

**Laboratory Analytical Data  
Attachment D**

*Vermilion Parish School Board v.  
Louisiana Land, et al*

*Expert Report  
Michael E. Pisani, P.E.  
David G. Angle, P.G.*

**MICHAEL PISANI & ASSOCIATES**

**07-47-East White Lake**

**STANDARD LEVEL IV  
REPORT OF ANALYSIS**

**WORK ORDER #10-03066-OR**

**April 19, 2010**

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY  
OAK RIDGE, TN**



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**Eberline Services – Oak Ridge Laboratory  
LABORATORY DATA SUPPORT CHECKLIST**

MP-001-3

Eberline Services Work Order # 10 030 66

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		3-9-10	KF	Sample Log-In
		4-9-10	KEW	Data Compilation
		4-13-10	MLT	First Technical Data Review
		4-13-10	ML	Second Technical Data Review
		4/16/10	[Signature]	Data Entry/Electronic Deliverable
		4/16/10	[Signature]	Case Narrative
		4/16/10	[Signature]	Electronic Deliverable Proof
		4/16/10	[Signature]	Samples Analyzed within Holding Time Yes? <input type="checkbox"/> No? <input type="checkbox"/> <b>YES</b>
		4/16/10	[Signature]	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by: [Signature] 4/19/10  
Laboratory Manager Date



**SECTION I**  
**CHAIN OF CUSTODY & pH CHECK SHEET**



Richmond Laboratory

# Chain of Custody

10 03066

PURCHASE ORDER NO. 07-47

CLIENT: Michael Pisanig Assoc  
 ADDRESS: 100 Poydras Ste. 1430  
New Orleans, LA  
 PROJECT: 07-47 - East White Lake

SAMPLERS SIGNATURE: [Signature]

SAMPLE NO.	DATE	TIME	LOCATION
MW-1	3/5/10	1710	<del>XXXX</del>
MW-2R	3/5/10	1810	---
MW-3R	3/5/10	1630	---
(X)			

Radium 226/228  
 gross alpha/beta  
 2 & 2  
 2 & 2  
 2

PARAMETERS	SAMPLE TYPE OR MATRIX
	water
	water
	water

# CONTAINERS

DATE: 3/5/10 PAGE 1 OF 1  
 TAT (IN DAYS) \_\_\_\_\_

OBSERVATIONS, COMMENTS, VOLUMES, SPECIAL OR ADDITIONAL TEST

1 \* Analyze filtrate  
 1 also DIS/SUS all samples per J. Miller.  
 1 MW-50 missing from OAC.  
 Johnathan Miller contacted add to OAC. KF. 39-10

RECEIVED

BY: KF  
 [Signature]

1) RELINQUISHED BY / DATE:	2) RECEIVED BY / DATE:	3) RELINQUISHED BY / DATE:	4) RECEIVED BY / DATE:
<u>[Signature]</u> 3/7/10 COMPANY: <u>MP&amp;A</u>	<u>[Signature]</u> 3/8/10 COMPANY: <u>MP&amp;A</u>	<u>[Signature]</u> 3/8/10 COMPANY: <u>MP&amp;A</u>	Kevin Fox 3/9/10 COMPANY: <u>Eberline</u>
5) RELINQUISHED BY / DATE:	6) RECEIVED BY / DATE:	7) RELINQUISHED BY / DATE:	8) RECEIVED BY / DATE:
COMPANY:	COMPANY:	COMPANY:	COMPANY:

TOTAL NO. OF CONTAINERS:  
 METHOD OF SHIPMENT:  
 SPECIAL SHIPMENT-HANDLING, STORAGE REQUIREMENTS, OR POSSIBLE HAZARDS

2030 Wright Avenue P.O. Box 4040 Richmond, CA 94804-0040 (510) 235-2633 FAX No. (510) 235-0438

# Chain of Custody Record

No. 4039

Eberline Services  
601 Scarboro Road  
Oak Ridge, TN 37830  
(865) 481-0683 Phone • (865) 483-4621 Fax



<b>Project Name:</b>	Project Number: _____	
<b>Send Report To:</b>	Sampler (Print Name): _____	
<b>Address:</b>	Sampler (Print Name): _____	
	Shipment Method: _____	
	Airbill Number: _____	
<b>Phone:</b>	Laboratory Receiving: _____	
<b>Fax:</b>	_____	

Page \_\_\_\_\_ of \_\_\_\_\_

10 03066

Purchase Order #: \_\_\_\_\_

No.	Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers	Comments, Special Instructions, etc.	Lab Sample ID (to be completed by lab)
4	MW-1 DIS	3/5/10	1710	H <sub>2</sub> O	1		
5	MW-1 SUS		1710				
6	MW-2R DIS		1810				
7	MW-2R SUS		1810				
8	MW-3R DIS		1630				
9	MW-3R SUS		1630				
10	MW-50 DIS		1900				
11	MW-50 SUS		1900	↓		⊕ MW-50 added to Chain per Jonathan Miller. 3-9-10 KF	

**RECEIVED**

MAR 09 2010

BY: KF

<b>Relinquished by:</b> (Signature)	<b>Received by:</b> (Signature)	<b>Date:</b>	<b>Time:</b>	<b>Sample Custodian Remarks (Completed by Laboratory):</b>										
		3/9/10	1000											
<b>Relinquished by:</b> (Signature)	<b>Received by:</b> (Signature)	<b>Date:</b>	<b>Time:</b>	<table border="0" style="width:100%;"> <tr> <td style="width:50%;"><b>QA/QC Level</b></td> <td style="width:50%;"><b>Turnaround</b></td> </tr> <tr> <td>Level I <input type="checkbox"/></td> <td>Routine <input type="checkbox"/></td> </tr> <tr> <td>Level II <input type="checkbox"/></td> <td>24 Hour <input type="checkbox"/></td> </tr> <tr> <td>Level III <input type="checkbox"/></td> <td>1 Week <input type="checkbox"/></td> </tr> <tr> <td>Other <input type="checkbox"/></td> <td>Other _____</td> </tr> </table>	<b>QA/QC Level</b>	<b>Turnaround</b>	Level I <input type="checkbox"/>	Routine <input type="checkbox"/>	Level II <input type="checkbox"/>	24 Hour <input type="checkbox"/>	Level III <input type="checkbox"/>	1 Week <input type="checkbox"/>	Other <input type="checkbox"/>	Other _____
<b>QA/QC Level</b>	<b>Turnaround</b>													
Level I <input type="checkbox"/>	Routine <input type="checkbox"/>													
Level II <input type="checkbox"/>	24 Hour <input type="checkbox"/>													
Level III <input type="checkbox"/>	1 Week <input type="checkbox"/>													
Other <input type="checkbox"/>	Other _____													
<b>Relinquished by:</b> (Signature)	<b>Received by:</b> (Signature)	<b>Date:</b>	<b>Time:</b>	<table border="0" style="width:100%;"> <tr> <td style="width:50%;"><b>Sample Receipt</b></td> <td style="width:50%;"><b>Total # Containers Received?</b></td> </tr> <tr> <td></td> <td>COC Seals Present? <input type="checkbox"/></td> </tr> <tr> <td></td> <td>COC Seals Intact? <input type="checkbox"/></td> </tr> <tr> <td></td> <td>Received Containers Intact? <input type="checkbox"/></td> </tr> <tr> <td></td> <td>Temperature? _____</td> </tr> </table>	<b>Sample Receipt</b>	<b>Total # Containers Received?</b>		COC Seals Present? <input type="checkbox"/>		COC Seals Intact? <input type="checkbox"/>		Received Containers Intact? <input type="checkbox"/>		Temperature? _____
<b>Sample Receipt</b>	<b>Total # Containers Received?</b>													
	COC Seals Present? <input type="checkbox"/>													
	COC Seals Intact? <input type="checkbox"/>													
	Received Containers Intact? <input type="checkbox"/>													
	Temperature? _____													



# Internal Chain of Custody

Work Order #	<b>10-03066</b>
Lab Deadline	<b>3/23/2010</b>
Analysis	<b>Ra226 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fdractions 04, 06, 08 &amp; 10 - Dissolved.</b>	<b>04</b>	27	AA1.4
	<b>05</b>	27	AA1.4
	<b>06</b>	54	AA1.4
	<b>07</b>	54	AA1.4
	<b>08</b>	25	AA1.4
	<b>09</b>	25	AA1.4
	<b>10</b>	21	AA1.4
	<b>11</b>	21	AA1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>RB</i>	3/11/10 0530
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>RB</i>	3/11/10 2035
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>RB</i>	3-12-10 0630
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>RB</i>	3-15-10 1720
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>RB</i>	3/15/10 1730
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>RB</i>	3/18/10 1450
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #	<b>10-03066</b>
Lab Deadline	<b>3/23/2010</b>
Analysis	<b>Ra226 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
<b>Fractions 05, 07, 09 &amp; 11 - Suspended.</b>	<b>04</b>	27	AA1.4	
	<b>05</b>	27	AA1.4	
	<b>06</b>	54	AA1.4	
	<b>07</b>	54	AA1.4	
	<b>08</b>	25	AA1.4	
	<b>09</b>	25	AA1.4	
	<b>10</b>	21	AA1.4	
	<b>11</b>	21	AA1.4	

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	3/11/10 0530
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>[Signature]</i>	3/11/10 2035
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>[Signature]</i>	3-10-10 0630
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>[Signature]</i>	3-15-10
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>[Signature]</i>	3/15/10 1730
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>[Signature]</i>	3/18/10 1400
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #	<b>10-03066</b>
Lab Deadline	<b>3/23/2010</b>
Analysis	<b>Ra228 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fdractions 04, 06, 08 &amp; 10 - Dissolved.</b>	<b>04</b>	27	AA1.4
	<b>05</b>	27	AA1.4
	<b>06</b>	54	AA1.4
	<b>07</b>	54	AA1.4
	<b>08</b>	25	AA1.4
	<b>09</b>	25	AA1.4
	<b>10</b>	21	AA1.4
	<b>11</b>	21	AA1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	3/11/10 2032
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>[Signature]</i>	3/11/10 2035
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>[Signature]</i>	3-12-10 0630
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>[Signature]</i>	3-15-10
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>[Signature]</i>	3/15/10 1730
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>[Signature]</i>	3/18/10 1450
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>[Signature]</i>	3-18-10 1400
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>[Signature]</i>	3-23-10 0842
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	3-23-10 1246
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		







# Internal Chain of Custody

Work Order #	<b>10-03066</b>
Lab Deadline	<b>3/23/2010</b>
Analysis	<b>Ra228 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Fractions 05, 07, 09 & 11 - Suspended.	04	27	AA1.4
	05	27	AA1.4
	06	54	AA1.4
	07	54	AA1.4
	08	25	AA1.4
	09	25	AA1.4
	10	21	AA1.4
	11	21	AA1.4

	Location (circle one)					Initials	Date
	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	BA	3/11/10 0530
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	PA	3/11/10 2035
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	JCH	3-12-10 0630
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	JCH	3-15-10
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	WBS	3/15/10 1730
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	WBS	3/12/10 1450
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	JCH	3-18-10 1400
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	JCH	3-22-10 0840
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	KMCC	3-23-10 0842
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #

**10-03066**

Lab Deadline

**3/23/2010**

Analysis

**GaGdT\_ThSr - Level 4**

Sample Matrix

**Water**

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fdractions 04, 06, 08 &amp; 10 - Dissolved.</b>	<b>04</b>	27	AA1.4
	<b>05</b>	27	AA1.4
	<b>06</b>	54	AA1.4
	<b>07</b>	54	AA1.4
	<b>08</b>	25	AA1.4
	<b>09</b>	25	AA1.4
	<b>10</b>	21	AA1.4
	<b>11</b>	21	AA1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	BL	4.6.2010
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	BL	4.7.2010 1432
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	KB 4/7/10	1432
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	KB 4/7/10	1721
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		




# Internal Chain of Custody

Work Order #	<b>10-03066</b>
Lab Deadline	<b>3/23/2010</b>
Analysis	<b>GaGbT_ThSr - Level 4</b>
Sample Matrix	<b>Water</b>


Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05, 07, 09 &amp; 11 - Suspended.</b>	04	27	AA1.4
	05	27	AA1.4
	06	54	AA1.4
	07	54	AA1.4
	08	25	AA1.4
	09	25	AA1.4
	10	21	AA1.4
	11	21	AA1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	BL	4.6.2010
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	BL	4.7.2010 1432
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	ICB	4/7/10 1432
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<del>Count Room</del>	ICB	4/7/10 1721
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

	<b>Sample Receiving Report</b> (Volumes, pH, & CPM)	Internal Work Order
		<b>10-03066</b>
		Received By
		KFOX

FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol	Ttl	CPM Max
01	LCS	0		WA	AA1.4			
02	BLANK	0		WA	AA1.4			
03	DUP	0		WA	AA1.4			
04	MW-1 DIS ✓	1		WA	AA1.4	3.80		27
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.8000	27	
05	MW-1 SUS ✓	1	SAME SAMPLE	WA	AA1.4	0.00		27
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.8000	27	
06	MW-2R DIS ✓	1		WA	AA1.4	3.80		54
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.8000	54	
07	MW-2R SUS ✓	1	SAME SAMPLE	WA	AA1.4	0.00		54
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.8000	54	
08	MW-3R DIS ✓	1		WA	AA1.4	3.70		25
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.7000	25	
09	MW-3R SUS ✓	1	SAME SAMPLE	WA	AA1.4	0.00		25
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.7000	25	
10	MW-30 DIS ✓	1		WA	AA1.4	3.70		21
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.7000	21	
11	MW-30 SUS ✓	1	SAME SAMPLE	WA	AA1.4	0.00		21
			Container Number	pH Orig	pH Final	Volume (L)	CPM	
			1	7	7	3.7000	21	


Vent  
03/10/10

Received by:  Date: 3-9-10

**SECTION II**  
**SAMPLE ACKNOWLEDGEMENT**

Internal ID	Client ID	Sample Date	Matrix	Storage	Sample Date	Matrix	Storage	01	02	03	04	05	06	07	08	09	10	11
01	LCS	03/10/10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
02	BLANK	03/10/10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
03	DUP	03/10/10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
04	MW-1 DIS	03/05/10 17:10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
05	MW-1 SUS	03/05/10 17:10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
06	MW-2R DIS	03/05/10 18:10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
07	MW-2R SUS	03/05/10 18:10	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
08	MW-3R DIS	03/05/10 16:30	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
09	MW-3R SUS	03/05/10 16:30	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
10	MW-30 DIS	03/05/10 19:00	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X
11	MW-30 SUS	03/05/10 19:00	WA	AA1.4				X	X	X	X	X	X	X	X	X	X	X

<b>Totals Per Analysis (non QA samples)</b>	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

 <p><b>EBERLINE SERVICES</b></p> <p>Sample Log In Report</p>	<p><b>Oak Ridge Laboratory</b>          601 Scarborough Rd.          Oak Ridge, TN 37830</p> <p>Voice: (865) 481-0683          Fax: (865) 483-4621</p>	<p><b>Invoice</b></p> <p>Accounts Payable          Michael Pisani &amp; Associates          1100 Poydras St. #1430          New Orleans, LA 70163</p> <p>504-582-2488          Voice          985-237-5091          Fax</p>	<p><b>Report Data</b></p> <p>Jody Shugart          Michael Pisani &amp; Associates          1100 Poydras St. #1430          New Orleans, LA 70163</p> <p>985-237-5091          Voice          985-237-5091          Fax</p>
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**Eberline Services – Oak Ridge Laboratory**

**SAMPLE RECEIPT CHECKLIST**  
MP-001-2

WORK ORDER # 10 030 66

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS    NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	<u>Y</u>	N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: 4 cubes unpreserved  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SIGNATURE: [Signature]

DATE: 39-10



**Eberline Services – Oak Ridge Laboratory**

**DISCREPANT SAMPLE RECEIPT REPORT**

**MP-001-1**

<b>WORK ORDER:</b> 10 03066
<b>CUSTOMER:</b> Michael Pisani + Assoc.
<b>DATE RECEIVED:</b> 3-9-10
<b>MATRIX:</b> H <sub>2</sub> O
<b>PROBLEM:</b> 9 MW-50 was missing from Chain
<b>ACTION TAKEN:</b> contacted Johnathan Miller, added MW-50 to new Occ. logged in.
<b>CLIENT NOTIFIED:</b> DATE 3-9-10 INITIALS 3-9-10 KF
<b>CLIENT COMMENT:</b> Johnathan Miller

1. Shipping papers not in order.
2. Custody papers absent.
3. Analyses not specified.
4. Samples physically damaged.
5. Samples not adequately identified.
6. Custody seals absent or broken.
7. Sample screen activity levels elevated.
8. Amount of sample less than that required for analyses.
9. Number of samples does not agree with chain-of-custody.
10. Identification of samples does not agree with chain-of-custody.
11. Sample analyses requested do not agree with paperwork.
12. Other (describe).

SIGNATURE:  Date: 3-9-10



**SECTION III**  
**CASE NARRATIVE**



EBERLINE ANALYTICAL CORPORATION  
601 SCARBORO ROAD  
OAK RIDGE, TENNESSEE 37830  
PHONE (865) 481-0683  
FAX (865) 483-4621

EBS-OR-30170

April 19, 2010

Anna Fix  
Michael Pisani & Associates  
1100 Poydras Street, 1430 Energy Center  
New Orleans, LA 70163

CASE NARRATIVE  
Work Order # 10-03066-OR

SAMPLE RECEIPT

This work order contains four water samples received 03/09/10. These samples were analyzed as dissolved and suspended for Radium-226/228 and Gross Alpha/Beta.

<u>CLIENT ID</u>	<u>LAB ID</u>
MW-1 DIS	10-03066-04
MW-1 SUS	10-03066-05
MW-2R DIS	10-03066-06
MW-2R SUS	10-03066-07
MW-3R DIS	10-03066-08
MW-3R SUS	10-03066-09
MW-50 DIS	10-03066-10
MW-50 SUS	10-03066-11

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0 Modified. Gross Alpha/Beta was performed using EPA Method 900.0 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

RADIUM-226

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. This was followed by selective sulfate precipitations of the Radium. Samples were then mounted by semi-micro-precipitations onto micro-porous filters. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. Chemical recovery was calculated by the use of a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

## ANALYTICAL RESULTS CONTINUED

### RADIUM-226

Samples demonstrated background equivalent to slightly positive results for Radium-226 activity. Chemical recovery was acceptable for all samples. Results for the Radium-226 method blank demonstrated background equivalent activity. Results for the Radium-226 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

### RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were then counted on a gas proportional counter. Chemical recovery was determined by the use of a Barium-133 tracer, of which each sample activity was determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated near background equivalent results for Radium-228 activity. Chemical recovery was acceptable for all samples. Results for the Radium-228 method blank demonstrated background equivalent activity. Results for the Radium-228 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery. Due to an apparent error associated with the Barium-133 recovery, chemical recovery for the laboratory control sample was estimated at 100 percent.

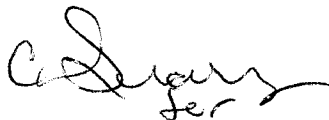
### GROSS ALPHA/BETA

Samples were filtered to disassociate the dissolved and suspended fractions. Volumetric aliquots from the dissolved fractions were acidified with  $\text{HNO}_3$ . Reduced samples were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Volumetric equivalent aliquots from the suspended fractions were digested in mixed acids, nitrated with  $\text{HNO}_3$ , and were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Samples were then counted on a gas proportional counter. Results were corrected as required for inherent self-absorption based on residual mass present.

Samples demonstrated background equivalent results for Gross Alpha activity. Samples demonstrated background equivalent to slightly positive results for Gross Beta activity. Due to the high Total Solids content within these samples, method detection limits for some samples are slightly high for some results. Results for the Gross Alpha and Beta method blank demonstrated background equivalent activity. Results for the Gross Alpha replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Gross Beta replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Gross Alpha and Beta laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

A handwritten signature in black ink, appearing to read 'M.R. McDougall', with a stylized flourish at the end.

M.R. McDougall  
Laboratory Manager

Date: 4/19/2010

**SECTION IV**  
**ANALYTICAL RESULTS SUMMARY**

# Eberline Analytical

## Final Report of Analysis

**Anna Fix**  
**Michael Pisani & Associates**  
**1100 Poydras St. #1430**  
**New Orleans, LA 70163**

**SDG: 10-03066**

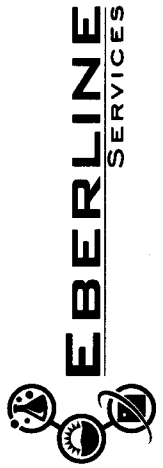
**Project:** 07-47-East White Lake  
**Analysis Category:** ENVIRONMENTAL  
**Sample Matrix:** WA

Report To:

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
10-03066-01	LCS	KNOWN	03/10/10 00:00	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	3.15E+02	1.38E+01			pCi/l
10-03066-01	LCS	SPIKE	03/10/10 00:00	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	2.72E+02	7.35E+00	7.46E+00	3.62E-01	pCi/l
10-03066-02	MBL	BLANK	03/10/10 00:00	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	-5.20E-02	7.21E-02	7.21E-02	2.21E-01	pCi/l
10-03066-03	DUP	MW-1 DIS	03/05/10 17:10	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	2.43E+01	2.86E+01	2.86E+01	5.37E+01	pCi/l
10-03066-04	DO	MW-1 DIS	03/05/10 17:10	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	2.40E+01	2.10E+01	2.10E+01	1.44E+01	pCi/l
10-03066-05	TRG	MW-1 SUS	03/05/10 17:10	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	2.92E+00	1.33E+00	1.33E+00	1.47E+00	pCi/l
10-03066-06	TRG	MW-2R DIS	03/05/10 18:10	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	5.07E+00	7.77E+00	7.77E+00	1.62E+01	pCi/l
10-03066-07	TRG	MW-2R SUS	03/05/10 18:10	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	-1.30E-01	8.46E-01	8.46E-01	2.21E+00	pCi/l
10-03066-08	TRG	MW-3R DIS	03/05/10 16:30	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	6.93E+00	5.60E+01	5.60E+01	1.32E+02	pCi/l
10-03066-09	TRG	MW-3R SUS	03/05/10 16:30	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	1.38E-01	1.11E+00	1.11E+00	2.64E+00	pCi/l
10-03066-10	TRG	MW-50 DIS	03/05/10 19:00	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	-4.48E+01	3.76E+01	3.76E+01	1.22E+02	pCi/l
10-03066-11	TRG	MW-50 SUS	03/05/10 19:00	3/9/2010	4/7/2010	10-03066	Gross Alpha	EPA 900.0 Modified	5.15E+00	2.20E+00	2.20E+00	3.50E+00	pCi/l
10-03066-01	LCS	KNOWN	03/10/10 00:00	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	2.38E+02	7.15E+00			pCi/l
10-03066-01	LCS	SPIKE	03/10/10 00:00	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	2.61E+02	5.93E+00	5.95E+00	8.92E-01	pCi/l
10-03066-02	MBL	BLANK	03/10/10 00:00	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	-5.50E-02	2.93E-01	2.93E-01	6.31E-01	pCi/l
10-03066-03	DUP	MW-1 DIS	03/05/10 17:10	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	7.82E+00	4.01E+01	4.01E+01	8.52E+01	pCi/l
10-03066-04	DO	MW-1 DIS	03/05/10 17:10	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	3.30E+01	4.12E+01	4.12E+01	8.44E+01	pCi/l
10-03066-05	TRG	MW-1 SUS	03/05/10 17:10	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	2.20E+00	2.83E+00	2.83E+00	5.82E+00	pCi/l
10-03066-06	TRG	MW-2R DIS	03/05/10 18:10	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	5.71E+00	7.76E+00	7.76E+00	1.60E+01	pCi/l
10-03066-07	TRG	MW-2R SUS	03/05/10 18:10	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	-1.03E+00	3.31E+00	3.31E+00	7.14E+00	pCi/l
10-03066-08	TRG	MW-3R DIS	03/05/10 16:30	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	-2.59E+01	5.79E+01	5.79E+01	1.27E+02	pCi/l
10-03066-09	TRG	MW-3R SUS	03/05/10 16:30	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	6.83E+00	2.98E+00	2.98E+00	5.60E+00	pCi/l
10-03066-10	TRG	MW-50 DIS	03/05/10 19:00	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	3.19E+01	4.47E+01	4.47E+01	9.20E+01	pCi/l
10-03066-11	TRG	MW-50 SUS	03/05/10 19:00	3/9/2010	4/7/2010	10-03066	Gross Beta	EPA 900.0 Modified	2.64E+01	3.77E+00	3.78E+00	5.32E+00	pCi/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE ANALYTICAL CORPORATION**

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

# Eberline Analytical

## Final Report of Analysis

**Anna Fix**  
**Michael Pisani & Associates**  
 1100 Poydras St. #1430  
 New Orleans, LA 70163

**SDG:**  
**Project:**  
**Analysis Category:**  
**Sample Matrix:**

**10-03066**  
 07-47-East White Lake  
 ENVIRONMENTAL  
 WA

Report To:

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
10-03066-01	LCS	KNOWN	03/10/10 00:00	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	2.73E+01	1.25E+00			pCi/l
10-03066-01	LCS	SPIKE	03/10/10 00:00	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	2.40E+01	2.70E+00	2.70E+00	2.79E-01	pCi/l
10-03066-02	MBL	BLANK	03/10/10 00:00	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	2.95E-01	2.27E-01	2.27E-01	3.35E-01	pCi/l
10-03066-03	DUP	MW-1 DIS	03/05/10 17:10	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	6.50E+00	2.91E+00	2.91E+00	2.31E+00	pCi/l
10-03066-04	DO	MW-1 DIS	03/05/10 17:10	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	4.76E+00	3.27E+00	3.27E+00	3.51E+00	pCi/l
10-03066-05	TRG	MW-1 SUS	03/05/10 17:10	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	1.22E+00	4.54E-01	4.54E-01	3.24E-01	pCi/l
10-03066-06	TRG	MW-2R DIS	03/05/10 18:10	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	1.82E+00	5.93E-01	5.93E-01	2.79E-01	pCi/l
10-03066-07	TRG	MW-2R SUS	03/05/10 18:10	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	2.28E-01	1.82E-01	1.82E-01	2.37E-01	pCi/l
10-03066-08	TRG	MW-3R DIS	03/05/10 16:30	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	6.18E+00	2.51E+00	2.51E+00	6.55E-01	pCi/l
10-03066-09	TRG	MW-3R SUS	03/05/10 16:30	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	1.20E+00	4.31E-01	4.31E-01	2.38E-01	pCi/l
10-03066-10	TRG	MW-50 DIS	03/05/10 19:00	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	5.30E+00	3.19E+00	3.19E+00	3.36E+00	pCi/l
10-03066-11	TRG	MW-50 SUS	03/05/10 19:00	3/9/2010	3/18/2010	10-03066	Radium-226	EPA 903.0 Modified	1.04E+00	4.01E-01	4.01E-01	2.95E-01	pCi/l
10-03066-01	LCS	KNOWN	03/10/10 00:00	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.72E+01	8.76E-01			pCi/l
10-03066-01	LCS	SPIKE	03/10/10 00:00	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.87E+01	1.15E+00	1.29E+00	1.08E+00	pCi/l
10-03066-02	MBL	BLANK	03/10/10 00:00	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	8.53E-01	6.04E-01	6.04E-01	1.19E+00	pCi/l
10-03066-03	DUP	MW-1 DIS	03/05/10 17:10	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.02E+01	4.33E+00	4.34E+00	8.16E+00	pCi/l
10-03066-04	DO	MW-1 DIS	03/05/10 17:10	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	2.68E+00	7.13E+00	7.13E+00	1.49E+01	pCi/l
10-03066-05	TRG	MW-1 SUS	03/05/10 17:10	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	9.71E-01	7.04E-01	7.05E-01	1.40E+00	pCi/l
10-03066-06	TRG	MW-2R DIS	03/05/10 18:10	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.51E+00	6.41E-01	6.43E-01	1.22E+00	pCi/l
10-03066-07	TRG	MW-2R SUS	03/05/10 18:10	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	9.90E-02	6.39E-01	6.39E-01	1.35E+00	pCi/l
10-03066-08	TRG	MW-3R DIS	03/05/10 16:30	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	5.72E+00	2.75E+00	2.75E+00	5.24E+00	pCi/l
10-03066-09	TRG	MW-3R SUS	03/05/10 16:30	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.54E+00	5.32E-01	5.35E-01	9.38E-01	pCi/l
10-03066-10	TRG	MW-50 DIS	03/05/10 19:00	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.15E+01	7.04E+00	7.05E+00	1.37E+01	pCi/l
10-03066-11	TRG	MW-50 SUS	03/05/10 19:00	3/9/2010	3/23/2010	10-03066	Radium-228	EPA 904.0 Modified	1.06E+00	5.76E-01	5.77E-01	1.11E+00	pCi/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE ANALYTICAL CORPORATION**

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

**SECTION V**  
**ANALYTICAL STANDARD**





# National Institute of Standards & Technology

## Certificate

Ba-6  
(#6a)

### Standard Reference Material 4251C Barium-133 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive barium-133 chloride, non-radioactive barium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of ionization chambers and solid-state gamma-ray spectrometry systems.

#### Radiological Hazard

The SRM ampoule contains barium-133 with a total activity of approximately 2.5 MBq. Barium-133 decays by electron capture and during the decay process X-rays and gamma rays with energies from 4 to 400 keV are emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
October 1994

Thomas E. Gills, Chief  
Standard Reference Materials Program



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE SOLUTIONS**  
**PRIMARY DILUTION RECERTIFICATION**  
QCP 009-1

**SOLUTION REFERENCE #** NIST SRM4251C      **CURRENT DATE** 10/28/2009 0:00  
**SOLUTION #** Ba-6

Principal Radionuclide	Half Life, Years	Half Life, Days
<sup>133</sup> Barium	1.048E+01	3.828E+03

Radionuclide	<sup>133</sup> Barium	Reference Date	9/1/1993 0:00
Certified Activity	μCi		
Certified Concentration	1.318E+01 μCi per gram		

Ampoule /Solution Gross	9.3081	Weight, Grams
Empty Ampoule	4.2582	Weight, Grams
Solution Net	5.0499	Weight, Grams
Total Activity in Ampoule	66.5577	μCi

**Chemical Composition of Standard Solution**  
<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

**Dilution Instructions:**      **Dilution Solvent Used** 1M HCl

Dilute to a volume of 1000.00 milliliters

**Certified Total Activity of** 66.5577 μCi      **Which Equals** 1.478E+08 dpm at the date listed above

**And after dilution the activity of this solution is** 1.478E+05 dpm/ml      This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

**Expiration Date:** October 28, 2010

Recertified By       Date: 10/28/09

Verified & Approved By       Date: 11/4/09

QC Approval       Date: 11/4/09



QUALITY CONTROL PROGRAM  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # QCP-009-1-A      Date 10/28/09  
NIST SRM4251C      Solution # Ba-6a

Principal Radionuclide <sup>133</sup>Ba      Half Life, Years 1.048E+01      Half Life, Days 3.828E+03

Radionuclide of Interest <sup>133</sup>Ba      Reference Date 9/1/1993 0:00  
Parent Solution Conc. 1.48E+05 dpm/ml

Chemical Composition of Standard Solution  
<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions:      Dilution Solvent Used 1M HCl

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 25.0000 ml  
Total Activity: 3.6950E+06 dpm      Final Activity Concentration: 3.6950E+03 dpm/ml  
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 28, 2010

Recertified By [Signature]

Date: 10/28/09

Verified & Approved By [Signature]

Date: 11/4/09

QC Approval [Signature]

Date: 11/4/09

# CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

<sup>Ra-5</sup>  
QA/QC REVIEWED  
Date 2/8/94 Initials WT

Radionuclide:	Ra-226	Customer:	TMA EBERLINE
Half Life:	1600 ± 7 years	P.O.No.:	VH1888
Catalog No.:	7226	Reference Date:	February 1 1994 12:00 PST.
Source No.:	453-26	Contained Radioactivity: (Ra-226)	1.001 μCi.
		Contained Radioactivity: (Ra-226)	37.0 kBq.

### Description of Solution

a. Mass of solution:	5.1864 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Ra(NO <sub>3</sub> ) <sub>2</sub> in 1 N HNO <sub>3</sub>
c. Carrier content:	None added
d. Density:	1.0318 g/ml @ 20°C.

Radioimpurities None detected (other than daughters)

### Radioactive Daughters

Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

### Radionuclide Concentration

(Ra-226) 0.1929 μCi/g.

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:

Energy peak(s) integrated under: 186 keV.

Branching ratio(s) used: 0.0351 gamma rays per decay.

### Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.4%
b. Random uncertainty in assay:	±3.1%
c. Random uncertainty in weighing(s):	±0.2%
d. Total uncertainty at the 99% confidence level:	±4.6%

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

Ana H. Kuen  
QUALITY CONTROL

Feb. 3, 1994  
Date Signed



**QUALITY CONTROL PROGRAM**  
MP 009

Rev.8; 11/01/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE SOLUTIONS**  
*PRIMARY DILUTION RECERTIFICATION*  
MP 009

**SOLUTION REFERENCE #**  **CURRENT DATE**   
**SOLUTION #**

<b>Principal Radionuclide</b>	<b>Half Life, Years</b>	<b>Half Life, Days</b>
<sup>226</sup> Radium	<input type="text" value="1.600E+03"/>	<input type="text" value="5.844E+05"/>

<b>Radionuclide</b>	<input type="text" value="226Radium"/>	<b>Reference Date</b>	<input type="text" value="2/1/1994 0:00"/>
<b>Certified Activity</b>	<input type="text" value="1.001E+00"/> $\mu\text{Ci}$		
<b>Certified Concentration</b>	<input type="text" value=""/> $\mu\text{Ci per gram}$		

<b>Ampoule /Solution Gross</b>	<input type="text"/>	<b>Weight, Grams</b>
<b>Empty Ampoule</b>	<input type="text"/>	<b>Weight, Grams</b>
<b>Solution Net</b>	<input type="text"/>	<b>Weight, Grams</b>
<b>Total Activity in Ampoule</b>	<input type="text" value="1.0010"/> $\mu\text{Ci}$	

**Chemical Composition of Standard Solution**

**Dilution Instructions:** **Dilution Solvent Used**

Dilute to a volume of  milliliters

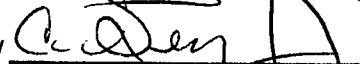
**Certified Total Activity of**   $\mu\text{Ci}$  **Which Equals**  **dpm at the date listed above**

**And after dilution the activity of this solution is**  **dpm/ml** This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

**Expiration Date:**

**Diluted By** 

**Date:**

**Verified & Approved By** 

**Date:**

**QC Approval** 

**Date:**



QUALITY CONTROL PROGRAM

MP 009

Rev.8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP 009  
IPL-453-26

Date 12/17/2009 0:00  
Solution # Ra-5b

Principal Radionuclide

Half Life, Years

Half Life, Days

<sup>226</sup>Radium

1.600E+03

5.844E+05

Radionuclide of Interest <sup>226</sup>Radium

Reference Date 2/1/1994 0:00

Parent Solution Conc. 2.22E+03 dpm/ml

Chemical Composition of Standard Solution

<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions:

Dilution Solvent Used

1M HNO<sub>3</sub>

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml

Total Activity: 4.4440E+04 dpm

Final Volume: 1000.00 ml

Final Activity Concentration: 4.4440E+01 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: December 17, 2010

Recertified By [Signature]

Date: 12/17/2009 0:00

Verified & Approved By [Signature]

Date: 1/5/10

QC Approval [Signature]

Date: 1/15/10



## CERTIFICATE OF CALIBRATION

### Standard Radionuclide Source

61680-416

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	3.586 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	June 4, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.1%
SYSTEMATIC:	3.6%
RANDOM:	1.5%

SAMPLE RECEIVED  
 DATE 6/11/01 INITIALS *DA*

\*99% Confidence Level

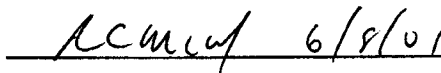
Impurities:  $\gamma$ -impurities (other than decay products) <0.1%5.00872 grams 0.1M HCl solution with 50  $\mu$ g/g Ba carrier.

P O NUMBER 00008864, Item 1

SOURCE PREPARED BY:

  
 M. D. Currie, Radiochemist

Q A APPROVED:

  
 M. D. Currie, Radiochemist



QUALITY CONTROL PROGRAM  
MP-009

Rev.8; 1/10/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE SOLUTIONS  
PRIMARY DILUTION RECERTIFICATION  
MP 009

SOLUTION REFERENCE # Analytics 61680-416 CURRENT DATE 12/17/2009 0:00  
SOLUTION # Ra-10

Principal Radionuclide <sup>228</sup>Ra Half Life, Years 5.750E+00 Half Life, Days 2.100E+03

Radionuclide <sup>228</sup>Ra Reference Date 6/4/2001 0:00  
Certified Activity 9.692E-02  $\mu\text{Ci}$   
Certified Concentration                       $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.4982</u>	Weight, Grams
Empty Ampoule	<u>4.4895</u>	Weight, Grams
Solution Net	<u>5.0087</u>	Weight, Grams
Total Activity in Ampoule	<u>0.0969</u>	$\mu\text{Ci}$

Chemical Composition of Standard Solution  
<sup>228</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 0.5 M HCl

Dilution Instructions: Dilution Solvent Used 0.5 M HCl  
Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.0969  $\mu\text{Ci}$  Which Equals 2.152E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.152E+02 dpm/ml  
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Recertified By [Signature] Date: 12/17/2009 0:00

Verified & Approved By [Signature] Date: 1/4/10

QC Approval [Signature] Date: 1/5/10



ANALYTICS

QA/QC REVIEWED  
Date 4/30/96 Initials WT

Am-4

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677  
Fax (404) 352-2837

# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

52094-416

Am-241 10 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Am-241
ACTIVITY (dps):	1.975 E+05
HALF-LIFE:	432.2 years
CALIBRATION DATE:	March 19, 1996 12:00 EST
TOTAL ERROR:	3.0%
SYSTEMATIC ERROR:	2.37%
RANDOM ERROR:	0.63%

10.01177 grams of solution 1M HCl.

P O NUMBER OR3830, Item 1

SOURCE PREPARED BY:

Kare O'Brien Beverly  
K. O. Beverly, Radiochemist

Q A APPROVED:

DM. Moly 4-26-96



**QUALITY CONTROL PROGRAM**  
MP-009

Rev.8; 1/10/03  
Title: **Radioactive Reference Standards Solutions & Records**

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference # Analytics 52094-416 Date 11/9/2009 0:00  
Solution # A/B-7 (alpha)

Principal Radionuclide <sup>241</sup>Americium Half Life, Years 4.322E+02 Half Life, Days 1.579E+05

Radionuclide of Interest <sup>241</sup>Am Reference Date 3/19/1996 0:00  
Parent Solution Conc. 1.19E+04 dpm/ml

Chemical Composition of Standard Solution  
<sup>241</sup>AmCl<sub>3</sub> in 1M HCL

Dilution Instructions: Dilution Solvent Used 1 M HNO<sub>3</sub>

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution: 60.0000 ml  
Total Activity: 7.1100E+05 dpm  
Final Volume: 1000.00 ml  
Final Activity Concentration: 7.1100E+02 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

**NOTES:**

Expiration Date: November 9, 2010

Recertified By: [Signature]

Date: 11/9/09

Verified & Approved By: [Signature]

Date: 12/11/09

QC Approval: [Signature]

Date: 12/11/09

5-75  
13-2-95



# National Institute of Standards & Technology

## Certificate

### Standard Reference Material 4234A Strontium-90 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive strontium-90 chloride, non-radioactive strontium chloride, non-radioactive yttrium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

#### Radiological Hazard

The SRM ampoule contains strontium-90 with a total activity of approximately 13 MBq. Strontium-90 decays by beta-particle emission to yttrium-90, which also decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. The beta particles emitted from strontium-90 and yttrium-90 produce bremsstrahlung photons with energies up to 2 MeV. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least March 2005.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
May 1995 (Text only revised November 1997)

Thomas E. Gills, Chief  
Standard Reference Materials Program



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.7; 9/29/99  
Title: **Radioactive Reference Standards Solutions & Records**

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference # QCP-009-1-A      Date: 11/9/2009 0:00  
NIST 4234A      Solution # A/B-7 (beta)

Principal Radionuclide <sup>90</sup> Sr	Half Life, Years 2.878E+01	Half Life, Days 1.051E+04
--	-------------------------------	------------------------------

Radionuclide of Interest <sup>90</sup>Sr      Reference Date 3/13/1995 0:00  
Parent Solution Conc. 1.52E+06 dpm/ml

The beta activity of solution reflects the original <sup>90</sup>Sr concentration and an equal concentration of <sup>90</sup>Yttrium.

Chemical Composition of Standard Solution  
<sup>90</sup>SrCl<sub>2</sub> in 1 M HCl

Dilution Instructions:      Dilution Solvent Used 1 M HNO<sub>3</sub>

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution:	<u>0.5000</u> ml	Final Activity Concentration:	<u>7.5764E+02</u> dpm/ml
Total Activity:	<u>7.5764E+05</u> dpm		
Final Volume:	<u>1000.00</u> ml		

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

**NOTES:**

Expiration Date: November 9, 2010

Recertified By: [Signature]      Date: 11/09/09  
Verified & Approved By: [Signature]      Date: 12/11/09  
QC Approval: [Signature]      Date: 12/11/09

**SECTION VI**  
**QUALITY CONTROL SAMPLE RESULTS SUMMARY**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-03066</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	2.29	87.91%	11.27%	100.00%	4.60%	2.73E+01	1.25E+00	2.40E+01	2.70E+00	Ra-5b	4.41E+01	4.60E+00	1.37E+00

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

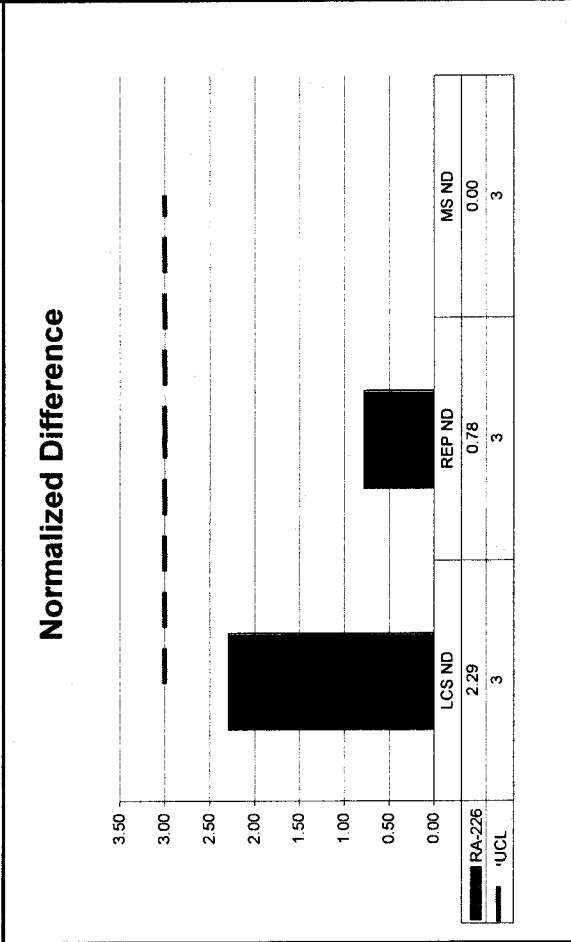
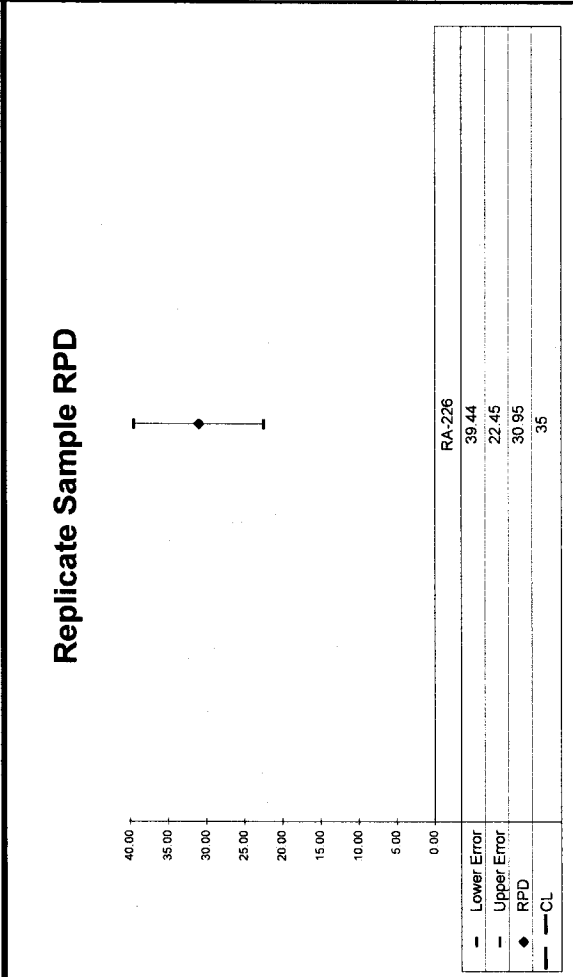
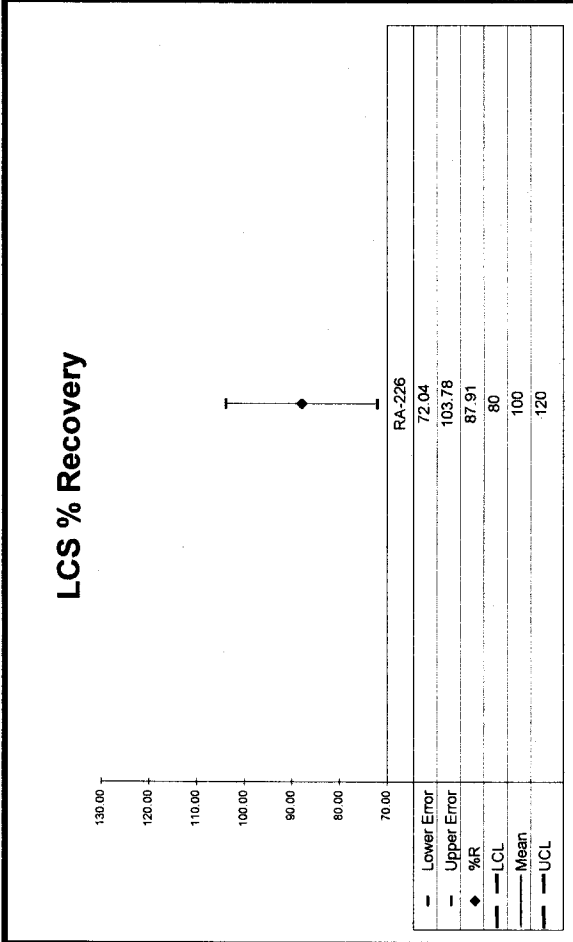
**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.78	30.95	4.76E+00	3.27E+00	6.50E+00	2.91E+00	OK	OK	OK	OK	INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.78	30.95	4.76E+00	3.27E+00	6.50E+00	2.91E+00	OK	OK	OK	OK	INV	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-03066</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-03066</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	2.20	109.21%	6.88%	100.00%	5.10%	1.72E+01	8.76E-01	1.87E+01	1.29E+00	Ra-10	7.48E+01	5.10E+00	5.10E-01

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

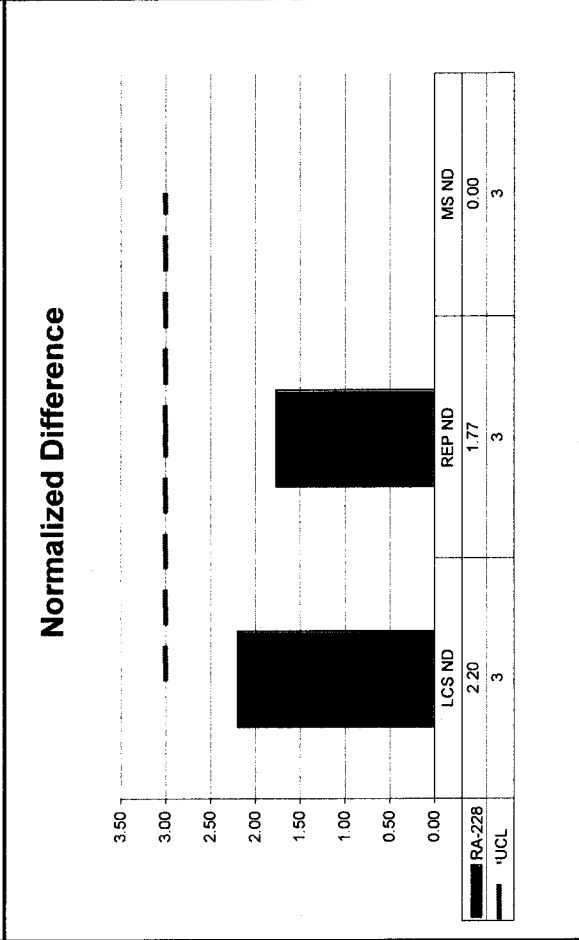
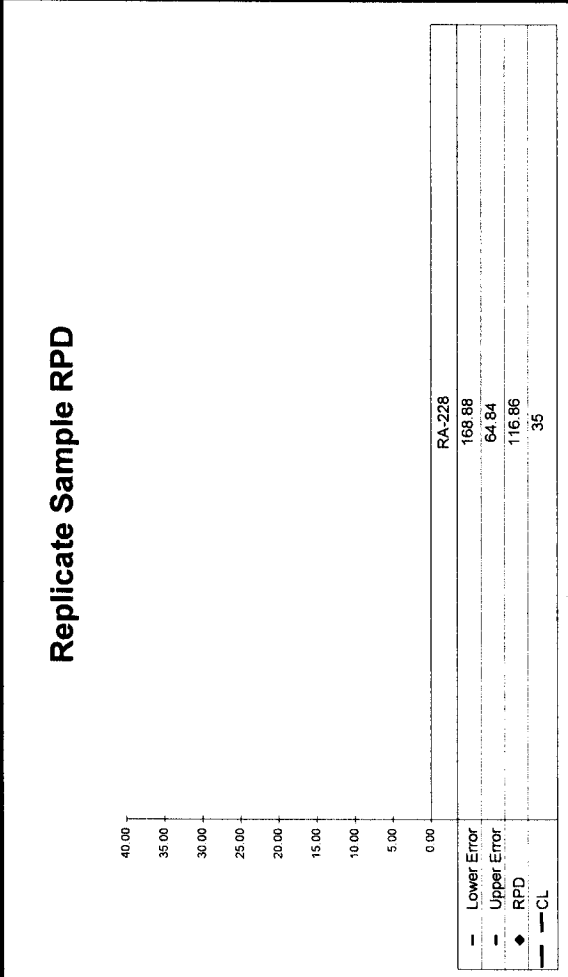
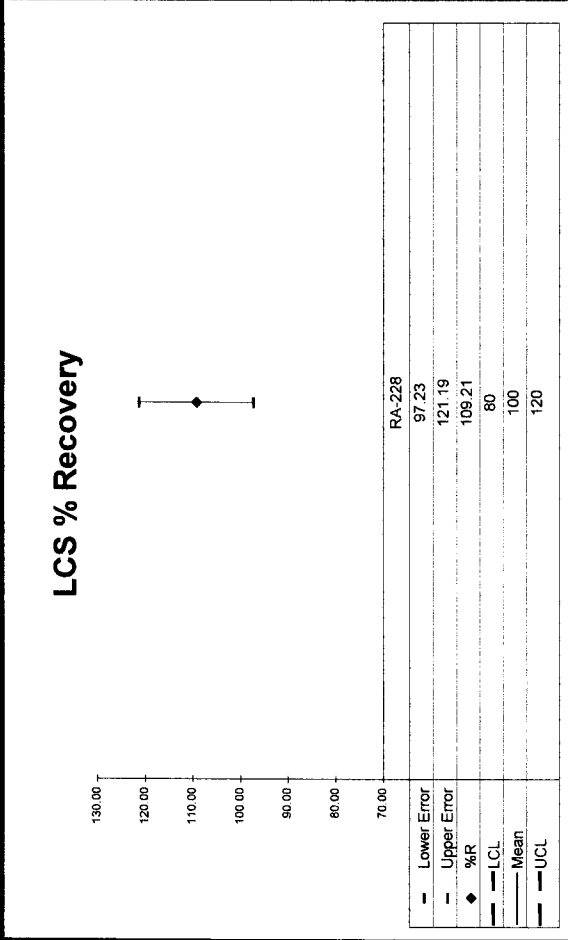
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	1.77	116.86	2.68E+00	7.13E+00	1.02E+01	4.34E+00	1.09	OK	OK			INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-03066</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-03066</b>	<b>GaGbT_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
GROSS ALPHA_TH	7.25	86.41%	2.74%	100.00%	4.30%	3.15E+02	1.36E+01	2.72E+02	7.46E+00	A/B-07	6.95E+02	4.30E+00	1.01E+00
GROSS BETA_SR	5.81	109.41%	2.28%	100.00%	3.00%	2.38E+02	7.15E+00	2.61E+02	5.95E+00	A/B-07	5.26E+02	3.00E+00	1.01E+00

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

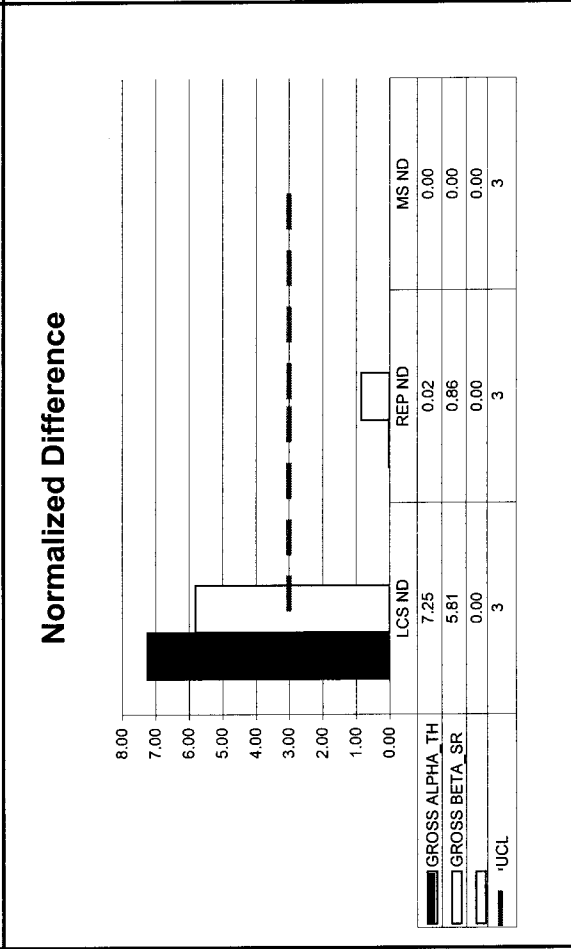
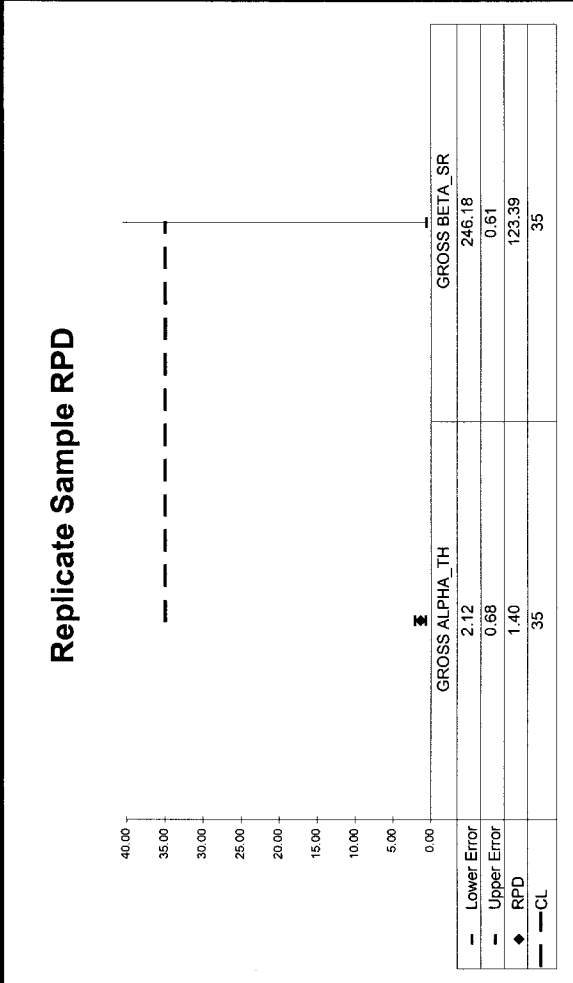
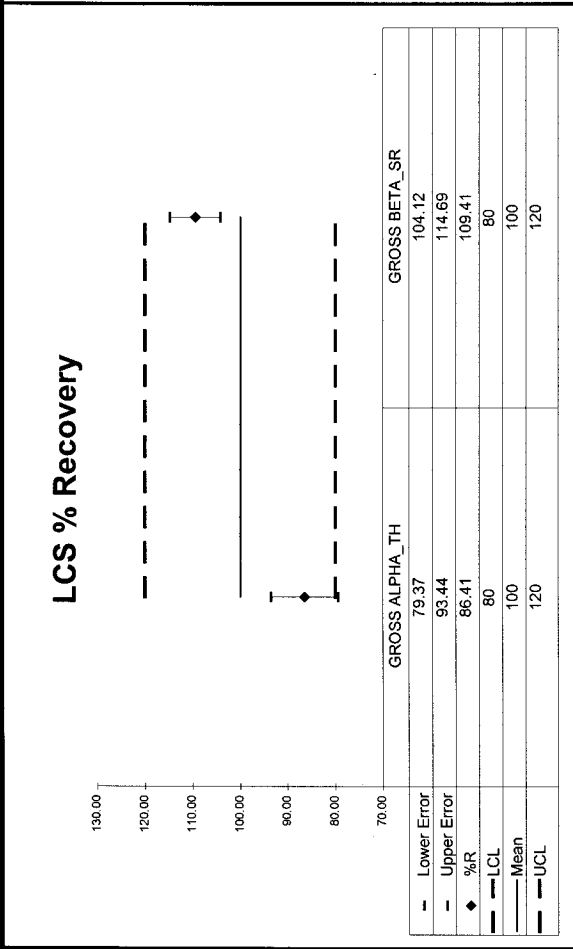
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	0.02	1.40	2.40E+01	2.10E+01	2.43E+01	2.86E+01	0.86	OK	INV			OK	OK
GROSS BETA_SR	0.86	123.39	3.30E+01	4.12E+01	7.82E+00	4.01E+01	1.09	OK	INV			INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	0.02	1.40	2.40E+01	2.10E+01	2.43E+01	2.86E+01	0.86	OK	INV			OK	OK
GROSS BETA_SR	0.86	123.39	3.30E+01	4.12E+01	7.82E+00	4.01E+01	1.09	OK	INV			INV	OK



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-03066</b>	<b>GaGbT_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>




**No Matrix Spike**




**SECTION VII**  
**LABORATORY TECHNICIAN'S NOTES**

**RA-226 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-03066
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	03/11/10 11:50	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DIGESTED SUSPENDED FRACTIONS WITH MIXED ACIDS- PH'D SAMPLES TO 2.8-3.0- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JB*  
~~3/11/10~~

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-03066
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	03/11/10 11:50	PREP	JBARNARD	ALIQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DIGESTED SUSPENDED FRACTIONS WITH MIXED ACIDS- PH'D SAMPLES TO 2.8-3.0- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	03/12/10 11:44	CHEM	TSMITH	Dissolved samples from prep in EDTA.
3	03/15/10 13:15	CHEM	TSMITH	Followed steps 12.2 to 12.2.8 in AP-006 rev. 9 . ( Sringe filtered samples. Precipitated and filtered samples and took to count room )

*3-15-10*  
*JM*



Reagents Used in an Analysis

Internal Work Order

10-03066

Analysis Code

Run

Ra226

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	3/11/2010
009323D01	Ammonium Sulfate	200 mg/ml	JBARNARD	3/11/2010
008327D04	Barium Carrier	1 mg/ml	JBARNARD	3/11/2010
008973D06	Lead Carrier	166 mg/ml	JBARNARD	3/11/2010
009196P	Nitric Acid	Reagent Grade	JBARNARD	3/11/2010
006799P	Sulfuric Acid	Reagent Grade	JBARNARD	3/11/2010
009182P	Perchloric Acid	Reagent Grade	JBARNARD	3/11/2010
009359S	EDTA	0.25M	TSMITH	3/12/2010
008735P	Acetic Acid	Reagent Grade	TSMITH	3/15/2010
006943D02	Ammonium Sulfate	200 mg/ml	TSMITH	3/15/2010



# Alpha #2


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Date	Sample #	Client	Load Time	Cr. Time	Analysis	Tech
3/15/10	1002110A(4-10)	BSC	1437	2hr 50min	Np	KB
3/15/10	1002103B(4)	BSC	1753	2hr 50min	Am <sup>241</sup>	KB
3/15/10	1002107B(1-4)	BSC	1755	2hr 50min	Am <sup>241</sup>	KB
3/15/10	1002111B(1-4)	BSC	1756	2hr 50min	Am <sup>241</sup>	KB
3/15/10	1002024B(1)	BSC	1758	2hr 50min	Am <sup>241</sup>	KB
3/16/10	1002144A(3-11)	CDM	0646	2hr. 50min	Th	KM
3/16/10	1002113A(1)	GL Enu. Lab	0647	2hr. 50min	Uu	KM
3/16/10	Daily Pulsers	Lab	0532	10 min.	NA	KM
3/16/10	1002114A(5-11)	GL Enu.	1003	2hr 50min	Uu	KM
3/16/10	100304A(1-3)	BJC	1004	2hr. 50min	Th	KM
3/16/10	1003027A(1-4)	Chemtech	1315	2hr. 50min.	Th	KM
3/16/10	1003027A(1-4)	Chemtech	1316	2hr. 50min.	Uu	KM
3/16/10	1003024A(1-2)	CDM	1317	2hr 50min	Uu	KM
3/16/10	1002132A(3-4)	BSC	1658	2hr 50min	Am <sup>241</sup>	KB
3/16/10	1002133A(13,5)	BSC	1659	2hr 50min	Am <sup>241</sup>	KB
3/16/10	1002119A(1-4)	BSC	1702	2hr 50min	Am <sup>241</sup>	KB
3/17/10	Daily Pulsers	Lab	0533	10 min.	NA	KM
3/17/10	1003050A(7-9)	CDM	0644	2hr 50min	Th	KM
3/17/10	1003050A(1-7)	CDM	0647	2hr. 50min	Uu	KM
3/17/10	1002100A(17-19)	BSC	0957	2hr. 50min	Th	KM
3/17/10	1002100A(1-2, 4-8)	BSC	1001	2hr. 50min	Th NT	KM
3/17/10	1002100A(8-17)	BSC	1315	2hr. 50min	Uu	KM
3/17/10	1002110A(1-10)	BSC	1648	2hr 50min	Am <sup>241</sup>	KB
3/18/10	1002120A(7)	BSC	0639	2hr 50min	Ra226	KM
3/18/10	1002147A(1-9)	CH2M Hill	0643	2hr. 50min	Th	KM
3/18/10	1002100A(17-20)	BSC	1058	2hr. 50min	Pu	KM
3/18/10	1003066A(1-6)	MFA	1101	2hr 50min	Ra226	KM
3/18/10						

# Alpha #3


Date	Sample #	Client	Load Time	CT-time	Analysis	tech
3/17/10	1003050A (8-9)	CDM	0647	2hr.50min	ULL	KM
3/17/10	1002100A (1-7)	BJC	0650	2hr.50min	Th	KM
3/17/10	1002100A (9-17)	BJC	1004	2hr.50min	TKNT	KM
3/17/10	1002100A (18-19)	BJC	1316	2hr.50min	ULL	KM
3/17/10	1003059A (1-4)	RASI	1318	2hr.50min	Th	KM
3/17/10	1003060A (1-3)	CDM	1319	2hr.50min	ULL	KM
3/17/10	1002034A (1-5)	BJC	1647	2hr50-	Am241	KB
3/17/10	1003060A (1-4)	CDM	1650	2hr50-	Rn <sup>6</sup>	KB
3/18/10	1002147A (10-11)	Cit 2nd Hill	0644	2hr.50min	Th	KM
3/18/10	1002100A (1-7)	BJC	0646	2hr.50min	Ru	KM
3/18/10	1003060A (9-11)	MFA	1051	2hr.50min	Ra226	KM
3/18/10	1003065A (1-4)	EnergyXTN	1054	2hr.50min	ULL	KM

**RA-228 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-03066
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	03/11/10 11:51	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DIGESTED SUSPENDED FRACTIONS WITH MIXED ACIDS- PH'D SAMPLES TO 2.8-3.0- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*BS*  
*3/11/10*

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-03066
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	03/11/10 11:51	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DIGESTED SUSPENDED FRACTIONS WITH MIXED ACIDS- PH'D SAMPLES TO 2.8-3.0- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	03/19/10 16:46	CHEM	TSMITH	Placed filters from count room into labeled centrifuge tubes. Added EDTA and swirled.
3	03/22/10 11:43	CHEM	TSMITH	Followed steps 12.2 to 12.9 in AP-007 rev. 14 . ( Chemical cleanup for Ra 228 )
4	03/23/10 07:57	CHEM	TSMITH	Followed steps 12.10 to 12.18 in AP-007 rev. 14 . ( Precipitated samples, centrifuged, discarded supernate. Dissolved samples, precipitated, hot bathed, centrifuged, and discarded supernate. Dissolved samples, precipitated and filtered samples, obtained final weight, covered with aluminum foil, and took to count room )

3-23-10  
 jm



Reagents Used in an Analysis

Internal Work Order

10-03066

Analysis Code

Run

Ra228

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	3/11/2010
009323D01	Ammonium Sulfate	200 mg/ml	JBARNARD	3/11/2010
008327D04	Barium Carrier	1 mg/ml	JBARNARD	3/11/2010
008973D06	Lead Carrier	166 mg/ml	JBARNARD	3/11/2010
009196P	Nitric Acid	Reagent Grade	JBARNARD	3/11/2010
006799P	Sulfuric Acid	Reagent Grade	JBARNARD	3/11/2010
009182P	Perchloric Acid	Reagent Grade	JBARNARD	3/11/2010
009359S	EDTA	0.25M	TSMITH	3/19/2010
009040D05	Ammonium Sulfide	2%	TSMITH	3/22/2010
008973D07	Lead Carrier	1.5 mg/ml	TSMITH	3/22/2010
009375P	Nitric Acid	Reagent Grade	TSMITH	3/22/2010
009401S	Yttrium Carrier	9 mg/ml	TSMITH	3/22/2010
008974D02	Ammonium Oxalate	5%	TSMITH	3/23/2010
009286D12	Nitric Acid	1N	TSMITH	3/23/2010
008737D03	Nitric Acid	6N	TSMITH	3/23/2010
008736D10	Sodium Hydroxide	10M	TSMITH	3/23/2010
009361S	Sodium Hydroxide	18M	TSMITH	3/23/2010

# LB4110 Red

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Date	Sample #	Client	Load Time	CT. Time	Analysis	Tech
3/19/10	1002053PB(1-4,8,10)	BSC	1335	2hrs	Pb210	KB
3/19/10	1002082AB(1)	ND	1350	30min	αβ	KB
3/19/10	1002037AB(4)	ND	1425	2hrs	αβ	KB
3/19/10	1002091RA(1-4)	BSC	1611	2hrs	Ru <sup>88</sup> Cr	ICB
3/19/10	1002078RA(1-1)	BSC	1612	2hrs	Ru <sup>88</sup> Cr	ICB
3/19/10	1002046AB(1)	MWRD	1730	30min	αβ	KB
3/19/10	1002047AB(1)	MWRD	1731	30min	αβ	KB
3/19/10	1002047AB(4-14)	MWRD	1719	8 hrs	αβ	KB
3/20/10	Weekly Bkgd	Lab	0947	8hrs	αβ	KB
3/22/10	Daily Bkgd/QC	Lab	0505/0612	1hr/30min	αβ	KM
3/22/10	1002146RA(1-12)	CK2M Hill	0853	2 hrs.	RA	KM
3/22/10	1002119AB(2-11)	BSC	1136	2hrs	αβ	KB
3/22/10	1002119AB(1)	BSC	1137	30min	αβ	KB
3/22/10	1002048AB(6-15)	MWRD	1745	8 hrs	αβ	KB
3/23/10	Daily Bkgd/QC	Lab	0511/0618	1hr/30min	αβ	KM
3/23/10	1003150AB(2-4)	BSC	0849	1hr.	αβ	KM
3/23/10	1003150AB(1)	BSC	0850	30 min.	αβ	KM
3/23/10	1003053RA(2-5)	Energy Soln.	0858	2hrs.	αβ	KM
3/23/10	1003053RA(1)	Energy Soln.	0859	30 min	αβ	KM
3/23/10	1002055NP(14)	BSC	0941	10min	NP	KM
3/23/10	1003060RA(8-11)	MFA	1035	2hrs.	RA	KM

# LB4110 Agua

Date	Sample #	Client	Load Time	CT Time	Analysis	tech
3/22/10	1002049AB(1)	MWRD	0950	30 min	αβ	KB
3/22/10	1002133AB(2-356)	BSC	1131	2 hrs	αβ	KB
3/22/10	1002133AB(1)	BSC	1132	30 min	αβ	KB
3/22/10	1002034AB(1-5)	BSC	1236	30 min	αβ	KB
3/22/10	1002111AB(2-4)	BSC	1322	2 hrs	αβ	KB
3/22/10	1002111AB(1)	BSC	1323	30 min	αβ	KB
3/22/10	1002048AB(16-19)	MWRD	1746	8 hrs	αβ	KB
3/22/10	1002048AB(18-20)	MWRD	1749	8 hrs	αβ	KB
3/23/10	Daily Bkgd/QC	Lab	0550/0511	1 hr/20 min	αβ	KB
3/23/10	1003149AB(2-4)	BSC	0852	1 hr.	αβ	KB
3/23/10	1003149AB(1)	BSC	0853	30 min	αβ	KB
3/23/10	1003005AB(2nd)	EnergyX TN	0903	2 hrs.	αβ	KB
3/23/10	1003005AB(1)	EnergyX TN	0904	30 min	αβ	KB
3/23/10	100208UMP(1-4)	Unitech	0939	10 min.	MP	KB
3/23/10	1003066RA(1-5)	MPA	1033	2 hrs.	RA	KB




**ALPHA/BETA NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-03066
		Analysis Code	GaGbT_ThSr
		Run Number	1

#	Date	Dept	User	Notes
1	04/07/10 14:28	PREP	BLESTER	Filtered 100 ml into tared beaker, dried, re-weighed for TDS aliquot. Agitated sample, used tared filter to capture suspended particles from 100ml of sample, dried. Aliquoted, prepared spike and blank, dried, applied to tared planchets, dried, flamed, re-weighed, and submitted to count room.

*Brian P. Lester*

4.7.2010

 <p><b>EBERLINE</b> SERVICES</p> <p>Reagents Used in an Analysis</p>		Internal Work Order			
		10-03066			
		Analysis Code		Run	
		GaGbT_ThSr		1	
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded	
009375D02	Nitric Acid	3N	BLESTER	4/7/2010	

# LB4110 Agua

Date	Sample #	Client	Load Time	CT Time	Analysis	Tech
4/1/10	1003089AB(2-11)	MWRD	1202	2 hrs	$\alpha$ $\beta$	KB
4/2/10	Daily Bkgd/QC	Lab	0548/0512	1hr/30min	$\alpha$ $\beta$	KM
4/2/10	1003176AB(2-13)	COM	0921	2 hrs.	$\alpha$ $\beta$	KM
4/2/10	1003176AB(1)	COM	0922	30 min	$\alpha$ $\beta$	KM
4/2/10	1003139RA(1)	Gilbert-Summitt	1046	30min	Rad	KB
4/2/10	1003139RA(2-7)	Gilbert-Summitt	1139	2hr	Rad	KB
4/2/10	1003166AB(1)	COM	1228	30min	$\alpha$ $\beta$	KB
4/2/10	1003166AB(10-19)	COM	1344	2hrs	$\alpha$ $\beta$	KB
4/2/10	1003058PB(1-4)	BSC	1446	2 hrs	Pb210	KB
4/2/10	1003089AB(12-19)	MWRD	1757	8 hrs	$\alpha$ $\beta$	KB
4/3/10	Weekly Bkgd	Lab	0950	8 hrs	$\alpha$ $\beta$	KB
4/5/10	Daily Bkgd/QC	Lab	0544/0504	1hr/30min	$\alpha$ $\beta$	KM
4/5/10	1003166RA(1-14)	COM	0800	2 hrs.	Rad	KM
4/5/10	1003161AB(2-14)	MP&A	1302	2hrs	$\alpha$ $\beta$	KB
4/5/10	1003097AB(2-15)	MWRD	1327	8 hrs	$\alpha$ $\beta$	KB
4/6/10	Daily Bkgd/QC	Lab	0543/0507	1hr/30min	$\alpha$ $\beta$	KM
4/6/10	1003176RA(1-14)	COM	<del>2166</del> 0916	2 hrs.	Rad	KM
4/6/10	1002100 Pb(2-15)	BSC	1205	4 hrs	Pb210	KB
4/7/10	Daily Bkgd/QC	Lab	0541/0506	1hr/30min	$\alpha$ $\beta$	KM
4/7/10	1004004AB(2-13)	COM	1220	2hrs	$\alpha$ $\beta$	KB
4/7/10	1004004AB(1)	COM	1221	30min	$\alpha$ $\beta$	KB
4/7/10	1003164AB(1)	ND	1254	30min	$\alpha$ $\beta$	KB
4/7/10	1004001RA(1-4)	BSC	1502	2hrs	Rad E <sup>-</sup>	KB
4/7/10	1003152RA(1-4)	BSC	1504	2hrs	Rad E <sup>-</sup>	KB
4/7/10	1003164AB(2-5)	ND	1506	2hrs	$\alpha$ $\beta$	KB
4/7/10	1003066AB(1)	MP&A	1517	30min	$\alpha$ $\beta$	KB

# LB4110 Red

Date	Sample #	Client	Load Time	CT Time	Analysis	Tech
4/3/10	Weekly Blyd	Lab	0951	8 hrs	αβ	KB
4/5/10	Daily Blyd/QC	Lab	0508/510	1hr/30min	αβ	KM
4/5/10	100316GRA (15-14)	COM	0759	2 hrs.	ReP	KM
4/5/10	1004001SR(2-14)	BSC	1256	2 hrs.	TOTSn	KB
4/5/10	1004001SR(C1)	BSC	1257	1 hr	TOTSn	KB
4/5/10	1003161AB(C1)	MPFA	1303	30min	αβ	KB
4/5/10	1003087AB(C1)	MWRD	1419	30min	αβ	KB
4/5/10	1003087AB(C16-20)	MWRD	1422	8 hrs	αβ	KB
4/6/10	Daily Blyd/QC	Lab	0508/0612	1hr/30min	αβ	KM
4/6/10	1004001C1(13,5)	BSC	0908	30min	Cl	KM
4/6/10	1003064NP(1-1)	Aerjet	0955	10 min	NP	KM
4/6/10	1004012AB(2-4)	BSC	1020	1 hr.	αβ	KM
4/6/10	1004012AB1(1)	BSC	1020	30 min.	αβ	KM
4/6/10	1002100Pb(16-19)	BSC	1206	4 hrs	Pb210	KB
4/6/10	1002100Pb1(C1)	BSC	1207	1 hr	Pb210	KB
4/7/10	Daily Blyd/QC	Lab	0507/0612	1hr/30min	αβ	KM
4/7/10	1004001NP(1-4)	BSC	0439	10 min.	NP	KM
4/7/10	1003077NP(1-6)	unitech	0440	10 min.	NP	KM
4/7/10	1003164RA(1-5)	North Dakota	1012	2 hrs.	ReP	KM
4/7/10	1003152Pb(1-4)	BSC	1012	4 hrs.	Pb	KM
4/7/10	1004001pb(1-4)	BSC	1013	2 hrs.	Pb	KM
4/7/10	1003066AB(2-11)	MPFA	1517	2 hrs	αβ	KB

**SECTION VIII**  
**ANALYTICAL DATA (RADIUM-226)**

<b>Work Order</b>	<b>10-03066</b>
<b>Analysis Code</b>	<b>Ra226</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>3/9/2010</b>
<b>Lab Deadline</b>	<b>3/23/2010</b>
<b>Client</b>	Michael Pisani & Associates
<b>Project</b>	ENV
<b>Report Level</b>	4
<b>Activity Units</b>	pCi
<b>Aliquot Units</b>	I
<b>Matrix</b>	WA
<b>Method</b>	EPA 903.0 Modified
<b>Instrument Type</b>	Alpha Spectroscopy
<b>Radiometric Tracer</b>	Ba-133
<b>Radiometric Sol#</b>	Ba-6a
<b>Tracer Act (dpm/g)</b>	1240.619
<b>Carrier</b>	
<b>Carrier Conc (mg/ml)</b>	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		03/10/10 00:00	1.0000E+00
02	MBL	BLANK		03/10/10 00:00	1.0000E+00
03	DUP	MW-1 DIS	27	03/05/10 17:10	1.6670E-01
04	DO	MW-1 DIS	27	03/05/10 17:10	1.2500E-01
05	TRG	MW-1 SUS	27	03/05/10 17:10	1.0000E+00
06	TRG	MW-2R DIS	54	03/05/10 18:10	1.0000E+00
07	TRG	MW-2R SUS	54	03/05/10 18:10	1.0000E+00
08	TRG	MW-3R DIS	25	03/05/10 16:30	2.5000E-01
09	TRG	MW-3R SUS	25	03/05/10 16:30	1.0000E+00
10	TRG	MW-30 DIS	21	03/05/10 19:00	1.2500E-01
11	TRG	MW-30 SUS	21	03/05/10 19:00	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8186	1015.6	378.6	82.76	0.0225	0.0225	0.0299	0.0074		82.76	2.61	1.00
02	MBL	0.8178	1014.6	427.3	93.50	0.0227	0.0227	0.0299	0.0072		93.50	2.55	1.00
03	DUP	0.8118	1007.1	396.0	87.29	0.0223	0.0223	0.0329	0.0106		87.29	3.47	1.00
04	DO	0.8152	1011.4	298.5	65.52	0.0222	0.0222	0.0318	0.0096		65.52	3.17	1.00
05	TRG	0.8116	1006.9	403.4	88.94	0.0225	0.0225	0.0292	0.0067		88.94	2.40	1.00
06	TRG	0.8097	1004.5	460.4	101.75	0.0223	0.0223	0.0320	0.0097		101.75	3.20	1.00
07	TRG	0.8094	1004.2	396.2	87.59	0.0225	0.0225	0.0287	0.0062		87.59	2.23	1.00
08	TRG	0.8108	1005.9	376.8	83.16	0.0224	0.0224	0.0340	0.0116		83.16	3.86	1.00
09	TRG	0.8119	1007.3	431.3	95.06	0.0226	0.0226	0.0291	0.0065		95.06	2.34	1.00
10	TRG	0.8127	1008.3	270.2	59.49	0.0224	0.0224	0.0294	0.0070		59.49	2.50	1.00
11	TRG	0.8109	1006.0	417.5	92.13	0.0226	0.0226	0.0293	0.0067		92.13	2.40	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
02	MBL			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
03	DUP			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
04	DO			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
05	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
06	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
07	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
08	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
09	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
10	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		
11	TRG			03/11/10 06:37	JBARNARD	03/15/10 11:37	TSMITH		

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	2.40E+01	2.70E+00	2.79E-01	2.73E+01	87.91	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	2.95E-01	2.27E-01	3.35E-01					OK	INV
03	RA-226	DUP	MW-1 DIS	pCi/l	6.50E+00	2.91E+00	2.31E+00				INV	INV	
04	RA-226	DO	MW-1 DIS	pCi/l	4.76E+00	3.27E+00	3.51E+00					INV	
05	RA-226	TRG	MW-1 SUS	pCi/l	1.22E+00	4.54E-01	3.24E-01					OK	
06	RA-226	TRG	MW-2R DIS	pCi/l	1.82E+00	5.93E-01	2.73E-01					OK	
07	RA-226	TRG	MW-2R SUS	pCi/l	2.26E-01	1.82E-01	2.37E-01					OK	
08	RA-226	TRG	MW-3R DIS	pCi/l	6.18E+00	2.51E+00	6.55E-01					OK	
09	RA-226	TRG	MW-3R SUS	pCi/l	1.20E+00	4.31E-01	2.38E-01					OK	
10	RA-226	TRG	MW-30 DIS	pCi/l	5.30E+00	3.19E+00	3.36E+00					INV	
11	RA-226	TRG	MW-30 SUS	pCi/l	1.04E+00	4.01E-01	2.95E-01					OK	

Client	Michael Pisani & Associates
	Eberline Services Work Order
	10-03066
Analysis Code	Ra226
	1
Run	1



Run	1
Analysis Code	Ra226
Eberline Services Work Order	10-03066
Client	Michael Pisani & Associates

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	03/10/10 00:00	1.00E+00	82.76		82.76		3/15/2010 11:37	
02	RA-226	MBL	03/10/10 00:00	1.00E+00	93.50		93.50		3/15/2010 11:37	
03	RA-226	DUP	03/05/10 17:10	1.67E-01	87.29		87.29		3/15/2010 11:37	
04	RA-226	DO	03/05/10 17:10	1.25E-01	65.52		65.52		3/15/2010 11:37	
05	RA-226	TRG	03/05/10 17:10	1.00E+00	88.94		88.94		3/15/2010 11:37	
06	RA-226	TRG	03/05/10 18:10	1.00E+00	101.75		101.75		3/15/2010 11:37	
07	RA-226	TRG	03/05/10 18:10	1.00E+00	87.59		87.59		3/15/2010 11:37	
08	RA-226	TRG	03/05/10 16:30	2.50E-01	83.16		83.16		3/15/2010 11:37	
09	RA-226	TRG	03/05/10 16:30	1.00E+00	95.06		95.06		3/15/2010 11:37	
10	RA-226	TRG	03/05/10 19:00	1.25E-01	59.49		59.49		3/15/2010 11:37	
11	RA-226	TRG	03/05/10 19:00	1.00E+00	92.13		92.13		3/15/2010 11:37	

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-Ra226-1**

Client

**Michael Pisani & Associates**

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Eberline Services Work Order

**10-03066**

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Analysis Code

**Ra226**

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Run

**1**

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	03/18/10 10:59		A_Spec	24	170.12	1.34 E+03	3.00 E-03	17.9
02	RA-226	MBL	03/18/10 10:59		A_Spec	25	170.07	1.89 E+01	9.00 E-03	18.1
03	RA-226	DUP	03/18/10 11:00		A_Spec	27	170.08	7.19 E+01	6.00 E-03	20.1
04	RA-226	DO	03/18/10 11:00		A_Spec	28	170.03	2.79 E+01	4.00 E-03	18.9
05	RA-226	TRG	03/18/10 11:00		A_Spec	29	170.05	7.30 E+01	8.00 E-03	17.8
06	RA-226	TRG	03/18/10 11:01		A_Spec	32	170	1.28 E+02	3.00 E-03	18.2
07	RA-226	TRG	03/18/10 10:50		A_Spec	35	170	1.48 E+01	5.00 E-03	19.8
08	RA-226	TRG	03/18/10 10:51		A_Spec	37	170	9.65 E+01	0.00 E+00	19.9
09	RA-226	TRG	03/18/10 10:51		A_Spec	38	170	7.65 E+01	4.00 E-03	17.8
10	RA-226	TRG	03/18/10 10:51		A_Spec	39	170	2.90 E+01	6.00 E-03	19.5
11	RA-226	TRG	03/18/10 10:51		A_Spec	41	170	6.82 E+01	8.00 E-03	18.9

25

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	03/10/10 00:00	1.0000	0.8186	1015.5707	378.6000	82.76	2.61	1.00
02	MBL	BLANK	03/10/10 00:00	1.0000	0.8178	1014.5782	427.3000	93.50	2.55	1.00
03	DUP	MW-1 DIS	03/05/10 17:10	0.1667	0.8118	1007.1345	396.0000	87.29	3.47	1.00
04	DO	MW-1 DIS	03/05/10 17:10	0.1250	0.8152	1011.3526	298.5000	65.52	3.17	1.00
05	TRG	MW-1 SUS	03/05/10 17:10	1.0000	0.8116	1006.8864	403.4000	88.94	2.40	1.00
06	TRG	MW-2R DIS	03/05/10 18:10	1.0000	0.8097	1004.5292	460.4000	101.75	3.20	1.00
07	TRG	MW-2R SUS	03/05/10 18:10	1.0000	0.8094	1004.1570	396.2000	87.59	2.23	1.00
08	TRG	MW-3R DIS	03/05/10 16:30	0.2500	0.8108	1005.8939	376.8000	83.16	3.86	1.00
09	TRG	MW-3R SUS	03/05/10 16:30	1.0000	0.8119	1007.2586	431.3000	95.06	2.34	1.00
10	TRG	MW-30 DIS	03/05/10 19:00	0.1250	0.8127	1008.2511	270.2000	59.49	2.50	1.00
11	TRG	MW-30 SUS	03/05/10 19:00	1.0000	0.8109	1006.0179	417.5000	92.13	2.40	1.00

24  
32  
38  
41

# Spike and Tracer Worksheet

Internal Work Order		Run		Analysis Code		Date		Technician		Technician Initials		Witness Initials		
<b>10-03066</b>		<b>1</b>		<b>Ra226</b>		<b>3/11/2010 6:30</b>		<b>JBARNARD</b>		<b>JB</b>				
LCS & Matrix Spikes														
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Error Estimate	Added pCi	MS Error Estimate	LCS Known pCi	MSD Error Estimate
Ra-226	Ra-5b	44.131	3/11/2010	0.500	0.5073				10.08	0.464	0.00	0.000	0.00	0.000
<i>17.17 g Ra-226 Total 27.25 g 1.254</i>														

Tracers															
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes								
							Tracer							LCS	
01	Ba-133	Ba-6a	1240.619	3/11/2010	0.8186	0.8200	0.8186 g							0.5073 g	
02	Ba-133	Ba-6a	1240.619	3/11/2010	0.8178	0.8200	0.8178 g							0.5096 g	
03	Ba-133	Ba-6a	1240.619	3/11/2010	0.8118	0.8200	-0.8118 g								
04	Ba-133	Ba-6a	1240.619	3/11/2010	0.8152	0.8200	-0.8152 g								
05	Ba-133	Ba-6a	1240.619	3/11/2010	0.8116	0.8200	-0.8116 g								
06	Ba-133	Ba-6a	1240.619	3/11/2010	0.8097	0.8200	-0.8097 g								
07	Ba-133	Ba-6a	1240.619	3/11/2010	0.8094	0.8200	-0.8094 g								
08	Ba-133	Ba-6a	1240.619	3/11/2010	0.8108	0.8200	-0.8108 g								
09	Ba-133	Ba-6a	1240.619	3/11/2010	0.8119	0.8200	-0.8119 g								
10	Ba-133	Ba-6a	1240.619	3/11/2010	0.8127	0.8200	-0.8127 g								
11	Ba-133	Ba-6a	1240.619	3/11/2010	0.8109	0.8200	-0.8109 g								
							Matrix Spike								

# Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
<b>10-03066</b>	<b>1</b>	<b>Ra226</b>	<b>liters</b>	<b>3/23/2010</b>	<b>TSMITH</b>

Lab Fraction	Michael Pisani & Associates		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS		LCS						1.000E+00	1.000E+00				
02	BLANK		MBL						1.000E+00	1.000E+00				
03	MW-1 DIS		DUP						1.000E+00	1.6670E-01				
04	MW-1 DIS		DO						1.000E+00	1.2500E-01				
05	MW-1 SUS		TRG						1.000E+00	1.000E+00				
06	MW-2R DIS		TRG						1.000E+00	1.000E+00				
07	MW-2R SUS		TRG						1.000E+00	1.000E+00				
08	MW-3R DIS		TRG						1.000E+00	2.5000E-01				
09	MW-3R SUS		TRG						1.000E+00	1.000E+00				
10	MW-30 DIS		TRG						1.000E+00	1.2500E-01				
11	MW-30 SUS		TRG						1.000E+00	1.000E+00				

Comments
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Technician: SM Date: 3/15/10

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-03066</b>	<b>1</b>	<b>Ra226</b>			<b>TSMITH</b>

TRetec Fraction	Michael Pisani & Associates		Sample Type	Carrier Data		Filter Data			Gravimetric % Recovery
	Client ID			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)		
01	LCS		LCS			0.0225	0.0299	0.0074	
02	BLANK		MBL			0.0227	0.0299	0.0072	
03	DUP		DUP			0.0223	0.0329	0.0106	
04	MW-1 DIS		DO			0.0222	0.0318	0.0096	
05	MW-1 SUS		TRG			0.0225	0.0292	0.0067	
06	MW-2R DIS		TRG			0.0223	0.0320	0.0097	
07	MW-2R SUS		TRG			0.0225	0.0287	0.0062	
08	MW-3R DIS		TRG			0.0224	0.0340	0.0116	
09	MW-3R SUS		TRG			0.0226	0.0291	0.0065	
10	MW-30 DIS		TRG			0.0224	0.0294	0.0070	
11	MW-30 SUS		TRG			0.0226	0.0293	0.0067	

Technician: SP Date: 3/15/10





Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:46:42

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_C:C\_1003066A-RA\$01\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	01
SAMPLE DATE:	18-MAR-2010 00:00	*	ALIQOUT:	1.000E+00 liter
SAMPLE TITLE:	SPIKE	*	DETECTOR NUMBER:	024
ACQ DATE:	18-MAR-2010 10:59	*	AVERAGE EFFICIENCY:	17.87%
ELAPSED LIVE TIME:	10207.	*	RECOVERY:	82.76%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 08:55	*	EFF CAL DATE:	23-MAY-2009 09:40
BKG FILENAME:	B_024_12MAR10	*	BKG ELAPSED TIME:	60004.
		*	SAF:	2.61
		*		

\*\*\*\*\*

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	2229.23	4.93	100.0	3.992E+01	3.907E+00	6.065E-01
RN-222	5490.0	2391.67	1.70	99.9	4.285E+01	4.122E+00	4.075E-01
RA-226	4785.0	1338.42	0.51	100.0	2.396E+01	2.699E+00	2.790E-01

\*\*\*\*\*

K. Bannister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA,ALUSR,ARCHIVE.C]C-1003066A-RA\$01-RA.CNF;1

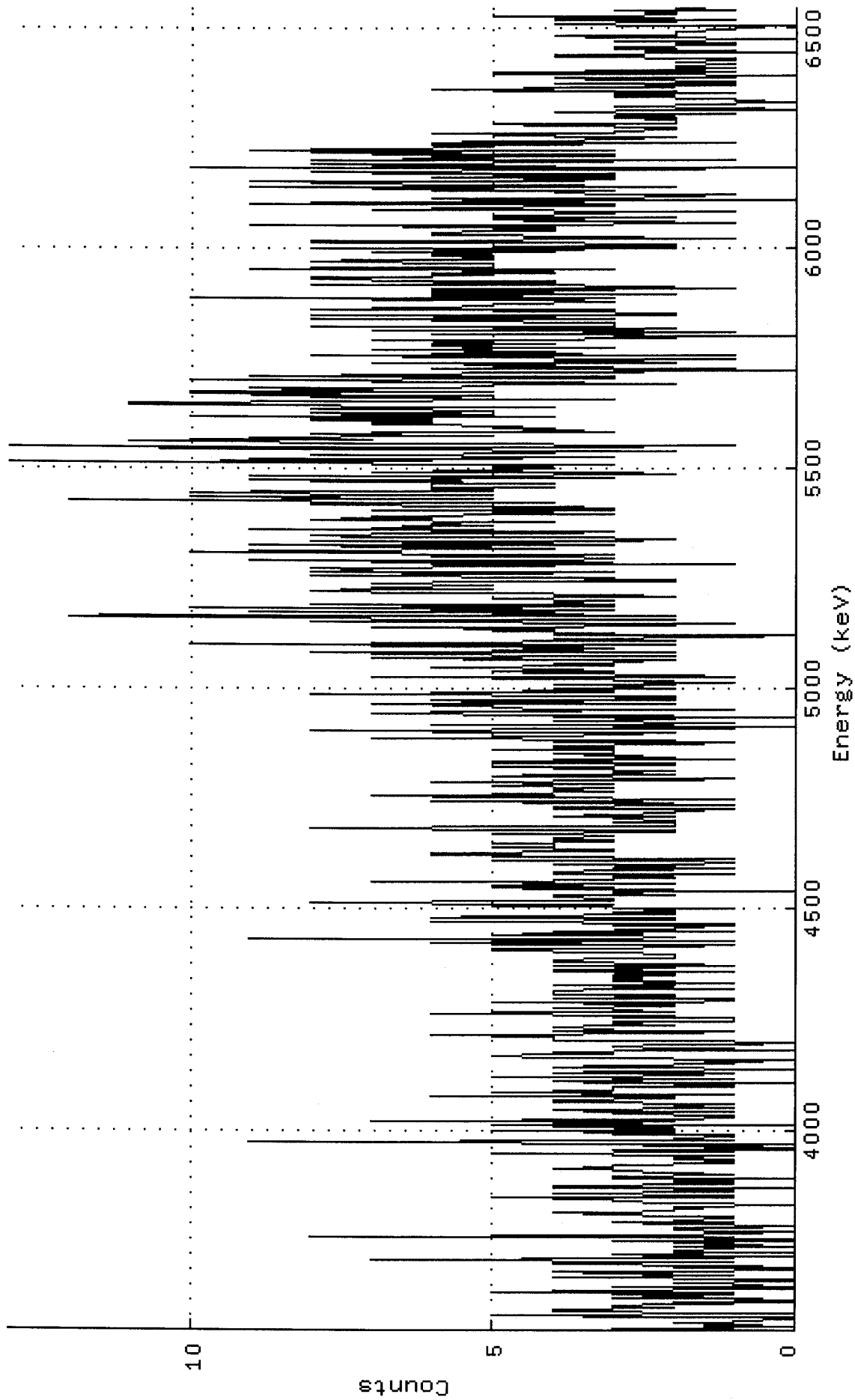
Title : 024

Sample Title: SPIKE

Start Time: 18-MAR-2010 10:59 Sample Time: 18-MAR-2010 00:00 Energy Offset: 3.53277E+03

Real Time : 0 02:50:03.00 Sample ID : 01 Energy Slope : 3.16661E+00

Live Time : 0 02:50:07.00 Sample Type: RA Energy Quad : -2.26342E-04



Channel Contents for ND\_AMS\_ARCHIVE\_C:C\_1003066A-RA\$01\_RA

Channel

1:	10203	10207	1	1	3	0	1	2	1	1	0	0	2	5
15:	0	1	4	4	2	3	3	2	0	2	0	1	3	2
29:	1	5	1	4	0	3	0	1	1	2	0	0	4	4
43:	1	3	4	2	0	2	0	4	4	3	1	7	2	0
57:	2	3	0	2	2	1	2	0	1	2	0	3	0	2
71:	8	2	1	0	1	2	2	1	0	2	3	1	2	1
85:	5	2	3	4	3	2	2	1	2	0	2	2	3	3
99:	1	1	1	4	4	1	2	0	4	4	1	2	1	2
113:	0	3	3	1	2	2	3	3	4	3	3	1	2	1
127:	2	1	2	1	5	4	2	0	3	0	1	4	0	9
141:	2	1	2	1	1	3	2	5	2	2	4	0	5	3
155:	2	7	2	1	2	1	3	1	3	4	1	2	2	1
169:	4	4	4	2	2	6	1	5	5	3	3	3	1	2
183:	0	3	4	1	5	3	2	1	4	3	0	3	4	3
197:	1	2	1	0	4	4	5	4	3	4	2	0	2	3
211:	2	1	0	2	4	4	4	6	5	2	1	4	3	4
225:	3	2	3	3	1	1	1	3	2	6	4	2	3	3
239:	4	2	2	5	2	1	1	4	2	2	4	4	4	3
253:	1	3	2	4	1	3	2	3	3	2	3	2	4	1
267:	4	2	4	1	2	4	3	4	3	2	2	2	3	3
281:	5	5	3	2	1	4	6	1	9	3	2	3	5	4
295:	1	4	2	2	1	3	1	6	5	2	2	6	5	2
309:	2	3	2	2	1	5	3	4	8	4	3	3	4	4
323:	2	3	3	0	4	5	3	5	2	7	4	4	2	3
337:	3	1	4	4	3	1	3	2	4	2	1	2	5	1
351:	5	3	6	6	3	4	3	5	4	4	4	5	3	3
365:	4	4	3	4	5	2	2	4	8	4	2	2	2	3
379:	2	3	2	4	3	2	2	2	1	4	4	2	1	3
393:	6	4	1	5	7	4	5	3	4	4	3	3	5	4
407:	3	6	2	2	1	5	4	2	3	2	3	3	5	4
421:	2	2	5	5	1	4	2	3	4	3	3	3	5	3
435:	3	4	2	1	4	2	7	6	4	3	2	4	8	2
449:	2	0	6	3	1	4	4	2	4	0	4	7	6	6
463:	1	4	5	5	7	2	5	6	2	2	4	2	8	3
477:	6	3	4	2	3	2	4	1	3	3	3	7	1	2
491:	4	5	3	4	5	6	3	4	3	3	2	4	7	2
505:	4	6	8	2	5	4	3	4	4	2	7	4	4	4
519:	1	0	4	3	5	4	4	7	5	2	4	1	8	5
533:	2	12	11	2	5	4	9	3	6	10	3	8	3	4
547:	4	3	5	3	2	3	5	6	8	7	5	7	5	5
561:	7	5	2	2	5	3	8	5	3	8	7	8	8	4
575:	6	1	5	9	4	3	4	6	3	10	7	9	4	4
589:	6	9	3	5	8	3	2	4	7	8	6	4	3	9
603:	5	7	6	5	6	5	4	8	7	6	7	4	3	5
617:	3	7	3	4	5	8	8	4	6	6	6	10	5	6
631:	10	8	5	6	4	6	6	6	4	7	9	8	3	9
645:	6	2	3	7	5	4	5	5	3	7	7	13	6	9
659:	6	3	8	7	4	4	2	8	8	4	1	7	6	11
673:	9	7	9	6	5	8	6	3	4	5	4	5	6	7
687:	6	8	6	8	4	10	5	8	6	5	7	8	4	11
701:	8	11	10	8	4	3	8	5	8	10	5	10	7	9
715:	6	5	2	5	5	9	10	3	3	9	6	5	5	0
729:	6	1	5	4	4	7	2	4	1	3	5	8	1	6
743:	4	4	7	3	5	6	4	6	5	7	5	2	3	0
757:	5	6	1	4	7	2	8	3	3	3	3	6	3	8
771:	4	8	2	2	4	5	3	8	6	5	5	5	3	3
785:	4	10	3	6	6	2	6	3	6	6	1	3	4	8
799:	4	4	6	8	8	6	6	4	6	5	3	9	7	5
813:	5	5	5	8	7	5	5	6	5	6	4	7	5	2
827:	8	2	5	2	5	8	8	1	1	4	5	6	6	5
841:	4	5	4	4	9	5	1	3	4	5	2	5	5	5
855:	3	4	1	7	5	6	3	3	9	7	0	5	6	3
869:	2	1	3	4	3	6	5	9	2	5	6	7	9	4
883:	3	6	3	3	7	3	8	3	3	0	10	4	8	5
897:	5	1	8	5	6	3	3	6	8	3	9	7	5	5
911:	6	1	6	5	4	3	2	4	4	6	3	3	3	2
925:	3	2	4	5	2	2	2	2	3	2	3	1	2	4
939:	2	0	1	3	3	1	2	0	1	1	1	3	3	3
953:	3	1	5	2	6	3	3	1	4	1	1	1	3	4
967:	2	0	3	5	1	5	2	1	2	2	1	1	2	2
981:	1	2	1	4	4	3	2	0	2	3	2	3	1	2
995:	1	3	2	1	0	3	4	2	2	2	2	1	1	1
1009:	0	2	4	2	2	4	1	3	5	3	2	2	2	3
1023:	0	0												

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:46:34.22

Detector ID: 24	Acquisition Start: 18-MAR-2010 10:59:37.01
Live Time: 0 02:50:07.00	Real Time: 0 02:50:03.00
Batch Id: 1003066A-RA	Sample Id: 01
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4608.83	513	0	0.00	348.50	271	154	5.03E-02	4.4	
2	0	5296.15	917	0	0.00	580.99	487	175	8.98E-02	3.3	
3	0	5804.11	856	0	490.19	758.39	681	164	8.39E-02	3.4	

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:46:40.61

	Acquisition Start: 12-MAR-2010 18:28:08.01
Live Time: 0 16:40:04.00	Real Time: 0 16:40:04.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4603.23	3	0	50.51	347.50	271	154	5.00E-05	57.7	
2	0	5273.46	10	0	3.16	574.00	487	175	1.67E-04	31.6	
3	0	5814.46	29	0	154.68	762.50	681	164	4.83E-04	18.6	

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:46:40.94

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4608.83*	1338	0	0.00	348.50	271	154	1.31E-01	4.4	
2	0	5296.15*	2392	0	0.00	580.99	487	175	2.34E-01	3.3	
3	0	5804.11*	2229	0	490.19	758.39	681	164	2.18E-01	3.4	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SPIKE  
 Sample date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 10:59:37  
 Sample ID : 01 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 024 Detector geometry:  
 Elapsed live time: 0 02:50:07.00 Elapsed real time: 0 02:50:03.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4608.83*	1338	0.00	348.50	271	154	8.8		RA-226	19.8
0	5296.15*	2392	0.00	580.99	487	175	6.6		RN-222	35.5
0	5804.11*	2229490.19	758.39	758.39	681	164	6.9		PO-218	33.0

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:47:06

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_R:R\_1003066A-RA\$02\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	02
SAMPLE DATE:	18-MAR-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	BLANK	*	DETECTOR NUMBER:	025
ACQ DATE:	18-MAR-2010 10:59	*	AVERAGE EFFICIENCY:	18.14%
ELAPSED LIVE TIME:	10204.	*	RECOVERY:	93.50%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 08:55	*	EFF CAL DATE:	7-MAR-2009 10:35
BKG FILENAME:	B_025_12MAR10	*	BKG ELAPSED TIME:	60002.
		*	SAF:	2.55
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	9.86	2.89	100.0	1.540E-01	1.797E-01	4.204E-01
RN-222	5490.0	6.12	4.08	99.9	9.560E-02	1.616E-01	4.799E-01
RA-226	4785.0	18.87	1.53	100.0	2.946E-01	2.267E-01	3.345E-01

\*\*\*\*\*

IC Bannister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum : DKA100:[ALPHA.ALUSR.ARCHIVE.R]R\_1003066A-RA#02\_RA.CNF;1

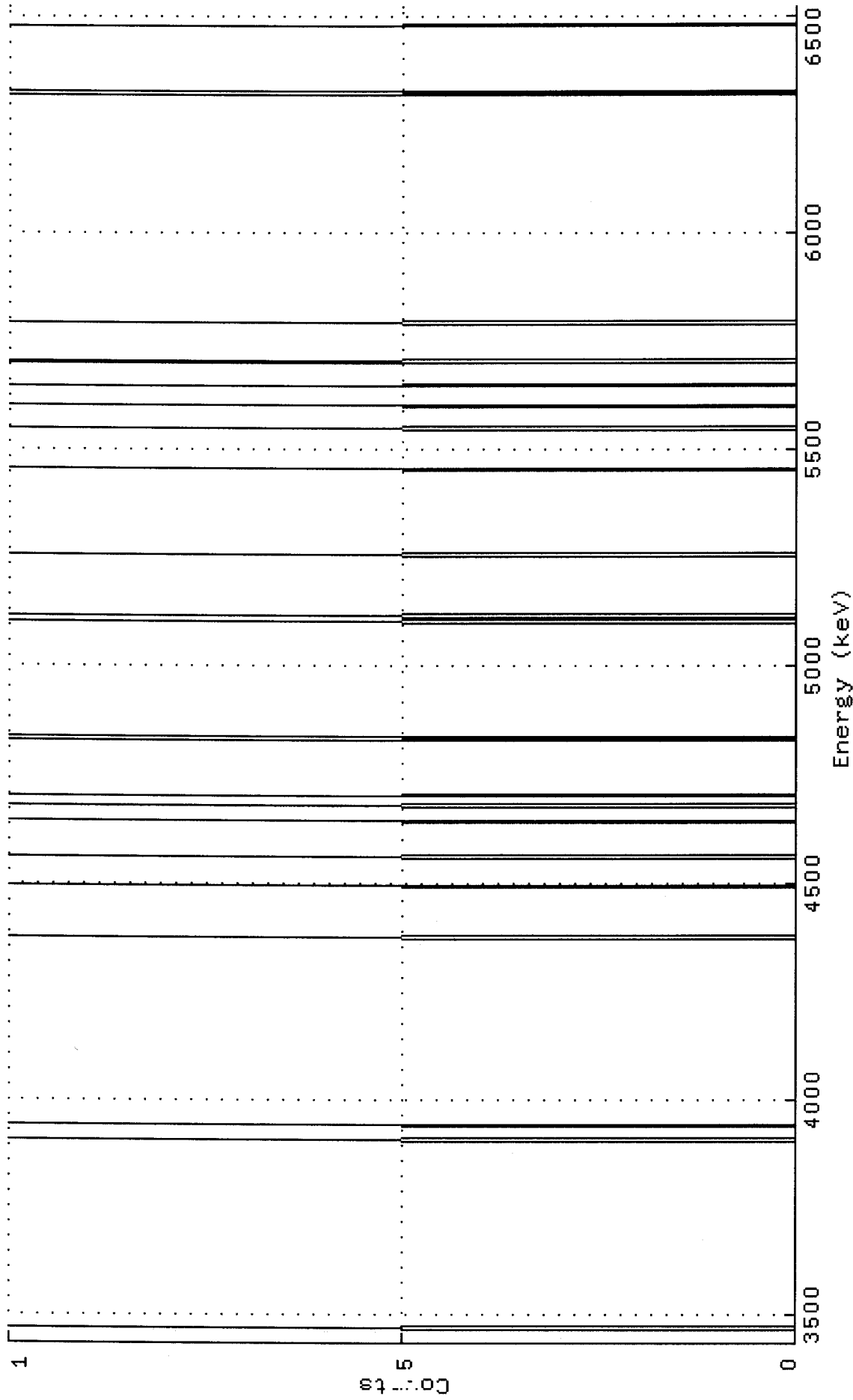
Title : 025

Sample Title: BLANK

Start Time: 18-MAR-2010 10:59 Sample Time: 18-MAR-2010 00:00 Energy Offset: 3.42413E+03

Real Time : 0 02:50:04.00 Sample ID : 02 Energy Slope : 3.16693E+00

Live Time : 0 02:50:04.00 Sample Type: RA Energy Quad : -1.42740E-04



Channel Contents for ND\_AMS\_ARCHIVE\_R:R\_1003066A-RA\$02\_RA

Channel

1:	10204	10204	0	0	0	0	0	0	0	0	0	0	0	1
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
169:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
393:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
407:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	1	0	1	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	1	0	0	0	0	0	0	0	0	0	1	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	1	1	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	1	0	1	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 18-MAR-2010 14:46:57.79

Detector ID: 25 Acquisition Start: 18-MAR-2010 10:59:50.01  
 Live Time: 0 02:50:04.00 Real Time: 0 02:50:04.00  
 Batch Id: 1003066A-RA Sample Id: 02  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4638.67	8	0	0.00	390.37	304	152	7.84E-04	35.4	
2	0	5230.94	4	0373.70	586.00	516	171	3.92E-04	50.0		
3	0	5686.54	5	0209.02	739.00	704	157	4.90E-04	44.7		

Background Counts Within Peak Regions Generated: 18-MAR-2010 14:47:03.52

Acquisition Start: 12-MAR-2010 18:28:11.01  
 Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4600.61	9	0370.56	379.50	304	152	1.50E-04	33.3		
2	0	5271.03	24	0475.98	601.00	516	171	4.00E-04	20.4		
3	0	5806.39	17	0 63.89	782.00	704	157	2.83E-04	24.3		

Net Sample Counts Within Peak Regions Generated: 18-MAR-2010 14:47:03.87

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4638.67*	19	0	0.00	390.37	304	152	1.85E-03	38.3	
2	0	5230.94*	6	0373.70	586.00	516	171	6.00E-04	84.5		
3	0	5686.54*	10	0209.02	739.00	704	157	9.66E-04	58.3		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 18-MAR-2010 14:47:04

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : BLANK  
 Sample date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 10:59:50  
 Sample ID : 02 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 025 Detector geometry:  
 Elapsed live time: 0 02:50:04.00 Elapsed real time: 0 02:50:04.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4638.67*	19	0.00	390.37	304	152	76.6		RA-226	0.275
0	5230.94*	6373.70	586.00	516	1711	168.9			RN-222	8.939E-02
0	5686.54*	10209.02	739.00	704	1571	116.5			PO-218	0.144

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:48:20

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$03\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	03
SAMPLE DATE:	5-MAR-2010 00:00	*	ALIQOUT:	1.667E-01 liter
SAMPLE TITLE:	MW-1 DIS	*	DETECTOR NUMBER:	027
ACQ DATE:	18-MAR-2010 11:00	*	AVERAGE EFFICIENCY:	20.12%
ELAPSED LIVE TIME:	10205.	*	RECOVERY:	87.29%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 08:55	*	EFF CAL DATE:	7-NOV-2009 11:51
BKG FILENAME:	B_027_12MAR10	*	BKG ELAPSED TIME:	60004.
		*	SAF:	3.47
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	85.56	1.19	100.0	7.742E+00	3.187E+00	2.425E+00
RN-222	5490.0	71.34	1.53	99.9	6.459E+00	2.916E+00	2.640E+00
RA-226	4785.0	71.85	1.02	100.0	6.500E+00	2.914E+00	2.306E+00

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IC Bannister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1003066A-RA\$03\_RA.CNF; 1

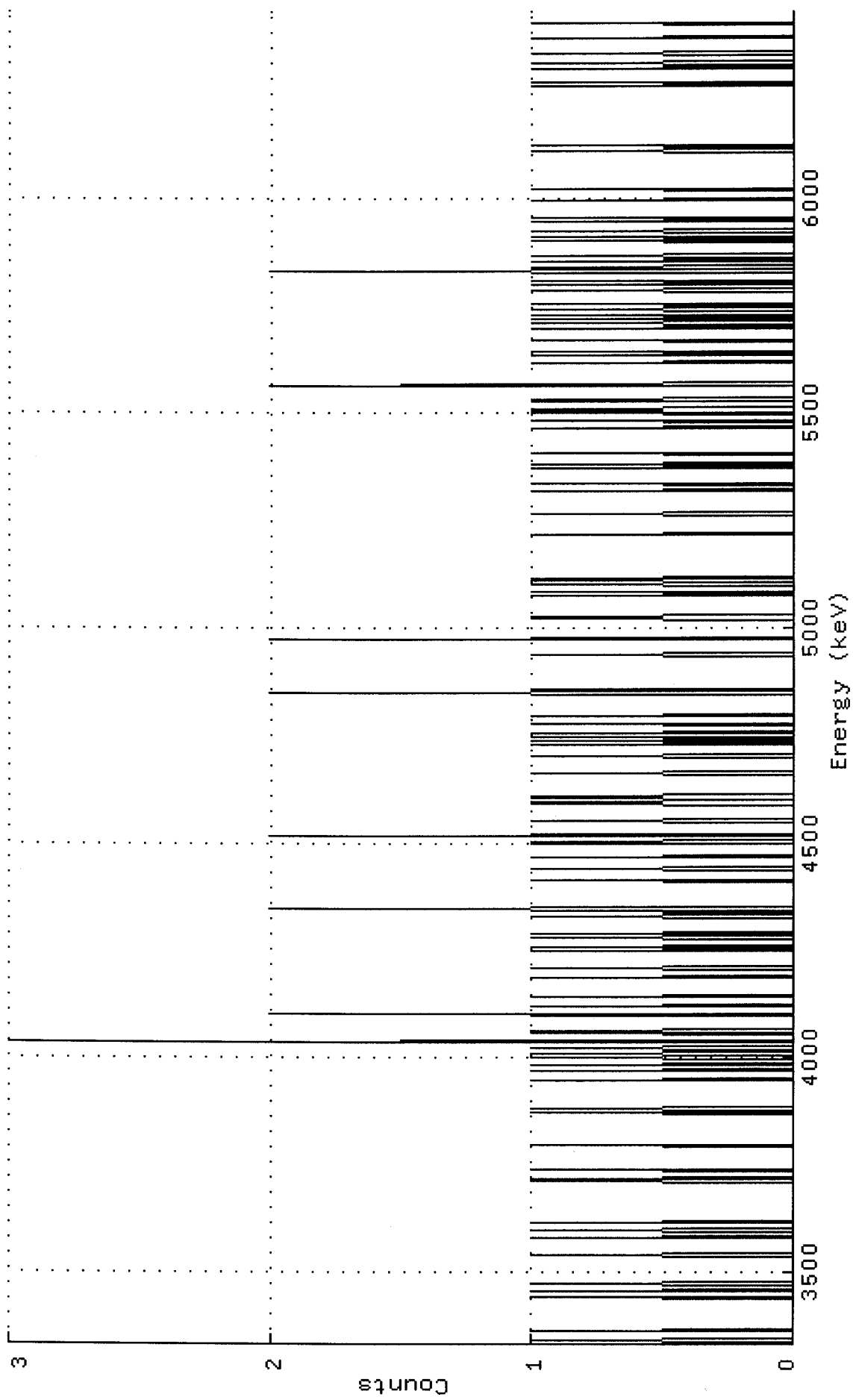
Title : 027

Sample Title: MW-1 DIS

Start Time: 18-MAR-2010 11:00 Sample Time: 5-MAR-2010 00:00: Energy Offset: 3.32124E+03

Real Time : 0 02:50:05.00 Sample ID : 03 Energy Slope : 3.22428E+00

Live Time : 0 02:50:05.00 Sample Type: RA Energy Quad : -1.83949E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$03\_RA

Channel

1:	10205	10205	0	0	0	1	0	0	0	0	0	0	1	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	1	0	0	0	0	1
43:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
71:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
85:	0	1	0	0	0	0	0	1	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	1	0	1	0	0
127:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	1	0	0	1	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	1	0	0	0	0	0	0	1	0	0	0	1	0	0
211:	0	0	1	0	0	1	0	0	0	1	0	0	0	0
225:	3	0	0	0	0	0	1	0	1	0	0	0	0	0
239:	0	0	0	0	0	0	2	0	0	0	0	0	0	1
253:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	1	0	0	0	0	0	0	1
281:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
295:	0	1	0	0	0	0	0	1	1	0	0	1	0	0
309:	0	0	0	0	0	0	0	0	0	1	0	0	0	1
323:	0	2	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
351:	0	0	0	1	0	0	0	0	0	0	0	0	1	0
365:	0	0	0	0	0	0	0	0	1	1	0	0	0	0
379:	2	0	0	0	0	0	0	0	0	0	0	1	0	0
393:	0	0	0	0	0	0	0	0	0	0	1	1	0	0
407:	1	1	1	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
435:	0	0	0	0	1	0	0	0	0	0	0	0	0	1
449:	0	1	0	0	1	0	0	0	1	0	0	0	0	0
463:	1	0	0	0	0	0	0	1	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	2	0	1	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
519:	0	0	0	0	0	0	0	0	0	2	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	0	0	1	1	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	1	0	1	0	0	0	0	0	1	0	0	1	0
575:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
645:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
659:	0	0	1	0	0	1	0	0	0	0	0	0	0	1
673:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	1	0	0	0	0	1	0	0	0
701:	0	0	1	0	1	1	1	0	0	0	0	0	1	1
715:	0	0	0	0	0	0	0	0	0	0	2	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	1	0	0	0	0	0	1	0	1	0	0	0	0	0
757:	0	0	0	1	0	0	0	0	0	0	0	0	0	1
771:	0	0	0	1	0	0	1	0	0	1	0	0	0	0
785:	1	0	0	0	1	0	0	0	0	0	0	0	0	0
799:	0	1	0	0	0	0	1	0	1	0	0	0	0	0
813:	0	0	2	0	0	1	0	0	0	0	1	0	0	0
827:	1	0	0	0	0	0	0	0	0	0	0	0	1	0
841:	0	1	0	0	0	0	1	0	0	0	0	0	0	0
855:	1	0	1	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	1	0	0	0	0	0	0	0	1	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	1	0	0	0	1	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	1	0	1
967:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
981:	0	1	0	0	0	0	0	0	0	1	0	0	0	0
995:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1009:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	1	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 18-MAR-2010 14:47:12.22

Detector ID: 27 Acquisition Start: 18-MAR-2010 11:00:07.01  
 Live Time: 0 02:50:05.00 Real Time: 0 02:50:05.00  
 Batch Id: 1003066A-RA Sample Id: 03  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4609.93	21	0	3.22	409.24	333	151	2.06E-03	21.8	
2	0	5300.61	21	0	0.00	637.05	544	170	2.06E-03	21.8	
3	0	5804.02	25	0	3.22	807.20	732	158	2.45E-03	20.0	

Background Counts Within Peak Regions Generated: 18-MAR-2010 14:48:18.19

Acquisition Start: 12-MAR-2010 18:28:13.01  
 Live Time: 0 16:40:04.00 Real Time: 0 16:40:04.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4602.49	6	0	233.89	408.00	333	151	1.00E-04	40.8	
2	0	5272.12	9	0	442.15	628.50	544	170	1.50E-04	33.3	
3	0	5813.02	7	0	352.44	810.50	732	158	1.17E-04	37.8	

Net Sample Counts Within Peak Regions Generated: 18-MAR-2010 14:48:18.54

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4609.93*	72	0	3.22	409.24	333	151	7.04E-03	22.1	
2	0	5300.61*	71	0	0.00	637.05	544	170	6.99E-03	22.3	
3	0	5804.02*	86	0	3.22	807.20	732	158	8.38E-03	20.3	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 18-MAR-2010 14:48:19

```

Configuration      : MCA0:[AMSCOUNT]0000252E$1
Analyses by       : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : MW-1 DIS
Sample date       : 5-MAR-2010 00:00:00   Acquisition date  : 18-MAR-2010 11:00:07
Sample ID        : 03                      Sample quantity  : 0.16670 liter
Sample type      : RA                      Sample geometry  :
Detector name    : 027                    Detector geometry:
Elapsed live time: 0 02:50:05.00          Elapsed real time: 0 02:50:05.00   0.0%
Energy tolerance : 100.00 keV             Half life ratio  : 8.00
Errors propagated: Yes                    Systematic Error : 3.00 %
Efficiency type  : Average value          Efficiencies at  : Peak Energy
Abundance limit  : 75.00
    
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4609.93*	72	3.22	409.24	333	151	44.3		RA-226	5.67
0	5300.61*	71	0.00	637.05	544	170	44.6		RN-222	5.64
0	5804.02*	86	3.22	807.20	732	158	40.6		PO-218	6.76

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ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:48:33

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$04\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1003066A-RA \* SAMPLE ID: 04  
SAMPLE DATE: 5-MAR-2010 00:00 \* ALIQUOT: 1.250E-01 liter  
SAMPLE TITLE: MW-1 DIS \* DETECTOR NUMBER: 028  
ACQ DATE: 18-MAR-2010 11:00 \* AVERAGE EFFICIENCY: 18.93%  
ELAPSED LIVE TIME: 10202. \* RECOVERY: 65.52%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 12-MAR-2010 08:55 \* EFF CAL DATE: 7-MAR-2009 10:35  
BKG FILENAME: B\_028\_12MAR10 \* BKG ELAPSED TIME: 60001.  
\* SAF: 3.17  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	34.53	0.34	100.0	5.901E+00	3.616E+00	2.904E+00
RN-222	5490.0	16.30	2.72	99.9	2.787E+00	2.672E+00	5.593E+00
RA-226	4785.0	27.85	0.68	100.0	4.758E+00	3.268E+00	3.512E+00

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KBannister  
Analyst

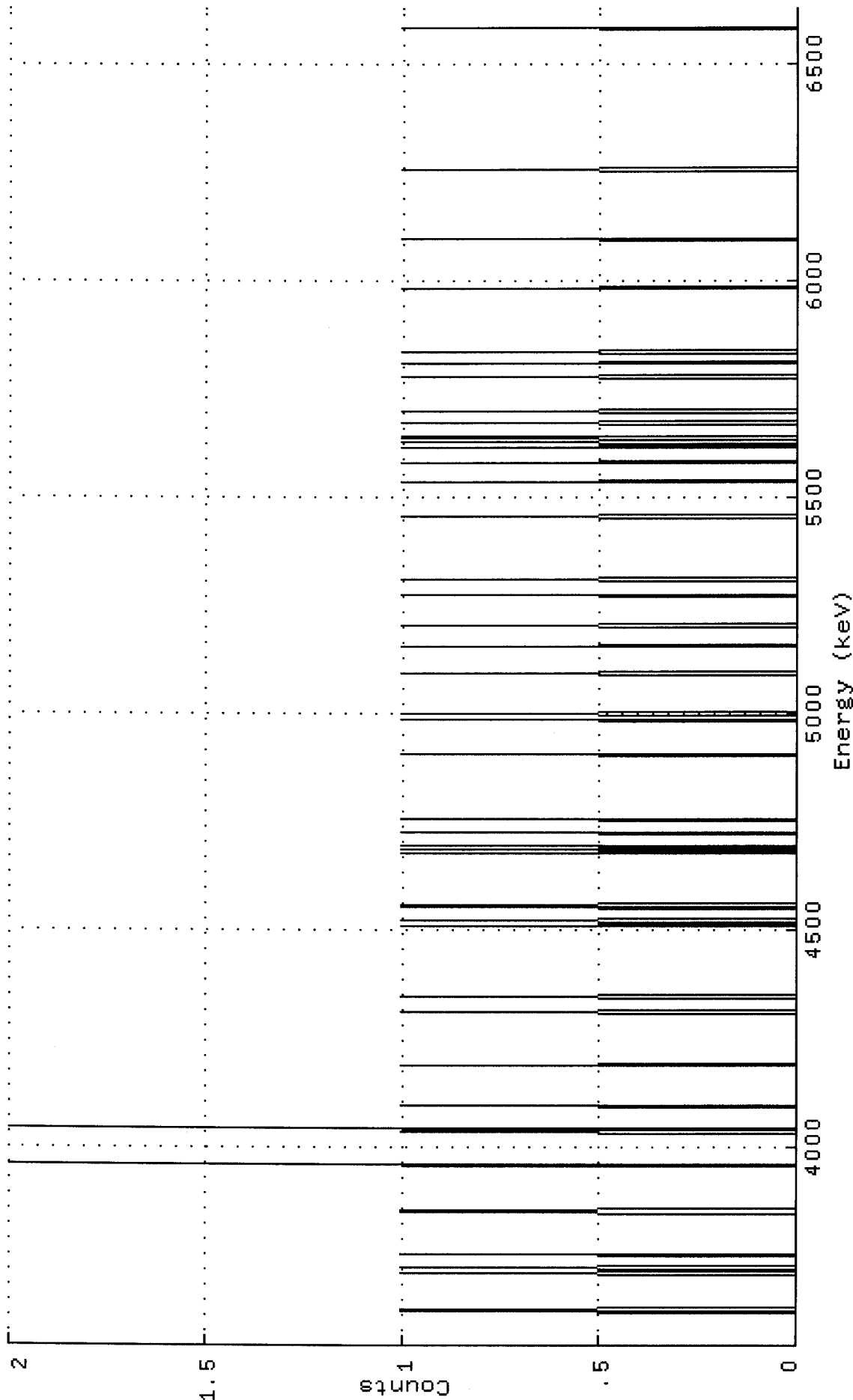
3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date



Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.SJS\_1003066A-RA#04-RA.CNF;1  
 Title : 028  
 Sample Title: MW-1 DIS  
 Start Time: 18-MAR-2010 11:00 Sample Time: 5-MAR-2010 00:00; Energy Offset: 3.52905E+03  
 Real Time : 0 02:50:02.00 Sample ID : 04 Energy Slope : 3.24564E+00  
 Live Time : 0 02:50:02.00 Sample Type: RA Energy Quad : -2.19036E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$04\_RA

Channel	10202	10202	0	0	0	0	0	0	0	0	0	0	0	0
1:	10202	10202	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
29:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
57:	0	0	1	0	0	0	0	0	0	0	0	1	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	1	1	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	2	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	1	0	2	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
253:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	1	0	0	0	1	0	0	0	0	0	0	0	0	1
323:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
365:	0	1	0	1	0	0	0	0	0	0	0	0	0	1
379:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
393:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	1	0	0	0	0	1	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
561:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	1	1	0	0	0	0	0	0	0	0	0	0	0
673:	1	0	0	0	1	0	0	1	1	0	0	0	0	0
687:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
701:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
729:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
743:	0	0	0	0	1	1	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:48:25.48

Detector ID: 28      Acquisition Start: 18-MAR-2010 11:00:23.01  
 Live Time: 0 02:50:02.00      Real Time: 0 02:50:02.00  
 Batch Id: 1003066A-RA      Sample Id: 04  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4631.66	9	0259.65	347.89	265	150	8.82E-04	33.3		
2	0	5247.39	6	0395.97	549.83	475	170	5.88E-04	40.8		
3	0	5737.44	11	0408.95	714.91	663	158	1.08E-03	30.2		

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:48:30.76

Acquisition Start: 12-MAR-2010 18:28:16.01  
 Live Time: 0 16:40:01.00      Real Time: 0 16:40:01.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4583.28	4	0 74.27	339.50	265	150	6.67E-05	50.0		
2	0	5251.76	16	0 0.00	559.50	475	170	2.67E-04	25.0		
3	0	5789.28	2	0461.74	741.50	663	158	3.33E-05	70.7		

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:48:31.12

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4631.66*	28	0259.65	347.89	265	150	2.73E-03	34.2		
2	0	5247.39*	16	0395.97	549.83	475	170	1.60E-03	47.8		
3	0	5737.44*	35	0408.95	714.91	663	158	3.38E-03	30.5		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 18-MAR-2010 14:48:32

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-1 DIS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 11:00:23  
 Sample ID : 04 Sample quantity : 0.12500 liter  
 Sample type : RA Sample geometry :  
 Detector name : 028 Detector geometry:  
 Elapsed live time: 0 02:50:02.00 Elapsed real time: 0 02:50:02.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4631.66*	28259.65	347.89	265	150	68.3			RA-226	3.12
0	5247.39*	16395.97	549.83	475	170	95.6			RN-222	1.83
0	5737.44*	35408.95	714.91	663	158	60.9			PO-218	3.87

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:49:05

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$05\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1003066A-RA \* SAMPLE ID: 05  
SAMPLE DATE: 5-MAR-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: MW-1 SUS \* DETECTOR NUMBER: 029  
ACQ DATE: 18-MAR-2010 11:00 \* AVERAGE EFFICIENCY: 17.84%  
ELAPSED LIVE TIME: 10203. \* RECOVERY: 88.94%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 12-MAR-2010 08:55 \* EFF CAL DATE: 7-MAR-2009 10:35  
BKG FILENAME: B\_029\_12MAR10 \* BKG ELAPSED TIME: 60002.  
\* SAF: 2.40  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	37.04	1.36	100.0	6.186E-01	3.238E-01	3.236E-01
RN-222	5490.0	55.22	2.38	99.9	9.228E-01	3.985E-01	3.940E-01
RA-226	4785.0	73.04	1.36	100.0	1.220E+00	4.541E-01	3.236E-01

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IC Bannister  
Analyst

3/18/10  
Date

A  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1003066A-RA\$05\_RA.CNF; 1

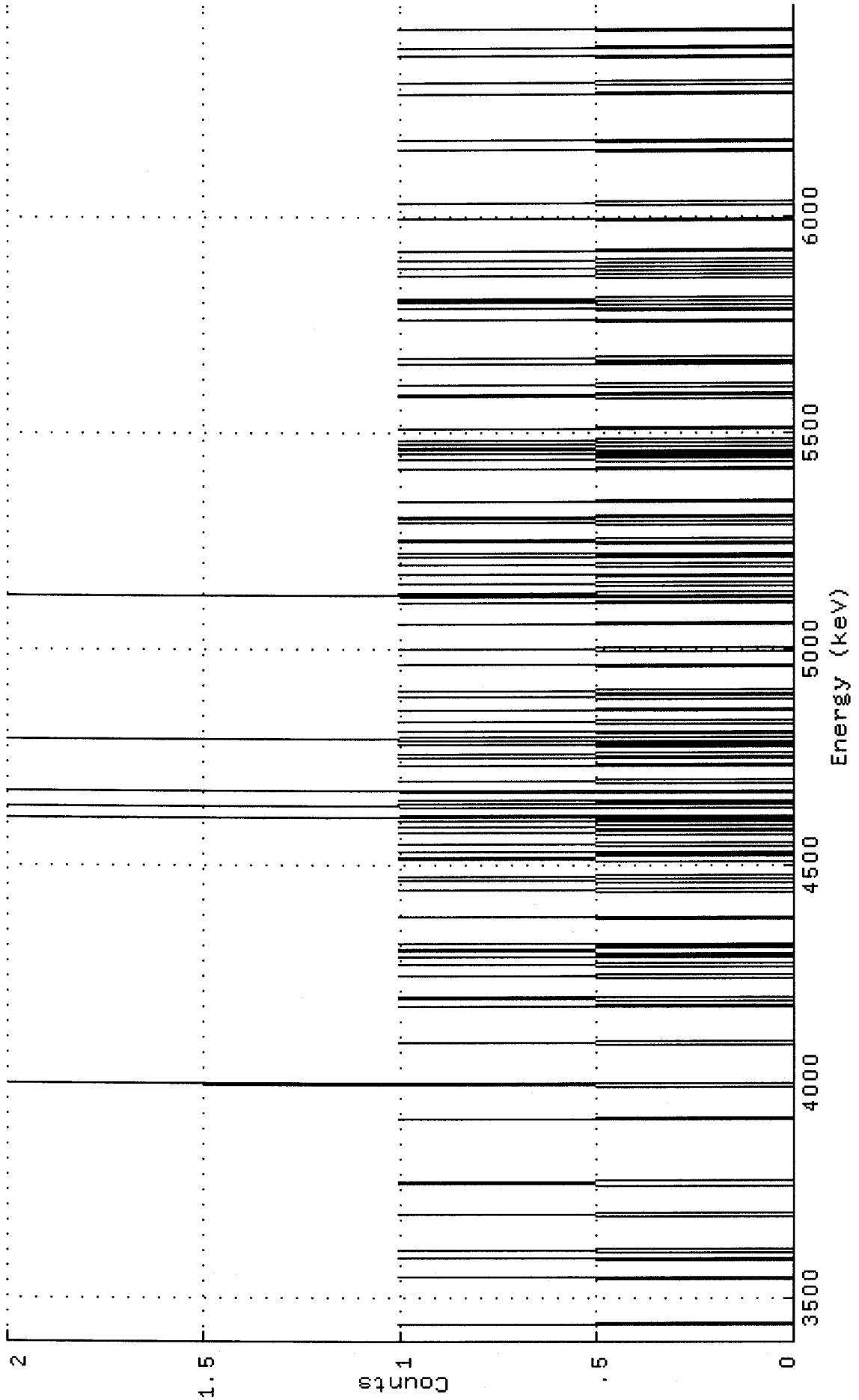
Title : 029

Sample Title: MW-1 SUS

Start Time: 18-MAR-2010 11:00 Sample Time: 5-MAR-2010 00:00: Energy Offset: 3.38740E+03

Real Time : 0 02:50:03.00 Sample ID : 05 Energy Slope : 3.16418E+00

Live Time : 0 02:50:03.00 Sample Type: RA Energy Quad : -1.38151E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$05\_RA

Channel	10203	10203	0	0	0	0	0	0	0	0	0	0	0	0
1:	10203	10203	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	1	0	0	0	0	0	1
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	1	1	1	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	1	2	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
253:	0	0	0	0	1	1	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0	1	0	0	0	1	1
295:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
323:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	1	1	0	0	0	0	0	0	1	0	0	1	0
351:	0	0	0	0	0	0	0	0	0	0	1	1	1	0
365:	0	0	1	0	0	0	0	0	1	0	0	0	0	0
379:	0	0	0	1	0	0	0	1	0	0	0	0	1	0
393:	0	2	0	0	0	0	0	0	0	2	0	1	0	1
407:	0	0	0	0	0	0	2	0	0	0	0	0	0	0
421:	1	0	0	0	0	0	0	0	0	0	0	0	1	0
435:	0	0	0	0	1	0	1	0	0	0	0	0	0	1
449:	0	0	1	0	2	0	0	0	0	1	0	0	0	0
463:	0	0	0	1	0	0	0	0	0	0	0	0	1	0
477:	0	0	0	0	0	0	0	0	1	0	0	0	1	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
519:	0	0	1	1	0	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
561:	0	2	0	1	0	0	0	0	0	0	1	0	0	0
575:	0	0	0	1	0	0	0	0	0	0	0	1	0	0
589:	0	0	0	1	0	1	0	0	0	0	0	0	0	0
603:	1	0	1	0	0	0	0	0	0	0	0	0	0	0
617:	0	1	0	0	1	0	1	0	0	0	0	0	0	0
631:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	1	0	0	0	0	0	0	1	0	0	0	1	0
673:	0	1	0	1	0	0	1	0	0	1	0	0	0	0
687:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	1	0	1	0	0	0	0	0	0	1	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
743:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	1	0	0	0	0	0	0	0	0	1
785:	0	0	0	0	1	1	0	1	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
813:	0	0	0	1	0	0	0	0	0	1	0	0	0	0
827:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	1	0	0	0	0	0	0	0	0	0	0	0	1	1
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
911:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0	0	0	1	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	1	0	0	0	0	0	0	1	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:48:38.00

Detector ID: 29                                      Acquisition Start: 18-MAR-2010 11:00:39.01  
Live Time: 0 02:50:03.00                              Real Time: 0 02:50:03.00  
Batch Id: 1003066A-RA                                  Sample Id: 05  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4627.61	31	0189.85	398.90	316	152	3.04E-03	18.0		
2	0	5287.60	24	0 3.16	617.17	528	171	2.35E-03	20.4		
3	0	5817.26	16	0477.79	795.56	717	157	1.57E-03	25.0		

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:02.63

    Acquisition Start: 12-MAR-2010 18:28:19.01  
Live Time: 0 16:40:02.00                              Real Time: 0 16:40:02.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4600.63	8	0 0.00	391.50	316	152	1.33E-04	35.4		
2	0	5271.28	14	0 3.21	613.00	528	171	2.33E-04	26.7		
3	0	5809.27	8	0301.41	795.00	717	157	1.33E-04	35.4		

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:02.95

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4627.61*	73	0189.85	398.90	316	152	7.16E-03	18.3		
2	0	5287.60*	55	0 3.16	617.17	528	171	5.41E-03	21.3		
3	0	5817.26*	37	0477.79	795.56	717	157	3.63E-03	26.0		

Flag: "\*" = Peak area was modified by background subtraction



VMS Nuclide Identification Report V3.0 Generated 18-MAR-2010 14:49:04

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-1 SUS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 11:00:39  
 Sample ID : 05 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 029 Detector geometry:  
 Elapsed live time: 0 02:50:03.00 Elapsed real time: 0 02:50:03.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4627.61*	73189.85	398.90	316	152	36.6			RA-226	1.08
0	5287.60*	55	3.16	617.17	528	171	42.6		RN-222	0.821
0	5817.26*	37477.79	795.56	717	157	51.9			PO-218	0.550

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:49:16

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$06\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	06
SAMPLE DATE:	5-MAR-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	MW-2R DIS	*	DETECTOR NUMBER:	032
ACQ DATE:	18-MAR-2010 11:01	*	AVERAGE EFFICIENCY:	18.20%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	101.75%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 08:55	*	EFF CAL DATE:	7-NOV-2009 11:51
BKG FILENAME:	B_032_12MAR10	*	BKG ELAPSED TIME:	60004.
		*	SAF:	3.20
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	77.79	2.21	100.0	1.113E+00	4.649E-01	4.379E-01
RN-222	5490.0	123.61	1.19	99.9	1.770E+00	5.857E-01	3.539E-01
RA-226	4785.0	127.49	0.51	100.0	1.824E+00	5.931E-01	2.734E-01

\*\*\*\*\*

KBannister  
Analyst

3/18/10  
Date

A  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1003066A-RA\$06\_RA.CNF; 1

Title : 032

Sample Title: MW-2R DIS

Start Time: 18-MAR-2010 11:01

Real Time : 0 02:50:00.00

Live Time : 0 02:50:00.00

Sample Time: 5-MAR-2010 00:00:

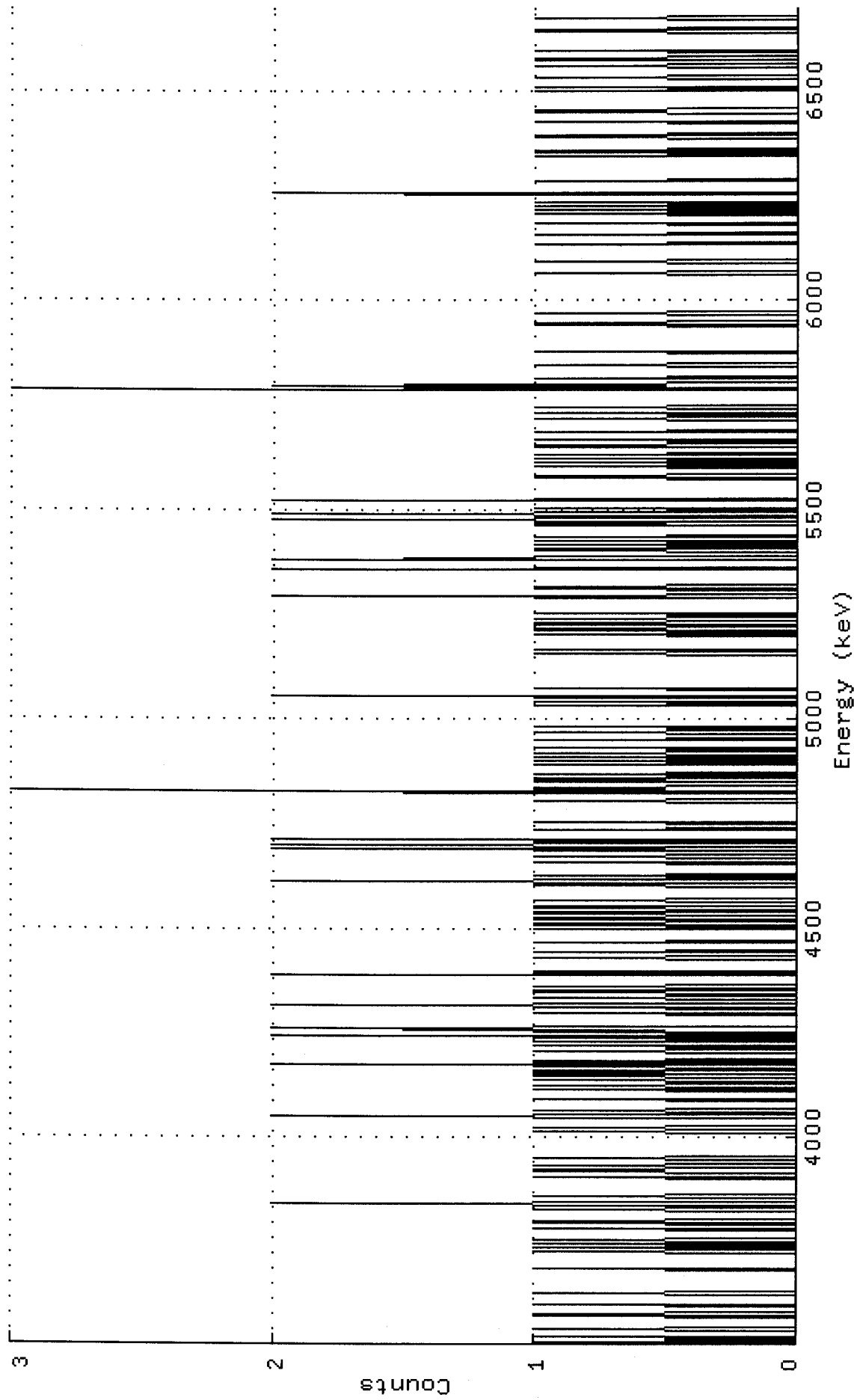
Sample ID : 06

Sample Type: RA

Energy Offset: 3.49453E+03

Energy Slope : 3.35312E+00

Energy Quad : -2.27617E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$06\_RA

Channel

1:	10200	10200	0	0	1	0	0	1	0	0	0	0	1
15:	0	0	0	0	0	0	0	0	1	0	1	0	0
29:	0	0	1	0	0	0	0	0	0	0	0	1	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0	0	0	0	0	1
71:	0	0	1	0	0	1	0	1	0	0	0	0	0
85:	0	1	0	0	0	0	1	0	0	0	0	0	0
99:	0	1	0	0	0	0	2	0	0	0	0	1	0
113:	0	0	0	0	0	0	0	0	0	0	1	0	0
127:	0	1	1	0	0	1	0	0	0	0	1	1	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	1	0	1	1	0	0	0	0	0	0	2
169:	0	0	0	1	0	0	0	0	0	0	0	1	0
183:	0	0	0	0	1	0	0	1	0	0	0	1	0
197:	1	0	1	1	0	1	0	1	0	2	0	0	0
211:	0	0	0	0	1	1	0	0	1	0	0	0	0
225:	0	2	0	0	1	0	1	2	0	0	0	0	0
239:	0	0	0	0	1	0	0	0	1	0	2	0	0
253:	0	0	1	0	0	0	1	0	1	0	1	0	0
267:	0	0	0	0	0	2	0	1	0	0	0	0	0
281:	0	0	0	1	1	0	0	0	1	0	0	0	0
295:	0	1	0	0	0	0	0	0	0	0	0	1	0
309:	1	1	0	0	1	1	0	0	1	0	1	0	1
323:	0	0	0	0	1	0	0	0	0	0	0	0	0
337:	0	1	0	0	2	0	1	0	0	1	0	0	0
351:	0	0	0	0	1	0	0	0	1	1	0	0	0
365:	2	1	0	2	0	0	0	2	0	0	0	0	0
379:	0	1	0	0	0	0	1	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	1	0	0	0	0
407:	0	3	0	1	1	0	0	0	0	1	1	0	0
421:	0	1	0	0	0	0	0	0	1	0	0	1	0
435:	1	0	1	0	0	0	1	0	0	0	0	0	1
449:	0	0	0	0	1	0	0	0	1	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	1	0
477:	0	0	0	2	0	0	0	0	0	1	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	1	0	1	0	0
519:	0	0	0	0	0	0	0	0	1	0	0	1	0
533:	0	1	0	1	0	0	1	0	0	0	1	0	0
547:	0	0	0	0	0	0	0	0	0	2	1	0	0
561:	0	1	0	1	0	0	0	0	0	2	0	0	0
575:	0	0	0	2	0	0	0	0	0	0	2	1	0
589:	0	0	0	1	0	1	0	0	0	0	1	0	0
603:	1	0	0	0	0	0	0	0	0	1	1	0	2
617:	0	0	0	2	0	0	0	1	0	0	0	0	0
631:	2	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	1	0	1	0	0	0	0	0	0	0
659:	0	1	0	0	1	0	0	0	1	0	0	0	0
673:	1	1	0	0	0	1	0	0	0	0	0	1	0
687:	0	0	0	0	0	0	0	0	1	0	0	0	0
701:	0	0	0	1	0	0	0	0	0	0	0	0	0
715:	0	0	0	3	0	1	2	1	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	1	0	0	0	0
743:	0	0	0	0	1	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	1	0
771:	1	0	0	0	0	0	0	1	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	1	0
813:	0	0	0	0	0	0	1	0	0	0	0	0	0
827:	0	0	0	0	0	0	1	0	0	0	0	0	0
841:	1	0	0	0	0	0	0	0	1	0	0	0	0
855:	0	0	1	0	0	1	0	0	1	0	0	1	0
869:	0	0	0	0	1	2	0	0	0	0	0	0	0
883:	0	1	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	1	0	0	1	0	0
911:	0	0	0	0	0	0	0	0	1	0	1	0	0
925:	0	0	0	0	0	0	1	0	0	0	0	0	0
939:	1	1	1	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	1	0	1	0	0	0	0	0	0
967:	1	1	0	0	0	0	0	0	0	0	1	0	0
981:	0	1	1	0	0	0	0	0	1	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	1	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	1	0
1023:	0	0	0	0	0	0	0	1	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:10.16

Detector ID: 32                                  Acquisition Start: 18-MAR-2010 11:01:01.01  
Live Time: 0 02:50:00.00                      Real Time: 0 02:50:00.00  
Batch Id: 1003066A-RA                        Sample Id: 06  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4616.27	40	0458.54	342.50	267	146	3.92E-03	15.8		
2	0	5315.67	39	0509.67	564.77	470	165	3.82E-03	16.0		
3	0	5765.47	25	0 13.41	711.64	652	153	2.45E-03	20.0		

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:14.27

Live Time: 0 16:40:04.00                      Acquisition Start: 12-MAR-2010 18:28:21.01  
Real Time: 0 16:40:04.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4603.30	3	0312.15	339.50	267	146	5.00E-05	57.7		
2	0	5273.20	7	0478.19	552.00	470	165	1.17E-04	37.8		
3	0	5815.12	13	0441.67	728.00	652	153	2.17E-04	27.7		

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:14.59

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4616.27*	127	0458.54	342.50	267	146	1.25E-02	15.9		
2	0	5315.67*	124	0509.67	564.77	470	165	1.21E-02	16.2		
3	0	5765.47*	78	0 13.41	711.64	652	153	7.63E-03	20.6		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-2R DIS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 11:01:01  
 Sample ID : 06 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 032 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4616.27*	127458.54	342.50	267	146	31.8			RA-226	1.86
0	5315.67*	124509.67	564.77	470	165	32.3			RN-222	1.80
0	5765.47*	78	13.41	711.64	652	153	41.2		PO-218	1.13

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:49:37

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$07\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	07
SAMPLE DATE:	5-MAR-2010 00:00	*	ALIQOUT:	1.000E+00 liter
SAMPLE TITLE:	MW-2R SUS	*	DETECTOR NUMBER:	035
ACQ DATE:	18-MAR-2010 10:50	*	AVERAGE EFFICIENCY:	19.76%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	87.59%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 12:34	*	EFF CAL DATE:	7-MAR-2009 22:44
BKG FILENAME:	B_035_12MAR10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.23
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	14.93	0.68	100.0	2.286E-01	1.816E-01	2.214E-01
RN-222	5490.0	19.22	0.85	99.9	2.944E-01	2.063E-01	2.370E-01
RA-226	4785.0	14.76	0.85	100.0	2.259E-01	1.816E-01	2.368E-01

\*\*\*\*\*

IC Bannister  
Analyst

3/18/10  
Date

N  
Reviewer

3/18/10  
Date

Spectrum : DKA100:[ALPHA.ALUSR.ARCHIVE.S]S\_1003066A-RA#07\_RA.CNF;1

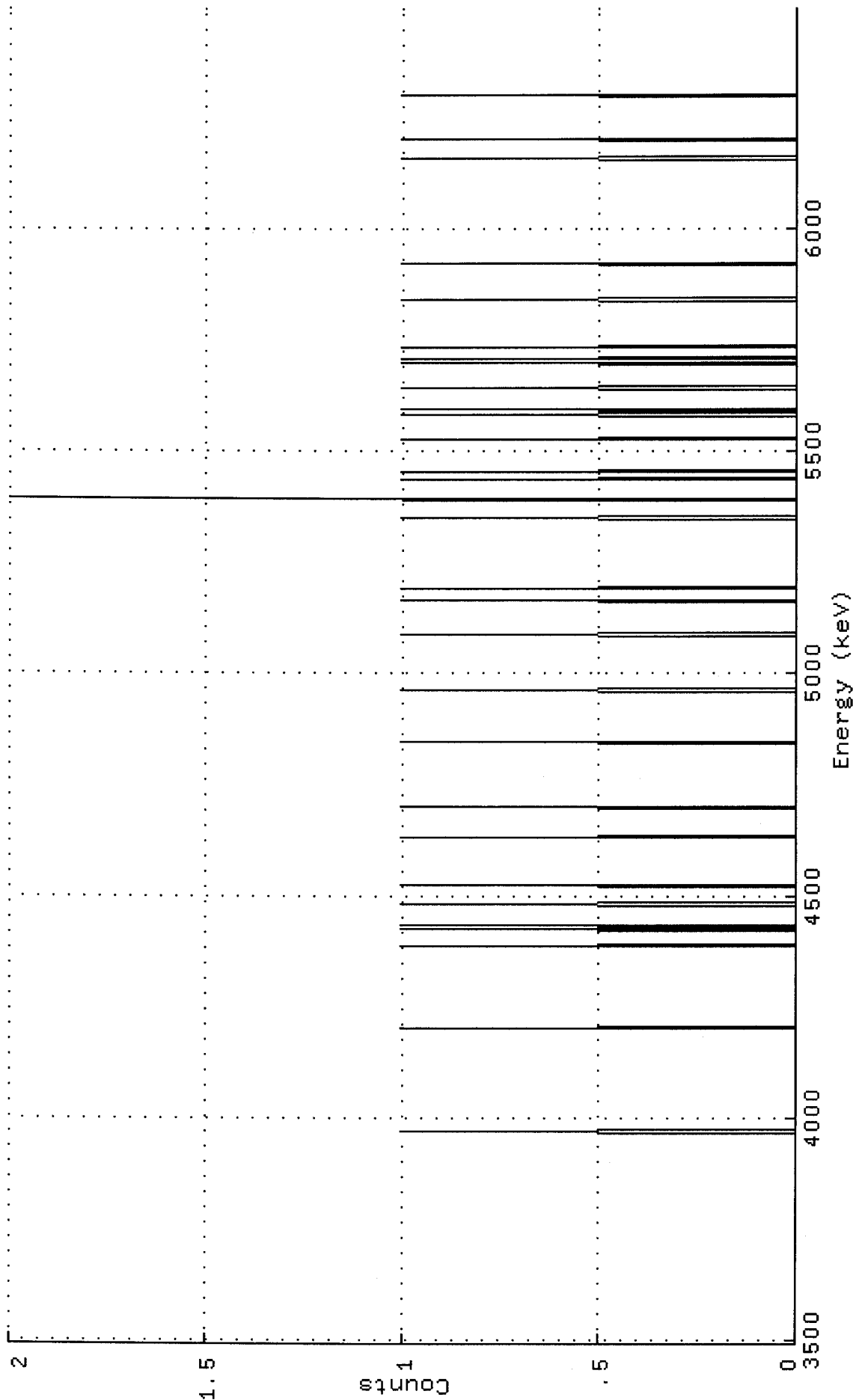
Title : 035

Sample Title: MW-2R SUS

Start Time: 18-MAR-2010 10:50 Sample Time: 5-MAR-2010 00:00: Energy Offset: 3.48005E+03

Real Time : 0 02:50:00.10 Sample ID : 07 Energy Slope : 3.10201E+00

Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.59824E-04





Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$07\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
309:	1	0	0	1	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
533:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
561:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
631:	0	0	0	0	0	2	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	1	0	0	0	0	0	1
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	1	0	0	0	0	1	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
743:	0	0	0	1	0	0	0	0	0	0	0	0	1	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:21.62

Detector ID: 35      Acquisition Start: 18-MAR-2010 10:50:43.01  
 Live Time: 0 02:50:00.00      Real Time: 0 02:50:00.10  
 Batch Id: 1003066A-RA      Sample Id: 07  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4511.13	7	0325.71	338.29	293	155	6.86E-04	37.8		
2	0	5330.57	9	0 3.10	616.11	510	175	8.82E-04	33.3		
3	0	5730.56	7	0356.73	754.86	704	162	6.86E-04	37.8		

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:35.02

Live Time: 0 16:40:00.00      Acquisition Start: 12-MAR-2010 18:28:24.01  
    Real Time: 0 16:40:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4571.88	5	0210.71	370.00	293	155	8.33E-05	44.7		
2	0	5235.94	5	0502.00	597.00	510	175	8.33E-05	44.7		
3	0	5770.51	4	0319.17	784.50	704	162	6.67E-05	50.0		

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:49:35.33

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4511.13*	15	0325.71	338.29	293	155	1.45E-03	40.1		
2	0	5330.57*	19	0 3.10	616.11	510	175	1.88E-03	34.9		
3	0	5730.56*	15	0356.73	754.86	704	162	1.46E-03	39.6		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-2R SUS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 10:50:43  
 Sample ID : 07 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 035 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4511.13*	15325.71	338.29	293	155	80.1			RA-226	0.198
0	5330.57*	19	3.10	616.11	510	175	69.7		RN-222	0.258
0	5730.56*	15356.73	754.86	704	162	79.2			PO-218	0.200

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:49:52

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$08\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	08
SAMPLE DATE:	5-MAR-2010 00:00	*	ALIQUOT:	2.500E-01 liter
SAMPLE TITLE:	MW-3R DIS	*	DETECTOR NUMBER:	037
ACQ DATE:	18-MAR-2010 10:51	*	AVERAGE EFFICIENCY:	19.91%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	83.16%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 12:34	*	EFF CAL DATE:	7-MAR-2009 22:44
BKG FILENAME:	B_037_12MAR10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	3.86
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	80.72	0.34	100.0	5.168E+00	2.292E+00	1.325E+00
RN-222	5490.0	95.82	0.68	99.9	6.139E+00	2.508E+00	1.603E+00
RA-226	4785.0	96.50	0.00	100.0	6.177E+00	2.506E+00	6.548E-01

\*\*\*\*\*

IC Bannister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1003066A-RA\$08\_RA.CNF; 1

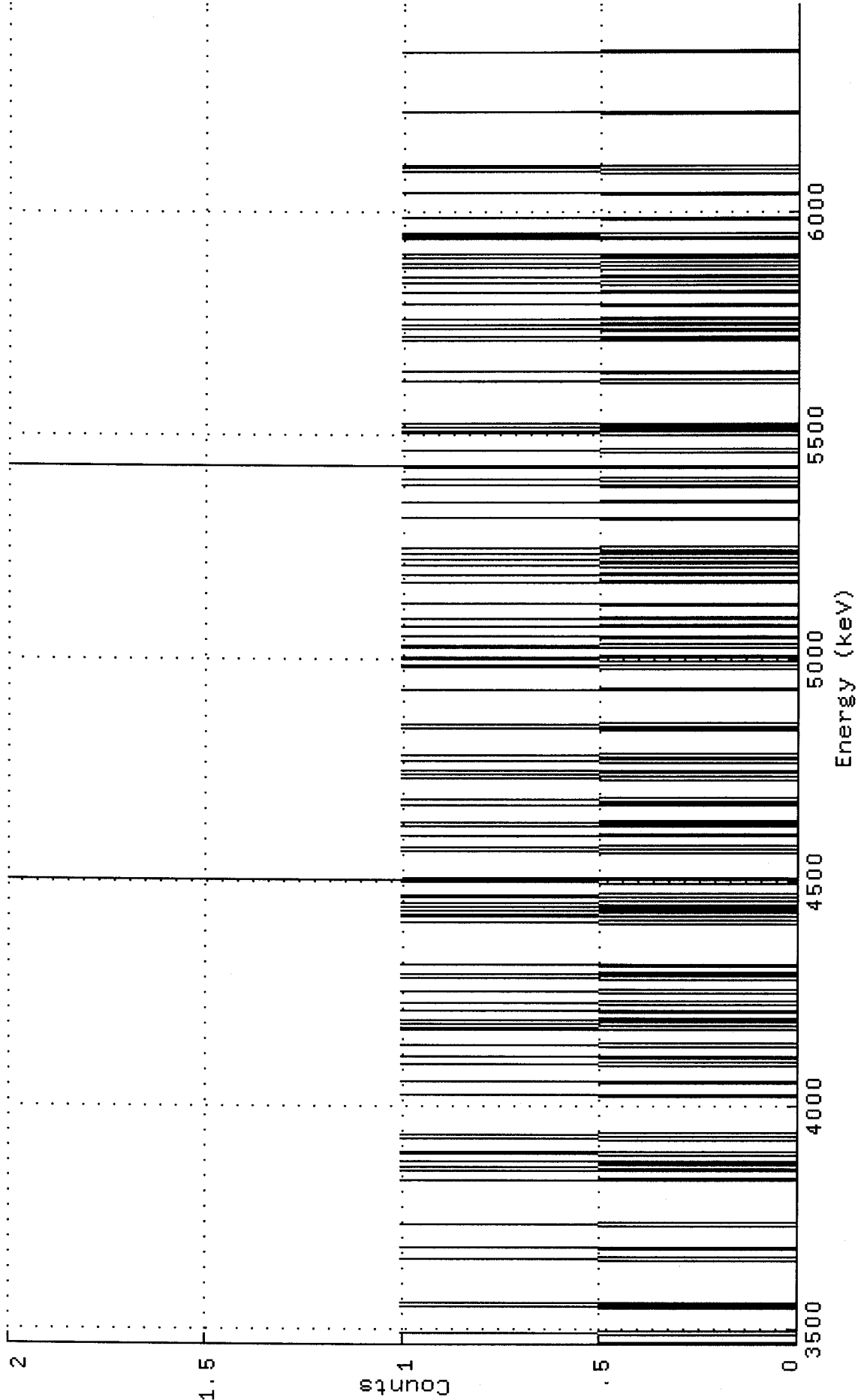
Title : 037

Sample Title: MW-3R DIS

Start Time: 18-MAR-2010 10:51 Sample Time: 5-MAR-2010 00:00: Energy Offset: 3.45541E+03

Real Time : 0 02:50:00.10 Sample ID : 08 Energy Slope : 3.10495E+00

Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.69759E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$08\_RA

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1:	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
71:	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
127:	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
141:	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0
155:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
211:	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
225:	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1
239:	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
253:	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0
267:	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
281:	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0
323:	0	1	0	0	1	1	0	0	0	1	1	0	0	0	0
337:	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
379:	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	1	0	1	1	0	1	0	0	0	0	0	0	0	0	1
435:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0
519:	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0
533:	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
547:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
575:	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0
589:	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
645:	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
659:	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0
673:	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
687:	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
729:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0
771:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
785:	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
799:	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
813:	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
841:	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 18-MAR-2010 14:49:42.27

Detector ID: 37 Acquisition Start: 18-MAR-2010 10:51:03.01  
Live Time: 0 02:50:00.00 Real Time: 0 02:50:00.10  
Batch Id: 1003066A-RA Sample Id: 08  
Sample Type: RA

Pk It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1 0	4575.76	25	0	3.10	368.24	301	156	2.45E-03	20.0	
2 0	5285.57	25	0	3.10	609.76	519	176	2.45E-03	20.0	
3 0	5834.63	21	0462.64	801.38	713	163	2.06E-03	21.8		

Background Counts Within Peak Regions Generated: 18-MAR-2010 14:49:50.11

Acquisition Start: 12-MAR-2010 18:28:27.01  
Live Time: 0 16:40:00.00 Real Time: 0 16:40:00.10

Pk It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1 0	4597.89	0	0	0.00	378.50	301	156	0.00E+00	0.0	
2 0	5266.74	4	0272.40	606.50	519	176	6.67E-05	50.0		
3 0	5803.97	2	0362.16	794.00	713	163	3.33E-05	70.7		

Net Sample Counts Within Peak Regions Generated: 18-MAR-2010 14:49:50.44

Pk It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1 0	4575.76*	97	0	3.10	368.24	301	156	9.46E-03	20.0	
2 0	5285.57*	96	0	3.10	609.76	519	176	9.39E-03	20.1	
3 0	5834.63*	81	0462.64	801.38	713	163	7.91E-03	21.9		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 18-MAR-2010 14:49:51

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-3R DIS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 10:51:03  
 Sample ID : 08 Sample quantity : 0.25000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 037 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4575.76*	97	3.10	368.24	301	156	40.0		RA-226	5.14
0	5285.57*	96	3.10	609.76	519	176	40.3		RN-222	5.10
0	5834.63*	81462.64	801.38	801.38	713	163	43.8		PO-218	4.30



Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:50:08

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$09\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1003066A-RA \* SAMPLE ID: 09  
SAMPLE DATE: 5-MAR-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: MW-3R SUS \* DETECTOR NUMBER: 038  
ACQ DATE: 18-MAR-2010 10:51 \* AVERAGE EFFICIENCY: 17.75%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 95.06%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 12-MAR-2010 12:34 \* EFF CAL DATE: 23-MAY-2009 09:40  
BKG FILENAME: B\_038\_12MAR10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.34  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	50.12	1.36	100.0	7.872E-01	3.495E-01	2.967E-01
RN-222	5490.0	39.36	5.10	99.9	6.186E-01	3.248E-01	4.836E-01
RA-226	4785.0	76.54	0.68	100.0	1.202E+00	4.306E-01	2.383E-01

\*\*\*\*\*

K. Banister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.SJS\_1003066A-RA\$09\_RA.CNF; 1

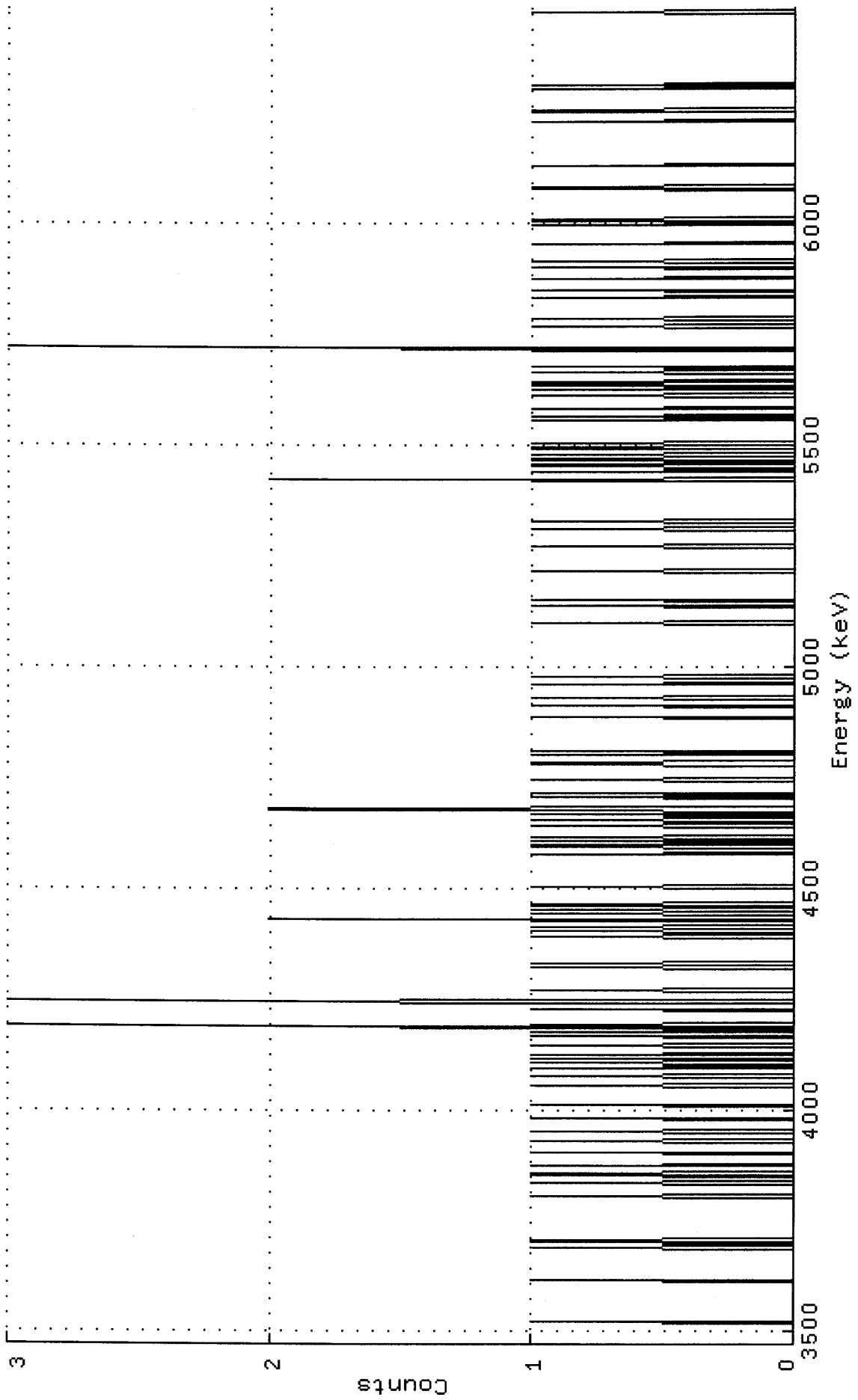
Title : 038

Sample Title: MW-3R SUS

Start Time: 18-MAR-2010 10:51 Sample Time: 5-MAR-2010 00:00; Energy Offset: 3.46190E+03

Real Time : 0 02:50:00.10 Sample ID : 09 Energy Slope : 3.09642E+00

Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.47270E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$09\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	1	0	0	0	1	0	1	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
113:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
127:	1	0	1	0	0	0	0	0	1	0	0	0	0	0
141:	0	0	0	1	0	0	0	0	0	0	0	0	1	0
155:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	0	0	1	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
197:	0	0	0	0	1	0	0	0	0	0	1	0	0	0
211:	1	0	1	0	0	1	0	0	0	0	0	0	1	1
225:	0	0	0	0	0	1	0	0	0	1	0	0	0	3
239:	1	0	0	0	0	0	0	0	0	0	0	1	0	0
253:	0	0	0	3	0	0	0	0	0	0	0	0	1	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	1	0	0	1	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
309:	1	0	0	1	0	0	0	0	2	0	0	0	0	1
323:	0	0	1	0	1	0	1	0	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	1	0	0	0	0	1	0	1	0	1	0	0
379:	1	1	0	0	0	0	0	0	0	0	0	0	0	1
393:	1	0	0	1	0	0	1	2	2	0	0	0	0	0
407:	0	0	1	0	0	1	0	0	0	0	0	0	0	0
421:	0	0	1	0	0	0	0	0	0	0	0	0	0	1
435:	1	1	0	0	0	0	0	1	0	1	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
477:	0	0	1	0	0	0	0	0	1	0	0	0	0	0
491:	0	0	0	0	0	1	0	0	0	0	1	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
547:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
575:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
603:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
617:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	2	1	0	0	0	0	0
659:	1	0	0	0	1	1	0	0	1	0	1	0	0	1
673:	0	0	0	0	1	1	0	0	1	0	0	0	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
701:	0	1	0	0	0	0	0	1	0	0	0	0	0	0
715:	0	0	0	1	0	0	0	0	1	0	1	0	1	0
729:	1	0	0	0	0	0	0	1	0	0	0	1	0	0
743:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	3	0
771:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
799:	0	1	0	0	0	0	0	0	0	0	0	1	0	0
813:	0	0	0	0	0	1	0	0	0	0	1	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	1	1	0	0
855:	1	1	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	1	0	1
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
939:	0	0	0	1	1	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	1	0	0	1	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
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Gross Sample Counts Within Peak Regions      Generated:    18-MAR-2010 14:49:57.30

Detector ID: 38                                      Acquisition Start: 18-MAR-2010 10:51:20.01  
Live Time:    0 02:50:00.00                        Real Time:    0 02:50:00.10  
Batch Id:     1003066A-RA                         Sample Id:    09  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4609.86	33	0263.20	377.52	299	156	3.24E-03	17.4		
2	0	5367.98	19	0 4.55	634.74	516	175	1.86E-03	22.9		
3	0	5781.25	22	0 3.10	777.82	709	162	2.16E-03	21.3		

Background Counts Within Peak Regions      Generated:    18-MAR-2010 14:50:06.50

   Acquisition Start: 12-MAR-2010 18:28:31.01  
Live Time:    0 16:40:00.00                        Real Time:    0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4592.30	4	0421.83	376.50	299	156	6.67E-05	50.0		
2	0	5259.70	30	0116.31	603.00	516	175	5.00E-04	18.3		
3	0	5797.05	8	0 4.56	789.50	709	162	1.33E-04	35.4		

Net Sample Counts Within Peak Regions      Generated:    18-MAR-2010 14:50:06.82

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4609.86*	77	0263.20	377.52	299	156	7.50E-03	17.6		
2	0	5367.98*	39	0 4.55	634.74	516	175	3.86E-03	26.0		
3	0	5781.25*	50	0 3.10	777.82	709	162	4.91E-03	21.9		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-3R SUS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 10:51:20  
 Sample ID : 09 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 038 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4609.86*	77263.20	377.52	299	156	35.1			RA-226	1.14
0	5367.98*	39	4.55	634.74	516	175	52.0		RN-222	0.588
0	5781.25*	50	3.10	777.82	709	162	43.8		PO-218	0.748

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:50:42

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$10\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	10
SAMPLE DATE:	5-MAR-2010 00:00	*	ALIQUOT:	1.250E-01 liter
SAMPLE TITLE:	MW-30 DIS	*	DETECTOR NUMBER:	039
ACQ DATE:	18-MAR-2010 10:51	*	AVERAGE EFFICIENCY:	19.50%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	59.49%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 12:34	*	EFF CAL DATE:	7-MAR-2009 22:44
BKG FILENAME:	B_039_12MAR10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.50

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	20.97	1.53	100.0	3.832E+00	2.760E+00	3.838E+00
RN-222	5490.0	24.49	0.51	99.9	4.478E+00	2.909E+00	2.729E+00
RA-226	4785.0	28.98	1.02	100.0	5.295E+00	3.189E+00	3.356E+00

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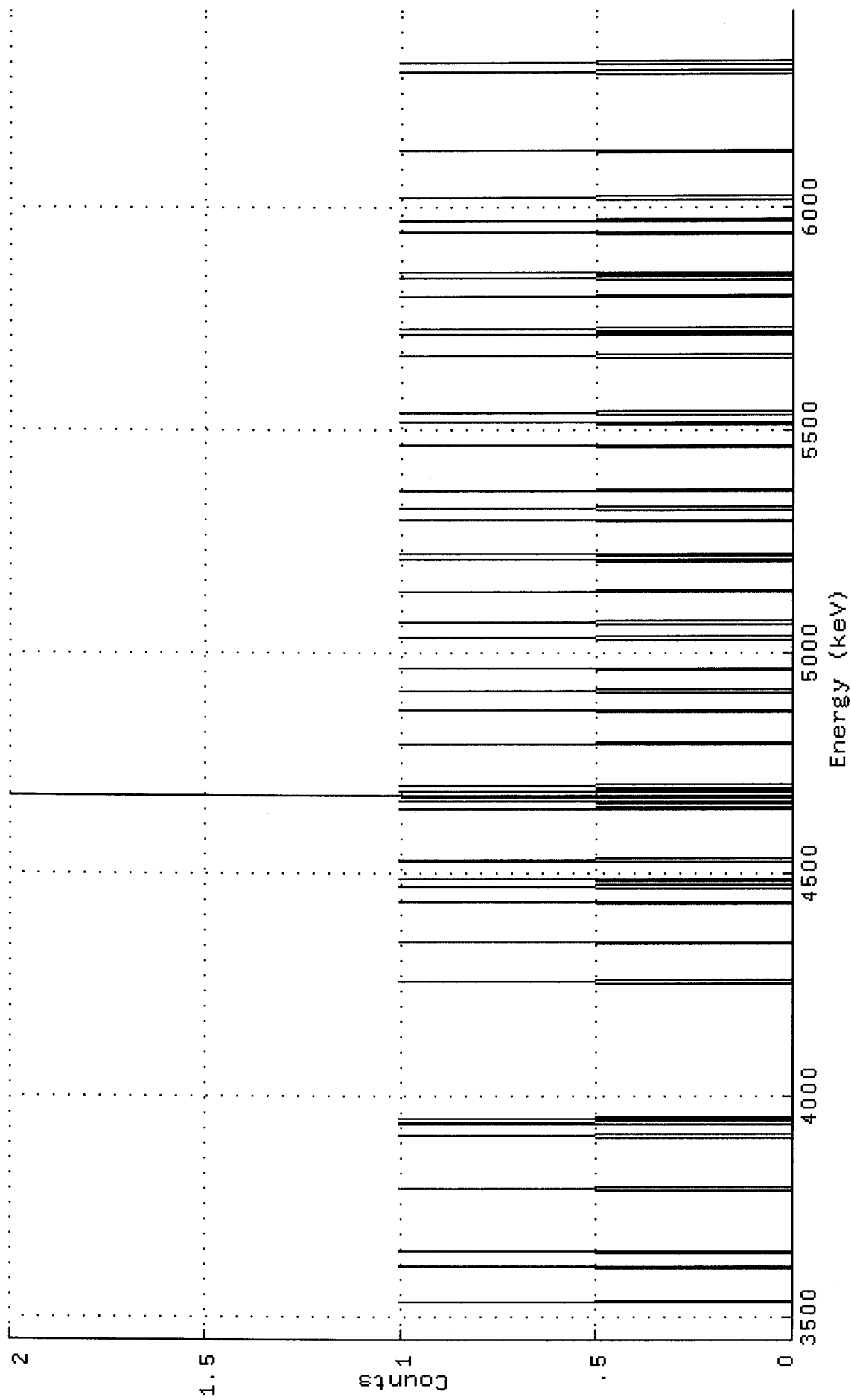
K. Bannister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.SJS\_1003066A-RA\$10\_RA.CNF;1  
Title : 039  
Sample Title: MW-30 DIS  
Start Time: 18-MAR-2010 10:51 Sample Time: 5-MAR-2010 00:00; Energy Offset: 3.43937E+03  
Real Time : 0 02:50:00.10 Sample ID : 10 Energy Slope : 3.12657E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.95116E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$10\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	1	0	0	1
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
155:	0	0	0	0	0	0	1	1	0	0	1	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
337:	1	0	0	0	0	1	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	1	1	0	0	0	0	0	0	0
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	0	1	0	0	0	0	1	0	0	0	2	0
407:	0	0	1	0	0	0	1	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
519:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
533:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
589:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	1	0	0	0	0	0	0	0	0	1	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
701:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	1	0	0	0	1	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	1	0	0	0	1
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	1	0	0	0	0	0	0	0	0	0	1
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
981:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:50:13.48

Detector ID: 39                                      Acquisition Start: 18-MAR-2010 10:51:37.01  
 Live Time: 0 02:50:00.00                        Real Time: 0 02:50:00.10  
 Batch Id: 1003066A-RA                          Sample Id: 10  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.99	12	0	3.13	382.58	305	156	1.18E-03	28.9	
2	0	5260.40	10	0525.26	605.30	605.30	523	176	9.80E-04	31.6	
3	0	5834.20	9	0397.07	806.56	806.56	718	164	8.82E-04	33.3	

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:50:40.50

Acquisition Start: 12-MAR-2010 18:28:35.01  
 Live Time: 0 16:40:00.00                        Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4603.21	6	0267.51	382.50	382.50	305	156	1.00E-04	40.8	
2	0	5270.73	3	0133.75	610.50	610.50	523	176	5.00E-05	57.7	
3	0	5809.55	9	0379.10	799.50	799.50	718	164	1.50E-04	33.3	

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:50:40.89

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.99*	29	0	3.13	382.58	305	156	2.84E-03	29.9	
2	0	5260.40*	24	0525.26	605.30	605.30	523	176	2.40E-03	32.3	
3	0	5834.20*	21	0397.07	806.56	806.56	718	164	2.06E-03	35.8	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : MCA0:[AMSCOUNT]0000252E$1
Analyses by       : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : MW-30 DIS
Sample date       : 5-MAR-2010 00:00:00   Acquisition date : 18-MAR-2010 10:51:37
Sample ID         : 10                     Sample quantity  : 0.12500 liter
Sample type       : RA                     Sample geometry  :
Detector name     : 039                   Detector geometry:
Elapsed live time : 0 02:50:00.00          Elapsed real time: 0 02:50:00.10   0.0%
Energy tolerance  : 100.00 keV           Half life ratio  : 8.00
Errors propagated: Yes                   Systematic Error : 3.00 %
Efficiency type   : Average value         Efficiencies at  : Peak Energy
Abundance limit   : 75.00
    
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4606.99*	29	3.13	382.58	305	156	59.8		RA-226	3.15
0	5260.40*	24525.26	605.30	605.30	523	176	64.6		RN-222	2.66
0	5834.20*	21397.07	806.56	806.56	718	164	71.7		PO-218	2.28

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ALPHA SPECTROMETRY REPORT  
18-MAR-2010 14:50:57

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$11\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1003066A-RA	*	SAMPLE ID:	11
SAMPLE DATE:	5-MAR-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	MW-30 SUS	*	DETECTOR NUMBER:	041
ACQ DATE:	18-MAR-2010 10:51	*	AVERAGE EFFICIENCY:	18.88%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	92.13%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	12-MAR-2010 12:34	*	EFF CAL DATE:	11-JUL-2009 13:37
BKG FILENAME:	B_041_12MAR10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.40
		*		

\*\*\*\*\*

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	41.84	1.36	100.0	6.374E-01	3.137E-01	2.951E-01
RN-222	5490.0	54.18	1.02	99.9	8.259E-01	3.558E-01	2.687E-01
RA-226	4785.0	68.24	1.36	100.0	1.039E+00	4.006E-01	2.951E-01

\*\*\*\*\*

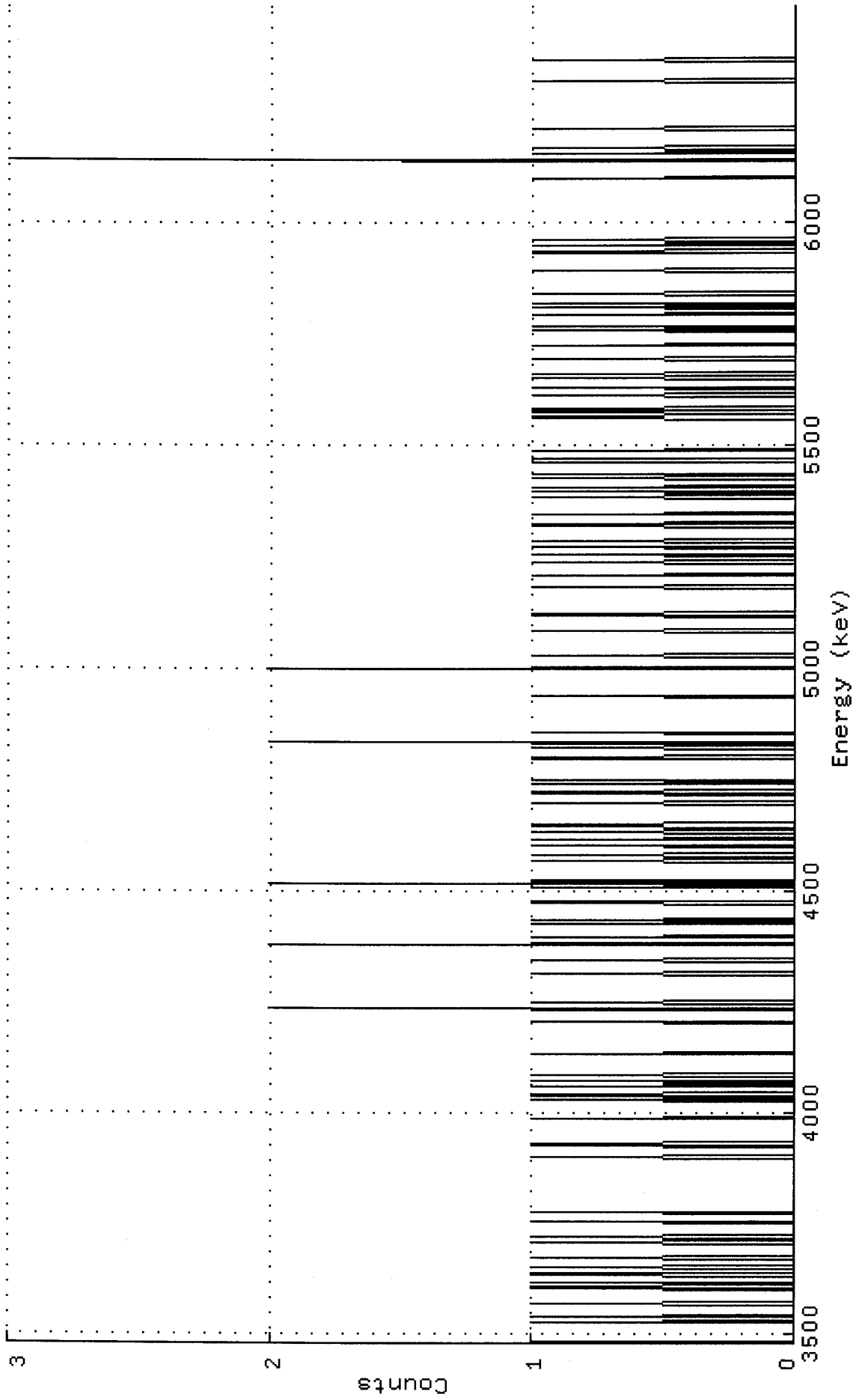
J. Bannister  
Analyst

3/18/10  
Date

[Signature]  
Reviewer

3/18/10  
Date

Spectrum Title : DKA100: [ALPHA.ALUSR.ARCHIVE.SJS\_1003066A-RA#11\_RA.CNF; 1  
Title : 041  
Sample Title: MW-30 SUS  
Start Time: 18-MAR-2010 10:51 Sample Time: 5-MAR-2010 00:00: Energy Offset: 3.46959E+03  
Real Time : 0 02:50:00.10 Sample ID : 11 Energy Slope : 3.09126E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.45525E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1003066A-RA\$11\_RA

Channel	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1:	1	0	0	1	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	1	0	0	0	1	0	0	0	0	0
29:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
43:	1	0	1	0	1	0	0	0	0	0	1	1	0	0
57:	0	0	1	0	0	0	0	0	0	1	0	0	0	0
71:	0	0	0	0	0	0	1	0	0	0	1	0	0	0
85:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
99:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
141:	0	0	0	0	0	0	0	1	0	1	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	0	0	0	0	0	1
183:	0	0	1	0	1	0	0	0	0	0	1	0	0	1
197:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	1	0	0	0	0	0	0	0	0	0	2	0	0
253:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
295:	0	0	0	2	0	0	0	0	0	1	0	0	0	0
309:	0	0	0	0	0	1	0	0	1	0	0	0	0	0
323:	0	0	0	0	0	1	0	1	0	0	0	0	0	0
337:	0	0	0	0	1	0	0	2	0	1	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
365:	1	0	0	0	0	0	0	1	0	0	0	0	1	0
379:	0	0	0	1	1	0	0	0	1	1	0	0	0	0
393:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
407:	0	0	0	0	1	0	1	0	0	0	0	0	1	0
421:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	1	1	0	0	0	0	0	0	1	0	0
449:	0	2	0	0	0	0	0	0	1	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	2	0	0	0	0	0	0	0	0	0	1	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	1	0	0	0	0	0	0	0	0	0	0	1
547:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	1	1	0	0	0	0	0
575:	0	0	0	1	0	0	0	0	0	0	0	0	0	1
589:	0	0	0	0	1	0	0	0	0	0	1	0	0	0
603:	0	1	0	0	0	0	0	0	0	0	0	0	0	1
617:	0	1	0	0	0	0	0	0	1	0	0	0	0	0
631:	0	0	0	0	0	0	0	1	0	0	0	1	0	0
645:	0	1	0	0	0	0	0	0	1	0	1	0	0	0
659:	0	0	0	0	0	0	1	1	1	0	0	0	0	0
673:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	0	1	1
701:	0	0	1	0	1	1	0	0	0	0	0	0	0	0
715:	0	1	1	0	0	0	0	1	0	0	0	0	0	0
729:	0	1	0	0	1	0	0	0	0	0	0	0	0	0
743:	0	0	1	0	0	0	0	0	0	0	0	0	0	1
757:	0	0	0	0	0	0	0	0	0	0	1	0	0	1
771:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
785:	1	0	0	1	0	0	0	0	0	0	0	1	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	1	1	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	1	0	0	0	1	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	3	0	0	0	0	0	1	0	0	0
911:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:50:47.90

Detector ID: 41      Acquisition Start: 18-MAR-2010 10:51:54.01  
 Live Time: 0 02:50:00.00      Real Time: 0 02:50:00.10  
 Batch Id: 1003066A-RA      Sample Id: 11  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.94	29	0472.96	374.86	297	156	2.84E-03	18.6		
2	0	5298.45	23	0491.51	609.09	514	175	2.25E-03	20.9		
3	0	5777.59	18	0379.84	774.89	708	161	1.76E-03	23.6		

Background Counts Within Peak Regions      Generated: 18-MAR-2010 14:50:54.96

Live Time: 0 16:40:00.00      Acquisition Start: 12-MAR-2010 18:28:41.01  
 Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4602.89	8	0380.28	374.50	297	156	1.33E-04	35.4		
2	0	5271.08	6	0340.09	601.00	514	175	1.00E-04	40.8		
3	0	5811.51	8	0 3.09	788.00	708	161	1.33E-04	35.4		

Net Sample Counts Within Peak Regions      Generated: 18-MAR-2010 14:50:55.30

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.94*	68	0472.96	374.86	297	156	6.69E-03	19.0		
2	0	5298.45*	54	0491.51	609.09	514	175	5.31E-03	21.3		
3	0	5777.59*	42	0379.84	774.89	708	161	4.10E-03	24.4		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]0000252E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-30 SUS  
 Sample date : 5-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 10:51:54  
 Sample ID : 11 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 041 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4607.94*	68472.96	374.86	297	156	37.9			RA-226	0.958
0	5298.45*	54491.51	609.09	514	175	42.5			RN-222	0.761
0	5777.59*	42379.84	774.89	708	161	48.7			PO-218	0.587

Detector	Parameter	Flag	Filename
1	OFFLINE		
2	OFFLINE		
3	ALL	Passed	D_003_NONE
4	OFFLINE		
5	ALL	Passed	D_005_NONE
6	ALL	Passed	D_006_NONE
7	OFFLINE		
8	OFFLINE		
9	OFFLINE		
10	ALL	Passed	D_010_NONE
11	ALL	Passed	D_011_NONE
12	ALL	Passed	D_012_NONE
13	ALL	Passed	D_013_NONE
14	ALL	Passed	D_014_NONE
15	ALL	Passed	D_015_NONE
16	OFFLINE		
17	ALL	Passed	D_017_NONE
18	ALL	Passed	D_018_NONE
19	ALL	Passed	D_019_NONE
20	OFFLINE		
21	OFFLINE		
22	OFFLINE		
23	ALL	Passed	D_023_NONE
24	ALL	Passed	D_024_NONE
25	ALL	Passed	D_025_NONE
26	OFFLINE		
27	PSFWHM-5000	Below	D_027_NONE
27	PSCENTRD-5000	Above	D_027_NONE
27	PSCTSS-5000	Action	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	OFFLINE		
31	OFFLINE		
32	ALL	Passed	D_032_NONE
33	OFFLINE		
34	OFFLINE		
35	ALL	Passed	D_035_NONE
36	OFFLINE		
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	OFFLINE		
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	OFFLINE		
44	ALL	Passed	D_044_NONE
45	OFFLINE		
46	PSCTSS-5000	Investigate	D_046_NONE
47	PSCTSS-5000	Investigate	D_047_NONE
48	OFFLINE		

APPROVAL DATE: 03/18/10  
*KM*

APPROVAL TIME: \_\_\_\_\_

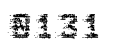


**SECTION IX**  
**ANALYTICAL DATA (RADIUM-228)**

<b>Work Order</b>	<b>10-03066</b>
<b>Analysis Code</b>	<b>Ra228</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>3/9/2010</b>
<b>Lab Deadline</b>	<b>3/23/2010</b>
<b>Client</b>	Michael Pisani & Associates
<b>Project</b>	ENV
<b>Report Level</b>	4
<b>Activity Units</b>	pCi
<b>Aliquot Units</b>	l
<b>Matrix</b>	WA
<b>Method</b>	EPA 904.0 Modified
<b>Instrument Type</b>	Alpha/Beta GPC
<b>Radiometric Tracer</b>	Ba-133
<b>Radiometric Sol#</b>	Ba-6a
<b>Tracer Act (dpm/g)</b>	1240.619
<b>Carrier</b>	Yttrium
<b>Carrier Conc (mg/ml)</b>	30.2

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		03/10/10 00:00	1.0000E+00
02	MBL	BLANK		03/10/10 00:00	1.0000E+00
03	DUP	MW-1 DIS	27	03/05/10 17:10	1.6670E-01
04	DO	MW-1 DIS	27	03/05/10 17:10	1.2500E-01
05	TRG	MW-1 SUS	27	03/05/10 17:10	1.0000E+00
06	TRG	MW-2R DIS	54	03/05/10 18:10	1.0000E+00
07	TRG	MW-2R SUS	54	03/05/10 18:10	1.0000E+00
08	TRG	MW-3R DIS	25	03/05/10 16:30	2.5000E-01
09	TRG	MW-3R SUS	25	03/05/10 16:30	1.0000E+00
10	TRG	MW-30 DIS	21	03/05/10 19:00	1.2500E-01
11	TRG	MW-30 SUS	21	03/05/10 19:00	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8186	1015.6	378.6	82.76	2.000	0.1020	0.1609	0.0589	97.52	80.71	1.00	1.00
02	MBL	0.8178	1014.6	427.3	93.50	2.000	0.1023	0.1564	0.0541	89.57	83.75	1.00	1.00
03	DUP	0.8118	1007.1	396.0	87.29	2.000	0.1024	0.1606	0.0582	96.36	84.11	1.00	1.00
04	DO	0.8152	1011.4	298.5	65.52	2.000	0.1016	0.1621	0.0605	100.17	65.63	1.00	1.00
05	TRG	0.8116	1006.9	403.4	88.94	2.000	0.1022	0.1576	0.0554	91.72	81.58	1.00	1.00
06	TRG	0.8097	1004.5	460.4	101.75	2.000	0.1023	0.1608	0.0585	96.85	98.55	1.00	1.00
07	TRG	0.8094	1004.2	396.2	87.59	2.000	0.1016	0.1625	0.0609	100.83	88.32	1.00	1.00
08	TRG	0.8108	1005.9	376.8	83.16	2.000	0.1021	0.1599	0.0578	95.70	79.58	1.00	1.00
09	TRG	0.8119	1007.3	431.3	95.06	2.000	0.1025	0.1597	0.0572	94.70	90.02	1.00	1.00
10	TRG	0.8127	1008.3	270.2	59.49	2.000	0.1018	0.1582	0.0564	93.38	55.55	1.00	1.00
11	TRG	0.8109	1006.0	417.5	92.13	2.000	0.1023	0.1596	0.0573	94.87	87.40	1.00	1.00

\* Rechecked Estimated  
@ 100%  
M  
3/24/10

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
02	MBL			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
03	DUP			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
04	DO			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
05	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
06	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
07	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
08	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
09	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
10	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH
11	TRG			03/11/10 06:38	JBARNARD	03/15/10 11:37	TSMITH	03/23/10 05:59	TSMITH

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-Ra228-1**

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	1.87E+01	1.15E+00	1.08E+00	1.72E+01	109.21	OK		OK	
02	RA-228	MBL	BLANK	pCi/l	8.53E-01	6.04E-01	1.19E+00					OK	OK
03	RA-228	DUP	MW-1 DIS	pCi/l	1.02E+01	4.33E+00	8.16E+00				INV	INV	
04	RA-228	DO	MW-1 DIS	pCi/l	2.68E+00	7.13E+00	1.49E+01					INV	
05	RA-228	TRG	MW-1 SUS	pCi/l	9.71E-01	7.04E-01	1.40E+00					OK	
06	RA-228	TRG	MW-2R DIS	pCi/l	1.51E+00	6.41E-01	1.22E+00					OK	
07	RA-228	TRG	MW-2R SUS	pCi/l	9.90E-02	6.39E-01	1.35E+00					OK	
08	RA-228	TRG	MW-3R DIS	pCi/l	5.72E+00	2.75E+00	5.24E+00					INV	
09	RA-228	TRG	MW-3R SUS	pCi/l	1.54E+00	5.32E-01	9.38E-01					OK	
10	RA-228	TRG	MW-30 DIS	pCi/l	1.15E+01	7.04E+00	1.37E+01					INV	
11	RA-228	TRG	MW-30 SUS	pCi/l	1.08E+00	5.76E-01	1.11E+00					OK	

	Client	Michael Pisani & Associates
Run	1	
Analysis Code	Ra228	
Eberline Services Work Order	10-03066	

	1 Run	Ra228 Analysis Code	10-03066 Eberline Services Work Order	Michael Pisani & Associates Client
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Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	03/10/10 00:00	1.00E+00	82.76	97.52	100.00	1.00	3/15/2010 11:37	3/23/2010 5:59
02	RA-228	MBL	03/10/10 00:00	1.00E+00	93.50	89.57	83.75	1.00	3/15/2010 11:37	3/23/2010 5:59
03	RA-228	DUP	03/05/10 17:10	1.67E-01	87.29	96.36	84.11	1.00	3/15/2010 11:37	3/23/2010 5:59
04	RA-228	DO	03/05/10 17:10	1.25E-01	65.52	100.17	65.63	1.00	3/15/2010 11:37	3/23/2010 5:59
05	RA-228	TRG	03/05/10 17:10	1.00E+00	88.94	91.72	81.58	1.00	3/15/2010 11:37	3/23/2010 5:59
06	RA-228	TRG	03/05/10 18:10	1.00E+00	101.75	96.85	98.55	1.00	3/15/2010 11:37	3/23/2010 5:59
07	RA-228	TRG	03/05/10 18:10	1.00E+00	87.59	100.83	88.32	1.00	3/15/2010 11:37	3/23/2010 5:59
08	RA-228	TRG	03/05/10 16:30	2.50E-01	83.16	95.70	79.58	1.00	3/15/2010 11:37	3/23/2010 5:59
09	RA-228	TRG	03/05/10 16:30	1.00E+00	95.06	94.70	90.02	1.00	3/15/2010 11:37	3/23/2010 5:59
10	RA-228	TRG	03/05/10 19:00	1.25E-01	59.49	93.38	55.55	1.00	3/15/2010 11:37	3/23/2010 5:59
11	RA-228	TRG	03/05/10 19:00	1.00E+00	92.13	94.87	87.40	1.00	3/15/2010 11:37	3/23/2010 5:59

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-Ra228-1**

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-228	LCS	03/23/10 10:16		LB4110A	B1	120	1420	1.266666667	0.4626
02	RA-228	MBL	03/23/10 10:16		LB4110A	B2	120	181	1.1	0.4691
03	RA-228	DUP	03/23/10 10:16		LB4110A	B3	120	254	1.333333333	0.449
04	RA-228	DO	03/23/10 10:16		LB4110A	C1	120	215	1.666666667	0.4667
05	RA-228	TRG	03/23/10 10:16		LB4110A	C2	120	219	1.383333333	0.4578
06	RA-228	TRG	03/23/10 10:16		LB4110A	C3	120	296	1.616666667	0.4699
07	RA-228	TRG	03/23/10 10:16		LB4110A	C4	120	198	1.6	0.4692
08	RA-228	TRG	03/23/10 10:19		LB4110R	A1	120	227	1.233333333	0.4776
09	RA-228	TRG	03/23/10 10:19		LB4110R	A2	120	187	0.766666667	0.4699
10	RA-228	TRG	03/23/10 10:19		LB4110R	A3	120	180	1.033333333	0.4809
11	RA-228	TRG	03/23/10 10:19		LB4110R	A4	120	188	1.033333333	0.4732

	Run	1
Eberline Services Work Order	Analysis Code	Ra228
Client	Michael Pisani & Associates	
	10-03066	

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	03/10/10 00:00	1.0000	0.8186	1015.5707	378.6000	82.76	1.00	1.00
02	MBL	BLANK	03/10/10 00:00	1.0000	0.8178	1014.5782	427.3000	93.50	1.00	1.00
03	DUP	MW-1 DIS	03/05/10 17:10	0.1667	0.8118	1007.1345	396.0000	87.29	1.00	1.00
04	DO	MW-1 DIS	03/05/10 17:10	0.1250	0.8152	1011.3526	298.5000	65.52	1.00	1.00
05	TRG	MW-1 SUS	03/05/10 17:10	1.0000	0.8116	1006.8864	403.4000	88.94	1.00	1.00
06	TRG	MW-2R DIS	03/05/10 18:10	1.0000	0.8097	1004.5292	460.4000	101.75	1.00	1.00
07	TRG	MW-2R SUS	03/05/10 18:10	1.0000	0.8094	1004.1570	396.2000	87.59	1.00	1.00
08	TRG	MW-3R DIS	03/05/10 16:30	0.2500	0.8108	1005.8939	376.8000	83.16	1.00	1.00
09	TRG	MW-3R SUS	03/05/10 16:30	1.0000	0.8119	1007.2586	431.3000	95.06	1.00	1.00
10	TRG	MW-30 DIS	03/05/10 19:00	0.1250	0.8127	1008.2511	270.2000	59.49	1.00	1.00
11	TRG	MW-30 SUS	03/05/10 19:00	1.0000	0.8109	1006.0179	417.5000	92.13	1.00	1.00

of Results Estimated  
 - N  
 - Los 2





# Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
<b>10-03066</b>	<b>1</b>	<b>Ra228</b>	<b>liters</b>	<b>3/23/2010</b>	<b>TSMITH</b>

Lab Fraction	Michael Pisani & Associates		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	Analysis Code		Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS		LCS			1.00E+00			1.0000E+00	1.0000E+00				
02	BLANK		MBL			1.00E+00			1.0000E+00	1.0000E+00				
03	MW-1 DIS		DUP			1.00E+00			1.6670E-01	1.6670E-01				
04	MW-1 DIS		DO			1.00E+00			1.2500E-01	1.2500E-01				
05	MW-1 SUS		TRG			1.00E+00			1.0000E+00	1.0000E+00				
06	MW-2R DIS		TRG			1.00E+00			1.0000E+00	1.0000E+00				
07	MW-2R SUS		TRG			1.00E+00			1.0000E+00	1.0000E+00				
08	MW-3R DIS		TRG			1.00E+00			2.5000E-01	2.5000E-01				
09	MW-3R SUS		TRG			1.00E+00			1.0000E+00	1.0000E+00				
10	MW-30 DIS		TRG			1.00E+00			1.2500E-01	1.2500E-01				
11	MW-30 SUS		TRG			1.00E+00			1.0000E+00	1.0000E+00				

Comments
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Technician: SM Date: 3/15/10

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-03066</b>	<b>1</b>	<b>Ra228</b>	<b>Yttrium</b>	<b>30.2000</b>	<b>TSMITH</b>

TRetek Fraction	Michael Pisani & Associates		Sample Type	Carrier Data Carrier Added (ml)	Filter Data			Gravimetric % Recovery
	Client ID				Filter Tare (g)	Filter Final (g)	Filter Net (g)	
01	LCS		LCS	2.0000	0.1020	0.1609	0.0589	97.52
02	BLANK		MBL	2.0000	0.1023	0.1564	0.0541	89.57
03	DUP		DUP	2.0000	0.1024	0.1606	0.0582	96.36
04	MW-1 DIS		DO	2.0000	0.1016	0.1621	0.0605	100.17
05	MW-1 SUS		TRG	2.0000	0.1022	0.1576	0.0554	91.72
06	MW-2R DIS		TRG	2.0000	0.1023	0.1608	0.0585	96.85
07	MW-2R SUS		TRG	2.0000	0.1016	0.1625	0.0609	100.83
08	MW-3R DIS		TRG	2.0000	0.1021	0.1599	0.0578	95.70
09	MW-3R SUS		TRG	2.0000	0.1025	0.1597	0.0572	94.70
10	MW-30 DIS		TRG	2.0000	0.1018	0.1582	0.0564	93.38
11	MW-30 SUS		TRG	2.0000	0.1023	0.1596	0.0573	94.87

Technician: *sch* Date: 3/23/10



KM  
03/23/10  
A

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
C1	1003066-04	8	215	120	1400	3/23/10 12:16	
C2	1003066-05	9	219	120	1400	3/23/10 12:16	
C3	1003066-06	9	296	120	1400	3/23/10 12:16	
C4	1003066-07	9	198	120	1400	3/23/10 12:16	
B1	1003066-01	53	1420	120	1400	3/23/10 12:16	
B2	1003066-02	7	181	120	1400	3/23/10 12:16	
B3	1003066-03	7	254	120	1400	3/23/10 12:16	



AM 03/23/10 (B)

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
A1	1003066-08	4	227	120		1400	3/23/10 12:19
A2	1003066-09	4	187	120		1400	3/23/10 12:19
A3	1003066-10	13	180	120		1400	3/23/10 12:19
A4	1003066-11	13	188	120		1400	3/23/10 12:19

GPC Detector Report  
(ALL Backgrounds)

KM  
03/23/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	3/23/2010	3.33E-02	P	-5.41E-02	7.20E-02	1.98E-01
LB4110A - A2	Alpha	11/18/2007	3/23/2010	6.67E-02	P	-5.73E-02	1.03E-01	2.63E-01
LB4110A - A3	Alpha	11/18/2007	3/23/2010	1.67E-02	P	-4.91E-02	5.07E-02	1.50E-01
LB4110A - A4	Alpha	11/18/2007	3/23/2010	1.17E-01	P	-6.41E-02	5.79E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	3/23/2010	5.00E-02	P	-1.36E-01	8.71E-02	3.10E-01
LB4110A - B2	Alpha	11/18/2007	3/23/2010	0.00E+00	P	-6.55E-02	8.04E-02	2.26E-01
LB4110A - B3	Alpha	11/18/2007	3/23/2010	3.33E-02	P	-5.59E-02	4.43E-02	1.45E-01
LB4110A - B4	Alpha	11/18/2007	3/23/2010	1.50E-01	F	-4.38E-02	5.14E-02	1.47E-01
LB4110A - C1	Alpha	11/18/2007	3/23/2010	3.33E-02	P	-6.37E-02	8.42E-02	2.32E-01
LB4110A - C2	Alpha	11/18/2007	3/23/2010	0.00E+00	P	-2.04E-01	1.29E-01	4.61E-01
LB4110A - C3	Alpha	11/18/2007	3/23/2010	1.00E-01	P	-2.53E-01	1.26E-01	5.06E-01
LB4110A - C4	Alpha	11/18/2007	3/23/2010	5.00E-02	P	-7.41E-02	7.87E-02	2.32E-01
LB4110A - D1	Alpha	11/18/2007	3/23/2010	1.00E-01	P	-4.43E-02	8.56E-02	2.16E-01
LB4110A - D2	Alpha	11/18/2007	3/23/2010	8.33E-02	P	-6.86E-02	7.17E-02	2.12E-01
LB4110A - D3	Alpha	11/18/2007	3/23/2010	3.33E-02	P	-3.74E-02	6.27E-02	1.63E-01
LB4110A - D4	Alpha	11/18/2007	3/23/2010	3.33E-02	P	-6.17E-02	7.75E-02	2.17E-01
LB4110R - A1	Alpha	11/24/2006	3/23/2010	1.00E-01	P	-1.14E-01	8.50E-02	2.84E-01
LB4110R - A2	Alpha	11/24/2006	3/23/2010	1.00E-01	P	-9.93E-02	9.86E-02	2.96E-01
LB4110R - A3	Alpha	11/24/2006	3/23/2010	3.33E-02	P	-9.12E-02	7.87E-02	2.49E-01
LB4110R - A4	Alpha	11/24/2006	3/23/2010	1.17E-01	P	-5.19E-02	8.30E-02	2.18E-01
LB4110R - B1	Alpha	11/24/2006	3/23/2010	5.00E-02	P	-1.20E-01	7.00E-02	2.60E-01
LB4110R - B2	Alpha	11/24/2006	3/23/2010	3.33E-02	P	-7.87E-02	7.87E-02	2.36E-01
LB4110R - B3	Alpha	11/24/2006	3/23/2010	8.33E-02	P	-7.81E-02	7.25E-02	2.23E-01
LB4110R - B4	Alpha	11/24/2006	3/23/2010	8.33E-02	P	-6.64E-02	8.62E-02	2.39E-01
LB4110R - C1	Alpha	11/24/2006	3/23/2010	3.33E-02	P	-8.35E-02	9.11E-02	2.66E-01
LB4110R - C2	Alpha	11/24/2006	3/23/2010	5.00E-02	P	-8.37E-02	8.84E-02	2.61E-01
LB4110R - C3	Alpha	11/24/2006	3/23/2010	0.00E+00	P	-1.05E-01	9.85E-02	3.02E-01
LB4110R - C4	Alpha	11/24/2006	3/23/2010	1.67E-02	P	-7.39E-02	9.30E-02	2.60E-01
LB4110R - D1	Alpha	11/24/2006	3/23/2010	1.67E-02	P	-9.20E-02	8.89E-02	2.70E-01
LB4110R - D2	Alpha	11/24/2006	3/23/2010	1.17E-01	P	-6.30E-02	9.08E-02	2.45E-01
LB4110R - D3	Alpha	11/24/2006	3/23/2010	1.00E-01	P	-6.08E-02	7.84E-02	2.18E-01
LB4110R - D4	Alpha	11/24/2006	3/23/2010	1.17E-01	P	-5.44E-02	9.42E-02	2.43E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

AM  
03/23/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	3/23/2010	1.38E+00	P	-7.97E+00	2.82E+00	1.36E+01
LB4110A - A2	Beta	11/18/2007	3/23/2010	1.25E+00	P	-7.49E-02	1.61E+00	3.29E+00
LB4110A - A3	Beta	11/18/2007	3/23/2010	1.10E+00	P	3.64E-01	1.30E+00	2.23E+00
LB4110A - A4	Beta	11/18/2007	3/23/2010	1.28E+00	P	4.51E-01	1.72E+00	3.00E+00
LB4110A - B1	Beta	11/18/2007	3/23/2010	1.27E+00	P	-8.67E+00	4.16E+00	1.70E+01
LB4110A - B2	Beta	11/18/2007	3/23/2010	1.10E+00	P	4.92E-02	1.51E+00	2.97E+00
LB4110A - B3	Beta	11/18/2007	3/23/2010	1.33E+00	P	9.06E-02	1.50E+00	2.91E+00
LB4110A - B4	Beta	11/18/2007	3/23/2010	1.27E+00	P	-9.22E-02	1.43E+00	2.96E+00
LB4110A - C1	Beta	11/18/2007	3/23/2010	1.67E+00	P	-7.77E+00	3.24E+00	1.43E+01
LB4110A - C2	Beta	11/18/2007	3/23/2010	1.38E+00	P	3.41E-01	1.45E+00	2.56E+00
LB4110A - C3	Beta	11/18/2007	3/23/2010	1.62E+00	P	4.22E-01	1.49E+00	2.56E+00
LB4110A - C4	Beta	11/18/2007	3/23/2010	1.60E+00	P	-1.34E+00	2.18E+00	5.70E+00
LB4110A - D1	Beta	11/18/2007	3/23/2010	1.68E+00	P	-4.09E+00	3.13E+00	1.03E+01
LB4110A - D2	Beta	11/18/2007	3/23/2010	1.30E+00	P	-1.39E+00	1.80E+00	5.00E+00
LB4110A - D3	Beta	11/18/2007	3/23/2010	3.90E+00	P	-4.72E-01	4.04E+00	8.54E+00
LB4110A - D4	Beta	11/18/2007	3/23/2010	1.17E+00	P	-9.76E-01	1.59E+00	4.16E+00
LB4110R - A1	Beta	11/24/2006	3/23/2010	1.23E+00	P	-6.34E+01	2.86E+00	6.91E+01
LB4110R - A2	Beta	11/24/2006	3/23/2010	7.67E-01	P	-6.37E+01	2.60E+00	6.89E+01
LB4110R - A3	Beta	11/24/2006	3/23/2010	1.03E+00	P	-6.30E+01	4.32E+00	7.16E+01
LB4110R - A4	Beta	11/24/2006	3/23/2010	1.03E+00	P	-6.35E+01	2.73E+00	6.90E+01
LB4110R - B1	Beta	11/24/2006	3/23/2010	1.07E+00	P	-6.68E+01	2.85E+00	7.25E+01
LB4110R - B2	Beta	11/24/2006	3/23/2010	1.03E+00	P	-6.67E+01	2.92E+00	7.25E+01
LB4110R - B3	Beta	11/24/2006	3/23/2010	1.32E+00	P	-6.60E+01	4.07E+00	7.41E+01
LB4110R - B4	Beta	11/24/2006	3/23/2010	1.27E+00	P	-6.70E+01	2.68E+00	7.23E+01
LB4110R - C1	Beta	11/24/2006	3/23/2010	1.35E+00	P	-6.58E+01	4.80E+00	7.54E+01
LB4110R - C2	Beta	11/24/2006	3/23/2010	1.78E+00	P	-6.67E+01	3.67E+00	7.41E+01
LB4110R - C3	Beta	11/24/2006	3/23/2010	1.13E+00	P	-6.70E+01	3.72E+00	7.45E+01
LB4110R - C4	Beta	11/24/2006	3/23/2010	1.35E+00	P	-7.56E+01	4.36E+00	8.43E+01
LB4110R - D1	Beta	11/24/2006	3/23/2010	8.47E+00	P	-6.41E+01	6.48E+00	7.71E+01
LB4110R - D2	Beta	11/24/2006	3/23/2010	8.50E-01	P	-6.78E+01	2.78E+00	7.33E+01
LB4110R - D3	Beta	11/24/2006	3/23/2010	3.50E+00	P	-7.17E+01	7.80E+00	8.73E+01
LB4110R - D4	Beta	11/24/2006	3/23/2010	1.35E+00	P	-6.74E+01	3.20E+00	7.38E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

GPC Detector Report  
(ALL Efficiencies)

AM  
03/23/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	3/23/2010	0.2497	P	0.2373	0.2506	0.2638
LB4110A - A2	Alpha	11/18/2007	3/23/2010	0.2187	P	0.2087	0.2213	0.2339
LB4110A - A3	Alpha	11/18/2007	3/23/2010	0.2193	P	0.2048	0.2180	0.2312
LB4110A - A4	Alpha	11/18/2007	3/23/2010	0.2274	P	0.2154	0.2290	0.2426
LB4110A - B1	Alpha	11/18/2007	3/23/2010	0.2262	P	0.2189	0.2322	0.2455
LB4110A - B2	Alpha	11/18/2007	3/23/2010	0.2262	P	0.2143	0.2280	0.2417
LB4110A - B3	Alpha	11/18/2007	3/23/2010	0.2442	P	0.2267	0.2425	0.2584
LB4110A - B4	Alpha	11/18/2007	3/23/2010	0.2402	P	0.2288	0.2413	0.2537
LB4110A - C1	Alpha	11/18/2007	3/23/2010	0.2237	P	0.2118	0.2228	0.2338
LB4110A - C2	Alpha	11/18/2007	3/23/2010	0.2243	P	0.2017	0.2272	0.2528
LB4110A - C3	Alpha	11/18/2007	3/23/2010	0.2467	P	0.2358	0.2495	0.2632
LB4110A - C4	Alpha	11/18/2007	3/23/2010	0.2235	P	0.2201	0.2328	0.2454
LB4110A - D1	Alpha	11/18/2007	3/23/2010	0.2381	P	0.2256	0.2402	0.2548
LB4110A - D2	Alpha	11/18/2007	3/23/2010	0.2638	P	0.2479	0.2634	0.2789
LB4110A - D3	Alpha	11/18/2007	3/23/2010	0.2570	P	0.2514	0.2692	0.2870
LB4110A - D4	Alpha	11/18/2007	3/23/2010	0.2009	P	0.1941	0.2112	0.2283
LB4110R - A1	Alpha	11/24/2006	3/23/2010	0.2392	P	0.2067	0.2429	0.2791
LB4110R - A2	Alpha	11/24/2006	3/23/2010	0.2213	P	0.1925	0.2247	0.2568
LB4110R - A3	Alpha	11/24/2006	3/23/2010	0.2247	P	0.1980	0.2285	0.2590
LB4110R - A4	Alpha	11/24/2006	3/23/2010	0.2456	P	0.2134	0.2471	0.2809
LB4110R - B1	Alpha	11/24/2006	3/23/2010	0.2301	P	0.1931	0.2308	0.2684
LB4110R - B2	Alpha	11/24/2006	3/23/2010	0.2177	P	0.1855	0.2217	0.2579
LB4110R - B3	Alpha	11/24/2006	3/23/2010	0.2407	P	0.2091	0.2482	0.2873
LB4110R - B4	Alpha	11/24/2006	3/23/2010	0.2337	P	0.2004	0.2382	0.2759
LB4110R - C1	Alpha	11/24/2006	3/23/2010	0.2166	P	0.1827	0.2174	0.2520
LB4110R - C2	Alpha	11/24/2006	3/23/2010	0.2274	P	0.1938	0.2266	0.2594
LB4110R - C3	Alpha	11/24/2006	3/23/2010	0.2411	P	0.2031	0.2427	0.2822
LB4110R - C4	Alpha	11/24/2006	3/23/2010	0.2235	P	0.1992	0.2319	0.2646
LB4110R - D1	Alpha	11/24/2006	3/23/2010	0.2303	P	0.1935	0.2297	0.2660
LB4110R - D2	Alpha	11/24/2006	3/23/2010	0.2639	P	0.2236	0.2591	0.2947
LB4110R - D3	Alpha	11/24/2006	3/23/2010	0.2562	P	0.2217	0.2551	0.2884
LB4110R - D4	Alpha	11/24/2006	3/23/2010	0.2002	P	0.1819	0.2123	0.2426
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578



GPC Detector Report  
(ALL Efficiencies)

LM  
03/23/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	3/23/2010	0.5897	P	0.5574	0.5899	0.6224
LB4110A - A2	Beta	11/18/2007	3/23/2010	0.5178	P	0.4978	0.5241	0.5503
LB4110A - A3	Beta	11/18/2007	3/23/2010	0.5262	P	0.4925	0.5269	0.5614
LB4110A - A4	Beta	11/18/2007	3/23/2010	0.5516	P	0.5195	0.5492	0.5790
LB4110A - B1	Beta	11/18/2007	3/23/2010	0.5335	P	0.5145	0.5436	0.5726
LB4110A - B2	Beta	11/18/2007	3/23/2010	0.5400	P	0.5111	0.5402	0.5694
LB4110A - B3	Beta	11/18/2007	3/23/2010	0.5546	P	0.5015	0.5536	0.6057
LB4110A - B4	Beta	11/18/2007	3/23/2010	0.5615	P	0.5362	0.5609	0.5856
LB4110A - C1	Beta	11/18/2007	3/23/2010	0.5060	P	0.4844	0.5066	0.5288
LB4110A - C2	Beta	11/18/2007	3/23/2010	0.4891	P	0.4359	0.5106	0.5852
LB4110A - C3	Beta	11/18/2007	3/23/2010	0.6002	P	0.5615	0.5874	0.6132
LB4110A - C4	Beta	11/18/2007	3/23/2010	0.5283	P	0.5100	0.5418	0.5737
LB4110A - D1	Beta	11/18/2007	3/23/2010	0.5651	P	0.5344	0.5732	0.6119
LB4110A - D2	Beta	11/18/2007	3/23/2010	0.6243	P	0.5509	0.6160	0.6811
LB4110A - D3	Beta	11/18/2007	3/23/2010	0.6188	P	0.5809	0.6269	0.6728
LB4110A - D4	Beta	11/18/2007	3/23/2010	0.4801	P	0.4672	0.5035	0.5399
LB4110R - A1	Beta	11/24/2006	3/23/2010	0.5881	P	0.4763	0.5767	0.6770
LB4110R - A2	Beta	11/24/2006	3/23/2010	0.4963	P	0.4093	0.5145	0.6197
LB4110R - A3	Beta	11/24/2006	3/23/2010	0.5499	P	0.4538	0.5491	0.6444
LB4110R - A4	Beta	11/24/2006	3/23/2010	0.5924	P	0.4924	0.5913	0.6903
LB4110R - B1	Beta	11/24/2006	3/23/2010	0.5418	P	0.4487	0.5526	0.6565
LB4110R - B2	Beta	11/24/2006	3/23/2010	0.5237	P	0.4278	0.5298	0.6317
LB4110R - B3	Beta	11/24/2006	3/23/2010	0.5858	P	0.4908	0.5972	0.7036
LB4110R - B4	Beta	11/24/2006	3/23/2010	0.5493	P	0.4620	0.5617	0.6615
LB4110R - C1	Beta	11/24/2006	3/23/2010	0.5042	P	0.4100	0.5065	0.6030
LB4110R - C2	Beta	11/24/2006	3/23/2010	0.5444	P	0.4339	0.5313	0.6287
LB4110R - C3	Beta	11/24/2006	3/23/2010	0.5842	P	0.4601	0.5740	0.6879
LB4110R - C4	Beta	11/24/2006	3/23/2010	0.5372	P	0.4454	0.5450	0.6446
LB4110R - D1	Beta	11/24/2006	3/23/2010	0.5535	P	0.4468	0.5463	0.6458
LB4110R - D2	Beta	11/24/2006	3/23/2010	0.6222	P	0.5024	0.6085	0.7147
LB4110R - D3	Beta	11/24/2006	3/23/2010	0.5963	P	0.4894	0.5907	0.6921
LB4110R - D4	Beta	11/24/2006	3/23/2010	0.4950	P	0.4071	0.5029	0.5987
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

**SECTION X**  
**BARIUM-133 ANALYTICAL TRACER DATA**

*KM*  
*03-18-10*

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306601\_GE5\_BAFIL\_146366.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : SPIKE  
 Deposition Date :  
 Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 06:28:01  
 Sample ID : 1003066-01 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE5 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.42 0.2%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	20.93	120	20	0.45	206.71	196	20	1.33E-01	12.9	
2	0	24.73	25	25	1.85	243.22	231	26	2.78E-02	59.2	
3	0	28.02	45	41	0.62	274.83	263	20	4.96E-02	39.5	
4	0	30.87	2377	101	0.72	302.24	288	26	2.64E+00	2.3	
5	1	35.07	445	14	0.69	342.61	331	35	4.95E-01	5.6	1.74E+00
6	1	35.94	115	4	0.63	351.00	331	35	1.27E-01	17.8	
7	0	53.26	36	19	0.52	517.56	510	14	4.04E-02	27.3	
8	2	61.72	289	48	0.83	598.93	584	24	3.21E-01	7.0	3.77E+00
9	2	62.27	11	23	0.55	604.25	584	24	1.22E-02	112.2	
10	1	65.47	17	21	0.69	635.00	624	34	1.84E-02	89.9	2.97E+00
11	1	65.99	153	17	0.69	640.00	624	34	1.70E-01	9.8	
12	0	81.10	760	108	0.61	785.25	774	23	8.45E-01	4.8	
13	2	101.66	39	6	0.74	983.00	978	12	4.37E-02	14.8	2.99E+00
14	2	102.18	11	1	0.74	987.96	978	12	1.18E-02	35.3	
15	0	111.93	198	46	0.42	1081.78	1070	21	2.20E-01	10.2	
16	0	160.90	25	10	0.22	1552.63	1546	14	2.73E-02	32.1	
17	1	238.62	9	5	0.89	2300.00	2291	21	1.01E-02	82.4	1.05E+00
18	1	239.03	31	3	0.89	2304.00	2291	21	3.44E-02	23.5	
19	0	276.79	42	11	0.77	2667.08	2652	22	4.67E-02	21.7	
20	0	303.06	113	18	0.61	2919.69	2907	23	1.26E-01	11.8	
21	0	307.37	27	2	0.26	2961.11	2949	21	2.97E-02	22.4	
22	0	333.77	64	7	0.79	3215.00	3200	27	7.10E-02	15.2	
23	0	337.83	19	6	0.32	3254.05	3246	15	2.15E-02	30.8	
24	4	356.15	430	12	0.99	3430.22	3416	26	4.78E-01	5.1	7.08E-01
25	4	356.61	28	11	1.07	3434.63	3416	26	3.08E-02	70.7	
26	0	383.99	106	3	0.88	3697.90	3682	28	1.18E-01	10.4	
27	0	387.05	161	23	1.00	3727.33	3714	23	1.79E-01	10.0	

Total number of lines in spectrum 27  
 Number of unidentified lines 21  
 Number of lines tentatively identified by NID 6 22.22%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.786E+02	3.786E+02	0.673E+02	17.79	
Total Activity :			3.786E+02	3.786E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	3.034E+01	3.034E+01	6.810E+01	224.47	
Total Activity :			3.034E+01	3.034E+01			

Grand Total Activity : 4.090E+02 4.090E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	3.786E+02	3.786E+02	17.79	OK
	302.84	17.80	4.662E+00	4.105E+02	4.105E+02	30.35	OK
	356.01	60.00	4.450E+00	4.835E+02	4.835E+02	17.17	OK

Final Mean for 3 Valid Peaks = 3.786E+02+/- 6.734E+01 ( 17.79%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	3.034E+01	3.034E+01	224.47	OK

Final Mean for 1 Valid Peaks = 3.034E+01+/- 6.810E+01 (224.47%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.786E+02	6.734E+01	2.103E+01	3.045E+00	18.009
TH-234	3.034E+01	6.810E+01	1.215E+02	4.380E+00	0.250

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	1.573E+00		4.982E+00	9.485E+00	9.349E-01	0.166
CD-109	4.518E+00		6.711E+01	1.239E+02	7.968E+00	0.036
PA-231	-9.774E-01		1.143E+00	1.860E+00	1.921E-02	-0.525
PA-234	5.545E+00	+	1.452E+00	2.278E+00	2.353E-02	2.434
NP-237	-8.923E+00		1.908E+01	3.254E+01	2.038E+00	-0.274
AM-241	3.183E+00		5.342E+00	8.870E+00	2.832E-01	0.359

LA  
 109  
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 237  
 241

KM  
03-18-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 07:03:07.75

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306602\_GE5\_BAFIL\_146367.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : BLANK  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 06:47:45  
Sample ID : 1003066-02 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.48 0.2%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5.44	14	9	0.79	57.76	52	13	1.54E-02	53.3	
2	0	21.10	75	43	0.60	208.33	201	17	8.38E-02	24.9	
3	0	30.88	2296	134	0.77	302.38	290	27	2.55E+00	2.5	
4	0	35.18	559	41	0.83	343.71	331	28	6.21E-01	5.1	
5	0	53.19	50	29	0.76	516.91	503	21	5.52E-02	26.8	
6	0	61.71	283	27	0.82	598.81	587	23	3.15E-01	7.2	
7	0	65.90	160	16	0.93	639.11	627	29	1.77E-01	9.8	
8	0	81.09	858	115	0.61	785.18	773	23	9.53E-01	4.4	
9	0	111.94	232	40	0.93	1081.86	1069	23	2.58E-01	8.8	
10	0	116.16	67	21	0.79	1122.47	1112	25	7.40E-02	19.9	
11	0	150.40	12	2	0.38	1451.70	1446	12	1.36E-02	34.6	
12	0	276.50	57	3	0.92	2664.26	2653	20	6.36E-02	14.2	
13	2	302.68	86	14	0.95	2916.00	2907	20	9.55E-02	14.0	3.38E+00
14	2	303.48	24	8	0.77	2923.71	2907	20	2.64E-02	27.1	
15	9	333.76	51	5	1.07	3214.93	3203	23	5.72E-02	17.9	1.16E+00
16	9	334.59	11	0	0.38	3222.92	3203	23	1.22E-02	29.9	
17	0	356.20	458	4	0.92	3430.71	3416	30	5.09E-01	4.8	
18	0	384.02	88	12	0.95	3698.24	3683	25	9.76E-02	13.9	
19	1	386.70	110	4	1.11	3723.97	3713	27	1.22E-01	11.7	2.11E+00
20	1	387.84	45	5	1.01	3735.00	3713	27	5.02E-02	17.4	

Total number of lines in spectrum 20  
 Number of unidentified lines 15  
 Number of lines tentatively identified by NID 5 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.273E+02	4.273E+02	0.743E+02	17.39	
Total Activity :			4.273E+02	4.273E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	7.808E+02	7.808E+02	1.197E+02	15.32	
Total Activity :			7.808E+02	7.808E+02			

Grand Total Activity : 1.208E+03 1.208E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.273E+02	4.273E+02	17.39	OK
	302.84	17.80	4.662E+00	3.109E+02	3.109E+02	33.86	OK
	356.01	60.00	4.450E+00	5.154E+02	5.154E+02	16.78	OK

Final Mean for 3 Valid Peaks = 4.273E+02 +/- 7.432E+01 ( 17.39%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	7.808E+02	7.808E+02	15.32	OK

Final Mean for 1 Valid Peaks = 7.808E+02 +/- 1.197E+02 ( 15.32%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.273E+02	7.432E+01	1.879E+01	2.721E+00	22.739
TH-234	7.808E+02	1.197E+02	4.039E+01	1.455E+00	19.334

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-3.271E+00		5.021E+00	8.362E+00	8.242E-01	-0.391
CD-109	3.341E+01		7.292E+01	1.398E+02	8.989E+00	0.239
PA-231	-3.381E-01		9.998E-01	1.758E+00	1.815E-02	-0.192
PA-234	3.490E+00	+	1.744E+00	2.122E+00	2.192E-02	1.645
NP-237	-1.677E+01		2.355E+01	3.847E+01	2.409E+00	-0.436
AM-241	-1.285E+00		5.152E+00	7.550E+00	2.411E-01	-0.170

KM  
03-18-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 07:19:01.98

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306603\_GE5\_BAFIL\_146371.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-1 DIS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 07:03:39  
Sample ID : 1003066-03 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.34 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	12.20	14	19	1.20	122.71	107	19	1.53E-02	80.6	
2	0	21.07	88	27	0.77	208.06	201	17	9.76E-02	17.7	
3	0	30.87	2155	104	0.75	302.29	289	32	2.39E+00	2.6	
4	6	35.03	386	60	0.65	342.25	331	27	4.28E-01	6.7	1.31E+00
5	6	35.91	85	27	0.57	350.74	331	27	9.41E-02	23.8	
6	0	53.46	45	36	0.59	519.52	505	22	4.96E-02	32.9	
7	0	61.76	249	59	0.87	599.27	585	30	2.76E-01	9.9	
8	0	65.89	101	30	0.79	639.06	627	22	1.12E-01	15.8	
9	0	81.01	795	58	0.57	784.45	769	27	8.83E-01	4.2	
10	0	111.90	211	60	0.84	1081.47	1065	30	2.35E-01	11.3	
11	2	115.64	16	9	0.92	1117.46	1110	29	1.80E-02	54.7	1.39E+00
12	2	116.22	64	11	0.76	1123.00	1110	29	7.06E-02	17.1	
13	0	160.50	46	10	1.46	1548.85	1538	26	5.14E-02	20.9	
14	0	171.82	14	5	0.31	1657.62	1650	15	1.56E-02	40.1	
15	0	276.88	34	16	0.17	2667.96	2657	19	3.72E-02	28.1	
16	1	302.57	106	5	0.95	2915.00	2901	30	1.18E-01	11.6	6.55E+00
17	1	303.30	43	6	0.95	2922.00	2901	30	4.81E-02	26.7	
18	0	307.24	33	3	0.70	2959.85	2947	23	3.72E-02	19.9	
19	0	334.02	39	12	1.35	3217.46	3204	23	4.36E-02	23.4	
20	3	356.10	329	3	0.90	3429.78	3415	30	3.65E-01	6.0	3.35E+00
21	3	356.64	95	4	1.08	3434.95	3415	30	1.05E-01	20.4	
22	0	384.13	73	7	0.78	3699.26	3684	27	8.14E-02	13.8	
23	0	386.95	159	7	0.82	3726.38	3712	26	1.76E-01	8.6	

Total number of lines in spectrum 23  
 Number of unidentified lines 18  
 Number of lines tentatively identified by NID 5 21.74%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.959E+02	3.960E+02	0.680E+02	17.18	
Total Activity :			3.959E+02	3.960E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	6.858E+02	6.858E+02	1.409E+02	20.54	
Total Activity :			6.858E+02	6.858E+02			

Grand Total Activity : 1.082E+03 1.082E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	3.959E+02	3.960E+02	17.18	OK
	302.84	17.80	4.662E+00	3.838E+02	3.838E+02	29.99	OK
	356.01	60.00	4.450E+00	3.699E+02	3.699E+02	18.32	OK

Final Mean for 3 Valid Peaks = 3.960E+02+/- 6.802E+01 ( 17.18%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	6.858E+02	6.858E+02	20.54	OK

Final Mean for 1 Valid Peaks = 6.858E+02+/- 1.409E+02 ( 20.54%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.960E+02	6.802E+01	1.401E+01	2.029E+00	28.257
TH-234	6.858E+02	1.409E+02	6.450E+01	2.324E+00	10.633

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.577E+00		4.472E+00	7.562E+00	7.454E-01	-0.341
CD-109	4.728E-01		6.310E+01	1.164E+02	7.482E+00	0.004
PA-231	-5.207E-01		1.108E+00	1.688E+00	1.744E-02	-0.308
PA-234	4.065E+00	+	1.448E+00	2.188E+00	2.260E-02	1.858
NP-237	2.092E+00		1.787E+01	3.357E+01	2.102E+00	0.062
AM-241	3.050E+00		4.665E+00	7.988E+00	2.550E-01	0.382

KM  
03-18-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 07:36:16.78

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100306604\_GE5\_BAFIL\_146372.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-1 DIS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 07:21:00  
Sample ID : 1003066-04 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.21 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	8.28	16	16	0.83	85.07	75	17	1.81E-02	62.7	
2	0	21.11	88	32	0.60	208.42	196	26	9.78E-02	22.0	
3	0	30.88	1595	81	0.74	302.37	291	30	1.77E+00	3.1	
4	2	34.93	314	51	0.76	341.27	329	28	3.49E-01	7.7	3.06E+00
5	2	35.83	74	22	0.63	350.00	329	28	8.25E-02	23.3	
6	0	53.21	28	18	0.54	517.07	509	18	3.11E-02	35.7	
7	0	61.65	186	9	1.23	598.24	585	23	2.07E-01	8.0	
8	1	65.78	81	19	0.69	638.00	625	26	9.05E-02	16.0	1.78E+00
9	1	66.41	32	16	0.69	644.00	625	26	3.57E-02	33.7	
10	5	79.69	51	14	1.15	771.71	760	36	5.66E-02	28.6	8.06E-01
11	5	81.06	599	6	0.70	784.89	760	36	6.66E-01	4.2	
12	0	111.91	124	18	0.86	1081.58	1072	19	1.37E-01	11.5	
13	0	116.12	47	16	0.55	1122.09	1111	24	5.18E-02	24.2	
14	8	141.83	8	1	0.34	1369.25	1368	20	8.99E-03	25.1	6.32E-01
15	8	142.95	35	2	1.06	1380.03	1368	20	3.86E-02	16.8	
16	0	276.51	35	6	0.18	2664.34	2655	17	3.84E-02	21.4	
17	0	302.96	100	3	0.71	2918.69	2905	25	1.11E-01	10.6	
18	0	333.93	45	3	0.63	3216.52	3202	23	4.95E-02	16.8	
19	1	356.02	232	6	1.08	3428.95	3415	29	2.58E-01	7.9	5.36E+00
20	1	356.65	124	7	0.99	3435.00	3415	29	1.38E-01	13.6	
21	0	384.15	49	24	1.07	3699.49	3683	25	5.46E-02	25.0	
22	0	386.99	91	3	1.32	3726.82	3714	25	1.01E-01	11.2	

Total number of lines in spectrum 22  
 Number of unidentified lines 16  
 Number of lines tentatively identified by NID 6 27.27%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	2.985E+02	2.985E+02	0.514E+02	17.23	
Total Activity :			2.985E+02	2.985E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	1.164E+00	1.164E+00	1.461E+00	125.49	
PA-234	4.47E+09Y	1.00	4.073E+00	4.073E+00	1.796E+00	44.10	
TH-234	4.47E+09Y	1.00	5.138E+02	5.138E+02	0.871E+02	16.95	
Total Activity :			5.190E+02	5.190E+02			

Grand Total Activity : 8.175E+02 8.175E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	2.985E+02	2.985E+02	17.23	OK
	302.84	17.80	4.662E+00	3.625E+02	3.626E+02	28.45	OK
	356.01	60.00	4.450E+00	2.613E+02	2.613E+02	20.92	OK

Final Mean for 3 Valid Peaks = 2.985E+02 +/- 5.143E+01 ( 17.23%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
PA-231	9.28	42.00*	1.000E+02	1.164E+00	1.164E+00	125.49	OK
	10.11	20.20	1.000E+02	2.420E+00	2.420E+00	125.49	OK
	283.67	1.60	4.787E+00	-----	Line Not Found	-----	Absent
	302.67	2.30	4.663E+00	2.805E+03	2.805E+03	26.59	OK

Final Mean for 3 Valid Peaks = 1.164E+00 +/- 1.461E+00 (125.49%)

PA-234	9.89	89.00	1.000E+02	5.494E-01	5.494E-01	125.49	OK
	21.72	64.90*	1.000E+02	4.073E+00	4.073E+00	44.10	OK
	37.93	23.75	8.878E+01	-----	Line Not Found	-----	Absent
	131.42	20.40	9.027E+00	-----	Line Not Found	-----	Absent

Final Mean for 2 Valid Peaks = 4.073E+00 +/- 1.796E+00 ( 44.10%)

TH-234	63.29	3.80*	2.867E+01	5.138E+02	5.138E+02	16.95	OK
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Final Mean for 1 Valid Peaks = 5.138E+02 +/- 8.710E+01 ( 16.95%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	2.985E+02	5.143E+01	1.075E+01	1.558E+00	27.759
PA-231	1.164E+00	1.461E+00	2.121E+00	2.190E-02	0.549
PA-234	4.073E+00	1.796E+00	7.560E-01	7.808E-03	5.388
TH-234	5.138E+02	8.710E+01	4.779E+01	1.722E+00	10.751

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	3.594E+00		4.066E+00	8.569E+00	8.446E-01	0.419
CD-109	-1.417E+01		5.886E+01	1.051E+02	6.757E+00	-0.135
NP-237	-4.241E+00		1.734E+01	3.090E+01	1.934E+00	-0.137
AM-241	3.330E+00		3.754E+00	6.963E+00	2.223E-01	0.478

KM  
03/18/10

VAX/VMS Peak Search Report Generated 18-MAR-2010 07:53:03.26

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306605\_GE5\_BAFIL\_146375.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : MW-1 SUS  
 Deposition Date :  
 Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 07:37:45  
 Sample ID : 1003066-05 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE5 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.29 0.1%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5.99	11	14	0.17	63.00	54	14	1.22E-02	78.2	
2	0	30.89	2091	140	0.78	302.41	289	27	2.32E+00	2.7	
3	4	35.05	462	18	0.74	342.43	329	31	5.14E-01	5.3	4.22E-01
4	4	35.94	99	12	0.71	351.04	329	31	1.10E-01	19.3	
5	0	53.23	48	63	1.53	517.28	495	31	5.34E-02	43.2	
6	0	56.28	9	9	0.38	546.57	536	13	1.02E-02	66.0	
7	0	61.78	247	56	0.73	599.46	588	29	2.74E-01	9.8	
8	1	65.68	99	38	0.69	637.00	626	28	1.10E-01	17.0	1.41E+00
9	1	66.62	54	35	0.69	646.00	626	28	6.01E-02	26.2	
10	0	81.08	810	95	0.72	785.12	775	24	9.00E-01	4.5	
11	0	112.00	204	53	0.85	1082.41	1070	25	2.26E-01	11.0	
12	0	160.73	25	13	0.75	1551.07	1542	15	2.83E-02	32.7	
13	0	184.48	19	8	0.80	1779.36	1766	21	2.11E-02	36.4	
14	0	276.58	42	12	0.73	2665.08	2649	23	4.70E-02	23.1	
15	4	302.48	17	11	1.04	2914.09	2905	25	1.84E-02	68.1	8.67E-01
16	4	303.01	95	10	0.93	2919.18	2905	25	1.05E-01	13.1	
17	0	307.65	19	6	0.41	2963.83	2954	17	2.09E-02	33.0	
18	2	333.76	57	2	1.06	3214.91	3201	23	6.36E-02	13.0	1.82E+00
19	2	334.33	18	2	0.79	3220.44	3201	23	1.97E-02	23.8	
20	1	355.40	15	4	1.08	3423.05	3416	29	1.72E-02	73.3	1.36E+00
21	1	356.18	368	16	0.92	3430.55	3416	29	4.09E-01	5.7	
22	0	384.09	95	7	0.66	3698.88	3684	28	1.06E-01	11.8	
23	0	387.10	157	21	0.76	3727.81	3712	27	1.74E-01	10.0	

Total number of lines in spectrum 23  
 Number of unidentified lines 17  
 Number of lines tentatively identified by NID 6 26.09%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.033E+02	4.034E+02	0.708E+02	17.56	
Total Activity :			4.033E+02	4.034E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	6.807E+02	6.807E+02	1.381E+02	20.29	
Total Activity :			6.807E+02	6.807E+02			

Grand Total Activity : 1.084E+03 1.084E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.033E+02	4.034E+02	17.56	OK
	302.84	17.80	4.662E+00	3.430E+02	3.430E+02	32.31	OK
	356.01	60.00	4.450E+00	4.136E+02	4.136E+02	17.95	OK

Final Mean for 3 Valid Peaks = 4.034E+02+/- 7.082E+01 ( 17.56%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	6.807E+02	6.807E+02	20.29	OK

Final Mean for 1 Valid Peaks = 6.807E+02+/- 1.381E+02 ( 20.29%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.034E+02	7.082E+01	2.652E+01	3.841E+00	15.209
TH-234	6.807E+02	1.381E+02	8.813E+01	3.175E+00	7.724

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	6.291E-01		5.250E+00	9.705E+00	9.566E-01	0.065
CD-109	5.264E+01		6.109E+01	1.267E+02	8.147E+00	0.415
PA-231	-4.332E-01		1.046E+00	1.815E+00	1.875E-02	-0.239
PA-234	1.629E+00		1.089E+00	2.141E+00	2.211E-02	0.761
NP-237	-1.335E+01		1.889E+01	3.090E+01	1.934E+00	-0.432
AM-241	6.857E+00		5.208E+00	9.474E+00	3.025E-01	0.724

KM  
03-18-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 08:09:33.16

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100306606\_GE5\_BAFIL\_146376.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : MW-2R DIS  
 Deposition Date :  
 Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 07:54:14  
 Sample ID : 1003066-06 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE5 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.26 0.1%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	20.79	146	26	0.60	205.31	191	25	1.62E-01	12.4	
2	0	30.91	2283	124	0.81	302.69	288	33	2.54E+00	2.6	
3	3	34.99	411	35	0.56	341.90	331	32	4.57E-01	5.9	1.52E+00
4	3	35.75	140	38	0.84	349.15	331	32	1.55E-01	20.0	
5	0	53.90	32	54	1.52	523.76	502	26	3.54E-02	57.1	
6	0	61.76	277	49	0.75	599.35	584	29	3.08E-01	8.5	
7	1	65.83	98	31	0.75	638.48	628	26	1.09E-01	16.5	1.68E+00
8	1	66.75	38	9	0.76	647.33	628	26	4.23E-02	28.6	
9	2	79.68	57	13	0.58	771.64	765	32	6.36E-02	16.6	9.89E-01
10	2	81.05	924	10	0.72	784.84	765	32	1.03E+00	3.4	
11	2	110.74	23	13	0.83	1070.27	1065	30	2.52E-02	32.6	2.88E+00
12	2	111.70	231	27	0.92	1079.53	1065	30	2.56E-01	8.4	
13	0	160.73	30	14	0.29	1551.01	1539	20	3.37E-02	31.0	
14	0	276.58	47	16	0.64	2665.05	2650	23	5.22E-02	22.6	
15	0	303.00	111	4	0.54	2919.09	2906	22	1.23E-01	10.3	
16	8	333.31	86	6	1.17	3210.56	3196	30	9.51E-02	11.5	6.64E+00
17	8	333.56	10	6	0.97	3213.00	3196	30	1.10E-02	95.6	
18	8	333.98	22	4	0.46	3217.03	3196	30	2.43E-02	34.9	
19	3	356.08	350	13	0.97	3429.59	3416	30	3.89E-01	6.3	1.38E+01
20	3	356.85	177	15	0.99	3437.00	3416	30	1.97E-01	10.6	
21	0	384.01	78	12	0.90	3698.13	3683	26	8.66E-02	14.7	
22	0	387.06	160	3	1.07	3727.44	3713	27	1.78E-01	8.3	
23	0	391.23	40	6	0.98	3767.60	3753	26	4.48E-02	20.3	

Total number of lines in spectrum 23  
 Number of unidentified lines 18  
 Number of lines tentatively identified by NID 5 21.74%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.604E+02	4.604E+02	0.759E+02	16.48	
Total Activity :			4.604E+02	4.604E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	7.649E+02	7.649E+02	1.368E+02	17.88	
Total Activity :			7.649E+02	7.649E+02			

Grand Total Activity : 1.225E+03 1.225E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.604E+02	4.604E+02	16.48	OK
	302.84	17.80	4.662E+00	3.999E+02	3.999E+02	28.04	OK
	356.01	60.00	4.450E+00	3.936E+02	3.936E+02	18.68	OK

Final Mean for 3 Valid Peaks = 4.604E+02 +/- 7.588E+01 ( 16.48%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	7.649E+02	7.649E+02	17.88	OK

Final Mean for 1 Valid Peaks = 7.649E+02 +/- 1.368E+02 ( 17.88%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.604E+02	7.588E+01	1.379E+01	1.997E+00	33.383
TH-234	7.649E+02	1.368E+02	8.813E+01	3.175E+00	8.680

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.699E+00		4.678E+00	7.901E+00	7.788E-01	-0.342
CD-109	5.658E+00		6.563E+01	1.219E+02	7.834E+00	0.046
PA-231	-7.224E-01		1.065E+00	1.779E+00	1.837E-02	-0.406
PA-234	6.754E+00	+	1.700E+00	2.266E+00	2.340E-02	2.981
NP-237	-2.018E+01		1.976E+01	3.045E+01	1.907E+00	-0.663
AM-241	4.046E+00		5.176E+00	8.850E+00	2.825E-01	0.457

KM  
03-18-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 08:32:52.64

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100306607\_GE5\_BAFIL\_146380.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-2R-SUS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 08:17:35  
Sample ID : 1003066-07 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.19 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	6.63	12	10	1.01	69.16	62	13	1.34E-02	60.6	
2	0	19.95	16	17	0.28	197.25	192	10	1.78E-02	54.7	
3	0	21.09	125	0	0.90	208.26	201	20	1.39E-01	8.9	
4	0	30.90	2162	127	0.79	302.59	288	32	2.40E+00	2.7	
5	7	34.98	393	34	0.62	341.81	331	28	4.36E-01	6.2	1.84E+00
6	7	35.79	131	15	0.75	349.60	331	28	1.46E-01	17.5	
7	0	53.13	52	27	0.38	516.33	507	20	5.81E-02	24.8	
8	1	61.42	125	23	0.68	596.00	587	22	1.39E-01	14.4	1.07E+01
9	1	61.94	240	28	0.68	601.00	587	22	2.67E-01	7.3	
10	1	65.47	40	31	0.69	635.00	630	19	4.41E-02	26.0	6.10E+00
11	1	66.10	83	43	0.69	641.00	630	19	9.25E-02	18.6	
12	4	74.63	21	4	0.75	723.04	719	18	2.33E-02	17.9	2.34E+00
13	4	75.35	22	6	0.99	730.03	719	18	2.43E-02	25.9	
14	0	81.07	795	73	0.63	785.00	773	23	8.84E-01	4.3	
15	0	111.96	156	58	0.81	1082.08	1068	25	1.74E-01	13.7	
16	0	116.09	58	17	1.25	1121.71	1108	26	6.43E-02	21.2	
17	5	302.08	12	0	0.56	2910.24	2905	22	1.38E-02	35.1	1.30E+00
18	5	302.88	56	4	0.95	2918.00	2905	22	6.26E-02	20.4	
19	5	303.30	59	4	0.95	2922.00	2905	22	6.58E-02	17.3	
20	5	333.45	39	0	0.96	3211.91	3200	26	4.31E-02	18.8	1.12E+00
21	5	334.58	31	0	0.57	3222.76	3200	26	3.44E-02	12.5	
22	0	356.17	372	7	1.03	3430.37	3416	29	4.13E-01	5.4	
23	0	384.00	84	3	0.99	3697.99	3683	28	9.31E-02	11.9	
24	0	387.05	151	4	0.32	3727.39	3713	28	1.68E-01	8.5	

Total number of lines in spectrum 24  
 Number of unidentified lines 18  
 Number of lines tentatively identified by NID 6 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.962E+02	3.962E+02	0.684E+02	17.27	
Total Activity :			3.962E+02	3.962E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	6.616E+02	6.616E+02	1.030E+02	15.56	
AM-241	432.20Y	1.00	3.227E+01	3.227E+01	0.947E+01	29.34	
Total Activity :			6.938E+02	6.938E+02			

Grand Total Activity : 1.090E+03 1.090E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected		Decay Corr		2-Sigma	Status
				pCi/filter	pCi/filter	pCi/filter	pCi/filter		
BA-133	81.00	33.00*	1.827E+01	3.962E+02	3.962E+02	17.27	OK		
	302.84	17.80	4.662E+00	2.040E+02	2.040E+02	45.00	OK		
	356.01	60.00	4.450E+00	4.181E+02	4.182E+02	17.56	OK		

Final Mean for 3 Valid Peaks = 3.962E+02+/- 6.842E+01 ( 17.27%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected		Decay Corr		2-Sigma	Status
				pCi/filter	pCi/filter	pCi/filter	pCi/filter		
TH-234	63.29	3.80*	2.867E+01	6.616E+02	6.616E+02	15.56	OK		

Final Mean for 1 Valid Peaks = 6.616E+02+/- 1.030E+02 ( 15.56%)

AM-241	59.54	35.90*	3.235E+01	3.227E+01	3.227E+01	29.34	OK
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Final Mean for 1 Valid Peaks = 3.227E+01+/- 9.468E+00 ( 29.34%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.962E+02	6.842E+01	1.747E+01	2.530E+00	22.676
TH-234	6.616E+02	1.030E+02	1.167E+02	4.205E+00	5.670
AM-241	3.227E+01	9.468E+00	7.121E+00	2.273E-01	4.532

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	1.879E+00		4.131E+00	8.241E+00	8.123E-01	0.228
CD-109	-3.021E+01		5.987E+01	1.018E+02	6.545E+00	-0.297
PA-231	-2.254E-01		9.324E-01	1.670E+00	1.725E-02	-0.135
PA-234	5.784E+00	+	1.062E+00	2.215E+00	2.288E-02	2.611
NP-237	-9.239E+00		1.950E+01	3.320E+01	2.079E+00	-0.278

KM  
031P-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 08:50:21.49

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306608\_GE5\_BAFIL\_146382.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-3R DIS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 08:35:04  
Sample ID : 1003066-08 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.26 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	21.02	92	16	0.64	207.53	199	15	1.02E-01	13.9	
2	0	30.89	1943	128	0.77	302.44	289	30	2.16E+00	2.9	
3	1	34.96	477	31	0.69	341.61	329	35	5.30E-01	5.2	2.05E+00
4	1	35.83	89	21	0.63	350.00	329	35	9.86E-02	24.7	
5	0	53.47	29	29	0.54	519.63	507	17	3.22E-02	40.6	
6	0	61.77	190	30	0.72	599.40	588	25	2.12E-01	9.7	
7	2	65.72	71	23	0.84	637.39	627	23	7.93E-02	19.0	1.47E+00
8	2	66.69	22	8	0.56	646.74	627	23	2.40E-02	25.3	
9	0	81.08	757	77	0.58	785.07	774	21	8.41E-01	4.4	
10	3	111.44	9	22	0.76	1077.00	1058	38	9.75E-03	187.9	7.82E-01
11	3	111.99	141	26	0.90	1082.31	1058	38	1.57E-01	12.4	
12	0	116.20	42	28	0.70	1122.80	1109	24	4.70E-02	31.9	
13	0	276.49	30	5	1.20	2664.19	2653	21	3.31E-02	23.5	
14	0	302.93	112	0	0.50	2918.40	2905	25	1.24E-01	9.4	
15	0	307.34	15	0	0.38	2960.87	2953	15	1.67E-02	25.8	
16	1	333.66	44	0	0.97	3214.00	3203	24	4.94E-02	14.7	8.23E-01
17	1	334.29	16	0	0.97	3220.00	3203	24	1.73E-02	37.5	
18	6	356.09	314	19	0.89	3429.68	3414	30	3.49E-01	6.7	6.31E-01
19	6	356.83	48	15	0.76	3436.75	3414	30	5.33E-02	32.0	
20	1	383.48	20	7	1.07	3693.03	3684	26	2.17E-02	47.7	3.04E+00
21	1	384.20	79	11	1.01	3700.00	3684	26	8.81E-02	12.8	
22	0	387.06	97	29	1.05	3727.42	3713	24	1.08E-01	15.2	
23	1	390.86	20	11	1.01	3764.00	3752	25	2.25E-02	42.3	1.13E+00
24	1	391.48	34	10	1.11	3769.97	3752	25	3.77E-02	20.1	

Total number of lines in spectrum 24  
 Number of unidentified lines 19  
 Number of lines tentatively identified by NID 5 20.83%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.768E+02	3.768E+02	0.656E+02	17.40	
Total Activity :			3.768E+02	3.768E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	5.251E+02	5.251E+02	1.057E+02	20.14	
Total Activity :			5.251E+02	5.251E+02			

Grand Total Activity : 9.020E+02 9.020E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	3.768E+02	3.768E+02	17.40	OK
	302.84	17.80	4.662E+00	4.053E+02	4.053E+02	26.78	OK
	356.01	60.00	4.450E+00	3.532E+02	3.533E+02	19.19	OK

Final Mean for 3 Valid Peaks = 3.768E+02 +/- 6.558E+01 ( 17.40%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	5.251E+02	5.251E+02	20.14	OK

Final Mean for 1 Valid Peaks = 5.251E+02 +/- 1.057E+02 ( 20.14%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.768E+02	6.558E+01	1.712E+01	2.480E+00	22.005
TH-234	5.251E+02	1.057E+02	7.332E+01	2.642E+00	7.162

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-4.876E-02		4.289E+00	7.977E+00	7.862E-01	-0.006
CD-109	2.617E+01		6.876E+01	1.318E+02	8.474E+00	0.199
PA-231	7.749E-01		1.037E+00	2.066E+00	2.134E-02	0.375
PA-234	4.268E+00	+	1.199E+00	2.061E+00	2.129E-02	2.071
NP-237	5.822E+00		1.989E+01	3.769E+01	2.360E+00	0.154
AM-241	1.021E+00		4.579E+00	7.360E+00	2.350E-01	0.139

KM  
03-18-10

VAX/VMS Peak Search Report Generated 18-MAR-2010 09:06:21.29

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306609\_GE5\_BAFIL\_146383.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-3R SUS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 08:51:03  
Sample ID : 1003066-09 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.24 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	21.23	71	51	0.52	209.54	198	17	7.88E-02	25.9	
2	0	28.49	25	47	0.63	279.41	271	16	2.74E-02	66.0	
3	0	30.86	2127	80	0.77	302.20	288	29	2.36E+00	2.5	
4	2	35.02	416	31	0.64	342.16	331	31	4.62E-01	5.8	1.24E+00
5	2	36.04	81	26	0.63	352.00	331	31	9.03E-02	24.6	
6	0	53.26	60	15	0.58	517.55	509	18	6.65E-02	18.3	
7	0	61.76	239	49	0.66	599.30	586	30	2.66E-01	9.7	
8	4	65.90	99	43	0.83	639.12	626	29	1.10E-01	18.7	4.51E+00
9	4	66.41	43	41	0.69	644.00	626	29	4.78E-02	38.6	
10	9	79.59	64	14	1.30	770.72	760	46	7.15E-02	20.3	1.74E+00
11	9	81.02	866	13	0.69	784.49	760	46	9.62E-01	3.5	
12	0	111.97	168	51	0.40	1082.13	1070	24	1.86E-01	12.5	
13	1	302.78	62	11	0.95	2917.00	2905	24	6.86E-02	19.3	6.10E+00
14	1	303.30	92	9	0.95	2922.00	2905	24	1.02E-01	11.3	
15	0	307.54	14	16	0.57	2962.78	2949	17	1.53E-02	58.9	
16	1	333.25	22	1	0.97	3210.00	3201	25	2.46E-02	35.6	1.25E+00
17	1	334.08	55	3	0.97	3218.00	3201	25	6.06E-02	15.1	
18	0	356.18	407	15	0.70	3430.49	3415	27	4.52E-01	5.4	
19	0	384.10	63	11	0.94	3698.96	3683	25	7.00E-02	16.9	
20	1	386.70	25	10	1.11	3724.03	3712	27	2.82E-02	50.7	3.02E+00
21	1	387.32	141	7	1.01	3730.00	3712	27	1.57E-01	8.6	

Total number of lines in spectrum 21  
 Number of unidentified lines 15  
 Number of lines tentatively identified by NID 6 28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.313E+02	4.313E+02	0.715E+02	16.57	
Total Activity :			4.313E+02	4.313E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	6.596E+02	6.596E+02	1.327E+02	20.12	
Total Activity :			6.596E+02	6.596E+02			

Grand Total Activity : 1.091E+03 1.091E+03

Flags: "K" = Keyline not found "M" = Manually accepted  
 "E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.313E+02	4.313E+02	16.57	OK
	302.84	17.80	4.662E+00	2.233E+02	2.233E+02	43.04	OK
	356.01	60.00	4.450E+00	4.574E+02	4.574E+02	17.52	OK

Final Mean for 3 Valid Peaks = 4.313E+02 +/- 7.148E+01 ( 16.57%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	6.596E+02	6.596E+02	20.12	OK

Final Mean for 1 Valid Peaks = 6.596E+02 +/- 1.327E+02 ( 20.12%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.313E+02	7.148E+01	1.486E+01	2.152E+00	29.029
TH-234	6.596E+02	1.327E+02	8.813E+01	3.175E+00	7.484

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	5.609E-01		4.727E+00	8.846E+00	8.719E-01	0.063
CD-109	4.733E+01		6.199E+01	1.267E+02	8.147E+00	0.373
PA-231	-2.885E-01		1.084E+00	1.915E+00	1.978E-02	-0.151
PA-234	3.283E+00	+	1.709E+00	2.073E+00	2.141E-02	1.584
NP-237	-1.158E+01		1.868E+01	3.104E+01	1.944E+00	-0.373
AM-241	6.701E+00		5.062E+00	9.275E+00	2.961E-01	0.722

KB  
3/18/10

VAX/VMS Peak Search Report Generated 18-MAR-2010 09:21:47.45

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100306610\_GE5\_BAFIL\_146384.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-30 DIS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 09:06:31  
Sample ID : 1003066-10 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.16 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	6.41	11	8	0.13	67.00	61	11	1.23E-02	58.4	
2	0	20.95	75	17	0.46	206.88	198	17	8.33E-02	17.1	
3	6	28.69	50	37	1.09	281.34	269	49	5.58E-02	30.4	4.35E+00
4	6	30.88	1504	22	0.80	302.37	269	49	1.67E+00	2.7	
5	6	32.16	13	4	0.45	314.70	269	49	1.49E-02	38.8	
6	2	35.01	374	25	0.76	342.04	328	31	4.16E-01	5.7	3.71E+00
7	2	35.83	86	23	0.63	350.00	328	31	9.52E-02	21.9	
8	0	53.11	29	17	0.47	516.10	507	17	3.22E-02	33.5	
9	0	61.68	151	27	0.79	598.56	585	27	1.68E-01	11.4	
10	0	66.09	65	29	0.40	640.95	629	25	7.24E-02	22.5	
11	0	81.05	542	28	0.66	784.83	774	19	6.03E-01	4.7	
12	1	111.90	146	18	0.83	1081.43	1068	24	1.62E-01	10.3	2.86E+00
13	1	112.45	28	4	0.68	1086.73	1068	24	3.07E-02	32.0	
14	0	276.73	20	10	0.79	2666.52	2654	20	2.20E-02	37.4	
15	0	302.91	84	0	0.84	2918.25	2905	25	9.33E-02	10.9	
16	1	333.26	32	5	1.07	3210.07	3201	22	3.61E-02	21.4	1.25E+00
17	1	334.08	20	3	0.97	3218.00	3201	22	2.26E-02	25.7	
18	1	356.33	281	6	1.07	3431.91	3416	28	3.12E-01	5.9	5.63E+00
19	1	356.75	10	4	0.99	3436.00	3416	28	1.12E-02	145.5	
20	0	383.99	39	9	1.09	3697.97	3684	21	4.32E-02	22.4	
21	0	387.00	118	6	0.91	3726.90	3713	27	1.31E-01	10.3	

Total number of lines in spectrum 21  
 Number of unidentified lines 16  
 Number of lines tentatively identified by NID 5 23.81%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma	Flags
			Uncorrected	Decay Corr				
BA-133	10.50Y	1.00	2.702E+02	2.702E+02	0.479E+02	17.72		
Total Activity :			2.702E+02	2.702E+02				

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma	Flags
			Uncorrected	Decay Corr				
TH-234	4.47E+09Y	1.00	4.174E+02	4.174E+02	0.980E+02	23.48		
Total Activity :			4.174E+02	4.174E+02				

Grand Total Activity : 6.876E+02 6.876E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	2.702E+02	2.702E+02	17.72	OK
	302.84	17.80	4.662E+00	3.040E+02	3.040E+02	28.92	OK
	356.01	60.00	4.450E+00	3.159E+02	3.159E+02	18.14	OK

Final Mean for 3 Valid Peaks = 2.702E+02 +/- 4.789E+01 ( 17.72%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	4.174E+02	4.174E+02	23.48	OK

Final Mean for 1 Valid Peaks = 4.174E+02 +/- 9.803E+01 ( 23.48%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	2.702E+02	4.789E+01	1.465E+01	2.122E+00	18.441
TH-234	4.174E+02	9.803E+01	9.207E+01	3.317E+00	4.534

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	1.904E+00		3.880E+00	7.866E+00	7.753E-01	0.242
CD-109	1.207E+01		5.171E+01	1.017E+02	6.537E+00	0.119
PA-231	1.340E-02		8.083E-01	1.528E+00	1.578E-02	0.009
PA-234	3.470E+00	+	1.195E+00	1.893E+00	1.956E-02	1.833
NP-237	-1.379E+01		1.385E+01	2.075E+01	1.299E+00	-0.665
AM-241	1.122E-01		4.167E+00	6.541E+00	2.088E-01	0.017

VMS  
3/16/10

VAX/VMS Peak Search Report Generated 18-MAR-2010 09:41:29.46

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100306611\_GE5\_BAFIL\_146387.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-30 SUS  
Deposition Date :  
Sample Date : 18-MAR-2010 00:00:00 Acquisition date : 18-MAR-2010 09:26:06  
Sample ID : 100306611 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:02.01 0.2%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	5.57	16	0	0.53	58.95	56	12	1.79E-02	22.9	1.73E+00
2	2	6.09	20	3	0.45	63.97	56	12	2.20E-02	26.7	
3	0	8.98	18	4	0.98	91.75	84	16	1.98E-02	34.6	
4	0	21.13	88	33	0.55	208.61	199	17	9.72E-02	18.6	
5	0	30.87	2159	71	0.74	302.29	288	29	2.40E+00	2.4	
6	2	35.07	474	29	0.74	342.63	327	37	5.26E-01	5.3	1.56E+00
7	2	35.86	78	17	0.67	350.25	327	37	8.65E-02	28.8	
8	0	53.19	61	15	0.60	516.87	507	18	6.80E-02	18.0	
9	0	61.65	304	27	0.91	598.20	585	27	3.38E-01	7.0	
10	0	66.17	88	47	0.67	641.75	631	24	9.79E-02	21.0	
11	0	81.03	838	59	0.55	784.66	771	28	9.31E-01	4.1	
12	0	104.15	12	8	1.09	1006.92	998	16	1.30E-02	54.9	
13	0	111.95	216	33	0.75	1081.92	1067	29	2.40E-01	9.4	
14	0	115.79	60	21	0.80	1118.84	1105	26	6.67E-02	22.0	
15	0	160.71	49	8	0.77	1550.86	1538	24	5.44E-02	19.3	
16	0	276.52	44	6	0.72	2664.52	2650	22	4.83E-02	18.4	
17	0	302.96	94	17	0.49	2918.73	2906	22	1.04E-01	13.7	
18	0	307.58	25	2	0.46	2963.16	2954	19	2.76E-02	23.0	
19	0	333.95	48	6	1.01	3216.72	3203	23	5.36E-02	17.4	
20	0	356.19	399	8	0.75	3430.62	3415	32	4.43E-01	5.3	
21	1	383.79	63	5	1.01	3696.00	3685	27	7.04E-02	16.8	3.51E+00
22	1	384.52	71	9	1.01	3703.00	3685	27	7.88E-02	14.9	
23	1	386.49	109	10	1.01	3722.00	3715	23	1.21E-01	9.4	1.22E+01
24	1	387.53	120	10	1.01	3732.00	3715	23	1.33E-01	9.7	
25	0	414.68	48	6	1.60	3993.10	3978	28	5.30E-02	18.6	

Total number of lines in spectrum 25  
 Number of unidentified lines 19  
 Number of lines tentatively identified by NID 6 24.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.175E+02	4.175E+02	0.715E+02	17.11	
Total Activity :			4.175E+02	4.175E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	1.276E+00	1.276E+00	0.883E+00	69.23	
PA-234	4.47E+09Y	1.00	4.049E+00	4.049E+00	1.514E+00	37.40	
TH-234	4.47E+09Y	1.00	8.377E+02	8.377E+02	1.257E+02	15.00	
Total Activity :			8.430E+02	8.430E+02			

Grand Total Activity : 1.261E+03 1.261E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma %Error	Status
				pCi/filter	pCi/filter		
BA-133	81.00	33.00*	1.827E+01	4.175E+02	4.175E+02	17.11	OK
	302.84	17.80	4.662E+00	3.384E+02	3.384E+02	33.32	OK
	356.01	60.00	4.450E+00	4.488E+02	4.488E+02	17.36	OK

Final Mean for 3 Valid Peaks = 4.175E+02+/- 7.146E+01 ( 17.11%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma %Error	Status
				pCi/filter	pCi/filter		
PA-231	9.28	42.00*	1.000E+02	1.276E+00	1.276E+00	69.23	OK
	10.11	20.20	1.000E+02	2.652E+00	2.652E+00	69.23	OK
	283.67	1.60	4.787E+00	-----	Line Not Found	-----	Absent
	302.67	2.30	4.663E+00	2.618E+03	2.618E+03	31.75	OK

Final Mean for 3 Valid Peaks = 1.276E+00+/- 8.831E-01 ( 69.23%)

PA-234	9.89	89.00	1.000E+02	6.020E-01	6.020E-01	69.23	OK
	21.72	64.90*	1.000E+02	4.049E+00	4.049E+00	37.40	OK
	37.93	23.75	8.878E+01	-----	Line Not Found	-----	Absent
	131.42	20.40	9.027E+00	-----	Line Not Found	-----	Absent

Final Mean for 2 Valid Peaks = 4.049E+00+/- 1.514E+00 ( 37.40%)

TH-234	63.29	3.80*	2.867E+01	8.377E+02	8.377E+02	15.00	OK
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Final Mean for 1 Valid Peaks = 8.377E+02+/- 1.257E+02 ( 15.00%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.175E+02	7.146E+01	1.546E+01	2.239E+00	27.009
PA-231	1.276E+00	8.831E-01	1.788E+00	1.846E-02	0.714
PA-234	4.049E+00	1.514E+00	1.103E+00	1.139E-02	3.672
TH-234	8.377E+02	1.257E+02	1.086E+02	3.913E+00	7.715

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.862E-01		4.597E+00	8.423E+00	8.302E-01	-0.034
CD-109	5.869E+00		6.567E+01	1.220E+02	7.842E+00	0.048
NP-237	-1.341E+01		2.114E+01	3.498E+01	2.190E+00	-0.383
AM-241	3.115E+00		4.948E+00	8.358E+00	2.668E-01	0.373

**SECTION XI**  
**ANALYTICAL DATA (GROSS ALPHA/BETA)**

<b>Work Order</b>	<b>10-03066</b>
<b>Analysis Code</b>	<b>GaGbT_ThSr</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>3/9/2010</b>
<b>Lab Deadline</b>	<b>3/23/2010</b>
<b>Client</b>	<b>Michael Pisani &amp; Associates</b>
<b>Project</b>	<b>ENV</b>
<b>Report Level</b>	<b>4</b>
<b>Activity Units</b>	<b>pCi</b>
<b>Aliquot Units</b>	<b>l</b>
<b>Matrix</b>	<b>WA</b>
<b>Method</b>	<b>EPA 900.0 Modified</b>
<b>Instrument Type</b>	<b>Alpha/Beta GPC</b>
<b>Radiometric Tracer</b>	
<b>Radiometric Soli#</b>	
<b>Tracer Act (dpm/g)</b>	
<b>Carrier</b>	
<b>Carrier Conc (mg/ml)</b>	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		03/10/10 00:00	1.0000E+00
02	MBL	BLANK		03/10/10 00:00	1.0000E+00
03	DUP	MW-1 DIS	27	03/05/10 17:10	7.0000E-03
04	DO	MW-1 DIS	27	03/05/10 17:10	7.0000E-03
05	TRG	MW-1 SUS	27	03/05/10 17:10	1.0000E-01
06	TRG	MW-2R DIS	54	03/05/10 18:10	4.0000E-02
07	TRG	MW-2R SUS	54	03/05/10 18:10	1.0000E-01
08	TRG	MW-3R DIS	25	03/05/10 16:30	6.0000E-03
09	TRG	MW-3R SUS	25	03/05/10 16:30	1.0000E-01
10	TRG	MW-30 DIS	21	03/05/10 19:00	6.0000E-03
11	TRG	MW-30 SUS	21	03/05/10 19:00	1.0000E-01

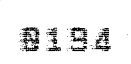
\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.





Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00		7.5974	7.5977	0.0003			1.00	1.00
02	MBL				0.00		7.5855	7.5856	0.0001			1.00	1.00
03	DUP				0.00		7.5768	7.6554	0.0786			1.00	1.00
04	DO				0.00		7.5783	7.6568	0.0785			1.00	1.00
05	TRG				0.00		0.0727	0.0791	0.0064			1.00	1.00
06	TRG				0.00		7.5990	7.6712	0.0722			1.00	1.00
07	TRG				0.00		0.0721	0.0722	0.0001			1.00	1.00
08	TRG				0.00		7.5936	7.6857	0.0921			1.00	1.00
09	TRG				0.00		0.0725	0.0759	0.0034			1.00	1.00
10	TRG				0.00		7.5946	7.6841	0.0895			1.00	1.00
11	TRG				0.00		0.0720	0.0779	0.0059			1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			04/07/10 12:06	BLESTER				
02	MBL			04/07/10 12:06	BLESTER				
03	DUP			04/07/10 12:06	BLESTER				
04	DO			04/07/10 12:06	BLESTER				
05	TRG			04/07/10 12:06	BLESTER				
06	TRG			04/07/10 12:06	BLESTER				
07	TRG			04/07/10 12:06	BLESTER				
08	TRG			04/07/10 12:06	BLESTER				
09	TRG			04/07/10 12:06	BLESTER				
10	TRG			04/07/10 12:06	BLESTER				
11	TRG			04/07/10 12:06	BLESTER				

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-GaGbt-1**

		<b>1</b> Run	<b>GaGbt</b> Analysis Code	<b>10-03066</b> Eberline Services Work Order	<b>Michael Pisani &amp; Associates</b> Client
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS ALPHA	LCS	LCS	pCi/l	2.72E+02	7.35E+00	3.62E-01	3.15E+02	86.41	OK		OK	
02	GROSS ALPHA	MBL	BLANK	pCi/l	-5.20E-02	7.21E-02	2.21E-01					OK	OK
03	GROSS ALPHA	DUP	MW-1 DIS	pCi/l	2.43E+01	2.86E+01	5.37E+01				OK	INV	
04	GROSS ALPHA	DO	MW-1 DIS	pCi/l	2.40E+01	2.10E+01	1.44E+01					INV	
05	GROSS ALPHA	TRG	MW-1 SUS	pCi/l	2.92E+00	1.33E+00	1.47E+00					OK	
06	GROSS ALPHA	TRG	MW-2R DIS	pCi/l	5.07E+00	7.77E+00	1.62E+01					INV	
07	GROSS ALPHA	TRG	MW-2R SUS	pCi/l	-1.30E-01	8.46E-01	2.21E+00					OK	
08	GROSS ALPHA	TRG	MW-3R DIS	pCi/l	6.93E+00	5.60E+01	1.32E+02					INV	
09	GROSS ALPHA	TRG	MW-3R SUS	pCi/l	1.38E-01	1.11E+00	2.64E+00					OK	
10	GROSS ALPHA	TRG	MW-30 DIS	pCi/l	-4.48E+01	3.76E+01	1.22E+02					INV	
11	GROSS ALPHA	TRG	MW-30 SUS	pCi/l	5.15E+00	2.20E+00	3.50E+00					OK	

	Run
1	
Analysis Code	<b>GaGbt</b>
Eberline Services Work Order	<b>10-03066</b>
Client	<b>Michael Pisani &amp; Associates</b>

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS ALPHA	LCS	03/10/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS ALPHA	MBL	03/10/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS ALPHA	DUP	03/05/10 17:10	7.00E-03	0.00	0.00	0.00	2.69		
04	GROSS ALPHA	DO	03/05/10 17:10	7.00E-03	0.00	0.00	0.00	2.69		
05	GROSS ALPHA	TRG	03/05/10 17:10	1.00E-01	0.00	0.00	0.00	1.00		
06	GROSS ALPHA	TRG	03/05/10 18:10	4.00E-02	0.00	0.00	0.00	2.53		
07	GROSS ALPHA	TRG	03/05/10 18:10	1.00E-01	0.00	0.00	0.00	1.00		
08	GROSS ALPHA	TRG	03/05/10 16:30	6.00E-03	0.00	0.00	0.00	3.03		
09	GROSS ALPHA	TRG	03/05/10 16:30	1.00E-01	0.00	0.00	0.00	1.00		
10	GROSS ALPHA	TRG	03/05/10 19:00	6.00E-03	0.00	0.00	0.00	2.96		
11	GROSS ALPHA	TRG	03/05/10 19:00	1.00E-01	0.00	0.00	0.00	1.00		

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-GaGt-1**

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	GROSS ALPHA	LCS	04/07/10 15:17		LB4110A	D2	30	5282	0.033333333	0.2912
02	GROSS ALPHA	MBL	04/07/10 15:17		LB4110R	A1	120	2	0.05	0.2885
03	GROSS ALPHA	DUP	04/07/10 15:17		LB4110R	A2	120	7	0.016666667	0.2968
04	GROSS ALPHA	DO	04/07/10 15:17		LB4110R	A3	120	5	0	0.3007
05	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	A4	120	24	0.016666667	0.2825
06	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	C1	120	14	0.066666667	0.2806
07	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	C2	120	5	0.05	0.2886
08	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	C3	120	9	0.066666667	0.2736
09	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	C4	120	9	0.066666667	0.2722
10	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	D2	120	1	0.066666667	0.2899
11	GROSS ALPHA	TRG	04/07/10 15:17		LB4110R	D4	120	58	0.15	0.2915

	<b>1</b>	<b>Run</b>
<b>10-03066</b>	<b>GaGt</b>	<b>Analysis Code</b>
<b>Michael Pisani &amp; Associates</b>		<b>Client</b>

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-GaGt-1**

	Run
1	
GaGt	Analysis Code
10-03066	Eberline Services Work Order
Michael Pisani & Associates	Client

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS BETA	LCS	LCS	pCi/l	2.61E+02	5.93E+00	8.92E-01	2.38E+02	109.41	OK		OK	
02	GROSS BETA	MBL	BLANK	pCi/l	-5.50E-02	2.93E-01	6.31E-01					OK	OK
03	GROSS BETA	DUP	MW-1 DIS	pCi/l	7.82E+00	4.01E+01	8.52E+01				INV	INV	
04	GROSS BETA	DO	MW-1 DIS	pCi/l	3.30E+01	4.12E+01	8.44E+01					INV	
05	GROSS BETA	TRG	MW-1 SUS	pCi/l	2.20E+00	2.83E+00	5.82E+00					INV	
06	GROSS BETA	TRG	MW-2R DIS	pCi/l	5.71E+00	7.76E+00	1.60E+01					INV	
07	GROSS BETA	TRG	MW-2R SUS	pCi/l	-1.03E+00	3.31E+00	7.14E+00					INV	
08	GROSS BETA	TRG	MW-3R DIS	pCi/l	-2.59E+01	5.79E+01	1.27E+02					INV	
09	GROSS BETA	TRG	MW-3R SUS	pCi/l	6.83E+00	2.98E+00	5.60E+00					INV	
10	GROSS BETA	TRG	MW-30 DIS	pCi/l	3.19E+01	4.47E+01	9.20E+01					INV	
11	GROSS BETA	TRG	MW-30 SUS	pCi/l	2.64E+01	3.77E+00	5.32E+00					INV	

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS BETA	LCS	03/10/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS BETA	MBL	03/10/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS BETA	DUP	03/05/10 17:10	7.00E-03	0.00	0.00	0.00	1.18		
04	GROSS BETA	DO	03/05/10 17:10	7.00E-03	0.00	0.00	0.00	1.18		
05	GROSS BETA	TRG	03/05/10 17:10	1.00E-01	0.00	0.00	0.00	1.00		
06	GROSS BETA	TRG	03/05/10 18:10	4.00E-02	0.00	0.00	0.00	1.17		
07	GROSS BETA	TRG	03/05/10 18:10	1.00E-01	0.00	0.00	0.00	1.00		
08	GROSS BETA	TRG	03/05/10 16:30	6.00E-03	0.00	0.00	0.00	1.22		
09	GROSS BETA	TRG	03/05/10 16:30	1.00E-01	0.00	0.00	0.00	1.00		
10	GROSS BETA	TRG	03/05/10 19:00	6.00E-03	0.00	0.00	0.00	1.21		
11	GROSS BETA	TRG	03/05/10 19:00	1.00E-01	0.00	0.00	0.00	1.00		



1  
Run

GaGt  
Analysis Code

10-03066  
Eberline Services Work Order

Michael Pisani & Associates  
Client

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-03066-GaGbt-1**

	<b>1</b>
<b>Run</b>	
<b>Analysis Code</b>	<b>GaGbt</b>
<b>Eberline Services Work Order</b>	<b>10-03066</b>
<b>Client</b>	<b>Michael Pisani &amp; Associates</b>

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff	A to B, Cor
01	GROSS BETA	LCS	04/07/10 15:17		LB4110A	D2	30	10007	1.45	0.4979	289.7260667
02	GROSS BETA	MBL	04/07/10 15:17		LB4110R	A1	120	177	1.533333333	0.4777	1.475
03	GROSS BETA	DUP	04/07/10 15:17		LB4110R	A2	120	126	1	0.4871	1.05
04	GROSS BETA	DO	04/07/10 15:17		LB4110R	A3	120	150	1.033333333	0.4999	1.25
05	GROSS BETA	TRG	04/07/10 15:17		LB4110R	A4	120	184	1.3	0.4786	1.533333333
06	GROSS BETA	TRG	04/07/10 15:17		LB4110R	C1	120	163	1.15	0.4795	1.358333333
07	GROSS BETA	TRG	04/07/10 15:17		LB4110R	C2	120	223	1.966666667	0.4758	1.858333333
08	GROSS BETA	TRG	04/07/10 15:17		LB4110R	C3	120	158	1.45	0.4705	1.316666667
09	GROSS BETA	TRG	04/07/10 15:17		LB4110R	C4	120	231	1.2	0.4781	1.925
10	GROSS BETA	TRG	04/07/10 15:17		LB4110R	D2	120	123	0.85	0.4993	1.025
11	GROSS BETA	TRG	04/07/10 15:17		LB4110R	D4	120	496	1.133333333	0.49	4.009745



Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	03/10/10 00:00	1.0000				0.00	1.00	1.00
02	MBL	BLANK	03/10/10 00:00	1.0000				0.00	1.00	1.00
03	DUP	MW-1 DIS	03/05/10 17:10	0.0070				0.00	1.00	1.00
04	DO	MW-1 DIS	03/05/10 17:10	0.0070				0.00	1.00	1.00
05	TRG	MW-1 SUS	03/05/10 17:10	0.1000				0.00	1.00	1.00
06	TRG	MW-2R DIS	03/05/10 18:10	0.0400				0.00	1.00	1.00
07	TRG	MW-2R SUS	03/05/10 18:10	0.1000				0.00	1.00	1.00
08	TRG	MW-3R DIS	03/05/10 16:30	0.0060				0.00	1.00	1.00
09	TRG	MW-3R SUS	03/05/10 16:30	0.1000				0.00	1.00	1.00
10	TRG	MW-30 DIS	03/05/10 19:00	0.0060				0.00	1.00	1.00
11	TRG	MW-30 SUS	03/05/10 19:00	0.1000				0.00	1.00	1.00

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials					
<b>10-03066</b>		<b>1</b>	<b>GaGbt_ThSr</b>		<b>4/7/2010 12:06</b>		<b>BLESTER</b>		<i>BL</i>							
LCS & Matrix Spikes																
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	LCS Error Estimate	MS Added pCi	MS Error Estimate	LCSD Known pCi	LCSD Error Estimate	MSD Added pCi	MSD Error Estimate
<b>Am-241</b>	A/B-07	695.171	4/7/2010	0.680	1.0064				315.14	13.551	0.00	0.000	0.00	0.000	0.00	0.000
<b>SrY-90</b>	A/B-07	525.836	4/7/2010	1.050	1.0064				238.38	7.151	0.00	0.000	0.00	0.000	0.00	0.000
Tracers																
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes									
							Tracer									
							LCS									
							Matrix Spike									

# Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
<b>10-03066</b>		<b>1</b>		<b>GaGbT_ThSr</b>		<b>liters</b>		<b>3/23/2010</b>		<b>BLESTER</b>	

Lab Fraction	Michael Pisani & Associates		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	LCS	Type	TRG	Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS		LCS	TRG					1.0000E+00	1.0000E+00					
02	BLANK		MBL	TRG					1.0000E+00	1.0000E+00					
03	MW-1 DIS		DUP	TRG					7.0000E-03	7.0000E-03					
04	MW-1 DIS		DO	TRG					7.0000E-03	7.0000E-03					
05	MW-1 SUS		TRG	TRG					1.0000E-01	1.0000E-01					
06	MW-2R DIS		TRG	TRG					4.0000E-02	4.0000E-02					
07	MW-2R SUS		TRG	TRG					1.0000E-01	1.0000E-01					
08	MW-3R DIS		TRG	TRG					6.0000E-03	6.0000E-03					
09	MW-3R SUS		TRG	TRG					1.0000E-01	1.0000E-01					
10	MW-30 DIS		TRG	TRG					6.0000E-03	6.0000E-03					
11	MW-30 SUS		TRG	TRG					1.0000E-01	1.0000E-01					

Comments	
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Technician: *BL*

Date: 4/17/2010

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-03066</b>	<b>1</b>	GaGbT_ThSr			BLESTER

TRetek Fraction	Michael Pisani & Associates Client ID	Sample Type	Carrier Added (ml)	Filter Data			Gravimetric % Recovery
				Filter Tare (g)	Filter Final (g)	Filter Net (g)	
01	LCS	LCS		7.5974	7.5977	0.0003	
02	BLANK	MBL		7.5855	7.5856	0.0001	
03	DUP	DUP		7.5768	7.6554	0.0786	
04	MW-1 DIS	DO		7.5783	7.6568	0.0785	
05	MW-1 SUS	TRG		0.0727	0.0791	0.0064	
06	MW-2R DIS	TRG		7.5990	7.6712	0.0722	
07	MW-2R SUS	TRG		0.0721	0.0722	0.0001	
08	MW-3R DIS	TRG		7.5936	7.6857	0.0921	
09	MW-3R SUS	TRG		0.0725	0.0759	0.0034	
10	MW-30 DIS	TRG		7.5946	7.6841	0.0895	
11	MW-30 SUS	TRG		0.0720	0.0779	0.0059	

Technician: \_\_\_\_\_  
Date: 4/7/2010

# TDS / TSS Worksheet

Work Order	Run	Analysis Code	Technician
<b>10-03066</b>	<b>1</b>	<b>GaGbt_ThSr</b>	<b>BLESTER</b>

TRetec Fraction	Michael Pisani & Associates		Aliquot ml	Filter Data			TDS/TSS (mg/L)	Maximum Aliq (mL)
	Client ID			Filter Tare (g)	Filter Final (g)	Filter Net (g)		
04	MW-1 DIS		4.0000	7.6418	7.6937	0.0519	12975.0000	7.71
05	MW-1 SUS		4.0000	7.6088	7.6183	0.0095	2375.0000	42.11
06	MW-2R DIS		4.0000	7.6080	7.6701	0.0621	15525.0000	6.44
07	MW-2R SUS		4.0000	7.6270	7.6871	0.0601	15025.0000	6.66
08	MW-3R DIS							
09	MW-3R SUS							
10	MW-30 DIS							
11	MW-30 SUS							

Technician: *BL* Date: 4/7/2010

APL  
7/10  
100

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
D2	1003066-01	5282	10007	30	1400	4/7/10 15:47

Page 1

(R)  
417-112  
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Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
A1	1003066-02	2	177	120	120	1400	4/7/10 17:17
A2	1003066-03	7	126	120	120	1400	4/7/10 17:17
A3	1003066-04	5	150	120	120	1400	4/7/10 17:17
A4	1003066-05	24	184	120	120	1400	4/7/10 17:17
C1	1003066-06	14	163	120	120	1400	4/7/10 17:17
C2	1003066-07	5	223	120	120	1400	4/7/10 17:17
C3	1003066-08	9	158	120	120	1400	4/7/10 17:17
C4	1003066-09	9	231	120	120	1400	4/7/10 17:17
D2	1003066-10	1	123	120	120	1400	4/7/10 17:17
D4	1003066-11	58	496	120	120	1400	4/7/10 17:17

GPC Detector Report  
(ALL Efficiencies)

*KM Sullivan*

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	4/7/2010	0.2511	P	0.2374	0.2505	0.2637
LB4110A - A2	Alpha	11/18/2007	4/7/2010	0.2145	P	0.1954	0.2209	0.2465
LB4110A - A3	Alpha	11/18/2007	4/7/2010	0.2179	P	0.2048	0.2180	0.2311
LB4110A - A4	Alpha	11/18/2007	4/7/2010	0.2275	P	0.2155	0.2290	0.2425
LB4110A - B1	Alpha	11/18/2007	4/7/2010	0.2224	P	0.2187	0.2321	0.2455
LB4110A - B2	Alpha	11/18/2007	4/7/2010	0.2169	W	0.2143	0.2279	0.2416
LB4110A - B3	Alpha	11/18/2007	4/7/2010	0.2363	P	0.2266	0.2425	0.2583
LB4110A - B4	Alpha	11/18/2007	4/7/2010	0.2385	P	0.2288	0.2412	0.2537
LB4110A - C1	Alpha	11/18/2007	4/7/2010	0.2240	P	0.2118	0.2227	0.2337
LB4110A - C2	Alpha	11/18/2007	4/7/2010	0.2228	P	0.2018	0.2272	0.2525
LB4110A - C3	Alpha	11/18/2007	4/7/2010	0.2507	P	0.2359	0.2495	0.2631
LB4110A - C4	Alpha	11/18/2007	4/7/2010	0.2263	P	0.2198	0.2326	0.2455
LB4110A - D1	Alpha	11/18/2007	4/7/2010	0.2359	P	0.2255	0.2401	0.2547
LB4110A - D2	Alpha	11/18/2007	4/7/2010	0.2629	P	0.2480	0.2634	0.2788
LB4110A - D3	Alpha	11/18/2007	4/7/2010	0.2658	P	0.2515	0.2692	0.2868
LB4110A - D4	Alpha	11/18/2007	4/7/2010	0.2026	P	0.1939	0.2111	0.2283
LB4110R - A1	Alpha	11/24/2006	4/7/2010	0.2449	P	0.2068	0.2428	0.2788
LB4110R - A2	Alpha	11/24/2006	4/7/2010	0.2252	P	0.1926	0.2246	0.2566
LB4110R - A3	Alpha	11/24/2006	4/7/2010	0.2274	P	0.1982	0.2285	0.2588
LB4110R - A4	Alpha	11/24/2006	4/7/2010	0.2448	P	0.2136	0.2471	0.2806
LB4110R - B1	Alpha	11/24/2006	4/7/2010	0.2304	P	0.1933	0.2307	0.2681
LB4110R - B2	Alpha	11/24/2006	4/7/2010	0.2149	P	0.1856	0.2216	0.2576
LB4110R - B3	Alpha	11/24/2006	4/7/2010	0.2446	P	0.2092	0.2481	0.2870
LB4110R - B4	Alpha	11/24/2006	4/7/2010	0.2285	P	0.2005	0.2381	0.2757
LB4110R - C1	Alpha	11/24/2006	4/7/2010	0.2164	P	0.1829	0.2173	0.2518
LB4110R - C2	Alpha	11/24/2006	4/7/2010	0.2288	P	0.1940	0.2266	0.2593
LB4110R - C3	Alpha	11/24/2006	4/7/2010	0.2410	P	0.2033	0.2427	0.2820
LB4110R - C4	Alpha	11/24/2006	4/7/2010	0.2290	P	0.1993	0.2319	0.2644
LB4110R - D1	Alpha	11/24/2006	4/7/2010	0.2301	P	0.1937	0.2297	0.2657
LB4110R - D2	Alpha	11/24/2006	4/7/2010	0.2620	P	0.2238	0.2592	0.2945
LB4110R - D3	Alpha	11/24/2006	4/7/2010	0.2600	P	0.2218	0.2550	0.2882
LB4110R - D4	Alpha	11/24/2006	4/7/2010	0.2034	P	0.1819	0.2122	0.2424
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578



GPC Detector Report  
(ALL Efficiencies)

*KM*  
*04/07/10*

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	4/7/2010	0.5978	P	0.5576	0.5899	0.6222
LB4110A - A2	Beta	11/18/2007	4/7/2010	0.5236	P	0.4644	0.5232	0.5819
LB4110A - A3	Beta	11/18/2007	4/7/2010	0.5319	P	0.4928	0.5269	0.5611
LB4110A - A4	Beta	11/18/2007	4/7/2010	0.5554	P	0.5197	0.5492	0.5787
LB4110A - B1	Beta	11/18/2007	4/7/2010	0.5215	P	0.5142	0.5434	0.5725
LB4110A - B2	Beta	11/18/2007	4/7/2010	0.5163	W	0.5111	0.5401	0.5692
LB4110A - B3	Beta	11/18/2007	4/7/2010	0.5464	P	0.5016	0.5534	0.6052
LB4110A - B4	Beta	11/18/2007	4/7/2010	0.5605	P	0.5362	0.5608	0.5855
LB4110A - C1	Beta	11/18/2007	4/7/2010	0.5097	P	0.4845	0.5066	0.5287
LB4110A - C2	Beta	11/18/2007	4/7/2010	0.4967	P	0.4360	0.5103	0.5845
LB4110A - C3	Beta	11/18/2007	4/7/2010	0.5884	P	0.5617	0.5874	0.6132
LB4110A - C4	Beta	11/18/2007	4/7/2010	0.5328	P	0.5095	0.5416	0.5737
LB4110A - D1	Beta	11/18/2007	4/7/2010	0.5706	P	0.5346	0.5731	0.6116
LB4110A - D2	Beta	11/18/2007	4/7/2010	0.6248	P	0.5515	0.6162	0.6808
LB4110A - D3	Beta	11/18/2007	4/7/2010	0.6222	P	0.5812	0.6268	0.6724
LB4110A - D4	Beta	11/18/2007	4/7/2010	0.4855	P	0.4668	0.5033	0.5397
LB4110R - A1	Beta	11/24/2006	4/7/2010	0.5795	P	0.4769	0.5766	0.6764
LB4110R - A2	Beta	11/24/2006	4/7/2010	0.4999	P	0.4095	0.5142	0.6190
LB4110R - A3	Beta	11/24/2006	4/7/2010	0.5533	P	0.4543	0.5491	0.6438
LB4110R - A4	Beta	11/24/2006	4/7/2010	0.5899	P	0.4929	0.5913	0.6897
LB4110R - B1	Beta	11/24/2006	4/7/2010	0.5411	P	0.4492	0.5525	0.6558
LB4110R - B2	Beta	11/24/2006	4/7/2010	0.5232	P	0.4283	0.5296	0.6310
LB4110R - B3	Beta	11/24/2006	4/7/2010	0.5939	P	0.4912	0.5970	0.7028
LB4110R - B4	Beta	11/24/2006	4/7/2010	0.5492	P	0.4623	0.5616	0.6608
LB4110R - C1	Beta	11/24/2006	4/7/2010	0.5128	P	0.4106	0.5066	0.6025
LB4110R - C2	Beta	11/24/2006	4/7/2010	0.5456	P	0.4346	0.5314	0.6283
LB4110R - C3	Beta	11/24/2006	4/7/2010	0.5829	P	0.4609	0.5741	0.6873
LB4110R - C4	Beta	11/24/2006	4/7/2010	0.5274	P	0.4458	0.5449	0.6439
LB4110R - D1	Beta	11/24/2006	4/7/2010	0.5535	P	0.4474	0.5463	0.6452
LB4110R - D2	Beta	11/24/2006	4/7/2010	0.6218	P	0.5031	0.6087	0.7142
LB4110R - D3	Beta	11/24/2006	4/7/2010	0.6171	P	0.4901	0.5908	0.6916
LB4110R - D4	Beta	11/24/2006	4/7/2010	0.4930	P	0.4074	0.5027	0.5981
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

GPC Detector Report  
(ALL Backgrounds)

KM  
04/07/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	4/7/2010	0.00E+00	P	-5.47E-02	7.13E-02	1.97E-01
LB4110A - A2	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-5.69E-02	1.03E-01	2.62E-01
LB4110A - A3	Alpha	11/18/2007	4/7/2010	8.33E-02	P	-4.93E-02	5.07E-02	1.51E-01
LB4110A - A4	Alpha	11/18/2007	4/7/2010	5.00E-02	P	-6.38E-02	5.83E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	4/7/2010	1.67E-02	P	-1.36E-01	8.61E-02	3.08E-01
LB4110A - B2	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-6.58E-02	7.97E-02	2.25E-01
LB4110A - B3	Alpha	11/18/2007	4/7/2010	1.00E-01	P	-5.57E-02	4.43E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-4.45E-02	5.20E-02	1.48E-01
LB4110A - C1	Alpha	11/18/2007	4/7/2010	8.33E-02	P	-6.36E-02	8.37E-02	2.31E-01
LB4110A - C2	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-2.04E-01	1.27E-01	4.59E-01
LB4110A - C3	Alpha	11/18/2007	4/7/2010	5.00E-02	P	-2.52E-01	1.25E-01	5.03E-01
LB4110A - C4	Alpha	11/18/2007	4/7/2010	5.00E-02	P	-7.34E-02	7.84E-02	2.30E-01
LB4110A - D1	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-4.48E-02	8.50E-02	2.15E-01
LB4110A - D2	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-6.85E-02	7.13E-02	2.11E-01
LB4110A - D3	Alpha	11/18/2007	4/7/2010	5.00E-02	P	-3.72E-02	6.24E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	4/7/2010	3.33E-02	P	-6.12E-02	7.73E-02	2.16E-01
LB4110R - A1	Alpha	11/24/2006	4/7/2010	5.00E-02	P	-1.13E-01	8.49E-02	2.83E-01
LB4110R - A2	Alpha	11/24/2006	4/7/2010	1.67E-02	P	-9.90E-02	9.81E-02	2.95E-01
LB4110R - A3	Alpha	11/24/2006	4/7/2010	0.00E+00	P	-9.10E-02	7.84E-02	2.48E-01
LB4110R - A4	Alpha	11/24/2006	4/7/2010	1.67E-02	P	-5.16E-02	8.29E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-1.19E-01	6.98E-02	2.58E-01
LB4110R - B2	Alpha	11/24/2006	4/7/2010	3.33E-02	P	-7.84E-02	7.84E-02	2.35E-01
LB4110R - B3	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-7.72E-02	7.25E-02	2.22E-01
LB4110R - B4	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-6.63E-02	8.58E-02	2.38E-01
LB4110R - C1	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-8.38E-02	9.05E-02	2.65E-01
LB4110R - C2	Alpha	11/24/2006	4/7/2010	5.00E-02	P	-8.36E-02	8.80E-02	2.60E-01
LB4110R - C3	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-1.05E-01	9.80E-02	3.01E-01
LB4110R - C4	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-7.35E-02	9.28E-02	2.59E-01
LB4110R - D1	Alpha	11/24/2006	4/7/2010	1.00E-01	P	-9.15E-02	8.86E-02	2.69E-01
LB4110R - D2	Alpha	11/24/2006	4/7/2010	6.67E-02	P	-6.26E-02	9.05E-02	2.44E-01
LB4110R - D3	Alpha	11/24/2006	4/7/2010	1.67E-02	P	-6.06E-02	7.81E-02	2.17E-01
LB4110R - D4	Alpha	11/24/2006	4/7/2010	1.50E-01	P	-5.41E-02	9.43E-02	2.43E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

AM  
04/07/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	4/7/2010	1.30E+00	P	-7.91E+00	2.80E+00	1.35E+01
LB4110A - A2	Beta	11/18/2007	4/7/2010	1.30E+00	P	-7.05E-02	1.60E+00	3.27E+00
LB4110A - A3	Beta	11/18/2007	4/7/2010	1.07E+00	P	3.68E-01	1.30E+00	2.22E+00
LB4110A - A4	Beta	11/18/2007	4/7/2010	1.42E+00	P	4.54E-01	1.72E+00	2.98E+00
LB4110A - B1	Beta	11/18/2007	4/7/2010	1.33E+00	P	-8.64E+00	4.11E+00	1.69E+01
LB4110A - B2	Beta	11/18/2007	4/7/2010	1.32E+00	P	5.36E-02	1.51E+00	2.96E+00
LB4110A - B3	Beta	11/18/2007	4/7/2010	1.42E+00	P	9.71E-02	1.50E+00	2.90E+00
LB4110A - B4	Beta	11/18/2007	4/7/2010	1.52E+00	P	-8.25E-02	1.43E+00	2.95E+00
LB4110A - C1	Beta	11/18/2007	4/7/2010	1.13E+00	P	-7.73E+00	3.21E+00	1.42E+01
LB4110A - C2	Beta	11/18/2007	4/7/2010	1.10E+00	P	3.38E-01	1.45E+00	2.55E+00
LB4110A - C3	Beta	11/18/2007	4/7/2010	1.27E+00	P	4.27E-01	1.49E+00	2.55E+00
LB4110A - C4	Beta	11/18/2007	4/7/2010	1.35E+00	P	-1.33E+00	2.17E+00	5.66E+00
LB4110A - D1	Beta	11/18/2007	4/7/2010	2.02E+00	P	-4.05E+00	3.11E+00	1.03E+01
LB4110A - D2	Beta	11/18/2007	4/7/2010	1.45E+00	P	-1.38E+00	1.79E+00	4.97E+00
LB4110A - D3	Beta	11/18/2007	4/7/2010	5.03E+00	P	-4.29E-01	4.05E+00	8.53E+00
LB4110A - D4	Beta	11/18/2007	4/7/2010	1.20E+00	P	-9.62E-01	1.59E+00	4.14E+00
LB4110R - A1	Beta	11/24/2006	4/7/2010	1.53E+00	P	-6.30E+01	2.84E+00	6.87E+01
LB4110R - A2	Beta	11/24/2006	4/7/2010	1.00E+00	P	-6.33E+01	2.59E+00	6.85E+01
LB4110R - A3	Beta	11/24/2006	4/7/2010	1.03E+00	P	-6.26E+01	4.28E+00	7.12E+01
LB4110R - A4	Beta	11/24/2006	4/7/2010	1.30E+00	P	-6.31E+01	2.71E+00	6.86E+01
LB4110R - B1	Beta	11/24/2006	4/7/2010	1.05E+00	P	-6.64E+01	2.83E+00	7.20E+01
LB4110R - B2	Beta	11/24/2006	4/7/2010	1.08E+00	P	-6.63E+01	2.90E+00	7.21E+01
LB4110R - B3	Beta	11/24/2006	4/7/2010	1.07E+00	P	-6.56E+01	4.04E+00	7.37E+01
LB4110R - B4	Beta	11/24/2006	4/7/2010	1.25E+00	P	-6.65E+01	2.67E+00	7.19E+01
LB4110R - C1	Beta	11/24/2006	4/7/2010	1.15E+00	P	-6.54E+01	4.75E+00	7.49E+01
LB4110R - C2	Beta	11/24/2006	4/7/2010	1.97E+00	P	-6.63E+01	3.65E+00	7.36E+01
LB4110R - C3	Beta	11/24/2006	4/7/2010	1.45E+00	P	-6.66E+01	3.69E+00	7.40E+01
LB4110R - C4	Beta	11/24/2006	4/7/2010	1.20E+00	P	-7.51E+01	4.32E+00	8.38E+01
LB4110R - D1	Beta	11/24/2006	4/7/2010	7.98E+00	P	-6.36E+01	6.50E+00	7.66E+01
LB4110R - D2	Beta	11/24/2006	4/7/2010	8.50E-01	P	-6.74E+01	2.76E+00	7.29E+01
LB4110R - D3	Beta	11/24/2006	4/7/2010	3.38E+00	P	-7.13E+01	7.75E+00	8.68E+01
LB4110R - D4	Beta	11/24/2006	4/7/2010	1.13E+00	P	-6.70E+01	3.18E+00	7.33E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-01 **Collection Date:** 3/02/10 13:25  
**Matrix:** SOIL

**Sample ID:** SED26 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	10.6	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	10.8	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	4.45	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	13.8	0.100		meq	3/09/10 0:00	
Soluble Calcium	36.3	1.00		meq	3/09/10 0:00	
Soluble Magnesium	31.9	1.00		meq	3/09/10 0:00	
Soluble Sodium	80.3	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,050	48.1		mg/Kg-dry	3/08/10 17:42	

**Qualifiers:**

B - Analyte detected in the associated Method Blank	E - Estimated value	R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-02 **Collection Date:** 3/02/10 13:35  
**Matrix:** SOIL

**Sample ID:** SED26 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	15.3	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	18.7	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	3.25	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	18.8	0.100		meq	3/09/10 0:00	
Soluble Calcium	45.1	1.00		meq	3/09/10 0:00	
Soluble Magnesium	34.6	1.00		meq	3/09/10 0:00	
Soluble Sodium	119	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,780	48.6		mg/Kg-dry	3/08/10 17:52	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-03 **Collection Date:** 3/02/10 12:45  
**Matrix:** SOIL

**Sample ID:** SED27 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	22.1	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	13.4	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.199	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	17.0	0.100		meq	3/09/10 0:00	
Soluble Calcium	31.7	1.00		meq	3/09/10 0:00	
Soluble Magnesium	111	1.00		meq	3/09/10 0:00	
Soluble Sodium	144	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	863	46.6		mg/Kg-dry	3/08/10 17:56	

**Qualifiers:**

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S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-04 **Collection Date:** 3/02/10 12:55  
**Matrix:** SOIL

**Sample ID:** SED27 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	14.4	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	8.8	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.320	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	12.8	0.100		meq	3/09/10 0:00	
Soluble Calcium	26.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	57.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	83.0	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,550	45.6		mg/Kg-dry	3/08/10 18:06	

**Qualifiers:**

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J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-05 **Collection Date:** 3/02/10 14:15  
**Matrix:** SOIL

**Sample ID:** SED28 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	23.1	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	28.9	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	7.22	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	22.1	0.100		meq	3/09/10 0:00	
Soluble Calcium	45.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	68.3	1.00		meq	3/09/10 0:00	
Soluble Sodium	166	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	660	49.4		mg/Kg-dry	3/08/10 18:10	

**Qualifiers:**

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 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-06 **Collection Date:** 3/02/10 14:20  
**Matrix:** SOIL

**Sample ID:** SED28 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	37.1	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	23.7	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	1.09	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	29.4	0.100		meq	3/09/10 0:00	
Soluble Calcium	82.9	1.00		meq	3/09/10 0:00	
Soluble Magnesium	112	1.00		meq	3/09/10 0:00	
Soluble Sodium	290	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	496	47.5		mg/Kg-dry	3/08/10 18:13	

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R - RPD outside accepted recovery limits  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-07 **Collection Date:** 3/02/10 15:10  
**Matrix:** SOIL

**Sample ID:** SED29 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	22.5	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	27.0	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	4.87	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	28.5	0.100		meq	3/09/10 0:00	
Soluble Calcium	20.2	1.00		meq	3/09/10 0:00	
Soluble Magnesium	41.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	159	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	740	47.9		mg/Kg-dry	3/08/10 18:17	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-08 **Collection Date:** 3/02/10 15:15  
**Matrix:** SOIL

**Sample ID:** SED29 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	31.3	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	39.3	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	1.88	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	30.4	0.100		meq	3/09/10 0:00	
Soluble Calcium	50.6	1.00		meq	3/09/10 0:00	
Soluble Magnesium	59.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	226	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	758	47.2		mg/Kg-dry	3/08/10 18:20	

**Qualifiers:**

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J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-09 **Collection Date:** 3/02/10 14:55  
**Matrix:** SOIL

**Sample ID:** SED30 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	27.5	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	24.1	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	8.37	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	28.8	0.100		meq	3/09/10 0:00	
Soluble Calcium	34.7	1.00		meq	3/09/10 0:00	
Soluble Magnesium	62.1	1.00		meq	3/09/10 0:00	
Soluble Sodium	200	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	760	47.0		mg/Kg-dry	3/08/10 18:23	

**Qualifiers:**

B - Analyte detected in the associated Method Blank	E - Estimated value	R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-10 **Collection Date:** 3/02/10 15:00  
**Matrix:** SOIL

**Sample ID:** SED30 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	51.0	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	47.9	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	< 0.0500	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	73.5	0.100		meq	3/09/10 0:00	
Soluble Calcium	36.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	34.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	439	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	857	47.7		mg/Kg-dry	3/08/10 18:27	

**Qualifiers:**

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J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-11 **Collection Date:** 3/02/10 9:45  
**Matrix:** SOIL

**Sample ID:** SED31 4-6'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	34.7	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	19.0	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.295	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	27.1	0.100		meq	3/09/10 0:00	
Soluble Calcium	40.0	1.00		meq	3/09/10 0:00	
Soluble Magnesium	104	1.00		meq	3/09/10 0:00	
Soluble Sodium	230	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	720	48.3		mg/Kg-dry	3/08/10 18:30	

**Qualifiers:**

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J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-12    **Collection Date:** 3/02/10 10:10  
**Matrix:** SOIL

**Sample ID:** SED32 4-6'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	18.9	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	14.1	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.461	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	16.2	0.100		meq	3/09/10 0:00	
Soluble Calcium	26.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	67.5	1.00		meq	3/09/10 0:00	
Soluble Sodium	111	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	706	47.3		mg/Kg-dry	3/08/10 18:34	

**Qualifiers:**

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J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-13 **Collection Date:** 3/02/10 10:25  
**Matrix:** SOIL

**Sample ID:** SED33 4-6'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	41.3	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	19.2	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.322	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	26.1	0.100		meq	3/09/10 0:00	
Soluble Calcium	57.1	1.00		meq	3/09/10 0:00	
Soluble Magnesium	138	1.00		meq	3/09/10 0:00	
Soluble Sodium	258	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	277	48.0		mg/Kg-dry	3/08/10 18:37	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-14 **Collection Date:** 3/02/10 11:50  
**Matrix:** SOIL

**Sample ID:** SED23 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	9.24	0.100		mmhos/cm	3/08/10 8:52	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	13.3	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	7.53	0.0500	*	% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	14.4	0.100		meq	3/09/10 0:00	
Soluble Calcium	10.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	19.7	1.00		meq	3/09/10 0:00	
Soluble Sodium	55.8	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,530	46.6		mg/Kg-dry	3/08/10 18:48	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-15 **Collection Date:** 3/02/10 12:00  
**Matrix:** SOIL

**Sample ID:** SED23 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	9.85	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	9.1	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.0923	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	10.1	0.100		meq	3/09/10 0:00	
Soluble Calcium	18.2	1.00		meq	3/09/10 0:00	
Soluble Magnesium	32.1	1.00		meq	3/09/10 0:00	
Soluble Sodium	50.8	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,670	46.1		mg/Kg-dry	3/08/10 18:51	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-16 **Collection Date:** 3/02/10 11:25  
**Matrix:** SOIL

**Sample ID:** SED24 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	8.20	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	7.6	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.208	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	11.9	0.100		meq	3/09/10 0:00	
Soluble Calcium	9.10	1.00		meq	3/09/10 0:00	
Soluble Magnesium	17.7	1.00		meq	3/09/10 0:00	
Soluble Sodium	43.4	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,120	46.4		mg/Kg-dry	3/08/10 18:55	

**Qualifiers:**

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S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-17 **Collection Date:** 3/02/10 11:30  
**Matrix:** SOIL

**Sample ID:** SED24 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	12.5	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	10.3	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.265	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	8.41	0.100		meq	3/09/10 0:00	
Soluble Calcium	31.9	1.00		meq	3/09/10 0:00	
Soluble Magnesium	68.4	1.00		meq	3/09/10 0:00	
Soluble Sodium	59.6	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	787	48.2		mg/Kg-dry	3/08/10 18:58	

**Qualifiers:**

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J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-18    **Collection Date:** 3/02/10 11:00  
**Matrix:** SOIL

**Sample ID:** SED25 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	18.5	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	17.1	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.445	0.0500		% dry wt	3/09/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	15.6	0.100		meq	3/09/10 0:00	
Soluble Calcium	39.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	63.0	1.00		meq	3/09/10 0:00	
Soluble Sodium	112	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,420	46.1		mg/Kg-dry	3/08/10 19:01	

**Qualifiers:**

B - Analyte detected in the associated Method Blank	E - Estimated value	R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-19 **Collection Date:** 3/02/10 11:10  
**Matrix:** SOIL

**Sample ID:** SED25 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	18.8	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	15.2	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.0813	0.0500		% dry wt	3/08/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	15.8	0.100		meq	3/09/10 0:00	
Soluble Calcium	44.2	1.00		meq	3/09/10 0:00	
Soluble Magnesium	69.0	1.00		meq	3/09/10 0:00	
Soluble Sodium	119	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	5,480	47.3		mg/Kg-dry	3/08/10 19:05	

**Qualifiers:**

B - Analyte detected in the associated Method Blank	E - Estimated value	R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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 (337) 235-0483

P O Box 81816  
 Lafayette LA 70598-1816  
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 (800) 737-2378

**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-20 **Collection Date:** 3/01/10 9:45  
**Matrix:** SOIL

**Sample ID:** SED31 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>POL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	23.6	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	19.4	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	1.61	0.0500	*	% dry wt	3/09/10 0:00	
<b>PERCENT MOISTURE</b>	<b>SW9071B</b>					<b>MB</b>
Percent Moisture	69.4	0.0100		wt%	3/03/10 18:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	22.7	0.100		meq	3/09/10 0:00	
Soluble Calcium	27.6	1.00		meq	3/09/10 0:00	
Soluble Magnesium	68.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	158	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	823	48.3		mg/Kg-dry	3/08/10 19:08	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-21 **Collection Date:** 3/01/10 9:55  
**Matrix:** SOIL

**Sample ID:** SED31 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>POL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 48.5	0.100		mmhos/cm	3/08/10 9:29	<b>MB</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 40.2	0.1		%	3/12/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 2.31	0.0500	*	% dry wt	3/09/10 0:00	<b>AG</b>
<b>PERCENT MOISTURE</b> Percent Moisture	<b>SW9071B</b> 85.8	0.0100		wt%	3/03/10 18:40	<b>MB</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 31.3	0.100		meq	3/09/10 0:00	<b>STS</b>
Soluble Calcium	70.0	1.00		meq	3/09/10 0:00	
Soluble Magnesium	166	1.00		meq	3/09/10 0:00	
Soluble Sodium	339	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 472	47.4		mg/Kg-dry	3/08/10 19:29	<b>STS</b>

**Qualifiers:**

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 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-22 **Collection Date:** 3/01/10 10:20  
**Matrix:** SOIL

**Sample ID:** SED32 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 23.8			mmhos/cm	3/08/10 9:29	<b>MB</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 12.3		0.1	%	3/12/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 4.77		0.0500	% dry wt	3/09/10 0:00	<b>AG</b>
<b>PERCENT MOISTURE</b> Percent Moisture	<b>SW9071B</b> 71.4		0.0100	wt%	3/03/10 18:40	<b>MB</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 17.7		0.100	meq	3/09/10 0:00	<b>STS</b>
Soluble Calcium	39.8		1.00	meq	3/09/10 0:00	
Soluble Magnesium	105		1.00	meq	3/09/10 0:00	
Soluble Sodium	151		1.00	meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 524		48.7	mg/Kg-dry	3/08/10 19:39	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank	E - Estimated value	R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits	+DO - Diluted out due to dilution	PQL - Practical Quantitation Limit
S - Spike Recovery outside accepted recovery limits	MI+ - Matrix Interference	* - Value exceeds MCL or Permit Limitation
	H - Exceeds Holding Time	< - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-23 **Collection Date:** 3/01/10 10:30  
**Matrix:** SOIL

**Sample ID:** SED32 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>POL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	20.5	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	18.8	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.186	0.0500		% dry wt	3/09/10 0:00	
<b>PERCENT MOISTURE</b>	<b>SW9071B</b>					<b>MB</b>
Percent Moisture	85.4	0.0100		wt%	3/03/10 18:40	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	17.3	0.100		meq	3/09/10 0:00	
Soluble Calcium	26.5	1.00		meq	3/09/10 0:00	
Soluble Magnesium	66.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	118	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	416	45.9		mg/Kg-dry	3/08/10 19:43	

**Qualifiers:**

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 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-24 **Collection Date:** 3/01/10 11:10  
**Matrix:** SOIL

**Sample ID:** SED33 0-2'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>MB</b>
Electrical Conductivity	28.2	0.100		mmhos/cm	3/08/10 9:29	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	14.1	0.1		%	3/12/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	1.06	0.0500	*	% dry wt	3/09/10 0:00	
<b>PERCENT MOISTURE</b>	<b>SW9071B</b>					<b>MB</b>
Percent Moisture	73.4	0.0100		wt%	3/03/10 18:40	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	26.0	0.100		meq	3/09/10 0:00	
Soluble Calcium	26.6	1.00		meq	3/09/10 0:00	
Soluble Magnesium	76.8	1.00		meq	3/09/10 0:00	
Soluble Sodium	187	1.00		meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	436	47.6		mg/Kg-dry	3/08/10 19:46	

**Qualifiers:**

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 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030202  
**Project:** E. White Lake 07-47

**Date Received:** 3/03/10 16:17  
**Date Reported:** 3/18/10 21:25

**Lab ID:** L10030202-25 **Collection Date:** 3/01/10 11:15  
**Matrix:** SOIL

**Sample ID:** SED33 2-4'  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>POL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 47.2		0.100	mmhos/cm	3/08/10 9:29	<b>MB</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 31.5		0.1	%	3/12/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.397		0.0500	% dry wt	3/09/10 0:00	<b>AG</b>
<b>PERCENT MOISTURE</b> Percent Moisture	<b>SW9071B</b> 87.2		0.0100	wt%	3/03/10 18:40	<b>MB</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 31.5		0.100	meq	3/09/10 0:00	<b>STS</b>
Soluble Calcium	59.8		1.00	meq	3/09/10 0:00	
Soluble Magnesium	156		1.00	meq	3/09/10 0:00	
Soluble Sodium	328		1.00	meq	3/09/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 360		45.9	mg/Kg-dry	3/08/10 19:50	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit

# ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.

**Report Date** 03/19/2010

**GCAL Report** 210030850



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210030850

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

### **METALS**

In the SW-846 6010B analysis, samples 21003085001 (MW-1), 21003085003 (MW-3R) and 21003085004 (MW-50) had to be diluted in order to bracket the concentrations within the linear dynamic range of the instrument. This is reflected in the elevated detection limits reported.

In the SW-846 6010B analysis for prep batch 427515, the MS recovery is not applicable for Barium and Strontium because the sample concentration is greater than four times the spike concentration.

In the SW-846 7470A analysis for prep batch 427516, the Sample/Duplicate RPD for Mercury is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 7010 analysis for prep batch 427514, the MS and/or MSD recovery was outside the control limits for Arsenic. The LCS recovery was within the control limits. This indicates the analysis is in control and the sample is affected by matrix interference.

### **CONVENTIONALS**

In the SM 4500 CL E Chloride analysis, samples 21003085001 (MW-1), 21003085002 (MW-2R), 21003085003 (MW-3R) and 21003085004 (MW-50) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the SW-846 9056/EPA 300.0 analysis, a chemical or physical interference necessitated a dilution for sample 21003085001 (MW-1), 21003085002 (MW-2R), 21003085003 (MW-3R) and 21003085004 (MW-50). This is reflected in the elevated reporting limit.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [ISO Guide 25](#) and [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210030850**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085001	MW-1	Water	03/05/2010 17:10	03/08/2010 12:00
21003085002	MW-2R	Water	03/05/2010 18:10	03/08/2010 12:00
21003085003	MW-3R	Water	03/05/2010 16:30	03/08/2010 12:00
21003085004	MW-50	Water	03/05/2010 19:00	03/08/2010 12:00
21003085005	TRIP BLANK	Water	03/05/2010 00:00	03/08/2010 12:00



# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085001	MW-1	Water	03/05/2010 17:10	03/08/2010 12:00

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	9150	200	31.6	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	13.7	0.010	0.00031	mg/L
7439-92-1	Lead	0.0057B	0.015	0.0015	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-24-6	Strontium	13.4	0.25	0.0025	mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.028	0.005	0.0000747	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	17000	10.0	10.0	mg/L

## EPA 300.0 Bromide

CAS#	Parameter	Result	RDL	MDL	Units
24959-67-9	Bromide	19.2B	20.0	8.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085002	MW-2R	Water	03/05/2010 18:10	03/08/2010 12:00

## EPA 300.0 Bromide

CAS#	Parameter	Result	RDL	MDL	Units
24959-67-9	Bromide	3.18	2.00	0.800	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085002	MW-2R	Water	03/05/2010 18:10	03/08/2010 12:00

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	960	20.0	3.2	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.019	0.010	0.00079	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2010	10.0	10.0	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.04	0.010	0.00031	mg/L
7440-24-6	Strontium	0.93	0.050	0.00050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085003	MW-3R	Water	03/05/2010 16:30	03/08/2010 12:00

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.95	0.010	0.00031	mg/L
7439-92-1	Lead	0.0035B	0.015	0.0015	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-24-6	Strontium	7.30	0.10	0.00099	mg/L

## EPA 300.0 Bromide

CAS#	Parameter	Result	RDL	MDL	Units
24959-67-9	Bromide	23.9	20.0	8.00	mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.00136J	0.005	0.0000747	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085003	MW-3R	Water	03/05/2010 16:30	03/08/2010 12:00

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	17200	10.0	10.0	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	9100	200	31.6	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085004	MW-50	Water	03/05/2010 19:00	03/08/2010 12:00

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	9040	200	31.6	mg/L

## EPA 300.0 Bromide

CAS#	Parameter	Result	RDL	MDL	Units
24959-67-9	Bromide	19.3B	20.0	8.00	mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.028	0.005	0.0000747	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	14.2	0.010	0.00031	mg/L
7439-92-1	Lead	0.0072B	0.015	0.0015	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-24-6	Strontium	12.7	0.25	0.0025	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	17300	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085001	MW-1	Water	03/05/2010 17:10	03/08/2010 12:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/11/2010 14:54	CLH	427664

CAS#	Parameter	Result	RDL	MDL	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.028</b>	<b>0.005</b>	<b>0.0000747</b>	<b>mg/L</b>
100-41-4	Ethylbenzene	ND	0.005	0.0000522	mg/L
108-88-3	Toluene	ND	0.005	0.0000820	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.000334	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	90	78 - 130
1868-53-7	Dibromofluoromethane	.05	.05	mg/L	100	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.053	mg/L	105	71 - 127

LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/16/2010 13:00	427931	TNRCC 1005/LA 1005	1	03/16/2010 17:04	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	0.150	0.131	mg/L
GCSV-05-03	>C28-C35	ND	0.150	0.131	mg/L
GCSV-02-19	C6-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.5	20.2	mg/L	130	58 - 148

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427516	SW-846 7470A	1	03/10/2010 15:03	CLB	427538

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	1	03/11/2010 14:14	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>13.7</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050	0.00016	mg/L
7440-47-3	Chromium	ND	0.010	0.00032	mg/L
<b>7439-92-1</b>	<b>Lead</b>	<b>0.0057B</b>	<b>0.015</b>	<b>0.0015</b>	<b>mg/L</b>
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085001	MW-1	Water	03/05/2010 17:10	03/08/2010 12:00

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	5	03/11/2010 14:33	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-24-6	Strontium	13.4	0.25	0.0025	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427514	SW-846 3020A	1	03/10/2010 10:59	CLB	427603

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/10/2010 09:35	CSS	427611

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	17000	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	03/16/2010 15:51	AEL	427937

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	9150	200	31.6	mg/L

### EPA 300.0 Bromide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	03/17/2010 17:03	AEL	427976

CAS#	Parameter	Result	RDL	MDL	Units
24959-67-9	Bromide	19.2B	20.0	8.00	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085002	MW-2R	Water	03/05/2010 18:10	03/08/2010 12:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/11/2010 15:17	CLH	427664

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000747	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000522	mg/L
108-88-3	Toluene	ND	0.005	0.0000820	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.000334	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	90	78 - 130
1868-53-7	Dibromofluoromethane	.05	.05	mg/L	100	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.052	mg/L	104	71 - 127

LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/16/2010 13:00	427931	TNRCC 1005/LA 1005	1	03/16/2010 17:37	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	0.150	0.131	mg/L
GCSV-05-03	>C28-C35	ND	0.150	0.131	mg/L
GCSV-02-19	C6-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.6	21.8	mg/L	132	58 - 148

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427516	SW-846 7470A	1	03/10/2010 15:05	CLB	427538

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	1	03/11/2010 14:21	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.04</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050	0.00016	mg/L
7440-47-3	Chromium	ND	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.015	0.0015	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.93</b>	<b>0.050</b>	<b>0.00050</b>	<b>mg/L</b>
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085002	MW-2R	Water	03/05/2010 18:10	03/08/2010 12:00

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427514	SW-846 3020A	1	03/10/2010 11:30	CLB	427603

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.019	0.010	0.00079	mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/10/2010 09:35	CSS	427611

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2010	10.0	10.0	mg/L

SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	03/16/2010 15:52	AEL	427937

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	960	20.0	3.2	mg/L

EPA 300.0 Bromide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	03/17/2010 17:56	AEL	427976

CAS#	Parameter	Result	RDL	MDL	Units
24959-67-9	Bromide	3.18	2.00	0.800	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085003	MW-3R	Water	03/05/2010 16:30	03/08/2010 12:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/11/2010 15:39	CLH	427664

CAS#	Parameter	Result	RDL	MDL	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.00136J</b>	<b>0.005</b>	<b>0.0000747</b>	<b>mg/L</b>
100-41-4	Ethylbenzene	ND	0.005	0.0000522	mg/L
108-88-3	Toluene	ND	0.005	0.0000820	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.000334	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	90	78 - 130
1868-53-7	Dibromofluoromethane	.05	.051	mg/L	102	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/16/2010 13:00	427931	TNRCC 1005/LA 1005	1	03/16/2010 18:09	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	0.150	0.131	mg/L
GCSV-05-03	>C28-C35	ND	0.150	0.131	mg/L
GCSV-02-19	C6-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.7	20.4	mg/L	130	58 - 148

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427516	SW-846 7470A	1	03/10/2010 15:06	CLB	427538

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	1	03/11/2010 14:27	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>6.95</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050	0.00016	mg/L
7440-47-3	Chromium	ND	0.010	0.00032	mg/L
<b>7439-92-1</b>	<b>Lead</b>	<b>0.0035B</b>	<b>0.015</b>	<b>0.0015</b>	<b>mg/L</b>
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085003	MW-3R	Water	03/05/2010 16:30	03/08/2010 12:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	2	03/11/2010 14:39	CNB	427663
CAS#	Parameter	Result	RDL	MDL	Units	
7440-24-6	Strontium	7.30	0.10	0.00099	mg/L	

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427514	SW-846 3020A	1	03/10/2010 11:36	CLB	427603
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L	

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/10/2010 09:35	CSS	427611
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	17200	10.0	10.0	mg/L	

SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	03/16/2010 15:53	AEL	427937
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	9100	200	31.6	mg/L	

EPA 300.0 Bromide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	03/17/2010 18:13	AEL	427976
CAS#	Parameter	Result	RDL	MDL	Units	
24959-67-9	Bromide	23.9	20.0	8.00	mg/L	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085004	MW-50	Water	03/05/2010 19:00	03/08/2010 12:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/11/2010 16:02	CLH	427664

CAS#	Parameter	Result	RDL	MDL	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.028</b>	<b>0.005</b>	<b>0.0000747</b>	<b>mg/L</b>
100-41-4	Ethylbenzene	ND	0.005	0.0000522	mg/L
108-88-3	Toluene	ND	0.005	0.0000820	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.000334	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.044	mg/L	89	78 - 130
1868-53-7	Dibromofluoromethane	.05	.05	mg/L	100	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.053	mg/L	105	71 - 127

LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/16/2010 13:00	427931	TNRCC 1005/LA 1005	1	03/16/2010 18:42	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	0.150	0.131	mg/L
GCSV-05-03	>C28-C35	ND	0.150	0.131	mg/L
GCSV-02-19	C6-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.6	21.7	mg/L	131	58 - 148

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427516	SW-846 7470A	1	03/10/2010 15:08	CLB	427538

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	1	03/11/2010 12:49	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>14.2</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050	0.00016	mg/L
7440-47-3	Chromium	ND	0.010	0.00032	mg/L
<b>7439-92-1</b>	<b>Lead</b>	<b>0.0072B</b>	<b>0.015</b>	<b>0.0015</b>	<b>mg/L</b>
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085004	MW-50	Water	03/05/2010 19:00	03/08/2010 12:00

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427515	SW-846 3010A	5	03/11/2010 15:26	CNB	427663
CAS#	Parameter	Result	RDL	MDL	Units	
7440-24-6	Strontium	12.7	0.25	0.0025	mg/L	

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 16:45	427514	SW-846 3020A	1	03/10/2010 11:54	CLB	427603
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/10/2010 09:35	CSS	427611
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	17300	10.0	10.0	mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	03/16/2010 15:54	AEL	427937
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	9040	200	31.6	mg/L	

### EPA 300.0 Bromide

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	03/17/2010 18:31	AEL	427976
CAS#	Parameter	Result	RDL	MDL	Units	
24959-67-9	Bromide	19.3B	20.0	8.00	mg/L	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003085005	TRIP BLANK	Water	03/05/2010 00:00	03/08/2010 12:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/11/2010 16:25	CLH	427664

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000747	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000522	mg/L
108-88-3	Toluene	ND	0.005	0.0000820	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.000334	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	89	78 - 130
1868-53-7	Dibromofluoromethane	.05	.051	mg/L	101	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.052	mg/L	104	71 - 127

# GC/MS Volatiles Quality Control Summary

Analytical Batch 427664 Prep Batch N/A		Client ID MB427664 GCAL ID 809346 Sample Type Method Blank Analytical Date 03/11/2010 10:16 Matrix Water		LCS427664 809347 LCS 03/11/2010 07:46 Water			LCSD427664 809348 LCSD 03/11/2010 08:08 Water				
SW-846 8260B		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.048	96	74 - 126	0.048	95	1	30
1330-20-7	Xylene (total)	ND	0.01	0.150	0.140	93	74 - 127	0.138	92	1	30
71-43-2	Benzene	ND	0.005	0.050	0.047	95	70 - 129	0.047	95	0.2	20
108-88-3	Toluene	ND	0.005	0.050	0.047	94	72 - 120	0.047	93	0.9	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	46.2	92	50	48	96	78 - 130	47.7	95		
1868-53-7	Dibromofluoromethane	49.7	99	50	51.7	103	77 - 127	52	104		
2037-26-5	Toluene d8	49.3	99	50	49.5	99	76 - 134	49.3	99		
17060-07-0	1,2-Dichloroethane-d4	51.3	103	50	50.4	101	71 - 127	50.8	102		

Analytical Batch 427664 Prep Batch N/A		Client ID MW-3 GCAL ID 21003052102 Sample Type SAMPLE Analytical Date 03/11/2010 11:55 Matrix Water		807726MS 809652 MS 03/11/2010 13:02 Water			807726MSD 809653 MSD 03/11/2010 13:24 Water				
SW-846 8260B		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	0.0244	0.03	0.250	0.286	105	74 - 126	0.274	100	4	30
1330-20-7	Xylene (total)	0.542	0.05	0.750	1.24	93	74 - 127	1.20	88	3	30
71-43-2	Benzene	0.350	0.03	0.250	0.573	89	70 - 129	0.561	84	2	30
108-88-3	Toluene	0.0235	0.03	0.250	0.276	101	72 - 120	0.265	97	4	30
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene			250	238	95	78 - 130	238	95		
1868-53-7	Dibromofluoromethane			250	255	102	77 - 127	259	104		
2037-26-5	Toluene d8			250	245	98	76 - 134	245	98		
17060-07-0	1,2-Dichloroethane-d4			250	252	101	71 - 127	251	100		

# General Chromatography Quality Control Summary

Analytical Batch 428005 Prep Batch 427931 Prep Method TNRCC 1005/LA 1005		Client ID MB427931 GCAL ID 810802 Sample Type Method Blank Prep Date 03/16/2010 13:00 Analytical Date 03/16/2010 15:34 Matrix Water		LCS427931 810803 LCS 03/16/2010 13:00 03/16/2010 16:02 Water			LCSD427931 810804 LCSD 03/16/2010 13:00 03/16/2010 16:33 Water						
LA1005 Hydrocarbons by Range				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
GCSV-02-19	C6-C10	ND	0.150										
GCSV-02-20	>C10-C28	ND	0.150										
GCSV-05-03	>C28-C35	ND	0.150										
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	60.8	45.8	75	75 - 125	49.7	80	8	20		
<b>Surrogate</b>													
84-15-1	o-Terphenyl	14900	97	15200	16100	106	58 - 148	17900	116				

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427538 <b>Prep Batch</b> 427516 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB427516 <b>GCAL ID</b> 808569 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/10/2010 14:44 <b>Matrix</b> Water	LCS427516 808570 LCS 03/09/2010 16:45 03/10/2010 14:45 Water					
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7439-97-6	Mercury	0.00006B	0.00020	0.00500	0.00506	101	80 - 120

<b>Analytical Batch</b> 427538 <b>Prep Batch</b> 427516 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> FINAL EFFLUENT <b>GCAL ID</b> 21003090401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/10/2010 14:47 <b>Matrix</b> Water	808606MS 808868 MS 03/09/2010 16:45 03/10/2010 15:00 Water					
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7439-97-6	Mercury	0.00007	0.00020	0.00500	0.00472	93	75 - 125

<b>Analytical Batch</b> 427538 <b>Prep Batch</b> 427516 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> FINAL EFFLUENT <b>GCAL ID</b> 21003090401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/10/2010 14:47 <b>Matrix</b> Water	808606DUP 808867 DUP 03/09/2010 16:45 03/10/2010 14:48 Water				
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7439-97-6	Mercury	0.00007	0.00020	0.00010	35*	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427515 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB427515 <b>GCAL ID</b> 808565 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/11/2010 13:22 <b>Matrix</b> Water	LCS427515 808566 LCS 03/09/2010 16:45 03/11/2010 13:28 Water
<b>SW-846 6010B</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> Added <b>Result</b> <b>% R</b> <b>Control</b> Limits % R
7440-39-3 Barium	ND 0.010	0.50 0.51 101 80 - 120
7440-43-9 Cadmium	ND 0.0050	0.50 0.50 100 80 - 120
7440-47-3 Chromium	ND 0.010	0.50 0.50 101 80 - 120
7439-92-1 Lead	ND 0.015	0.50 0.50 100 80 - 120
7782-49-2 Selenium	ND 0.040	0.50 0.50 100 80 - 120
7440-24-6 Strontium	ND 0.050	0.50 0.50 99 80 - 120
7440-66-6 Zinc	ND 0.020	0.50 0.49 98 80 - 120

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427515 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MW-50 <b>GCAL ID</b> 21003085004 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/11/2010 12:49 <b>Matrix</b> Water	808551MS 808568 MS 03/09/2010 16:45 03/11/2010 13:03 Water
<b>SW-846 6010B</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> Added <b>Result</b> <b>% R</b> <b>Control</b> Limits % R
7440-39-3 Barium	14.2 0.010	0.50 15.0 149* 75 - 125
7440-43-9 Cadmium	0.0 0.0050	0.50 0.49 97 75 - 125
7440-47-3 Chromium	0.0 0.010	0.50 0.46 93 75 - 125
7439-92-1 Lead	0.0072 0.015	0.50 0.48 94 75 - 125
7782-49-2 Selenium	0.0 0.040	0.50 0.56 111 75 - 125
7440-24-6 Strontium	12.9 0.050	0.50 13.6 146* 75 - 125
7440-66-6 Zinc	0.0 0.020	0.50 0.52 104 75 - 125



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427515 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MW-50 <b>GCAL ID</b> 21003085004 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/11/2010 15:26 <b>Matrix</b> Water	808551MS 808568 MS 03/09/2010 16:45 03/11/2010 15:37 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-24-6	Strontium	12.7	0.25	0.50	12.7	-10* 75 - 125

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427515 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MW-50 <b>GCAL ID</b> 21003085004 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/11/2010 12:49 <b>Matrix</b> Water	808551DUP 808567 DUP 03/09/2010 16:45 03/11/2010 12:56 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-39-3	Barium	14.21629	0.010	14.0	2 20
7440-43-9	Cadmium	0.0	0.0050	0.0	0 20
7440-47-3	Chromium	0.0	0.010	0.0	0 20
7439-92-1	Lead	0.00724	0.015	0.0060	19 20
7782-49-2	Selenium	0.0	0.040	0.0	0 20
7440-24-6	Strontium	12.86079	0.050	12.6	2 20
7440-66-6	Zinc	0.0	0.020	0.0	0 20

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427515 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MW-50 <b>GCAL ID</b> 21003085004 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/11/2010 15:26 <b>Matrix</b> Water	808551DUP 808567 DUP 03/09/2010 16:45 03/11/2010 15:31 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-24-6	Strontium	12.71747	0.25	12.3	4 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427603 <b>Prep Batch</b> 427514 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB427514 <b>GCAL ID</b> 808561 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/10/2010 10:47 <b>Matrix</b> Water	LCS427514 808562 LCS 03/09/2010 16:45 03/10/2010 10:53 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> ND	<b>RDL</b> 0.010	<b>Spike Added</b> 0.040
7440-38-2 Arsenic		<b>Result</b> 0.038 <b>% R</b> 94 <b>Control Limits % R</b> 80 - 120

<b>Analytical Batch</b> 427603 <b>Prep Batch</b> 427514 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21003085001 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/10/2010 10:59 <b>Matrix</b> Water	808548MS 808564 MS 03/09/2010 16:45 03/10/2010 11:12 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> 0.0	<b>RDL</b> 0.010	<b>Spike Added</b> 0.040
7440-38-2 Arsenic		<b>Result</b> 0.026 <b>% R</b> 66* <b>Control Limits % R</b> 75 - 125

<b>Analytical Batch</b> 427603 <b>Prep Batch</b> 427514 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21003085001 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 16:45 <b>Analytical Date</b> 03/10/2010 10:59 <b>Matrix</b> Water	808548DUP 808563 DUP 03/09/2010 16:45 03/10/2010 11:05 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> 0.0	<b>RDL</b> 0.010	<b>Result</b> 0.0
7440-38-2 Arsenic		<b>RPD</b> 0 <b>RPD Limit</b> 20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 427611 <b>Prep Batch</b> N/A	<b>Client ID</b> MB427611 <b>GCAL ID</b> 809028 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 03/10/2010 09:35 <b>Matrix</b> Water	LCS427611 809029 LCS 03/10/2010 09:35 Water					
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	976	97.6	80 - 120

<b>Analytical Batch</b> 427611 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-DUPE 2 <b>GCAL ID</b> 21003051447 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 03/10/2010 09:35 <b>Matrix</b> Water	807674DUP 809030 DUP 03/10/2010 09:35 Water				
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
WET-035	Total Dissolved Solids(TDS)	78.0	10.0	76.0	2.6	5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 427937 <b>Prep Batch</b> N/A	<b>Client ID</b> MB427937 <b>GCAL ID</b> 810818 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 03/16/2010 15:26 <b>Matrix</b> Water	LCS427937 810819 LCS 03/16/2010 15:26 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
16887-00-6 Chloride	ND 1.0	60.0 63.9 107 80 - 120

<b>Analytical Batch</b> 427937 <b>Prep Batch</b> N/A	<b>Client ID</b> 2/9/2004 W100 <b>GCAL ID</b> 21003051436 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 03/16/2010 15:27 <b>Matrix</b> Water	807663MS 810820 MS 03/16/2010 15:28 Water	807663MSD 810821 MSD 03/16/2010 15:38 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	16.1 1.0	60.0 78.2 103 75 - 125	79.6 106 2 25

<b>Analytical Batch</b> 427937 <b>Prep Batch</b> N/A	<b>Client ID</b> DB-201 <b>GCAL ID</b> 21003110701 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 03/16/2010 15:57 <b>Matrix</b> Water	809301MS 810822 MS 03/16/2010 16:00 Water	809301MSD 810823 MSD 03/16/2010 16:01 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	316 10.0	600 910 99 75 - 125	914 100 0.4 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 427976 <b>Prep Batch</b> N/A	<b>Client ID</b> MB427976 <b>GCAL ID</b> 810979 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 03/17/2010 09:43 <b>Matrix</b> Water	LCS427976 810980 LCS 03/17/2010 10:00 Water
<b>EPA 300.0 Bromide</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
24959-67-9 Bromide	ND 0.200	5.00 4.46 89 80 - 120

<b>Analytical Batch</b> 427976 <b>Prep Batch</b> N/A	<b>Client ID</b> EAP-136, IP-3 <b>GCAL ID</b> 21003112601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 03/17/2010 14:42 <b>Matrix</b> Water	809591MS 810981 MS 03/17/2010 15:00 Water	809591MSD 810982 MSD 03/17/2010 15:17 Water
<b>EPA 300.0 Bromide</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
24959-67-9 Bromide	8.08 2.00	50.0 53.3 90 75 - 125	53.1 90 0.3 25

<b>Analytical Batch</b> 427976 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21003085001 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 03/17/2010 17:03 <b>Matrix</b> Water	808548MS 811331 MS 03/17/2010 17:20 Water	808548MSD 811332 MSD 03/17/2010 17:38 Water
<b>EPA 300.0 Bromide</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
24959-67-9 Bromide	19.2 20.0	500 482 93 75 - 125	478 92 0.9 25

## CHAIN OF CUSTODY RECORD

Lab use only

Client Name: p.sani Client #: 4271 Workorder #: 210030650 Due Date: 3/17/10

<b>Report to:</b> Client: <u>MP&amp;A</u> Address: <u>1109 Poydras Ste 1430</u> Contact: <u>J. Miller</u> Phone: <u>504 582 2468</u> Fax: _____		<b>Bill to:</b> Client: _____ Address: _____ Contact: <u>[Signature]</u> Phone: _____ Fax: _____		<b>Analytical Requests &amp; Method</b>				<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in fact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>22</u>							
P.O. Number: <u>07-47</u>		Project Name/Number: <u>E. White Lake</u>						Lab ID: _____							
Sampled By: <u>A. Fix</u>															
Matrix	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	BTEX	TPH	Metals	TPS	Chlorides	Bromide	Remarks	Lab ID
W	3/5/10	1710		X	MW-1	Various	8	X	X	X	X	X	X	* TPH D/O/G	1
↓	↓	1810		X	MW-2R	↓	8	X	X	X	X	X	X		2
↓	↓	1630		X	MW-3R	↓	8	X	X	X	X	X	X	** Arsenic by AA	3
↓	↓	1900		X	MW-5D	↓	8	X	X	X	X	X	X	Metals Ba, Cd, Cr,	4
↓	↓			X	Trip blank	↓	3	X						Hg, Pb, Se, Sr, Zn	5

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>3/7/10</u>	Time: <u>1400</u>	Note: Analyze 1006 if 1005 exceeds RECAP AJW 3/8/10
Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>3/8/10</u>	Time: <u>12:00</u>	
Relinquished by: (Signature) _____	Received by: (Signature) _____	Date: _____	Time: _____	

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.



2417 West Pinhook Road  
Lafayette, LA 70508-3344  
Telephone (337) 235-0483

## Test Report

Jon Miller  
Michael Pisani & Associates  
1100 Poydras Street, Suite 1430  
New Orleans, LA 70163  
TEL: (504) 582-2468  
FAX (504) 582-2470

March 26, 2010  
Order No.: L10030367

RE: East White Lake 07-47

Dear Jon Miller:

Sherry Laboratories/Louisiana received 51 samples on 3/05/10 for the analyses presented in the following report.

In accordance with your instructions, Sherry Laboratories/Louisiana conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of NELAC. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated.

LELAP Certification No.: 01997. A scope of accredited parameters is available upon request. A "#" by the test method indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request.

If you have any questions regarding these test results, please feel free to call.

Sincerely,  
Jerry Landry  
Laboratory Director

Approved By: \_\_\_\_\_

  
Annie Reedy  
Assistant Laboratory Director

Total Pages in this Report 72

2417 West Pinhook Road  
Lafayette LA 70508-3344  
(337) 235-0483

P O Box 81816  
Lafayette LA 70598-1816  
Fax: (337) 233-6540  
(800) 737-2378

Date: 26-Mar-10

---

**CLIENT:** Michael Pisani & Associates  
**Project:** East White Lake 07-47  
**Lab Order:** L10030367

## CASE NARRATIVE

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Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).





2417 West Pinhook Road  
 Lafayette LA 70508-3344  
 (337) 235-0483

P O Box 81816  
 Lafayette LA 70598-1816  
 Fax: (337) 233-6540  
 (800) 737-2378

**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-01 **Collection Date:** 2/25/10 10:25  
**Matrix:** SOIL

**Sample ID:** SED 1 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	13.9	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	14.9	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	18.5	0.100		meq	3/16/10 0:00	
Soluble Calcium	12.8	1.00		meq	3/16/10 0:00	
Soluble Magnesium	29.9	1.00		meq	3/16/10 0:00	
Soluble Sodium	85.7	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	381	46.3		mg/Kg-dry	3/12/10 17:07	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
- < - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-02 **Collection Date:** 2/25/10 10:30  
**Matrix:** SOIL

**Sample ID:** SED 1 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	28.2	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	25.9	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	19.2	0.100		meq	3/16/10 0:00	
Soluble Calcium	56.5	1.00		meq	3/16/10 0:00	
Soluble Magnesium	129	1.00		meq	3/16/10 0:00	
Soluble Sodium	185	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	349	46.7		mg/Kg-dry	3/12/10 17:16	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-03 **Collection Date:** 2/25/10 10:40  
**Matrix:** SOIL

**Sample ID:** SED 1 (4-6')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	18.4	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	10.3	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	11.7	0.100		meq	3/16/10 0:00	
Soluble Calcium	22.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	123	1.00		meq	3/16/10 0:00	
Soluble Sodium	99.5	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	203	47.1		mg/Kg-dry	3/12/10 17:19	

**Qualifiers:**

 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

 E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

 R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-04 **Collection Date:** 2/25/10 11:00  
**Matrix:** SOIL

**Sample ID:** SED 2 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	15.2	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	17.8	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	20.0	0.100		meq	3/16/10 0:00	
Soluble Calcium	12.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	32.6	1.00		meq	3/16/10 0:00	
Soluble Sodium	94.8	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	339	47.3		mg/Kg-dry	3/12/10 17:36	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-05 **Collection Date:** 2/25/10 11:15  
**Matrix:** SOIL

**Sample ID:** SED 2 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	20.6	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	23.9	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	22.4	0.100		meq	3/16/10 0:00	
Soluble Calcium	19.1	1.00		meq	3/16/10 0:00	
Soluble Magnesium	42.5	1.00		meq	3/16/10 0:00	
Soluble Sodium	124	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	216	46.8		mg/Kg-dry	3/12/10 17:39	

**Qualifiers:**

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J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
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MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-06 **Collection Date:** 2/25/10 11:25  
**Matrix:** SOIL

**Sample ID:** SED 2 (4-6')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	17.4	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	11.4	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	12.6	0.100		meq	3/16/10 0:00	
Soluble Calcium	35.9	1.00		meq	3/16/10 0:00	
Soluble Magnesium	72.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	93.0	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	186	46.4		mg/Kg-dry	3/12/10 17:42	

**Qualifiers:**

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 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
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 MI+ - Matrix Interference  
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R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-07 **Collection Date:** 2/25/10 11:45  
**Matrix:** SOIL

**Sample ID:** SED 3 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	20.8	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	12.8	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	15.4	0.100		meq	3/16/10 0:00	
Soluble Calcium	37.5	1.00		meq	3/16/10 0:00	
Soluble Magnesium	88.1	1.00		meq	3/16/10 0:00	
Soluble Sodium	122	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	350	46.5		mg/Kg-dry	3/12/10 17:45	

**Qualifiers:**

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- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
- < - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-08 **Collection Date:** 2/25/10 12:00  
**Matrix:** SOIL

**Sample ID:** SED 3 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	21.1	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	26.8	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	16.0	0.100		meq	3/16/10 0:00	
Soluble Calcium	32.3	1.00		meq	3/16/10 0:00	
Soluble Magnesium	79.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	119	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	220	47.5		mg/Kg-dry	3/12/10 17:48	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
- < - Not Detected at the Reporting Limit





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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-09 **Collection Date:** 2/25/10 12:15  
**Matrix:** SOIL

**Sample ID:** SED 3 (4-6')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	19.9	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	9.6	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	7.82	0.100		meq	3/16/10 0:00	
Soluble Calcium	20.1	1.00		meq	3/16/10 0:00	
Soluble Magnesium	147	1.00		meq	3/16/10 0:00	
Soluble Sodium	71.5	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	169	47.1		mg/Kg-dry	3/12/10 17:51	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-10 **Collection Date:** 2/25/10 13:15  
**Matrix:** SOIL

**Sample ID:** SED 4 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 9.89	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 11.5	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.305	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 18.0	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	16.1	1.00		meq	3/16/10 0:00	
Soluble Magnesium	16.4	1.00		meq	3/16/10 0:00	
Soluble Sodium	72.6	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 718	46.1		mg/Kg-dry	3/12/10 17:54	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-11 **Collection Date:** 2/25/10 13:30  
**Matrix:** SOIL

**Sample ID:** SED 5 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 10.1	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 11.6	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.152	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 8.48	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	34.1	1.00		meq	3/16/10 0:00	
Soluble Magnesium	46.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	53.9	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 338	46.2		mg/Kg-dry	3/12/10 17:57	<b>STS</b>

**Qualifiers:**

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J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-12 **Collection Date:** 2/25/10 13:45  
**Matrix:** SOIL

**Sample ID:** SED 6 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 15.6	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 13.4	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 1.83	0.0500	*	% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 11.0	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	45.5	1.00		meq	3/16/10 0:00	
Soluble Magnesium	91.6	1.00		meq	3/16/10 0:00	
Soluble Sodium	90.7	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 915	46.8		mg/Kg-dry	3/12/10 18:00	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



2417 West Pinhook Road  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-13 **Collection Date:** 2/25/10 14:00  
**Matrix:** SOIL

**Sample ID:** SED 7 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	15.7	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	15.4	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.223	0.0500		% dry wt	3/09/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	14.7	0.100		meq	3/16/10 0:00	
Soluble Calcium	21.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	57.5	1.00		meq	3/16/10 0:00	
Soluble Sodium	92.0	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	869	48.5		mg/Kg-dry	3/12/10 18:03	

**Qualifiers:**

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 S - Spike Recovery outside accepted recovery limits

E - Estimated value

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-14 **Collection Date:** 2/25/10 14:15  
**Matrix:** SOIL

**Sample ID:** SED 7 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 10.0	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 11.3	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.706	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 7.11	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	31.3	1.00		meq	3/16/10 0:00	
Soluble Magnesium	42.7	1.00		meq	3/16/10 0:00	
Soluble Sodium	43.2	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 1,560	47.9		mg/Kg-dry	3/12/10 18:13	<b>STS</b>

**Qualifiers:**

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J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-15 **Collection Date:** 2/25/10 14:25  
**Matrix:** SOIL

**Sample ID:** SED 7 (4-6')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	11.4	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	10.5	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.518	0.0500		% dry wt	3/09/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	7.69	0.100		meq	3/16/10 0:00	
Soluble Calcium	25.9	1.00		meq	3/16/10 0:00	
Soluble Magnesium	72.0	1.00		meq	3/16/10 0:00	
Soluble Sodium	53.8	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,780	46.6		mg/Kg-dry	3/12/10 18:16	

**Qualifiers:**

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 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value

 +DO - Diluted out due to dilution  
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 H - Exceeds Holding Time

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PQL - Practical Quantitation Limit

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-16 **Collection Date:** 2/25/10 14:50  
**Matrix:** SOIL

**Sample ID:** SED 8 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 14.3	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 15.6	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.236	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 10.1	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	27.3	1.00		meq	3/16/10 0:00	
Soluble Magnesium	76.5	1.00		meq	3/16/10 0:00	
Soluble Sodium	72.8	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 844	49.2		mg/Kg-dry	3/12/10 18:19	<b>STS</b>

**Qualifiers:**

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J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-17 **Collection Date:** 2/25/10 15:00  
**Matrix:** SOIL

**Sample ID:** SED 8 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 10.9	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 12.7	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.184	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 7.82	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	28.3	1.00		meq	3/16/10 0:00	
Soluble Magnesium	54.3	1.00		meq	3/16/10 0:00	
Soluble Sodium	50.2	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 1,150	46.5		mg/Kg-dry	3/12/10 18:22	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
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H - Exceeds Holding Time

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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-18 **Collection Date:** 2/25/10 15:20  
**Matrix:** SOIL

**Sample ID:** SED 9 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 13.6	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 17.6	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.110	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 10.5	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	26.7	1.00		meq	3/16/10 0:00	
Soluble Magnesium	77.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	75.9	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 776	46.0		mg/Kg-dry	3/12/10 18:25	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-19 **Collection Date:** 2/25/10 15:40  
**Matrix:** SOIL

**Sample ID:** SED 9 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	11.5	0.100		mmhos/cm	3/13/10 13:20	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	9.1	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.0963	0.0500		% dry wt	3/09/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	6.92	0.100		meq	3/16/10 0:00	
Soluble Calcium	31.9	1.00		meq	3/16/10 0:00	
Soluble Magnesium	69.1	1.00		meq	3/16/10 0:00	
Soluble Sodium	49.2	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	955	45.8		mg/Kg-dry	3/12/10 18:28	

**Qualifiers:**

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 S - Spike Recovery outside accepted recovery limits

 E - Estimated value  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-20 **Collection Date:** 2/25/10 15:50  
**Matrix:** SOIL

**Sample ID:** SED 10 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 11.0	0.100		mmhos/cm	3/13/10 13:20	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 15.8	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.205	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 20.2	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	6.82	1.00		meq	3/16/10 0:00	
Soluble Magnesium	22.2	1.00		meq	3/16/10 0:00	
Soluble Sodium	76.9	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 907	45.9		mg/Kg-dry	3/12/10 18:31	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-21 **Collection Date:** 2/25/10 16:00  
**Matrix:** SOIL

**Sample ID:** SED 10 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	12.2	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	12.0	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.184	0.0500		% dry wt	3/09/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	12.1	0.100		meq	3/16/10 0:00	
Soluble Calcium	18.6	1.00		meq	3/16/10 0:00	
Soluble Magnesium	43.5	1.00		meq	3/16/10 0:00	
Soluble Sodium	67.2	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,270	45.9		mg/Kg-dry	3/12/10 18:50	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-22 **Collection Date:** 2/25/10 16:20  
**Matrix:** SOIL

**Sample ID:** SED 11 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 11.7	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 6.8	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.469	0.0500		% dry wt	3/09/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 10.5	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	19.8	1.00		meq	3/16/10 0:00	
Soluble Magnesium	46.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	60.3	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 2,310	48.9		mg/Kg-dry	3/12/10 19:00	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



2417 West Pinhook Road  
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P O Box 81816  
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(800) 737-2378

**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-23 **Collection Date:** 2/25/10 16:30  
**Matrix:** SOIL

**Sample ID:** SED 11 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 8.10	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 5.7	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.251	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 7.40	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	16.4	1.00		meq	3/16/10 0:00	
Soluble Magnesium	30.4	1.00		meq	3/16/10 0:00	
Soluble Sodium	35.8	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 1,450	48.1		mg/Kg-dry	3/12/10 19:03	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-24 **Collection Date:** 2/25/10 16:45  
**Matrix:** SOIL

**Sample ID:** SED 12 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	14.4	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	14.2	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.298	0.0500		% dry wt	3/11/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	14.0	0.100		meq	3/16/10 0:00	
Soluble Calcium	20.3	1.00		meq	3/16/10 0:00	
Soluble Magnesium	48.7	1.00		meq	3/16/10 0:00	
Soluble Sodium	82.3	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,300	48.6		mg/Kg-dry	3/12/10 19:06	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-25 **Collection Date:** 2/25/10 17:00  
**Matrix:** SOIL

**Sample ID:** SED 12 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	7.99	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	10.4	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.801	0.0500		% dry wt	3/11/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	9.35	0.100		meq	3/16/10 0:00	
Soluble Calcium	15.3	1.00		meq	3/16/10 0:00	
Soluble Magnesium	23.6	1.00		meq	3/16/10 0:00	
Soluble Sodium	41.3	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,100	48.7		mg/Kg-dry	3/12/10 19:09	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value

+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits

PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-26 **Collection Date:** 2/25/10 17:15  
**Matrix:** SOIL

**Sample ID:** SED 12 (4-6')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	8.19	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	7.9	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.621	0.0500		% dry wt	3/11/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	9.30	0.100		meq	3/16/10 0:00	
Soluble Calcium	17.8	1.00		meq	3/16/10 0:00	
Soluble Magnesium	22.7	1.00		meq	3/16/10 0:00	
Soluble Sodium	41.9	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,290	46.2		mg/Kg-dry	3/12/10 19:12	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-27 **Collection Date:** 2/26/10 8:20  
**Matrix:** SOIL

**Sample ID:** SED 13 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	17.6	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	16.9	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	17.7	0.100		meq	3/16/10 0:00	
Soluble Calcium	27.4	1.00		meq	3/16/10 0:00	
Soluble Magnesium	48.7	1.00		meq	3/16/10 0:00	
Soluble Sodium	109	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,310	47.8		mg/Kg-dry	3/12/10 19:15	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MH+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-28 **Collection Date:** 2/26/10 8:30  
**Matrix:** SOIL

**Sample ID:** SED 13 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	19.3	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	19.3	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	19.0	0.100		meq	3/16/10 0:00	
Soluble Calcium	43.7	1.00		meq	3/16/10 0:00	
Soluble Magnesium	36.3	1.00		meq	3/16/10 0:00	
Soluble Sodium	120	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,510	45.5		mg/Kg-dry	3/12/10 19:18	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
 < - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-29 **Collection Date:** 2/26/10 8:50  
**Matrix:** SOIL

**Sample ID:** SED 14 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	14.5	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	17.3	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	15.0	0.100		meq	3/16/10 0:00	
Soluble Calcium	13.6	1.00		meq	3/16/10 0:00	
Soluble Magnesium	50.2	1.00		meq	3/16/10 0:00	
Soluble Sodium	84.9	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,710	48.1		mg/Kg-dry	3/12/10 19:28	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
 \* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-30 **Collection Date:** 2/26/10 9:00  
**Matrix:** SOIL

**Sample ID:** SED 14 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	9.18	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	9.8	0.1		%	3/17/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	9.53	0.100		meq	3/16/10 0:00	
Soluble Calcium	14.5	1.00		meq	3/16/10 0:00	
Soluble Magnesium	28.9	1.00		meq	3/16/10 0:00	
Soluble Sodium	44.4	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,670	46.5		mg/Kg-dry	3/12/10 19:31	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-31 **Collection Date:** 2/26/10 9:25  
**Matrix:** SOIL

**Sample ID:** SED 15 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 9.89	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 12.5	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 6.31	0.0500	*	% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 8.82	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	42.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	35.5	1.00		meq	3/16/10 0:00	
Soluble Sodium	55.0	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 7,510	47.3		mg/Kg-dry	3/12/10 19:34	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-32 **Collection Date:** 2/26/10 9:35  
**Matrix:** SOIL

**Sample ID:** SED 15 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	5.31	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	7.7	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	13.2	0.0500	*	% dry wt	3/11/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	10.7	0.100		meq	3/16/10 0:00	
Soluble Calcium	12.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	7.74	1.00		meq	3/16/10 0:00	
Soluble Sodium	33.7	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	3,130	46.4		mg/Kg-dry	3/12/10 19:37	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
- < - Not Detected at the Reporting Limit





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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-33 **Collection Date:** 2/26/10 9:50  
**Matrix:** SOIL

**Sample ID:** SED 16 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 14.9	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 10.2	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.202	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 16.0	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	17.9	1.00		meq	3/16/10 0:00	
Soluble Magnesium	47.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	92.0	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 339	46.0		mg/Kg-dry	3/12/10 19:40	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-34 **Collection Date:** 2/26/10 10:10  
**Matrix:** SOIL

**Sample ID:** SED 17 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 14.4	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 9.8	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.327	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 11.6	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	26.5	1.00		meq	3/16/10 0:00	
Soluble Magnesium	75.2	1.00		meq	3/16/10 0:00	
Soluble Sodium	82.4	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 3,330	48.4		mg/Kg-dry	3/12/10 19:43	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-35 **Collection Date:** 2/26/10 10:15  
**Matrix:** SOIL

**Sample ID:** SED 17 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 9.48	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 10.6	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.376	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 13.7	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	9.54	1.00		meq	3/16/10 0:00	
Soluble Magnesium	27.1	1.00		meq	3/16/10 0:00	
Soluble Sodium	58.7	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 4,660	47.0		mg/Kg-dry	3/12/10 19:46	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-36 **Collection Date:** 2/26/10 10:20  
**Matrix:** SOIL

**Sample ID:** SED 18 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 12.5	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 11.5	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.411	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 13.5	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	21.8	1.00		meq	3/16/10 0:00	
Soluble Magnesium	35.3	1.00		meq	3/16/10 0:00	
Soluble Sodium	72.0	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 4,870	47.4		mg/Kg-dry	3/12/10 19:49	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MH+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-37 **Collection Date:** 2/26/10 10:30  
**Matrix:** SOIL

**Sample ID:** SED 18 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 16.6	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 8.5	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.268	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 9.97	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	52.4	1.00		meq	3/16/10 0:00	
Soluble Magnesium	99.2	1.00		meq	3/16/10 0:00	
Soluble Sodium	86.8	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 4,850	46.3		mg/Kg-dry	3/12/10 19:52	<b>STS</b>

**Qualifiers:**  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time  
 R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-38 **Collection Date:** 2/26/10 10:45  
**Matrix:** SOIL

**Sample ID:** SED 19 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	14.7	0.100		mmhos/cm	3/13/10 13:44	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	12.0	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.191	0.0500		% dry wt	3/11/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	9.05	0.100		meq	3/16/10 0:00	
Soluble Calcium	37.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	77.6	1.00		meq	3/16/10 0:00	
Soluble Sodium	68.6	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	8,460	46.9		mg/Kg-dry	3/12/10 19:55	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MH+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-39 **Collection Date:** 2/26/10 10:55  
**Matrix:** SOIL

**Sample ID:** SED 19 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 11.4	0.100		mmhos/cm	3/13/10 13:44	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 6.5	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.336	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 5.71	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	26.0	1.00		meq	3/16/10 0:00	
Soluble Magnesium	78.0	1.00		meq	3/16/10 0:00	
Soluble Sodium	41.2	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 3,360	47.2		mg/Kg-dry	3/12/10 20:05	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-40 **Collection Date:** 2/26/10 11:20  
**Matrix:** SOIL

**Sample ID:** SS-08 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.584	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 1,790	46.3		mg/Kg-dry	3/12/10 20:08	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit





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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-41 **Collection Date:** 2/26/10 11:30  
**Matrix:** SOIL

**Sample ID:** SS-08 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	2,060	47.1		mg/Kg-dry	3/15/10 18:59	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-42 **Collection Date:** 2/26/10 11:45  
**Matrix:** SOIL

**Sample ID:** SS 10 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.343	0.0500		% dry wt	3/11/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,360	47.9		mg/Kg-dry	3/15/10 19:09	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
- < - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-43 **Collection Date:** 2/26/10 11:50  
**Matrix:** SOIL

**Sample ID:** SS 10 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.494	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 2,030	45.9		mg/Kg-dry	3/15/10 19:12	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-44 **Collection Date:** 2/26/10 12:10  
**Matrix:** SOIL

**Sample ID:** SED 20 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	13.7	0.100		mmhos/cm	3/13/10 14:02	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	11.1	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.0753	0.0500		% dry wt	3/11/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	15.0	0.100		meq	3/16/10 0:00	
Soluble Calcium	14.6	1.00		meq	3/16/10 0:00	
Soluble Magnesium	47.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	84.0	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	953	48.9		mg/Kg-dry	3/15/10 19:15	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value

+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits

PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit

2417 West Pinhook Road  
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 (800) 737-2378

**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-45 **Collection Date:** 2/26/10 12:15  
**Matrix:** SOIL

**Sample ID:** SED 20 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 6.54	0.100		mmhos/cm	3/13/10 14:02	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 10.9	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 2.26	0.0500	*	% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 11.1	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	5.82	1.00		meq	3/16/10 0:00	
Soluble Magnesium	14.3	1.00		meq	3/16/10 0:00	
Soluble Sodium	35.1	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 1,460	46.2		mg/Kg-dry	3/15/10 19:24	<b>STS</b>

**Qualifiers:**

 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits

 E - Estimated value  
 +DO - Diluted out due to dilution  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time

 R - RPD outside accepted recovery limits  
 PQL - Practical Quantitation Limit  
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-46 **Collection Date:** 2/26/10 12:50  
**Matrix:** SOIL

**Sample ID:** SED 21 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	13.1	0.100		mmhos/cm	3/13/10 14:02	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	7.9	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.130	0.0500		% dry wt	3/15/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	14.2	0.100		meq	3/16/10 0:00	
Soluble Calcium	14.5	1.00		meq	3/16/10 0:00	
Soluble Magnesium	45.8	1.00		meq	3/16/10 0:00	
Soluble Sodium	77.8	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	702	47.8		mg/Kg-dry	3/15/10 19:27	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-47 **Collection Date:** 2/26/10 13:00  
**Matrix:** SOIL

**Sample ID:** SED 21 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	7.82	0.100		mmhos/cm	3/13/10 14:02	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	6.3	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.216	0.0500		% dry wt	3/15/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	10.7	0.100		meq	3/16/10 0:00	
Soluble Calcium	10.2	1.00		meq	3/16/10 0:00	
Soluble Magnesium	19.0	1.00		meq	3/16/10 0:00	
Soluble Sodium	40.9	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,700	46.4		mg/Kg-dry	3/15/10 19:30	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-48 **Collection Date:** 2/26/10 13:10  
**Matrix:** SOIL

**Sample ID:** SED 21 (4-6')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	6.37	0.100		mmhos/cm	3/13/10 14:02	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	7.1	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.282	0.0500		% dry wt	3/15/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	7.53	0.100		meq	3/16/10 0:00	
Soluble Calcium	10.9	1.00		meq	3/16/10 0:00	
Soluble Magnesium	21.7	1.00		meq	3/16/10 0:00	
Soluble Sodium	30.4	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	1,690	46.2		mg/Kg-dry	3/15/10 19:33	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
- < - Not Detected at the Reporting Limit





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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-49 **Collection Date:** 2/26/10 13:15  
**Matrix:** SOIL

**Sample ID:** SED 21 (6-8')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 7.20	0.100		mmhos/cm	3/13/10 14:02	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 6.7	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.340	0.0500		% dry wt	3/15/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 8.04	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	13.1	1.00		meq	3/16/10 0:00	
Soluble Magnesium	27.9	1.00		meq	3/16/10 0:00	
Soluble Sodium	36.4	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 1,220	47.7		mg/Kg-dry	3/15/10 19:36	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit



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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-50 **Collection Date:** 2/26/10 13:30  
**Matrix:** SOIL

**Sample ID:** SED 22 (0-2')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b>	<b>29B/E120.1</b>					<b>AG</b>
Electrical Conductivity	18.4	0.100		mmhos/cm	3/13/10 14:02	
<b>EXCHANGEABLE SODIUM PERCENTAGE</b>	<b>29B/E273.1</b>					<b>MB</b>
Exchangeable Sodium %	10.5	0.1		%	3/17/10 0:00	
<b>HEM, OIL &amp; GREASE</b>	<b>SW9071B</b>					<b>AG</b>
HEM, Oil & Grease	0.227	0.0500		% dry wt	3/15/10 0:00	
<b>SODIUM ADSORPTION RATIO</b>	<b>29B/SW6010B</b>					<b>STS</b>
Sodium Adsorption Ratio	13.6	0.100		meq	3/16/10 0:00	
Soluble Calcium	27.6	1.00		meq	3/16/10 0:00	
Soluble Magnesium	93.2	1.00		meq	3/16/10 0:00	
Soluble Sodium	106	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b>	<b>29B/SW6010B</b>					<b>STS</b>
True Total Barium	861	46.8		mg/Kg-dry	3/15/10 19:39	

**Qualifiers:**

- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- S - Spike Recovery outside accepted recovery limits
- E - Estimated value
- +DO - Diluted out due to dilution
- MI+ - Matrix Interference
- H - Exceeds Holding Time
- R - RPD outside accepted recovery limits
- PQL - Practical Quantitation Limit
- \* - Value exceeds MCL or Permit Limitation
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**CLIENT:** Michael Pisani & Associates  
**Lab Order:** L10030367  
**Project:** East White Lake 07-47

**Date Received:** 3/05/10 14:45  
**Date Reported:** 3/26/10 7:45

**Lab ID** L10030367-51 **Collection Date:** 2/26/10 13:40  
**Matrix:** SOIL

**Sample ID:** SED 22 (2-4')  
**Tag Number:**

<u>Analyses</u>	<u>Result</u>	<u>PQL</u>	<u>Qual</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
<b>ELECTRICAL CONDUCTIVITY @ SPE</b> Electrical Conductivity	<b>29B/E120.1</b> 11.6	0.100		mmhos/cm	3/13/10 14:02	<b>AG</b>
<b>EXCHANGEABLE SODIUM PERCENTAGE</b> Exchangeable Sodium %	<b>29B/E273.1</b> 11.3	0.1		%	3/17/10 0:00	<b>MB</b>
<b>HEM, OIL &amp; GREASE</b> HEM, Oil & Grease	<b>SW9071B</b> 0.434	0.0500		% dry wt	3/11/10 0:00	<b>AG</b>
<b>SODIUM ADSORPTION RATIO</b> Sodium Adsorption Ratio	<b>29B/SW6010B</b> 11.6	0.100		meq	3/16/10 0:00	<b>STS</b>
Soluble Calcium	14.1	1.00		meq	3/16/10 0:00	
Soluble Magnesium	33.1	1.00		meq	3/16/10 0:00	
Soluble Sodium	56.3	1.00		meq	3/16/10 0:00	
<b>TRUE TOTAL BARIUM</b> True Total Barium	<b>29B/SW6010B</b> 835	47.8		mg/Kg-dry	3/15/10 19:43	<b>STS</b>

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside accepted recovery limits

E - Estimated value  
+DO - Diluted out due to dilution  
MI+ - Matrix Interference  
H - Exceeds Holding Time

R - RPD outside accepted recovery limits  
PQL - Practical Quantitation Limit  
\* - Value exceeds MCL or Permit Limitation  
< - Not Detected at the Reporting Limit

Sherry Laboratories/Louisiana

Date: 26-Mar-10

CLIENT: Michael Pisani & Associates  
 Work Order: L10030367  
 Project: East White Lake 07-47

QC SUMMARY REPORT  
 Method Blank

Sample ID: MBLK      Batch ID: R82976      Test Code: SW9071B      Units: % dry wt      Analysis Date 03/09/10 0:00      Prep Date:  
 Client ID:      Run ID: MAN3\_100309B      SeqNo: 1354949

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.050	0.050									

Sample ID: MBLK      Batch ID: R83090      Test Code: SW9071B      Units: % dry wt      Analysis Date 03/11/10 0:00      Prep Date:  
 Client ID:      Run ID: MAN3\_100311C      SeqNo: 1356894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.050	0.050									

Sample ID: MBLK      Batch ID: R83199      Test Code: SW9071B      Units: % dry wt      Analysis Date 03/15/10 0:00      Prep Date:  
 Client ID:      Run ID: MAN3\_100315C      SeqNo: 1358910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.050	0.050									

Sample ID: MBLK      Batch ID: 10455      Test Code: 29B/SW6010      Units: mg/Kg-dry      Analysis Date 03/12/10 16:58      Prep Date:  
 Client ID:      Run ID: I2-OPTIMA\_100312B      SeqNo: 1355871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50	50									

Qualifiers:

B - Analyte detected in the associated Method Blank      \* - Value exceeds MCL or Permit Limitations      E - Estimated value      R - RPD outside accepted recovery limits  
 J - Analyte detected below quantitation limits      S - Spike Recovery outside accepted recovery limits      H - Exceeds Holding Time      +DO - Diluted out due to dilution  
 < - Not Detected at the Reporting Limit

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**QC SUMMARY REPORT**  
 Method Blank

**Sample ID:** MBLK      **Batch ID:** 10457      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/12/10 18:34      **Prep Date:**  
**Client ID:**      **Run ID:** I2-OPTIMA\_100312B      **SeqNo:** 1355896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50			50							

**Sample ID:** MBLK      **Batch ID:** 10458      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/15/10 18:50      **Prep Date:**  
**Client ID:**      **Run ID:** I2-OPTIMA\_100315B      **SeqNo:** 1357036

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50			50							

**Qualifiers:**

B - Analyte detected in the associated Method Blank      E - Estimated value      R - RPD outside accepted recovery limits  
 J - Analyte detected below quantitation limits      MI+ - Matrix Interference      +DO - Diluted out due to dilution  
 S - Spike Recovery outside accepted recovery limits      H - Exceeds Holding Time      < - Not Detected at the Reporting Limit

Sherry Laboratories/Louisiana

Date: 26-Mar-10

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**QC SUMMARY REPORT**  
 Sample Duplicate

Sample ID: L10030367-01ADU	Batch ID: R83131	Test Code: 29B/E120.1	Units: mmhos/cm	Analysis Date 03/13/10 13:20	Prep Date:
Client ID: SED 1 (0-2')	Run ID: MAN3_100313C	PQL	SPK value	SeqNo: 1357504	
Analyte	Result	0.10	0	LowLimit	HighLimit
Electrical Conductivity	13.92	0.10	0	0	0
				%REC	RPD Ref Val
				0	13.94
				0	0
				%RPD	RPDLimit
				0	20

Sample ID: L10030367-21ADU	Batch ID: R83133	Test Code: 29B/E120.1	Units: mmhos/cm	Analysis Date 03/13/10 13:44	Prep Date:
Client ID: SED 10 (2-4')	Run ID: MAN3_100313D	PQL	SPK value	SeqNo: 1357556	
Analyte	Result	0.10	0	LowLimit	HighLimit
Electrical Conductivity	12.15	0.10	0	0	0
				%REC	RPD Ref Val
				0	12.16
				0	0
				%RPD	RPDLimit
				0.0823	20

Sample ID: L10030367-48ADU	Batch ID: R83138	Test Code: 29B/E120.1	Units: mmhos/cm	Analysis Date 03/13/10 14:02	Prep Date:
Client ID: SED 21 (4-6')	Run ID: MAN3_100313B	PQL	SPK value	SeqNo: 1357687	
Analyte	Result	0.10	0	LowLimit	HighLimit
Electrical Conductivity	6.24	0.10	0	0	0
				%REC	RPD Ref Val
				0	6.37
				0	0
				%RPD	RPDLimit
				2.06	20

Sample ID: L10030375-10ADU	Batch ID: R83138	Test Code: 29B/E120.1	Units: mmhos/cm	Analysis Date 03/13/10 14:02	Prep Date:
Client ID:	Run ID: MAN3_100313B	PQL	SPK value	SeqNo: 1357701	
Analyte	Result	0.10	0	LowLimit	HighLimit
Electrical Conductivity	0.2602	0.10	0	0	0
				%REC	RPD Ref Val
				0	0.2597
				0	0
				%RPD	RPDLimit
				0.192	20

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 \* - Value exceeds MCL or Permit Limitations  
 S - Spike Recovery outside accepted recovery limits  
 E - Estimated value  
 R - RPD outside accepted recovery limits  
 MI+ - Matrix Interference  
 +DO - Diluted out due to dilution  
 H - Exceeds Holding Time  
 < - Not Detected at the Reporting Limit

# QC SUMMARY REPORT

Sample Duplicate

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**Sample ID:** L10030367-01ADU **Batch ID:** R83165 **Test Code:** 29B/E273.1 **Units:** % **Analysis Date:** 03/17/10 0:00 **Prep Date:**  
**Client ID:** SED 1 (0-2') **Run ID:** AA2\_100317A **SeqNo:** 1358170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	15.66	0.10	0	0	0	0	0	15.66	0	20	

**Sample ID:** L10030367-21ADU **Batch ID:** R83166 **Test Code:** 29B/E273.1 **Units:** % **Analysis Date:** 03/17/10 0:00 **Prep Date:**  
**Client ID:** SED 10 (2-4') **Run ID:** AA2\_100317B **SeqNo:** 1358214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	12.9	0.10	0	0	0	0	0	11.97	7.46	20	

**Sample ID:** L10030367-48ADU **Batch ID:** R83167 **Test Code:** 29B/E273.1 **Units:** % **Analysis Date:** 03/17/10 0:00 **Prep Date:**  
**Client ID:** SED 21 (4-6') **Run ID:** AA2\_100317C **SeqNo:** 1358263

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	7.661	0.10	0	0	0	0	0	7.147	6.94	20	

**Sample ID:** L10030367-20ADU **Batch ID:** R82976 **Test Code:** SW9071B **Units:** % dry wt **Analysis Date:** 03/09/10 0:00 **Prep Date:**  
**Client ID:** SED 10 (0-2') **Run ID:** MAN3\_100309B **SeqNo:** 1354943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.1602	0.050	0	0	0	0	0	0.2049	24.5	40	

**Sample ID:** L10030367-51ADU **Batch ID:** R83090 **Test Code:** SW9071B **Units:** % dry wt **Analysis Date:** 03/11/10 0:00 **Prep Date:**  
**Client ID:** SED 22 (2-4') **Run ID:** MAN3\_100311C **SeqNo:** 1356890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.129	0.050	0	0	0	0	0	0.4335	108	40	R

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
J - Analyte detected below quantitation limits

E - Estimated value  
MI+ - Matrix Interference  
H - Exceeds Holding Time  
R - RPD outside accepted recovery limits  
+DO - Diluted out due to dilution  
< - Not Detected at the Reporting Limit

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

# QC SUMMARY REPORT

Sample Duplicate

**Sample ID:** L10030375-15ADU **Batch ID:** R83199 **Test Code:** SW9071B **Units:** % dry wt **Analysis Date:** 03/15/10 0:00 **Prep Date:**  
**Client ID:** **Run ID:** MAN3\_100315C **SeqNo:** 1358904

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.050	0.050	0	0	0	0	0	0	0	0	40

**Sample ID:** L10030367-01ADU **Batch ID:** R83174 **Test Code:** 29B/SW6010 **Units:** meq **Analysis Date:** 03/16/10 0:00 **Prep Date:**  
**Client ID:** SED 1 (0-2) **Run ID:** I2-OPTIMA\_100316A **SeqNo:** 1358498

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	18.2	0.10	0	0	0	0	0	18.54	1.86	20	
Soluble Calcium	12.9	1.0	0	0	0	0	0	12.82	0.66	20	
Soluble Magnesium	30.06	1.0	0	0	0	0	0	29.87	0.632	20	
Soluble Sodium	84.35	1.0	0	0	0	0	0	85.65	1.54	20	

**Sample ID:** L10030367-21ADU **Batch ID:** R83174 **Test Code:** 29B/SW6010 **Units:** meq **Analysis Date:** 03/16/10 0:00 **Prep Date:**  
**Client ID:** SED 10 (2-4) **Run ID:** I2-OPTIMA\_100316A **SeqNo:** 1358519

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	12.21	0.10	0	0	0	0	0	12.05	1.34	20	
Soluble Calcium	19.29	1.0	0	0	0	0	0	18.62	3.53	20	
Soluble Magnesium	44.86	1.0	0	0	0	0	0	43.51	3.05	20	
Soluble Sodium	69.16	1.0	0	0	0	0	0	67.16	2.94	20	

**Qualifiers:**

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 E - Estimated value  
 R - RPD outside accepted recovery limits  
 \* - Value exceeds MCL or Permit Limitations  
 S - Spike Recovery outside accepted recovery limits  
 MI+ - Matrix Interference  
 +DO - Diluted out due to dilution  
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 < - Not Detected at the Reporting Limit



**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

# QC SUMMARY REPORT

Sample Duplicate

Sample ID: L10030367-48ADU	Batch ID: R83174	Test Code: 29B/SW6010	Units: meq	Analysis Date 03/16/10 0:00	Prep Date:	
Client ID: SED 21 (4-6')	Run ID: I2-OPTIMA_100316A	PQL	SPK value	SeqNo: 1358544		
Analyte	Result	%REC	LowLimit	HighLimit	RPDLimit	Qual
Sodium Adsorption Ratio	7.477	0	0	0	7.535	0.773
Soluble Calcium	11.18	0	0	0	10.95	2.12
Soluble Magnesium	22.16	0	0	0	21.65	2.33
Soluble Sodium	30.53	0	0	0	30.42	0.357

Sample ID: L10030375-10ADU	Batch ID: R83174	Test Code: 29B/SW6010	Units: meq	Analysis Date 03/16/10 0:00	Prep Date:	
Client ID:	Run ID: I2-OPTIMA_100316A	PQL	SPK value	SeqNo: 1358576		
Analyte	Result	%REC	LowLimit	HighLimit	RPDLimit	Qual
Sodium Adsorption Ratio	0.9189	0	0	0	0.8388	9.12
Soluble Calcium	1.056	0	0	0	1.075	1.78
Soluble Magnesium	< 1.0	0	0	0	0	0
Soluble Sodium	< 1.0	0	0	0	0	0

Sample ID: L10030415-01ADU	Batch ID: R83174	Test Code: 29B/SW6010	Units: meq	Analysis Date 03/16/10 0:00	Prep Date:	
Client ID:	Run ID: I2-OPTIMA_100316A	PQL	SPK value	SeqNo: 1358598		
Analyte	Result	%REC	LowLimit	HighLimit	RPDLimit	Qual
Sodium Adsorption Ratio	1.338	0	0	0	1.351	0.976
Soluble Calcium	10.17	0	0	0	9.89	2.79
Soluble Magnesium	4.523	0	0	0	4.477	1.02
Soluble Sodium	3.625	0	0	0	3.62	0.144

**Qualifiers:**  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 \* - Value exceeds MCL or Permit Limitations  
 S - Spike Recovery outside accepted recovery limits  
 E - Estimated value  
 R - RPD outside accepted recovery limits  
 MI+ - Matrix Interference  
 +DO - Diluted out due to dilution  
 H - Exceeds Holding Time  
 < - Not Detected at the Reporting Limit

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

# QC SUMMARY REPORT

Sample Duplicate

**Sample ID:** L10030382-21ADU **Batch ID:** R83174 **Test Code:** 29B/SW6010 **Units:** meq **Analysis Date:** 03/16/10 0:00 **Prep Date:**  
**Client ID:** Run ID: 12-OPTIMA\_100316A **SeqNo:** 1358611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	2.44	0.10	0	0	0	0	0	2.477	1.52	20	
Soluble Calcium	3.041	1.0	0	0	0	0	0	3.02	0.691	20	
Soluble Magnesium	2.153	1.0	0	0	0	0	0	2.124	1.35	20	
Soluble Sodium	3.932	1.0	0	0	0	0	0	3.972	1.03	20	

**Qualifiers:**

B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 \* - Value exceeds MCL or Permit Limitations  
 S - Spike Recovery outside accepted recovery limits  
 E - Estimated value  
 MI+ - Matrix Interference  
 H - Exceeds Holding Time  
 R - RPD outside accepted recovery limits  
 +DO - Diluted out due to dilution  
 < - Not Detected at the Reporting Limit

Sherry Laboratories/Louisiana

Date: 26-Mar-10

CLIENT: Michael Pisani & Associates  
 Work Order: L10030367  
 Project: East White Lake 07-47

**QC SUMMARY REPORT**  
 Sample Matrix Spike

Sample ID: L10030367-20AMS	Batch ID: R82976	Test Code: SW9071B	Units: % dry wt	Analysis Date 03/09/10 0:00	Prep Date:				
Client ID: SED 10 (0-2')	Run ID: MAN3_100309B	PQL	SPK value	SeqNo: 1354944					
Analyte	Result	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	1.202	0.050	0.2049	70	130	0			S*

Sample ID: L10030367-51AMS	Batch ID: R83090	Test Code: SW9071B	Units: % dry wt	Analysis Date 03/11/10 0:00	Prep Date:				
Client ID: SED 22 (2-4')	Run ID: MAN3_100311C	PQL	SPK value	SeqNo: 1356891					
Analyte	Result	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.9023	0.050	0.4335	70	130	0			

Sample ID: L10030375-15AMS	Batch ID: R83199	Test Code: SW9071B	Units: % dry wt	Analysis Date 03/15/10 0:00	Prep Date:				
Client ID:	Run ID: MAN3_100315C	PQL	SPK value	SeqNo: 1358905					
Analyte	Result	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.4309	0.050	0.263	70	130	0			S

Sample ID: L10030367-01AMS	Batch ID: 10455	Test Code: 29B/SW6010	Units: mg/Kg-dry	Analysis Date 03/12/10 17:10	Prep Date: 03/11/10 0:00				
Client ID: SED 1 (0-2')	Run ID: 12-OPTIMA_100312B	PQL	SPK value	SeqNo: 1355875					
Analyte	Result	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4620	47	381.4	75	125	0			

**Qualifiers:**

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 \* - Value exceeds MCL or Permit Limitations  
 S - Spike Recovery outside accepted recovery limits  
 E - Estimated value  
 R - RPD outside accepted recovery limits  
 M/H - Matrix Interference  
 +DO - Diluted out due to dilution  
 H - Exceeds Holding Time  
 < - Not Detected at the Reporting Limit

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

# QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: L10030367-01AMS Batch ID: 10455 Test Code: 29B/SW6010 Units: mg/Kg-dry Analysis Date 03/12/10 17:13 Prep Date: 03/11/10 0:00  
 Client ID: SED 1 (0-2') Run ID: 12-OPTIMA\_100312B SeqNo: 1355876

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4323	47	4669	381.4	84.4	75	125	4620	6.64	20	

Sample ID: L10030367-21AMS Batch ID: 10457 Test Code: 29B/SW6010 Units: mg/Kg-dry Analysis Date 03/12/10 18:53 Prep Date: 03/11/10 0:00  
 Client ID: SED 10 (2-4') Run ID: 12-OPTIMA\_100312B SeqNo: 1355900

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4392	46	4570	1268	68.3	75	125	0		S	

Sample ID: L10030367-21AMS Batch ID: 10457 Test Code: 29B/SW6010 Units: mg/Kg-dry Analysis Date 03/12/10 18:56 Prep Date: 03/11/10 0:00  
 Client ID: SED 10 (2-4') Run ID: 12-OPTIMA\_100312B SeqNo: 1355901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4806	46	4583	1268	77.2	75	125	4392	9.01	20	

Sample ID: L10030367-41AMS Batch ID: 10458 Test Code: 29B/SW6010 Units: mg/Kg-dry Analysis Date 03/15/10 19:02 Prep Date: 03/15/10 0:00  
 Client ID: SS-08 (2-4') Run ID: 12-OPTIMA\_100315B SeqNo: 1357040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	6473	47	4726	2058	93.4	75	125	0			

Sample ID: L10030367-41AMS Batch ID: 10458 Test Code: 29B/SW6010 Units: mg/Kg-dry Analysis Date 03/15/10 19:05 Prep Date: 03/15/10 0:00  
 Client ID: SS-08 (2-4') Run ID: 12-OPTIMA\_100315B SeqNo: 1357041

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	6485	47	4721	2058	93.8	75	125	6473	0.193	20	

**Qualifiers:**

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 \* - Value exceeds MCL or Permit Limitations  
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 E - Estimated value  
 R - RPD outside accepted recovery limits  
 MH - Matrix Interference  
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 < - Not Detected at the Reporting Limit

Sherry Laboratories/Louisiana

Date: 26-Mar-10

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**QC SUMMARY REPORT**  
 Laboratory Control Spike - generic

Sample ID:	LCS-R83131	Batch ID:	R83131	Test Code:	29B/E120.1	Units:	mmhos/cm	Analysis Date:	03/13/10 13:20	Prep Date:	
Client ID:		Run ID:	MAN3_100313C	SeqNo:	1357502						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	0.504	0.10	0.502	0	100	80	120	0			
Sample ID:	LCS-R83133	Batch ID:	R83133	Test Code:	29B/E120.1	Units:	mmhos/cm	Analysis Date:	03/13/10 13:44	Prep Date:	
Client ID:		Run ID:	MAN3_100313D	SeqNo:	1357554						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	0.505	0.10	0.502	0	101	80	120	0			
Sample ID:	LCS-R83138	Batch ID:	R83138	Test Code:	29B/E120.1	Units:	mmhos/cm	Analysis Date:	03/13/10 14:02	Prep Date:	
Client ID:		Run ID:	MAN3_100313B	SeqNo:	1357681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	0.503	0.10	0.502	0	100	80	120	0			
Sample ID:	LCS	Batch ID:	R82976	Test Code:	SW9071B	Units:	% dry wt	Analysis Date:	03/09/10 0:00	Prep Date:	
Client ID:		Run ID:	MAN3_100309B	SeqNo:	1354947						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.237	0.050	0.2	0	118	70	130	0			

**Qualifiers:**

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 E - Estimated value  
 R - RPD outside accepted recovery limits  
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**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**QC SUMMARY REPORT**  
 Laboratory Control Spike Duplicate

Sample ID:	LCSD	Batch ID:	R82976	Test Code:	SW9071B	Units:	% dry wt	Analysis Date:	03/09/10 0:00	Prep Date:													
Client ID:		Run ID:	MAN3_100309B <th>SeqNo:</th> <td>1354948 <td></td> <td></td> <td></td> <td></td> <td></td> </td>	SeqNo:	1354948 <td></td> <td></td> <td></td> <td></td> <td></td>																		
Analyte		Result		PQL	0.050	SPK value	0.2	SPK Ref Val	0	%REC	119	LowLimit	70	HighLimit	130	RPD Ref Val	0.237	%RPD	0.631	RPDLimit	40	Qual	
HEM, Oil & Grease		0.2385		0.050	0.2	0	0	119	70	130	0.237	0.631	40										

Sample ID:	LCS	Batch ID:	R83090	Test Code:	SW9071B	Units:	% dry wt	Analysis Date:	03/11/10 0:00	Prep Date:													
Client ID:		Run ID:	MAN3_100311C <th>SeqNo:</th> <td>1356892</td> <td></td> <td></td> <td></td> <td></td> <td></td>	SeqNo:	1356892																		
Analyte		Result		PQL	0.050	SPK value	0.2	SPK Ref Val	0	%REC	100	LowLimit	70	HighLimit	130	RPD Ref Val	0	%RPD		RPDLimit		Qual	
HEM, Oil & Grease		0.201		0.050	0.2	0	0	100	70	130	0												

Sample ID:	LCSD	Batch ID:	R83090	Test Code:	SW9071B	Units:	% dry wt	Analysis Date:	03/11/10 0:00	Prep Date:													
Client ID:		Run ID:	MAN3_100311C <th>SeqNo:</th> <td>1356893</td> <td></td> <td></td> <td></td> <td></td> <td></td>	SeqNo:	1356893																		
Analyte		Result		PQL	0.050	SPK value	0.2	SPK Ref Val	0	%REC	116	LowLimit	70	HighLimit	130	RPD Ref Val	0.201	%RPD	14.5	RPDLimit	40	Qual	
HEM, Oil & Grease		0.2325		0.050	0.2	0	0	116	70	130	0.201	14.5	40										

Sample ID:	LCS	Batch ID:	R83199	Test Code:	SW9071B	Units:	% dry wt	Analysis Date:	03/15/10 0:00	Prep Date:													
Client ID:		Run ID:	MAN3_100315C <th>SeqNo:</th> <td>1358908</td> <td></td> <td></td> <td></td> <td></td> <td></td>	SeqNo:	1358908																		
Analyte		Result		PQL	0.050	SPK value	0.2	SPK Ref Val	0	%REC	106	LowLimit	70	HighLimit	130	RPD Ref Val	0	%RPD		RPDLimit		Qual	
HEM, Oil & Grease		0.211		0.050	0.2	0	0	106	70	130	0												

Sample ID:	LCSD	Batch ID:	R83199	Test Code:	SW9071B	Units:	% dry wt	Analysis Date:	03/15/10 0:00	Prep Date:													
Client ID:		Run ID:	MAN3_100315C <th>SeqNo:</th> <td>1358909</td> <td></td> <td></td> <td></td> <td></td> <td></td>	SeqNo:	1358909																		
Analyte		Result		PQL	0.050	SPK value	0.2	SPK Ref Val	0	%REC	108	LowLimit	70	HighLimit	130	RPD Ref Val	0.211	%RPD	2.11	RPDLimit	40	Qual	
HEM, Oil & Grease		0.2155		0.050	0.2	0	0	108	70	130	0.211	2.11	40										

**Qualifiers:**  
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 E - Estimated value  
 R - RPD outside accepted recovery limits  
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**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**QC SUMMARY REPORT**  
 Laboratory Control Spike - generic

**Sample ID:** LCS      **Batch ID:** 10455      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/12/10 17:01      **Prep Date:**  
**Client ID:**      **Run ID:** 12-OPTIMA\_100312B      **SeqNo:** 1355872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4113	50	5000	0	82.3	75	125	0			

**Sample ID:** LCS      **Batch ID:** 10455      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/12/10 17:04      **Prep Date:**  
**Client ID:**      **Run ID:** 12-OPTIMA\_100312B      **SeqNo:** 1355873

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4077	50	5000	0	81.5	75	125	4113	0.866	20	

**Sample ID:** LCS      **Batch ID:** 10457      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/12/10 18:37      **Prep Date:**  
**Client ID:**      **Run ID:** 12-OPTIMA\_100312B      **SeqNo:** 1355897

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4223	50	5000	0	84.5	75	125	0			

**Sample ID:** LCS      **Batch ID:** 10457      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/12/10 18:40      **Prep Date:**  
**Client ID:**      **Run ID:** 12-OPTIMA\_100312B      **SeqNo:** 1355898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4215	50	5000	0	84.3	75	125	4223	0.194	20	

**Sample ID:** LCS      **Batch ID:** 10458      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/15/10 18:53      **Prep Date:**  
**Client ID:**      **Run ID:** 12-OPTIMA\_100315B      **SeqNo:** 1357037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4721	50	5000	0	94.4	75	125	0			

**Qualifiers:**

B - Analyte detected in the associated Method Blank      \* - Value exceeds MCL or Permit Limitations      E - Estimated value      R - RPD outside accepted recovery limits  
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 < - Not Detected at the Reporting Limit

**CLIENT:** Michael Pisani & Associates  
**Work Order:** L10030367  
**Project:** East White Lake 07-47

**QC SUMMARY REPORT**  
 Laboratory Control Spike Duplicate

**Sample ID:** LCSDD      **Batch ID:** 10458      **Test Code:** 29B/SW6010      **Units:** mg/Kg-dry      **Analysis Date:** 03/15/10 18:56      **Prep Date:**  
**Client ID:**      **Run ID:** 12-OPTIMA\_100315B      **SeqNo:** 1357038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4682	50	5000	0	93.6	75	125	4721	0.826	20	

**Qualifiers:**

B - Analyte detected in the associated Method Blank      \* - Value exceeds MCL or Permit Limitations      E - Estimated value      R - RPD outside accepted recovery limits  
 J - Analyte detected below quantitation limits      S - Spike Recovery outside accepted recovery limits      H - Exceeds Holding Time      +DO - Diluted out due to dilution  
 < - Not Detected at the Reporting Limit





GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

**CHAIN OF CUSTODY RECORD**

**SHERKY LABORATORY**

Lab use only

U0030367

Client Name

Client #

Workorder #

Due Date

**Report to:**

Client: MICHAEL PISANI  
Address: 1100 POY DRAS STAB  
N.O., LA. 70163  
Contact: JONATHAN MILLER  
Phone: 504.582.3468  
Fax: 504.582.2470

**Bill to:**

Client: SAME  
Address: SAME  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

P.O. Number

Project Name/Number  
EAST WHITE LAKE 07-47

**Sampled By:**

PATRICK RITCHIE

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Sample Description	Preservatives	No Containers
S	10/25/07	1030	GC	SED.1 (0-2')	ICE	35/10
		1040		SED.1 (2-4')		
		1100		SED.1 (4-6')		
		1115		SED.2 (0-2')		
		1125		SED.2 (2-4')		
		1145		SED.2 (4-6')		
		1200		SED.3 (0-2')		
		1215		SED.3 (4-6')		
		1315		SED.4 (0-2')		

**Analytical Requests & Method**

EC, SAR, ESP  
Oil + Grease  
True Total Barium

**Lab use only:**

Custody Seal used  yes  no  
in tact  yes  no  
Temperature °C \_\_\_\_\_

Lab ID

**Remarks:**

CALL  
JONATHAN MILLER FOR LIST OF PARAMETERS

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Temp. 4.9 QXB

Relinquished by: (Signature) \_\_\_\_\_

Date: 3-3-10

Time: 10:40

Relinquished by: (Signature) \_\_\_\_\_

Date: 3/5/10

Time: 11:35

Relinquished by: (Signature) \_\_\_\_\_

Date: 3/5/10

Time: 14:45

Note: No Oil and Grease analysis requested for SED-1, SED-2, or SED-3.

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

Matrix: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

We cannot accept verbal changes. Please fax written changes to (225) 767-5717





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**CHAIN OF CUSTODY RECORD**

Lab use only

Workorder # L10030367

Client Name

Client #

Due Date

**Report to:**

Client: Michael Pisani  
Address: 1100 Poydras Street  
N.O. 1A 70163  
Contact: Jonathan Miller  
Phone: 504-582-2468  
Fax: 504-582-2470

**Bill to:**

Client: SPAMF  
Address: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

P.O. Number

Project Name/Number  
EAST WHITE LAKE 07-47

Sampled By:

PATRICIA RICHIE

Matrix <sup>1</sup>	Date	Time (2400)	G C o m p	G a b	Sample Description	Preservatives	No Con- tainers
S	3/5/10	1330			SEO. 5 (0-2')	ICE	35/10
		1345			SEO. 6 (0-2')		
		1400			SEO. 7 (0-2')		
		1415			SEO. 7 (2-4')		
		1425			SEO. 7 (4-6')		
		1450			SEO. 8 (0-2')		
		1500			SEO. 8 (2-4')		
		1520			<del>SEO. 9 (0-2')</del>		
		1540			SEO. 9 (2-4')		
		1550			SEO. 10 (0-2')		

**Analytical Requests & Method**

<input checked="" type="checkbox"/>	CC, SRF, ESP
<input checked="" type="checkbox"/>	Oil + Grease
<input checked="" type="checkbox"/>	True Total Barium

**Lab use only:**

Custody Seal used  yes  no  
in tact  yes  no  
Temperature °C 1.8

Remarks:

OK CALL  
JONATHAN  
Miller for  
LIST OF  
PARAMETERS

Lab ID

/
---

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Reinquinished by: (Signature) \_\_\_\_\_ Date: 3-3-10 Time: 11:35

Reinquinished by: (Signature) Ken C Date: 3/5/10 Time: 11:35

Reinquinished by: (Signature) Ken C Date: 3/5/10 Time: 14:45

Temp. 4.9  
gas

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

Matrix: W = water, S = soil, SD = sludge, o = oil, CT = charcoal tube, A = air bag

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WHITE: CLIENT FINAL REPORT - CANARY: LABORATORY - PINK: CLIENT

GCAL-06 11/98





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Phone 225.769.4900 • Fax 225.767.5717

**CHAIN OF CUSTODY RECORD**

Lab use only

Workorder # L10030367

Client Name

Client #

Due Date

**Report to:**  
 Client: Michael Pisani  
 Address: 1100 POYDRAS HWY  
N.O., LA. 70163  
 Contact: JONATHAN MILLER  
 Phone: 504-582-2468  
 Fax: 504-582-2470

**Bill to:**  
 Client: SAAR  
 Address: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_

**Project Name/Number:**  
EAST WHITE LAKE 07-47

**Sampled By:** PATRICK RITCHIE

Matrix <sup>1</sup>	Date	Time (2400)	C o m p	G a b	Sample Description	Preservatives	No. Containers	Analytical Requests & Method	Lab use only:	Lab ID
S	07/26/08	1600	X		SED-10 (0-4')	ICED	35	EC, SAR, ESP Oil + Grease True Total Barium	used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>18</u>	/
		1620			SED-11 (0-2')			✓		
		1630			SED-11 (0-4')			✓		
		1645			SED-12 (0-2')			✓		
		1700			SED-12 (0-4')			✓		
		1715			SED-12 (4-6')			✓		
		0820			SED-13 (0-2')			✓		
		0830			SED-13 (0-4')			✓		
		0850			SED-14 (0-2')			✓		
		0900			SED-14 (0-4')			✓		

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) \_\_\_\_\_ Date: 3/5/10 Time: 14:45

Relinquished by: (Signature) \_\_\_\_\_ Date: 3/5/10 Time: 11:35

Relinquished by: (Signature) Ken C Date: 3/5/10 Time: 14:45

Note: No Oil and Grease analysis requested for SED-13 and SED-14.

Temp. 4.9 g/g

Matrix: W = water, S = soil, SD = sludge, o = oil, CT = charcoal tube, A = air bag

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

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WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT





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Phone 225.769.4900 • Fax 225.767.5717

# CHAIN OF CUSTODY RECORD

Lab use only

Client Name

Client #

Worker #

Due Date

### Report to:

Client: MICHAEL PISANI  
Address: 800 POKRAS ST 1430  
N.O. LA. 70163  
Contact: JONATHAN MILLER  
Phone: 504-582-2468  
Fax: 504-582-2470

### Bill to:

Client: SA DAZ  
Address: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

P.O. Number

Project Name/Number  
EAST WHITE LANE 07-47

Sampled By:

PATRICK RITCHIE

Matrix<sup>1</sup> Date Time (2400) C O M P G I A B

Matrix <sup>1</sup>	Date	Time (2400)	C O M P	G I A B	Sample Description	Preservatives Containers
S	02/09/03	0935			SED-15 (0-2')	35 No ICE
		0958			SED-15 (2-4')	
		1010			SED-16 (0-2')	
		1015			SED-17 (2-4')	
		1020			SED-18 (0-2')	
		1030			SED-18 (2-4')	
		1045			SED-19 (0-2')	
		1055			SED-19 (2-4')	
		1130			SS-08 (0-2')	
		1130			SS-08 (2-4')	

### Analytical Requests & Method

Request	Method
EC, SAR, ESP	✓
Oil + Grease	✓
True Total Barium	✓

### Lab use only:

Custody Seal used  yes  no  
in tact  yes  no  
Temperature °C \_\_\_\_\_

Lab ID

Remarks:

CALL  
JONATHAN MILLER FOR  
LIST OF  
PARAMETERS \*

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) \_\_\_\_\_ Date: 3-3-10 Time: 11:35

Relinquished by: (Signature) Ke Date: 3/5/10 Time: 11:35

Relinquished by: (Signature) Ke Date: 3/5/10 Time: 14:45

Temp. 4.9 g/s

Note:

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L10030367





GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

**CHAIN OF CUSTODY RECORD**

Lab use only

U10030367

Due Date

Workorder #

Client #

Client Name

**Report to:**

Client: Michael Pisani  
Address: 1100 POYARAS ST 1430 N.D., LA 70163  
Contact: JONATHAN MILLER  
Phone: 504.582.2468  
Fax: 504.582.2470

**Bill to:**

Client: \_\_\_\_\_  
Address: SAME  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

P.O. Number

Project Name/Number  
EAST WHITE LAKE 07-47

Sampled By:

PATRICK REZCHIE

Matrix <sup>1</sup>	Date	Time (2400)	G C P	G A B	Sample Description	Preservatives Con- tainers	EC1 SAR ESP	Oil + Grease	True Total Barium	Analytical Requests & Method	Lab use only: Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>1.8</u>	Remarks:	Lab ID
S	5/14/10	11:50			SS-10 (0-2')	ICE	✓	✓	✓				
		12:10			SS-10 (2-4')		✓	✓	✓				
		12:15			SED. 20 (0-2')		✓	✓	✓				
		12:50			SED. 20 (2-4')		✓	✓	✓				
		13:00			SED. 21 (0-3')		✓	✓	✓				
		13:10			SED. 21 (2-4)		✓	✓	✓				
		13:15			SED. 21 (4-6)		✓	✓	✓				
		13:30			SED. 21 (6-8')		✓	✓	✓				
		13:40			SED. 22 (0-2')		✓	✓	✓				
		14:00			SED. 22 (2-4')		✓	✓	✓				

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) \_\_\_\_\_ Date: 3-3-10 Time: 16:41

Relinquished by: (Signature) \_\_\_\_\_ Date: 3/5/10 Time: 11:25

Relinquished by: (Signature) \_\_\_\_\_ Date: 3/5/10 Time: 14:45

Note: Temp. 4.9 gpb

Matrix<sup>1</sup>: W = water, S = soil, SD = sludge, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

We cannot accept verbal changes. Please fax written changes to (225) 767-5717



## Sample Log-In Check List

Sherry Laboratories/Louisiana

Client Name: M_PISANI	Date and Time Received: 3/5/2010 2:45:00 PM
Work Order Number: L10030367	Logged by: Jennifer Begnaud
	Checked In by: Jennifer Begnaud

### Chain of Custody

- Were seals intact? Yes  No  Not Present
- Is Chain of Custody complete? If not, please comment below. Yes  No  Not Present
- How was the sample delivered? Sherry

### Log In

- How many ice chests were received? No. of Coolers: 1  
 Temperature °C for each Ice Chest:
 

	A	B	C	D	E
	<u>4.9</u>				
- Was an attempt made to cool the samples? Yes  No
- Were all samples received at a temperature of >0° C to 6.0°C? Yes  No
- Sample(s) in proper container(s)? Yes  No
- Sufficient sample volume for indicated test(s)? Yes  No
- Are samples (except VOA and ONG) properly preserved? Yes  No
- Was preservative added to bottles? Yes  No  NA   
 Bottle ID: \_\_\_\_\_ Added: \_\_\_\_\_ lot # \_\_\_\_\_
- Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes  No  No VOA Vials
- Were any sample containers received broken? Yes  No  Bottle ID: \_\_\_\_\_
- Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes  No
- Are matrices correctly identified on Chain of Custody? Yes  No
- Is it clear what analyses were requested? Yes  No
- Were all holding times able to be met? (If no, notify customer for authorization.) Yes  No

### Special Handling (if applicable)

- Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>	Time:	<input type="text"/>	
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail	<input type="checkbox"/> Phone	<input type="checkbox"/> Fax	<input type="checkbox"/> In Person
Regarding:	<input type="text"/>					
Client Instructions:	<input type="text"/>					

- Additional remarks:  
 Improper error correction(s) made by client  
 Received only one jar for every sample.

# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 06/14/2010

**GCAL Report** 210052428



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210052428

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

J Flag (Organics) - Indicates an estimated value. This flag is used when the data indicated the presence of an analyte meeting all the identification criteria for the method and the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RDL (reporting limit based on a low level calibration standard included in the initial calibration curve).

B flag (Inorganics) – This flag is used when the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RL (reporting limit based on a low level calibration standard included in the initial calibration curve or a low level check standard for ICP).

### **METALS**

In the SW-846 6010B analysis, the dissolved concentration for some metals may be slightly greater than the total concentration of the metal in some samples. This is attributed to separate aliquots of sample. It can be assumed that the metal is present in the dissolved state in these samples

In the SW-846 1312/6010B analysis, samples 21005242809 (MPA-SPLP-1), 21005242810 (MPA-SPLP-2), and 21005242811 (MPA-SPLP-3) were analyzed at a dilution.

In the SW-846 6010B analysis for prep batch 432575, the Sample/Duplicate RPD for Chromium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B analysis for prep batch 432560, the Ms recovery for Zinc is 0%. The Sample/Duplicated RPD for Zinc is above the control. It is suspected that Zinc is non-homogeneous in the original sample matrix based on the varied result for this sample.

### **CONVENTIONALS**

In the Chloride analysis, all water samples had to be diluted to bracket the concentrations within the calibration range of the instrument.



# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210052428**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242801	SW-BK-11	Water	05/19/2010 15:35	05/21/2010 16:15
21005242802	SW-BK-11 MS	Water	05/19/2010 15:35	05/21/2010 16:15
21005242803	SW-BK-11 MSD	Water	05/19/2010 15:35	05/21/2010 16:15
21005242804	SW-BK-10	Water	05/19/2010 16:10	05/21/2010 16:15
21005242805	SW-BK-10 MS	Water	05/19/2010 16:10	05/21/2010 16:15
21005242806	SW-BK-10 MSD	Water	05/19/2010 16:10	05/21/2010 16:15
21005242807	SED-BK-11	Solid	05/19/2010 15:45	05/21/2010 16:15
21005242808	SED-BK-10	Solid	05/19/2010 16:40	05/21/2010 16:15
21005242809	MPA-SPLP-1	Solid	05/20/2010 10:05	05/21/2010 16:15
21005242810	MPA-SPLP-2	Solid	05/20/2010 11:45	05/21/2010 16:15
21005242811	MPA-SPLP-3	Solid	05/20/2010 12:05	05/21/2010 16:15
21005242812	MPA-AB5(A) 4-6	Solid	05/19/2010 15:42	05/21/2010 16:15
21005242813	MPA-AB5(B) 4-6	Solid	05/19/2010 16:10	05/21/2010 16:15
21005242814	MPA-AB5(C) 4-6	Solid	05/19/2010 17:25	05/21/2010 16:15
21005242815	MPA-AB6 8-10 (DRY)	Solid	05/19/2010 15:12	05/21/2010 16:15
21005242816	MPA-AB8 6-8 (DRY)	Solid	05/19/2010 17:05	05/21/2010 16:15
21005242817	MPA-AB13 0-3 (DRY)	Solid	05/20/2000 09:20	05/21/2010 16:15
21005242818	MPA-AB6 8-10 (NORMAL)	Solid	05/19/2010 15:12	05/21/2010 16:15
21005242819	MPA-AB8 6-8 (NORMAL)	Solid	05/19/2010 17:05	05/21/2010 16:15
21005242820	MPA-AB13 0-3 (NORMAL)	Solid	05/20/2010 09:20	05/21/2010 16:15

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242801	SW-BK-11	Water	05/19/2010 15:35	05/21/2010 16:15

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0054B	0.010	0.00079	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	35.7	0.10	0.0093	mg/L
000-01-5	Hardness	403	0.33	0.12	mg/L
7439-95-4	Magnesium	76.2	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.18	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00078B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0011B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.52	0.050	0.00050	mg/L

## SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0029B	0.010	0.00079	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.25	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00056B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0040B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0042B	0.0080	0.0015	mg/L
7440-24-6	Strontium	0.52	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0097B	0.020	0.0040	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2330	10.0	10.0	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1240	50.0	7.9	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242802	SW-BK-11 MS	Water	05/19/2010 15:35	05/21/2010 16:15

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4280	50.0	7.9	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.72	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.46	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.46	0.010	0.00032	mg/L
7439-92-1	Lead	0.47	0.0080	0.0015	mg/L
7782-49-2	Selenium	0.50	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.0	0.050	0.00050	mg/L
7440-66-6	Zinc	0.48	0.020	0.0040	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.040	0.010	0.00079	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00490	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242803	SW-BK-11 MSD	Water	05/19/2010 15:35	05/21/2010 16:15

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.045	0.010	0.00079	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4340	50.0	7.9	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00509	0.00020	0.000055	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242803	SW-BK-11 MSD	Water	05/19/2010 15:35	05/21/2010 16:15

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.74	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.47	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.47	0.010	0.00032	mg/L
7439-92-1	Lead	0.49	0.0080	0.0015	mg/L
7782-49-2	Selenium	0.51	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.00	0.050	0.00050	mg/L
7440-66-6	Zinc	0.49	0.020	0.0040	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242804	SW-BK-10	Water	05/19/2010 16:10	05/21/2010 16:15

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.22	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00051B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0041B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0058B	0.0080	0.0015	mg/L
7440-24-6	Strontium	0.38	0.050	0.00050	mg/L
7440-66-6	Zinc	0.013B	0.020	0.0040	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	24.5	0.10	0.0093	mg/L
000-01-5	Hardness	277	0.33	0.12	mg/L
7439-95-4	Magnesium	52.3	0.10	0.024	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	834	10.0	1.6	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1530	10.0	10.0	mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.14	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00086B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.00071B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.34	0.050	0.00050	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242804	SW-BK-10	Water	05/19/2010 16:10	05/21/2010 16:15

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0035B	0.010	0.00079	mg/L

## SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0030B	0.010	0.00079	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242805	SW-BK-10 MS	Water	05/19/2010 16:10	05/21/2010 16:15

## SW-846 8270C SIM

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	0.00635	0.000102	0.0000517	mg/L
83-32-9	Acenaphthene	0.00729	0.000102	0.0000136	mg/L
208-96-8	Acenaphthylene	0.00765	0.000102	0.0000148	mg/L
120-12-7	Anthracene	0.00595	0.000102	0.00000914	mg/L
56-55-3	Benzo(a)anthracene	0.00799	0.000102	0.0000501	mg/L
50-32-8	Benzo(a)pyrene	0.00721	0.000102	0.0000136	mg/L
205-99-2	Benzo(b)fluoranthene	0.00821	0.000102	0.0000326	mg/L
207-08-9	Benzo(k)fluoranthene	0.00585	0.000102	0.0000222	mg/L
218-01-9	Chrysene	0.00688	0.000102	0.0000427	mg/L
53-70-3	Dibenz(a,h)anthracene	0.00759	0.000102	0.0000194	mg/L
206-44-0	Fluoranthene	0.00772	0.000102	0.0000133	mg/L
86-73-7	Fluorene	0.00909	0.000102	0.0000183	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	0.00740	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	0.00532	0.000102	0.0000281	mg/L
85-01-8	Phenanthrene	0.00612	0.000102	0.0000165	mg/L
129-00-0	Pyrene	0.00778	0.000102	0.0000180	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242806	SW-BK-10 MSD	Water	05/19/2010 16:10	05/21/2010 16:15

## SW-846 8270C SIM

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	0.00608	0.000108	0.0000547	mg/L
83-32-9	Acenaphthene	0.00596	0.000108	0.0000144	mg/L
208-96-8	Acenaphthylene	0.00669	0.000108	0.0000157	mg/L
120-12-7	Anthracene	0.00605	0.000108	0.00000968	mg/L
56-55-3	Benzo(a)anthracene	0.00967	0.000108	0.0000530	mg/L
50-32-8	Benzo(a)pyrene	0.00803	0.000108	0.0000144	mg/L
205-99-2	Benzo(b)fluoranthene	0.00921	0.000108	0.0000345	mg/L
207-08-9	Benzo(k)fluoranthene	0.00649	0.000108	0.0000235	mg/L
218-01-9	Chrysene	0.00828	0.000108	0.0000453	mg/L
53-70-3	Dibenz(a,h)anthracene	0.00843	0.000108	0.0000205	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242806	SW-BK-10 MSD	Water	05/19/2010 16:10	05/21/2010 16:15

### SW-846 8270C SIM

CAS#	Parameter	Result	RDL	MDL	Units
206-44-0	Fluoranthene	0.00856	0.000108	0.0000141	mg/L
86-73-7	Fluorene	0.00820	0.000108	0.0000194	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	0.00821	0.000108	0.0000181	mg/L
91-20-3	Naphthalene	0.00578	0.000108	0.0000298	mg/L
85-01-8	Phenanthrene	0.00646	0.000108	0.0000175	mg/L
129-00-0	Pyrene	0.00912	0.000108	0.0000190	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242807	SED-BK-11	Solid	05/19/2010 15:45	05/21/2010 16:15

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.97	1.60	0.22	mg/kg
7440-39-3	Barium	63.1	0.40	0.017	mg/kg
7440-47-3	Chromium	3.68	0.40	0.024	mg/kg
7439-92-1	Lead	4.21	0.60	0.066	mg/kg
7440-24-6	Strontium	19.8	0.40	0.037	mg/kg
7440-66-6	Zinc	18.0	0.80	0.090	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	322	10.0	1.58	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	195000	200	146	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242808	SED-BK-10	Solid	05/19/2010 16:40	05/21/2010 16:15

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.22B	1.60	0.22	mg/kg
7440-39-3	Barium	68.8	0.40	0.017	mg/kg
7440-47-3	Chromium	5.85	0.40	0.024	mg/kg
7439-92-1	Lead	6.82	0.60	0.066	mg/kg
7440-24-6	Strontium	25.9	0.40	0.037	mg/kg
7440-66-6	Zinc	51.4	0.80	0.090	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242808	SED-BK-10	Solid	05/19/2010 16:40	05/21/2010 16:15

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	134000	200	146	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	598	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242809	MPA-SPLP-1	Solid	05/20/2010 10:05	05/21/2010 16:15

## SW-846 6010B SPLP

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.07	0.050	0.0015	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242810	MPA-SPLP-2	Solid	05/20/2010 11:45	05/21/2010 16:15

## SW-846 6010B SPLP

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.89	0.050	0.0015	mg/L
7439-92-1	Lead	1.65	0.015	0.0073	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242811	MPA-SPLP-3	Solid	05/20/2010 12:05	05/21/2010 16:15

## SW-846 6010B SPLP

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.39	0.050	0.0015	mg/L
7439-92-1	Lead	0.015B	0.015	0.0073	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242815	MPA-AB6 8-10 (DRY)	Solid	05/19/2010 15:12	05/21/2010 16:15

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	10.4	0.60	0.15	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242816	MPA-AB8 6-8 (DRY)	Solid	05/19/2010 17:05	05/21/2010 16:15

SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	7.50	0.60	0.15	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242817	MPA-AB13 0-3 (DRY)	Solid	05/20/2000 09:20	05/21/2010 16:15

SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	11.5	0.12	0.031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242818	MPA-AB6 8-10 (NORMAL)	Solid	05/19/2010 15:12	05/21/2010 16:15

SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.45	0.12	0.031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242819	MPA-AB8 6-8 (NORMAL)	Solid	05/19/2010 17:05	05/21/2010 16:15

SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.71	0.12	0.031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242820	MPA-AB13 0-3 (NORMAL)	Solid	05/20/2010 09:20	05/21/2010 16:15

SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.45	0.12	0.031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242801	SW-BK-11	Water	05/19/2010 15:35	05/21/2010 16:15

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 10:20	432705	3510C	1	05/27/2010 21:50	KCB	432841

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000105	0.0000536	mg/L
83-32-9	Acenaphthene	ND	0.000105	0.0000141	mg/L
208-96-8	Acenaphthylene	ND	0.000105	0.0000154	mg/L
120-12-7	Anthracene	ND	0.000105	0.00000947	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000105	0.0000519	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000105	0.0000141	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000105	0.0000338	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000105	0.0000231	mg/L
218-01-9	Chrysene	ND	0.000105	0.0000443	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000105	0.0000201	mg/L
206-44-0	Fluoranthene	ND	0.000105	0.0000138	mg/L
86-73-7	Fluorene	ND	0.000105	0.0000189	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000105	0.0000177	mg/L
91-20-3	Naphthalene	ND	0.000105	0.0000292	mg/L
85-01-8	Phenanthrene	ND	0.000105	0.0000172	mg/L
129-00-0	Pyrene	ND	0.000105	0.0000186	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00526	.00441	mg/L	84	52 - 120
321-60-8	2-Fluorobiphenyl	.00526	.00336	mg/L	64	16 - 128
1718-51-0	Terphenyl-d14	.00526	.00419	mg/L	80	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:30	432619	SW-846 7470A Dissolved	1	05/26/2010 17:54	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432616	SW-846 3020A Dissolved	1	06/07/2010 13:28	CLB	433890

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0029B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:30	432619	SW-846 7470A	1	05/26/2010 12:58	CLB	432799

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242801	SW-BK-11	Water	05/19/2010 15:35	05/21/2010 16:15

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432614	SW-846 3010A	1	05/29/2010 16:26	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.25	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00056B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0040B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0042B	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.52	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0097B	0.020	0.0040	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 14:20	432575	SW-846 3010A Dissolved	1	05/29/2010 20:27	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.18	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00078B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0011B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.52	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432614	SM 2340 B	1	05/29/2010 16:26	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	35.7	0.10	0.0093	mg/L
000-01-5	Hardness	403	0.33	0.12	mg/L
7439-95-4	Magnesium	76.2	0.10	0.024	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432616	SW-846 3020A	1	06/07/2010 12:57	CLB	433890

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0054B	0.010	0.00079	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242801	SW-BK-11	Water	05/19/2010 15:35	05/21/2010 16:15

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 17:00	DJH	432583

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2330	10.0	10.0	mg/L

SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/27/2010 16:35	AEL	432919

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1240	50.0	7.9	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242802	SW-BK-11 MS	Water	05/19/2010 15:35	05/21/2010 16:15

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:30	432619	SW-846 7470A	1	05/26/2010 12:59	CLB	432799

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00490	0.00020	0.000055	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432614	SW-846 3010A	1	05/29/2010 16:33	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.72	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.46	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.46	0.010	0.00032	mg/L
7439-92-1	Lead	0.47	0.0080	0.0015	mg/L
7782-49-2	Selenium	0.50	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.0	0.050	0.00050	mg/L
7440-66-6	Zinc	0.48	0.020	0.0040	mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432616	SW-846 3020A	1	06/07/2010 13:03	CLB	433890

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.040	0.010	0.00079	mg/L

SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/27/2010 16:36	AEL	432919

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4280	50.0	7.9	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242803	SW-BK-11 MSD	Water	05/19/2010 15:35	05/21/2010 16:15

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:30	432619	SW-846 7470A	1	05/26/2010 13:01	CLB	432799

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00509	0.00020	0.000055	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432614	SW-846 3010A	1	05/29/2010 16:39	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.74	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.47	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.47	0.010	0.00032	mg/L
7439-92-1	Lead	0.49	0.0080	0.0015	mg/L
7782-49-2	Selenium	0.51	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.00	0.050	0.00050	mg/L
7440-66-6	Zinc	0.49	0.020	0.0040	mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432616	SW-846 3020A	1	06/07/2010 13:09	CLB	433890

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.045	0.010	0.00079	mg/L

SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/27/2010 16:38	AEL	432919

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4340	50.0	7.9	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242804	SW-BK-10	Water	05/19/2010 16:10	05/21/2010 16:15

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 10:20	432705	3510C	1	05/27/2010 22:05	KCB	432841

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00464	mg/L	91	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00511	mg/L	100	16 - 128
1718-51-0	Terphenyl-d14	.0051	.0037	mg/L	73	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:30	432619	SW-846 7470A Dissolved	1	05/26/2010 17:55	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432616	SW-846 3020A Dissolved	1	06/07/2010 13:40	CLB	433890

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0030B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:30	432619	SW-846 7470A	1	05/26/2010 13:04	CLB	432799

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242804	SW-BK-10	Water	05/19/2010 16:10	05/21/2010 16:15

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432614	SW-846 3010A	1	05/29/2010 16:58	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.22	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00051B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0041B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0058B	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.38	0.050	0.00050	mg/L
7440-66-6	Zinc	0.013B	0.020	0.0040	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 14:20	432575	SW-846 3010A Dissolved	1	05/29/2010 20:34	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.14	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00086B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.00071B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.34	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432614	SM 2340 B	1	05/29/2010 16:58	CNB	433089

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	24.5	0.10	0.0093	mg/L
000-01-5	Hardness	277	0.33	0.12	mg/L
7439-95-4	Magnesium	52.3	0.10	0.024	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 17:00	432616	SW-846 3020A	1	06/07/2010 13:34	CLB	433890

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0035B	0.010	0.00079	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242804	SW-BK-10	Water	05/19/2010 16:10	05/21/2010 16:15

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 17:00	DJH	432583

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1530	10.0	10.0	mg/L

SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/27/2010 16:39	AEL	432919

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	834	10.0	1.6	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242805	SW-BK-10 MS	Water	05/19/2010 16:10	05/21/2010 16:15

SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 10:20	432705	3510C	1	05/27/2010 22:19	KCB	432841

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	0.00635	0.000102	0.0000517	mg/L
83-32-9	Acenaphthene	0.00729	0.000102	0.0000136	mg/L
208-96-8	Acenaphthylene	0.00765	0.000102	0.0000148	mg/L
120-12-7	Anthracene	0.00595	0.000102	0.00000914	mg/L
56-55-3	Benzo(a)anthracene	0.00799	0.000102	0.0000501	mg/L
50-32-8	Benzo(a)pyrene	0.00721	0.000102	0.0000136	mg/L
205-99-2	Benzo(b)fluoranthene	0.00821	0.000102	0.0000326	mg/L
207-08-9	Benzo(k)fluoranthene	0.00585	0.000102	0.0000222	mg/L
218-01-9	Chrysene	0.00688	0.000102	0.0000427	mg/L
53-70-3	Dibenz(a,h)anthracene	0.00759	0.000102	0.0000194	mg/L
206-44-0	Fluoranthene	0.00772	0.000102	0.0000133	mg/L
86-73-7	Fluorene	0.00909	0.000102	0.0000183	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	0.00740	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	0.00532	0.000102	0.0000281	mg/L
85-01-8	Phenanthrene	0.00612	0.000102	0.0000165	mg/L
129-00-0	Pyrene	0.00778	0.000102	0.0000180	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00508	.00441	mg/L	87	52 - 120
321-60-8	2-Fluorobiphenyl	.00508	.00312	mg/L	61	16 - 128
1718-51-0	Terphenyl-d14	.00508	.00293	mg/L	58	43 - 138

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242806	SW-BK-10 MSD	Water	05/19/2010 16:10	05/21/2010 16:15

SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 10:20	432705	3510C	1	05/27/2010 22:34	KCB	432841

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	0.00608	0.000108	0.0000547	mg/L
83-32-9	Acenaphthene	0.00596	0.000108	0.0000144	mg/L
208-96-8	Acenaphthylene	0.00669	0.000108	0.0000157	mg/L
120-12-7	Anthracene	0.00605	0.000108	0.00000968	mg/L
56-55-3	Benzo(a)anthracene	0.00967	0.000108	0.0000530	mg/L
50-32-8	Benzo(a)pyrene	0.00803	0.000108	0.0000144	mg/L
205-99-2	Benzo(b)fluoranthene	0.00921	0.000108	0.0000345	mg/L
207-08-9	Benzo(k)fluoranthene	0.00649	0.000108	0.0000235	mg/L
218-01-9	Chrysene	0.00828	0.000108	0.0000453	mg/L
53-70-3	Dibenz(a,h)anthracene	0.00843	0.000108	0.0000205	mg/L
206-44-0	Fluoranthene	0.00856	0.000108	0.0000141	mg/L
86-73-7	Fluorene	0.00820	0.000108	0.0000194	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	0.00821	0.000108	0.0000181	mg/L
91-20-3	Naphthalene	0.00578	0.000108	0.0000298	mg/L
85-01-8	Phenanthrene	0.00646	0.000108	0.0000175	mg/L
129-00-0	Pyrene	0.00912	0.000108	0.0000190	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00538	.00505	mg/L	94	52 - 120
321-60-8	2-Fluorobiphenyl	.00538	.0029	mg/L	54	16 - 128
1718-51-0	Terphenyl-d14	.00538	.00368	mg/L	68	43 - 138

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242807	SED-BK-11	Solid	05/19/2010 15:45	05/21/2010 16:15

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 14:00	432914	3550B	1	05/28/2010 15:41	RLY	433000

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.326	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.326	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.326	0.011	mg/kg
120-12-7	Anthracene	ND	0.326	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.326	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.326	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.326	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.326	0.015	mg/kg
218-01-9	Chrysene	ND	0.326	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.326	0.00894	mg/kg
206-44-0	Fluoranthene	ND	0.326	0.00720	mg/kg
86-73-7	Fluorene	ND	0.326	0.00997	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.326	0.013	mg/kg
91-20-3	Naphthalene	ND	0.326	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.326	0.013	mg/kg
129-00-0	Pyrene	ND	0.326	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.36	mg/kg	83	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.35	mg/kg	82	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.38	mg/kg	84	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 00:00	432617	SW-846 7471B	1	05/27/2010 10:36	CLB	432845

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.010	0.0027	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432560	SW-846 3050B	1	06/02/2010 00:36	CLB	433334

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.97</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>63.1</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>3.68</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>4.21</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>19.8</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>18.0</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242807	SED-BK-11	Solid	05/19/2010 15:45	05/21/2010 16:15

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 16:45	DJH	432624

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	80.2	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:31	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	322	10.0	1.58	mg/kg

**SW-846 9060 TOC**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 16:16	AEL	432621

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	195000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242808	SED-BK-10	Solid	05/19/2010 16:40	05/21/2010 16:15

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 14:00	432914	3550B	1	05/28/2010 16:27	RLY	433000

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.326	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.326	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.326	0.011	mg/kg
120-12-7	Anthracene	ND	0.326	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.326	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.326	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.326	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.326	0.015	mg/kg
218-01-9	Chrysene	ND	0.326	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.326	0.00894	mg/kg
206-44-0	Fluoranthene	ND	0.326	0.00720	mg/kg
86-73-7	Fluorene	ND	0.326	0.00997	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.326	0.013	mg/kg
91-20-3	Naphthalene	ND	0.326	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.326	0.013	mg/kg
129-00-0	Pyrene	ND	0.326	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.44	mg/kg	88	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.41	mg/kg	86	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.42	mg/kg	86	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 00:00	432617	SW-846 7471B	1	05/27/2010 10:46	CLB	432845

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.010	0.0027	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432560	SW-846 3050B	1	06/01/2010 23:35	CLB	433334

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.22B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>68.8</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.85</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.82</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>25.9</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>51.4</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242808	SED-BK-10	Solid	05/19/2010 16:40	05/21/2010 16:15

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 16:45	DJH	432624

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	74.9	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:32	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	598	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 16:27	AEL	432621

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	134000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242809	MPA-SPLP-1	Solid	05/20/2010 10:05	05/21/2010 16:15

SW-846 6010B SPLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 07:20	432833	SW-846 3010A	5	05/29/2010 16:36	TEA	433099

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.07	0.050	0.0015	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242810	MPA-SPLP-2	Solid	05/20/2010 11:45	05/21/2010 16:15

SW-846 6010B SPLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 07:20	432833	SW-846 3010A	5	05/29/2010 17:25	TEA	433099

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.89	0.050	0.0015	mg/L
7439-92-1	Lead	1.65	0.015	0.0073	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242811	MPA-SPLP-3	Solid	05/20/2010 12:05	05/21/2010 16:15

SW-846 6010B SPLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 07:20	432833	SW-846 3010A	5	05/29/2010 17:32	TEA	433099

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.39	0.050	0.0015	mg/L
7439-92-1	Lead	0.015B	0.015	0.0073	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242812	MPA-AB5(A) 4-6	Solid	05/19/2010 15:42	05/21/2010 16:15

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 14:00	432793	TNRCC 1006/LA 1006	1	06/02/2010 20:36	SMH	433483

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	45.3	mg/kg	92	60 - 140

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242813	MPA-AB5(B) 4-6	Solid	05/19/2010 16:10	05/21/2010 16:15

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 14:00	432793	TNRCC 1006/LA 1006	1	06/02/2010 21:36	SMH	433483

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	48.7	mg/kg	97	60 - 140

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242814	MPA-AB5(C) 4-6	Solid	05/19/2010 17:25	05/21/2010 16:15

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 14:00	432793	TNRCC 1006/LA 1006	1	06/02/2010 23:34	SMH	433483

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	53.7	mg/kg	108	60 - 140

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242815	MPA-AB6 8-10 (DRY)	Solid	05/19/2010 15:12	05/21/2010 16:15

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432618	SW-846 3050B	5	06/06/2010 14:01	CLB	433720

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	10.4	0.60	0.15	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 16:45	DJH	432624

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	86.0	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242816	MPA-AB8 6-8 (DRY)	Solid	05/19/2010 17:05	05/21/2010 16:15

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432618	SW-846 3050B	5	06/06/2010 14:07	CLB	433720

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	7.50	0.60	0.15	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 16:45	DJH	432624

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	63.0	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242817	MPA-AB13 0-3 (DRY)	Solid	05/20/2000 09:20	05/21/2010 16:15

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432618	SW-846 3050B	1	06/06/2010 02:13	CLB	433720

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	11.5	0.12	0.031	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 16:45	DJH	432624

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	81.3	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242818	MPA-AB6 8-10 (NORMAL)	Solid	05/19/2010 15:12	05/21/2010 16:15

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432618	SW-846 3050B	1	06/04/2010 12:38	CLB	433511

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.45	0.12	0.031	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21005242819	MPA-AB8 6-8 (NORMAL)	Solid	05/19/2010 17:05	05/21/2010 16:15

SW-846 7010 Arsenic

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
05/25/2010 09:50	432618	SW-846 3050B	1	06/04/2010 12:44	CLB	433511

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
7440-38-2	Arsenic	1.71	0.12	0.031	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005242820	MPA-AB13 0-3 (NORMAL)	Solid	05/20/2010 09:20	05/21/2010 16:15

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/25/2010 09:50	432618	SW-846 3050B	1	06/04/2010 11:12	CLB	433511

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.45	0.12	0.031	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 433000 Prep Batch 432914 Prep Method 3550B		Client ID MB432914 GCAL ID 836466 Sample Type Method Blank Prep Date 05/27/2010 14:00 Analytical Date 05/28/2010 14:56 Matrix Solid		LCS432914 836467 LCS 05/27/2010 14:00 05/28/2010 15:11 Solid			LCSD432914 836468 LCSD 05/27/2010 14:00 05/28/2010 15:26 Solid				
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
208-96-8	Acenaphthylene	ND	0.325								
120-12-7	Anthracene	ND	0.325								
56-55-3	Benzo(a)anthracene	ND	0.325								
205-99-2	Benzo(b)fluoranthene	ND	0.325								
207-08-9	Benzo(k)fluoranthene	ND	0.325								
50-32-8	Benzo(a)pyrene	ND	0.325								
218-01-9	Chrysene	ND	0.325								
53-70-3	Dibenz(a,h)anthracene	ND	0.325								
206-44-0	Fluoranthene	ND	0.325								
86-73-7	Fluorene	ND	0.325								
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325								
91-57-6	2-Methylnaphthalene	ND	0.325								
91-20-3	Naphthalene	ND	0.325								
85-01-8	Phenanthrene	ND	0.325								
108-95-2	Phenol	ND	0.325	3.33	2.33	70	42 - 120	2.56	77	9	40
95-57-8	2-Chlorophenol	ND	0.325	3.33	2.39	72	48 - 120	2.60	79	8	40
106-46-7	1,4-Dichlorobenzene	ND	0.325	3.33	2.56	77	42 - 120	2.72	82	6	40
621-64-7	n-Nitrosodi-n-propylamine	ND	0.325	3.33	2.80	84	46 - 120	3.13	95	11	40
120-82-1	1,2,4-Trichlorobenzene	ND	0.325	3.33	2.71	81	46 - 120	2.75	83	1	40
59-50-7	4-Chloro-3-methylphenol	ND	0.325	3.33	2.38	71	46 - 120	2.60	79	9	40
83-32-9	Acenaphthene	ND	0.325	3.33	2.65	80	50 - 120	2.88	87	8	40
100-02-7	4-Nitrophenol	ND	1.62	3.33	2.28	68	32 - 120	2.43	73	6	40
121-14-2	2,4-Dinitrotoluene	ND	0.325	3.33	2.37	71	45 - 120	2.56	77	8	40
87-86-5	Pentachlorophenol	ND	1.62	3.33	2.43	73	30 - 124	2.49	75	2	40
129-00-0	Pyrene	ND	0.325	3.33	2.88	86	38 - 136	2.82	85	2	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1350	82	1670	1410	85	46 - 123	1430	86		
321-60-8	2-Fluorobiphenyl	1350	82	1670	1400	84	47 - 127	1460	88		
1718-51-0	Terphenyl-d14	1410	86	1670	1500	90	38 - 167	1420	86		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 433000 Prep Batch 432914 Prep Method 3550B		Client ID SED-BK-11 GCAL ID 21005242807 Sample Type SAMPLE Prep Date 05/27/2010 14:00 Analytical Date 05/28/2010 15:41 Matrix Solid			835104MS 836469 MS 05/27/2010 14:00 05/28/2010 15:57 Solid			835104MSD 836470 MSD 05/27/2010 14:00 05/28/2010 16:12 Solid			
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
108-95-2	Phenol	0.00	0.327	3.30	2.37	72	42 - 120	2.45	74	3	40
95-57-8	2-Chlorophenol	0.00	0.327	3.30	2.43	74	48 - 120	2.45	74	0.8	40
106-46-7	1,4-Dichlorobenzene	0.00	0.327	3.30	2.53	77	42 - 120	2.62	79	3	40
621-64-7	n-Nitrosodi-n-propylamine	0.00	0.327	3.30	2.92	88	46 - 120	2.89	88	1	40
120-82-1	1,2,4-Trichlorobenzene	0.00	0.327	3.30	2.64	80	46 - 120	2.65	80	0.4	40
59-50-7	4-Chloro-3-methylphenol	0.00	0.327	3.30	2.46	75	46 - 120	2.43	74	1	40
83-32-9	Acenaphthene	0.00	0.326	3.30	2.68	81	50 - 120	2.86	87	6	40
100-02-7	4-Nitrophenol	0.00	1.63	3.30	2.37	72	32 - 120	2.39	72	0.8	40
121-14-2	2,4-Dinitrotoluene	0.00	0.327	3.30	2.53	77	45 - 120	2.60	79	3	40
87-86-5	Pentachlorophenol	0.00	1.63	3.30	2.32	70	30 - 124	2.16	65	7	40
129-00-0	Pyrene	0.00	0.326	3.30	2.90	88	38 - 136	2.82	85	3	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1.36	83	1650	1370	83	46 - 123	1370	83		
321-60-8	2-Fluorobiphenyl	1.35	82	1650	1290	78	47 - 127	1420	86		
1718-51-0	Terphenyl-d14	1.38	84	1650	1440	87	38 - 167	1440	87		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432841 Prep Batch 432705 Prep Method 3510C		Client ID SW-BK-10 GCAL ID 21005242804 Sample Type SAMPLE Prep Date 05/26/2010 10:20 Analytical Date 05/27/2010 22:05 Matrix Water			SW-BK-10 MS 21005242805 MS 05/26/2010 10:20 05/27/2010 22:19 Water			SW-BK-10 MSD 21005242806 MSD 05/26/2010 10:20 05/27/2010 22:34 Water			
SW-846 8270C SIM		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
91-57-6	2-Methylnaphthalene	0.00	0.000102	0.010	0.00635	63	30 - 120	0.00608	57	4	40
83-32-9	Acenaphthene	0.00	0.000102	0.010	0.00729	72	30 - 120	0.00596	55	20	40
208-96-8	Acenaphthylene	0.00	0.000102	0.010	0.00765	75	30 - 130	0.00669	62	13	40
120-12-7	Anthracene	0.00	0.000102	0.010	0.00595	59	50 - 120	0.00605	56	2	40
56-55-3	Benzo(a)anthracene	0.00	0.000102	0.010	0.00799	79	44 - 123	0.00967	90	19	40
50-32-8	Benzo(a)pyrene	0.00	0.000102	0.010	0.00721	71	42 - 128	0.00803	75	11	40
205-99-2	Benzo(b)fluoranthene	0.00	0.000102	0.010	0.00821	81	43 - 129	0.00921	86	11	40
207-08-9	Benzo(k)fluoranthene	0.00	0.000102	0.010	0.00585	58	46 - 126	0.00649	60	10	40
218-01-9	Chrysene	0.00	0.000102	0.00995	0.00688	69	47 - 120	0.00828	79	18	40
53-70-3	Dibenz(a,h)anthracene	0.00	0.000102	0.010	0.00759	75	36 - 131	0.00843	78	10	40
206-44-0	Fluoranthene	0.00	0.000102	0.010	0.00772	76	37 - 129	0.00856	80	10	40
86-73-7	Fluorene	0.00	0.000102	0.010	0.00909	90	30 - 125	0.00820	76	10	40
193-39-5	Indeno(1,2,3-cd)pyrene	0.00	0.000102	0.010	0.00740	73	35 - 138	0.00821	76	10	40
91-20-3	Naphthalene	0.00	0.000102	0.010	0.00532	52	30 - 120	0.00578	54	8	40
85-01-8	Phenanthrene	0.00	0.000102	0.010	0.00612	60	43 - 120	0.00646	60	5	40
129-00-0	Pyrene	0.00	0.000102	0.010	0.00778	77	47 - 120	0.00912	85	16	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	.00464	91	.00508	.00441	87	52 - 120	.00505	94		
321-60-8	2-Fluorobiphenyl	.00511	100	.00508	.00312	61	16 - 128	.0029	54		
1718-51-0	Terphenyl-d14	.0037	73	.00508	.00293	58	43 - 138	.00368	68		

Analytical Batch 433014 Prep Batch 432705 Prep Method 3510C		Client ID MB432705 GCAL ID 835554 Sample Type Method Blank Prep Date 05/26/2010 10:20 Analytical Date 05/28/2010 11:33 Matrix Water			LCS432705 835555 LCS 05/26/2010 10:20 05/28/2010 11:48 Water			LCSD432705 835556 LCSD 05/26/2010 10:20 05/27/2010 21:35 Water			
SW-846 8270C SIM		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
83-32-9	Acenaphthene	ND	0.000100	0.010	0.00682	68	30 - 120	0.00761	76	11	40
208-96-8	Acenaphthylene	ND	0.000100	0.010	0.00766	77	30 - 130	0.00809	81	5	40

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 433014 Prep Batch 432705 Prep Method 3510C		Client ID MB432705 GCAL ID 835554 Sample Type Method Blank Prep Date 05/26/2010 10:20 Analytical Date 05/28/2010 11:33 Matrix Water			LCS432705 835555 LCS 05/26/2010 10:20 05/28/2010 11:48 Water			LCSD432705 835556 LCSD 05/26/2010 10:20 05/27/2010 21:35 Water			
SW-846 8270C SIM		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
120-12-7	Anthracene	ND	0.000100	0.010	0.00779	78	50 - 120	0.00593	59	27	40
56-55-3	Benzo(a)anthracene	ND	0.000100	0.010	0.00864	86	44 - 123	0.00894	89	3	40
205-99-2	Benzo(b)fluoranthene	ND	0.000100	0.010	0.00830	83	43 - 129	0.00861	86	4	40
207-08-9	Benzo(k)fluoranthene	ND	0.000100	0.010	0.00669	67	46 - 126	0.00658	66	2	40
50-32-8	Benzo(a)pyrene	ND	0.000100	0.010	0.00775	78	42 - 128	0.00810	81	4	40
218-01-9	Chrysene	ND	0.000100	0.00980	0.00855	87	47 - 120	0.00764	78	11	40
53-70-3	Dibenz(a,h)anthracene	ND	0.000100	0.010	0.00980	98	36 - 131	0.00810	81	19	40
206-44-0	Fluoranthene	ND	0.000100	0.010	0.00784	78	37 - 129	0.00796	80	2	40
86-73-7	Fluorene	ND	0.000100	0.010	0.00844	84	30 - 125	0.00929	93	10	40
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000100	0.010	0.00946	95	35 - 138	0.00773	77	20	40
91-20-3	Naphthalene	ND	0.000100	0.010	0.00544	54	30 - 120	0.00480	48	13	40
85-01-8	Phenanthrene	ND	0.000100	0.010	0.00725	73	43 - 120	0.00616	62	16	40
129-00-0	Pyrene	ND	0.000100	0.010	0.00951	95	47 - 120	0.00839	84	13	40
91-57-6	2-Methylnaphthalene	ND	0.000100	0.010	0.00506	51	30 - 120	0.00622	62	21	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	4.47	89	5	3.52	70	52 - 120	3.6	72		
321-60-8	2-Fluorobiphenyl	5.48	110	5	3.24	65	16 - 128	2.97	59		
1718-51-0	Terphenyl-d14	4.03	81	5	4.31	86	43 - 138	3.93	79		

# General Chromatography Quality Control Summary

Analytical Batch 433483		Client ID GCAL ID Sample Type Prep Date Analytical Date Matrix	MB432793			LCS432793			LCSD432793			
Prep Batch 432793	835929		835930		835931		835931		835931			
Prep Method TNRCC	1006/LA 1006	Method Blank	LCS		LCS		LCS		LCS			
		05/27/2010 14:00	05/27/2010 14:00		05/27/2010 14:00		05/27/2010 14:00		05/27/2010 14:00			
		06/02/2010 17:30	06/02/2010 18:33		06/02/2010 18:33		06/02/2010 19:35		06/02/2010 19:35			
		Solid	Solid		Solid		Solid		Solid			
<b>LA1006 Hydrocarbons by Range</b>			Units	ug/Kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
			Result	RDL	Added			Limits % R				Limit
GCSV-02-11	Aliphatic >C10-C12	ND	15.0									
GCSV-02-12	Aliphatic >C12-C16	ND	10.0									
GCSV-02-31	Aliphatic >C16-C35	ND	10.0									
GCSV-02-15	Aromatic >C10-C12	ND	10.0									
GCSV-02-16	Aromatic >C12-C16	ND	15.0									
GCSV-02-17	Aromatic >C16-C21	ND	15.0									
GCSV-05-18	Aromatic >C21-C35	ND	15.0									
GCSV-05-04	Total TPH (C6-C35)	ND	150000	200000	218000	109	60 - 140	236000	119	8	20	
<b>Surrogate</b>												
84-15-1	o-Terphenyl	48300	97	50000	46500	93	60 - 140	46800	95			



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432799 <b>Prep Batch</b> 432619 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB432619 <b>GCAL ID</b> 835140 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 17:30 <b>Analytical Date</b> 05/26/2010 12:51 <b>Matrix</b> Water	LCS432619 835141 LCS 05/24/2010 17:30 05/26/2010 12:56 Water			
<b>SW-846 7470A</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	ND 0.00020	0.00500	0.00512	102	80 - 120

<b>Analytical Batch</b> 432799 <b>Prep Batch</b> 432619 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW-BK-11 <b>GCAL ID</b> 21005242801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 17:30 <b>Analytical Date</b> 05/26/2010 17:54 <b>Matrix</b> Water	SW-BK-11 MS 21005242802 MS 05/24/2010 17:30 05/26/2010 12:59 Water	SW-BK-11 MSD 21005242803 MSD 05/24/2010 17:30 05/26/2010 13:01 Water						
<b>SW-846 7470A</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6 Mercury	0.00000 0.00020	0.00500	0.00490	98	75 - 125	0.00509	102	4	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432845 <b>Prep Batch</b> 432617 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB432617 <b>GCAL ID</b> 835132 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/25/2010 00:00 <b>Analytical Date</b> 05/27/2010 10:33 <b>Matrix</b> Solid	LCS432617 835133 LCS 05/25/2010 00:00 05/27/2010 10:34 Solid			
<b>SW-846 7471B</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	ND 0.010	0.25	0.24	95	80 - 120

<b>Analytical Batch</b> 432845 <b>Prep Batch</b> 432617 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-BK-11 <b>GCAL ID</b> 21005242807 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/25/2010 00:00 <b>Analytical Date</b> 05/27/2010 10:36 <b>Matrix</b> Solid	835104MS 835135 MS 05/25/2010 00:00 05/27/2010 10:39 Solid			
<b>SW-846 7471B</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	0.0 0.010	0.25	0.24	94	75 - 125

<b>Analytical Batch</b> 432845 <b>Prep Batch</b> 432617 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-BK-11 <b>GCAL ID</b> 21005242807 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/25/2010 00:00 <b>Analytical Date</b> 05/27/2010 10:36 <b>Matrix</b> Solid	835104DUP 835134 DUP 05/25/2010 00:00 05/27/2010 10:38 Solid		
<b>SW-846 7471B</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6 Mercury	0.0 0.010	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433089 <b>Prep Batch</b> 432614 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB432614 <b>GCAL ID</b> 835120 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 17:00 <b>Analytical Date</b> 05/29/2010 16:14 <b>Matrix</b> Water	LCS432614 835121 LCS 05/24/2010 17:00 05/29/2010 16:20 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-39-3	Barium	ND	0.010	0.50	0.49	97	80 - 120
7440-43-9	Cadmium	0.00046B	0.0027	0.50	0.50	99	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.49	97	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.49	98	80 - 120
7782-49-2	Selenium	ND	0.0050	0.50	0.50	100	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.47	95	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.48	95	80 - 120

<b>Analytical Batch</b> 433089 <b>Prep Batch</b> 432614 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-BK-11 <b>GCAL ID</b> 21005242801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 17:00 <b>Analytical Date</b> 05/29/2010 16:26 <b>Matrix</b> Water	SW-BK-11 MS 21005242802 MS 05/24/2010 17:00 05/29/2010 16:33 Water	SW-BK-11 MSD 21005242803 MSD 05/24/2010 17:00 05/29/2010 16:39 Water								
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-39-3	Barium	0.25	0.010	0.50	0.72	94	75 - 125	0.74	97	3	20
7440-43-9	Cadmium	0.00056	0.0027	0.50	0.46	92	75 - 125	0.47	95	2	20
7440-47-3	Chromium	0.0040	0.010	0.50	0.46	91	75 - 125	0.47	93	2	20
7439-92-1	Lead	0.0042	0.0080	0.50	0.47	94	75 - 125	0.49	97	4	20
7782-49-2	Selenium	-0.0053	0.0050	0.50	0.50	101	75 - 125	0.51	103	2	20
7440-24-6	Strontium	0.52	0.050	0.50	1.0	95	75 - 125	1.00	96	0	20
7440-66-6	Zinc	0.0097	0.020	0.50	0.48	93	75 - 125	0.49	96	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433334 <b>Prep Batch</b> 432560 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MB432560 <b>GCAL ID</b> 834853 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/25/2010 09:50 <b>Analytical Date</b> 06/01/2010 23:20 <b>Matrix</b> Solid	LCS432560 834854 LCS 05/25/2010 09:50 06/01/2010 23:27 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	ND	1.60	20.0	20.4	102	80 - 120
7440-39-3	Barium	ND	0.40	20.0	20.3	102	80 - 120
7440-43-9	Cadmium	ND	0.20	20.0	20.1	100	80 - 120
7440-47-3	Chromium	ND	0.40	20.0	20.6	103	80 - 120
7439-92-1	Lead	ND	0.60	20.0	20.4	102	80 - 120
7782-49-2	Selenium	ND	1.60	20.0	19.5	97	80 - 120
7440-24-6	Strontium	ND	0.40	20.0	19.8	99	80 - 120
7440-66-6	Zinc	ND	0.80	20.0	18.6	93	80 - 120

<b>Analytical Batch</b> 433334 <b>Prep Batch</b> 432560 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-BK-10 <b>GCAL ID</b> 21005242808 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/25/2010 09:50 <b>Analytical Date</b> 06/01/2010 23:35 <b>Matrix</b> Solid	835105MS 835404 MS 05/25/2010 09:50 06/02/2010 00:17 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	1.22	1.60	20.0	20.2	95	75 - 125
7440-39-3	Barium	68.8	0.40	20.0	89.7	104	75 - 125
7440-43-9	Cadmium	0.0	0.20	20.0	18.5	92	75 - 125
7440-47-3	Chromium	5.85	0.40	20.0	28.0	111	75 - 125
7439-92-1	Lead	6.82	0.60	20.0	25.7	94	75 - 125
7782-49-2	Selenium	0.0	1.60	20.0	19.5	97	75 - 125
7440-24-6	Strontium	25.9	0.40	20.0	46.8	104	75 - 125
7440-66-6	Zinc	51.4	0.80	20.0	47.3	-20*	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433334	<b>Client ID</b> SED-BK-10	835105DUP			
<b>Prep Batch</b> 432560	<b>GCAL ID</b> 21005242808	835403			
<b>Prep Method</b> SW-846 3050B	<b>Sample Type</b> SAMPLE	DUP			
	<b>Prep Date</b> 05/25/2010 09:50	05/25/2010 09:50			
	<b>Analytical Date</b> 06/01/2010 23:35	06/01/2010 23:41			
	<b>Matrix</b> Solid	Solid			
<b>SW-846 6010B</b>	<b>Units</b> mg/kg	<b>Result</b>	<b>RPD</b>	<b>RPD</b>	<b>Limit</b>
	<b>Result</b> <b>RDL</b>				
7440-38-2 Arsenic	1.22 1.60	1.45	17	20	
7440-39-3 Barium	68.8 0.40	62.8	9	20	
7440-43-9 Cadmium	0.0 0.20	0.0	0	20	
7440-47-3 Chromium	5.85 0.40	5.54	5	20	
7439-92-1 Lead	6.82 0.60	6.72	1	20	
7782-49-2 Selenium	0.0 1.60	0.0	0	20	
7440-24-6 Strontium	25.9 0.40	23.9	8	20	
7440-66-6 Zinc	51.4 0.80	19.2	91*	20	

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433089 <b>Prep Batch</b> 432575 <b>Prep Method</b> SW-846 3010A Dissolved	<b>Client ID</b> MB432575 <b>GCAL ID</b> 834897 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 14:20 <b>Analytical Date</b> 05/29/2010 17:50 <b>Matrix</b> Water	LCS432575 834898 LCS 05/24/2010 14:20 05/29/2010 17:57 Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.00031B	0.010	0.50	0.48	96	80 - 120
7440-43-9	Cadmium	0.00072B	0.0027	0.50	0.49	99	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.48	97	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.48	96	80 - 120
7782-49-2	Selenium	ND	0.0050	0.50	0.51	103	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.49	97	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.48	95	80 - 120

<b>Analytical Batch</b> 433089 <b>Prep Batch</b> 432575 <b>Prep Method</b> SW-846 3010A Dissolved	<b>Client ID</b> HG-19 <b>GCAL ID</b> 21005242406 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 12:35 <b>Analytical Date</b> 05/29/2010 23:01 <b>Matrix</b> Water	834869MS 834900 MS 05/24/2010 14:20 05/29/2010 18:16 Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	1.57	0.010	0.50	2.11	110	75 - 125
7440-43-9	Cadmium	0.0	0.0027	0.50	0.45	90	75 - 125
7440-47-3	Chromium	0.00072	0.010	0.50	0.47	93	75 - 125
7439-92-1	Lead	0.0	0.0080	0.50	0.47	94	75 - 125
7782-49-2	Selenium	0.0	0.0050	0.50	0.53	106	75 - 125
7440-24-6	Strontium	1.87	0.050	0.50	2.45	117	75 - 125
7440-66-6	Zinc	0.0	0.020	0.50	0.47	95	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433089	<b>Client ID</b> HG-19	834869DUP				
<b>Prep Batch</b> 432575	<b>GCAL ID</b> 21005242406	834899				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/24/2010 12:35	05/24/2010 14:20				
Dissolved	<b>Analytical Date</b> 05/29/2010 23:01	05/29/2010 18:10				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
	<b>Result</b>	<b>RDL</b>				
7440-39-3	Barium	1.57	0.010	1.58	0.6	20
7440-43-9	Cadmium	0.0	0.0027	0.0	0	20
7440-47-3	Chromium	0.00072	0.010	0.00045	46*	20
7439-92-1	Lead	0.0	0.0080	0.0	0	20
7782-49-2	Selenium	0.0	0.0050	0.0	0	20
7440-24-6	Strontium	1.87	0.050	1.90	2	20
7440-66-6	Zinc	0.0	0.020	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433089	<b>Client ID</b> MB432614	<b>LCS432614</b>					
<b>Prep Batch</b> 432614	<b>GCAL ID</b> 835120	835121					
<b>Prep Method</b> SW-846 3010A	<b>Sample Type</b> Method Blank	LCS					
	<b>Prep Date</b> 05/24/2010 17:00	05/24/2010 17:00					
	<b>Analytical Date</b> 05/29/2010 16:14	05/29/2010 16:20					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>	
		<b>Result</b>	<b>Added</b>			<b>Limits % R</b>	
7440-70-2	Calcium	ND	0.10	5.00	4.89	98	85 - 115
7439-95-4	Magnesium	ND	0.10	5.00	4.84	97	85 - 115
000-01-5	Hardness	ND	0.33	33.1	32.2	97	85 - 115



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433511 <b>Prep Batch</b> 432618 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MB432618 <b>GCAL ID</b> 835136 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/25/2010 09:50 <b>Analytical Date</b> 06/04/2010 11:00 <b>Matrix</b> Solid	LCS432618 835137 LCS 05/25/2010 09:50 06/04/2010 11:06 Solid					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-38-2	Arsenic	ND	0.12	1.60	1.50	94	80 - 120

<b>Analytical Batch</b> 433511 <b>Prep Batch</b> 432618 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MPA-AB13 0-3 (NORMAL) <b>GCAL ID</b> 21005242820 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/25/2010 09:50 <b>Analytical Date</b> 06/04/2010 11:12 <b>Matrix</b> Solid	835131MS 835148 MS 05/25/2010 09:50 06/04/2010 11:24 Solid					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-38-2	Arsenic	1.45	0.12	1.60	2.83	86	75 - 125

<b>Analytical Batch</b> 433511 <b>Prep Batch</b> 432618 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MPA-AB13 0-3 (NORMAL) <b>GCAL ID</b> 21005242820 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/25/2010 09:50 <b>Analytical Date</b> 06/04/2010 11:12 <b>Matrix</b> Solid	835131DUP 835149 DUP 05/25/2010 09:50 06/04/2010 11:18 Solid				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-38-2	Arsenic	1.45	0.12	1.25	15	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433890 <b>Prep Batch</b> 432616 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB432616 <b>GCAL ID</b> 835124 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 17:00 <b>Analytical Date</b> 06/07/2010 12:45 <b>Matrix</b> Water	LCS432616 835125 LCS 05/24/2010 17:00 06/07/2010 12:51 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b>	<b>Spike Added</b>	<b>Result</b>
7440-38-2 Arsenic	ND 0.010	0.040
		<b>% R</b> 94
		<b>Control Limits % R</b> 80 - 120

<b>Analytical Batch</b> 433890 <b>Prep Batch</b> 432616 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-BK-11 <b>GCAL ID</b> 21005242801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 17:00 <b>Analytical Date</b> 06/07/2010 13:28 <b>Matrix</b> Water	SW-BK-11 MS 21005242802 MS 05/24/2010 17:00 06/07/2010 13:03 Water	SW-BK-11 MSD 21005242803 MSD 05/24/2010 17:00 06/07/2010 13:09 Water
<b>SW-846 7010 Arsenic</b>			
<b>Units</b> mg/L <b>Result</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>
7440-38-2 Arsenic	0.0029 0.010	0.040	92
			<b>Control Limits % R</b> 75 - 125
			<b>Result</b> 0.045
			<b>% R</b> 106
			<b>RPD</b> 12
			<b>RPD Limit</b> 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433099 <b>Prep Batch</b> 432833 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB432833 <b>GCAL ID</b> 836106 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/27/2010 07:20 <b>Analytical Date</b> 05/29/2010 16:11 <b>Matrix</b> Water	LCS432833 836106 LCS 05/27/2010 07:20 05/29/2010 16:30 Water					
<b>SW-846 6010B SPLP</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>	
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>	
7440-39-3	Barium	ND	0.010	0.50	0.49	99	80 - 120
7439-92-1	Lead	ND	0.0030	0.50	0.49	98	80 - 120

<b>Analytical Batch</b> 433099 <b>Prep Batch</b> 432833 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MPA-SPLP-1 <b>GCAL ID</b> 21005242809 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/27/2010 07:20 <b>Analytical Date</b> 05/29/2010 16:36 <b>Matrix</b> Solid	835106MS 836108 MS 05/27/2010 07:20 05/29/2010 16:50 Solid					
<b>SW-846 6010B SPLP</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>	
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>	
7440-39-3	Barium	1.07	0.050	0.50	1.55	98	75 - 125
7439-92-1	Lead	4.66	0.015	0.50	5.12	92	75 - 125

<b>Analytical Batch</b> 433099 <b>Prep Batch</b> 432833 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MPA-SPLP-1 <b>GCAL ID</b> 21005242809 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/27/2010 07:20 <b>Analytical Date</b> 05/29/2010 16:36 <b>Matrix</b> Solid	835106DUP 836107 DUP 05/27/2010 07:20 05/29/2010 16:43 Solid				
<b>SW-846 6010B SPLP</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
7440-39-3	Barium	1.07	0.050	1.01	6	20
7439-92-1	Lead	4.66	0.015	4.41	6	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432583 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432583 <b>GCAL ID</b> 834909 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/24/2010 17:00 <b>Matrix</b> Water	LCS432583 834910 LCS 05/24/2010 17:00 Water					
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	1010	101	80 - 120

<b>Analytical Batch</b> 432583 <b>Prep Batch</b> N/A	<b>Client ID</b> HG-12 <b>GCAL ID</b> 21005242402 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/24/2010 17:00 <b>Matrix</b> Water	834865DUP 834911 DUP 05/24/2010 17:00 Water				
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
WET-035	Total Dissolved Solids(TDS)	2630	10.0	2610	0.76	5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432624 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	MPA-AB13 0-3 (DRY) 21005242817 SAMPLE 05/24/2010 16:45 Solid	835128DUP 835171 DUP 05/24/2010 16:45 Solid		
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	81.3	0.010	80.4	1.1 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432919 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432919 <b>GCAL ID</b> 836487 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/27/2010 16:22 <b>Matrix</b> Water	LCS432919 836488 LCS 05/27/2010 16:23 Water					
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6	Chloride	ND	1.0	60.0	62.6	104	80 - 120

<b>Analytical Batch</b> 432919 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-BK-11 <b>GCAL ID</b> 21005242801 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/27/2010 16:35 <b>Matrix</b> Water	SW-BK-11 MS 21005242802 MS 05/27/2010 16:36 Water		SW-BK-11 MSD 21005242803 MSD 05/27/2010 16:38 Water							
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6	Chloride	1240	50.0	3000	4280	101	75 - 125	4340	103	1	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432724 <b>GCAL ID</b> 835617 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:09 <b>Matrix</b> Solid	LCS432724 835618 LCS 05/24/2010 15:00 05/25/2010 16:10 Solid				
<b>SW-846 9251 Chloride</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
16887-00-6 Chloride	2.48B 10.0	600	594	99	80 - 120	

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-1C (46-48) <b>GCAL ID</b> 21005142606 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:22 <b>Matrix</b> Solid	831331MS 835621 MS 05/24/2010 15:00 05/25/2010 16:23 Solid	831331MSD 835622 MSD 05/24/2010 15:00 05/25/2010 16:24 Solid							
<b>SW-846 9251 Chloride</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
16887-00-6 Chloride	176 10.0	600	867	115	75 - 125	833	110	4	25	

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432621 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432621 <b>GCAL ID</b> 835150 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/25/2010 14:59 <b>Matrix</b> Solid	LCS432621 835151 LCS 05/25/2010 15:11 Solid	LCSD432621 835152 LCSD 05/25/2010 15:26 Solid								
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10200	102	69 - 128	10000	100	2	25

<b>Analytical Batch</b> 432621 <b>Prep Batch</b> N/A	<b>Client ID</b> SED-BK-08 <b>GCAL ID</b> 21005140209 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 15:35 <b>Matrix</b> Solid	830823DUP 835155 DUP 05/25/2010 16:07 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	58800	200	60200	2	25



## CHAIN OF CUSTODY RECORD

Lab use only

Client Name Pisani

Client # 4271

Workorder # 210052428

Due Date

<b>Report to:</b> Client: <u>Michael Pisani + Assoc</u> Address: <u>1100 Baydras St. Suite 430</u> <u>NOLA 70163</u> Contact: <u>Jon Miller</u> Phone: <u>(504) 582-2468</u> Fax: <u>jpmiller@ix.netcom.com</u>		<b>Bill to:</b> Client: _____ Address: _____ Contact: <u>SAME</u> Phone: _____ Fax: _____		<b>Analytical Requests &amp; Method</b> <u>Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Zn, Hg)</u> <u>PAH 8270 SIM</u> <u>Hardness, Chlorides, TDS</u> <u>Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Zn, Hg)</u> <u>Hg, PAH 8270, TOC, Chlorides</u> <u>Total Moisture</u> <u>Ba SPLP</u> <u>Pb, Ba SPLP</u> <u>TPH D+O</u> <u>As by AA (wet + dry weight) @ Moisture</u>		<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>27</u>	
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P.O. Number 07-47 Project Name/Number East White Lake UPSB

Sampled By: PMR, Charles Trahan

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Gr	Sample Description	Preservatives	No Con-tainers	Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Zn, Hg)	PAH 8270 SIM	Hardness, Chlorides, TDS	Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Zn, Hg)	Hg, PAH 8270, TOC, Chlorides	Total Moisture	Ba SPLP	Pb, Ba SPLP	TPH D+O	As by AA (wet + dry weight) @ Moisture	Remarks:	Lab ID	
W	5-19-10	1535		X	SW-BK-11	None	7	X	X	X								As by AA; 1 MSDS	1, 2, 3	
W	5-19-10	1610		X	SW-BK-10	↓	↓	X	X	X								↓ Bottle made w/MSDS run matrix spike + none	4, 5, 6	
S	5-19-10	1545		X	Sed-BK-11	None	3				X	X	X						AJW 5-24-10	7
S	5-19-10	1640		X	Sed-BK-10	↓	↓				X	X	X							8
S	5-20-10	1005		X	MPA-SPLP-1	↓	1							X					SW-BK-11*	9
↓	↓	1145		X	MPA-SPLP-2	↓	↓							X					MS/MSD on Cl and total metals	10
↓	↓	1205		X	MPA-SPLP-3	↓	↓							X						11
S	5-19-10	1542		X	MPA-AB 5(a) 4-6'	None	2								X				SW-BK-10-	12
↓	↓	1610		X	MPA-AB 5(b) 4-6'	↓	↓								X				MS/MSD on PAHs	13
↓	↓	1725		X	MPA-AB 5(c) 4-6'	↓	↓								X					14
↓	↓	1512		X	MPA-AB 6 8-10'	↓	↓									X				15 18
↓	↓	1705		X	MPA-AB 8 6-8'	↓	↓									X				16 19
↓	5-20-10	920		X	MPA-AB 13 0-3'	↓	↓									X				17 20
W	5-19-10	1615			FB-1 AJW 5/24/10	↓	↓												Field Blank	

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5/21/10</u>	Time: <u>10:15</u>
Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5/21/10</u>	Time: <u>16:15</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: Metals by SW-846 6010A - Total + Diss. TDS M2540C  
\*Mercury by SW-846 7470B SPLP - West side  
Hardness SM 2340C Call David Limke when samples are  
Chlorides SW-846 4500 Received (413) 414-6699  
 By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services. Call Jon Miller (504) 582-2468

# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 06/11/2010

**GCAL Report** 210052666



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210052666

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

J Flag (Organics) - Indicates an estimated value. This flag is used when the data indicated the presence of an analyte meeting all the identification criteria for the method and the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RDL (reporting limit based on a low level calibration standard included in the initial calibration curve).

B flag (Inorganics) – This flag is used when the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RL (reporting limit based on a low level calibration standard included in the initial calibration curve or a low level check standard for ICP).

### **METALS**

In the SW-846 6010B analysis for prep batch 432866, the MS recoveries are not applicable for Calcium and Sodium because the sample concentration is greater than four times the spike concentration.

In the SW-846 1312/6010B analysis for prep batch 433132, the Sample/Duplicate RPD for Chromium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

### **CONVENTIONALS**

In the SM 4500 CL E Chloride analysis, sample 21005266603 (MPA-WW-1) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

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Robyn Miguez  
Technical Director  
**GCAL REPORT 210052666**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266601	MPA-SPLP-4	Solid	05/25/2010 13:40	05/26/2010 16:17
21005266602	MPA-SPLP-5	Solid	05/25/2010 15:00	05/26/2010 16:17
21005266603	MPA-WW-1	Water	05/25/2010 14:40	05/26/2010 16:17
21005266604	TRIP BLANK	Water		05/26/2010 16:17

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266602	MPA-SPLP-5	Solid	05/25/2010 15:00	05/26/2010 16:17

## SW-846 6010B SPLP

CAS#	Parameter	Result	RDL	MDL	Units
7440-47-3	Chromium	0.00053B	0.010	0.00032	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266603	MPA-WW-1	Water	05/25/2010 14:40	05/26/2010 16:17

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	195	2.0	0.32	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	616	10.0	10.0	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.47	0.010	0.00031	mg/L
7440-70-2	Calcium	49.9	0.10	0.028	mg/L
7439-89-6	Iron	0.75	0.10	0.0095	mg/L
7439-95-4	Magnesium	17.7	0.10	0.023	mg/L
7439-96-5	Manganese	0.082	0.015	0.00057	mg/L
7440-09-7	Potassium	2.47	0.50	0.068	mg/L
7440-23-5	Sodium	161	1.00	0.059	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	356	1.0	0.17	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266601	MPA-SPLP-4	Solid	05/25/2010 13:40	05/26/2010 16:17

SW-846 7470A SPLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/30/2010 07:30	433134	SW-846 1312/7470A	1	05/30/2010 15:49	TEA	433150

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266602	MPA-SPLP-5	Solid	05/25/2010 15:00	05/26/2010 16:17

SW-846 6010B SPLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/30/2010 07:30	433132	SW-846 3010A	1	05/30/2010 20:40	TEA	433151

CAS#	Parameter	Result	RDL	MDL	Units
7440-47-3	Chromium	0.00053B	0.010	0.00032	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266603	MPA-WW-1	Water	05/25/2010 14:40	05/26/2010 16:17

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	06/02/2010 05:48	AGC	433337

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.042	mg/L	85	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	107	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/29/2010 08:00	433247	TNRCC 1006/LA 1006	1	06/08/2010 11:30	SMH	433976

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.7	10	mg/L	64	60 - 140

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/28/2010 16:30	432866	SW-846 3010A	1	06/02/2010 16:52	CLB	433375

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.47	0.010	0.00031	mg/L
7440-70-2	Calcium	49.9	0.10	0.028	mg/L
7439-89-6	Iron	0.75	0.10	0.0095	mg/L
7439-95-4	Magnesium	17.7	0.10	0.023	mg/L
7439-96-5	Manganese	0.082	0.015	0.00057	mg/L
7440-09-7	Potassium	2.47	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	161	1.00	0.059	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005266603	MPA-WW-1	Water	05/25/2010 14:40	05/26/2010 16:17

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/28/2010 08:20	432770	SW-846 3020A	1	05/31/2010 11:00	CNB	433159
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/27/2010 13:55	DJH	432918
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	616	10.0	10.0	mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	05/28/2010 12:27	AEL	433005
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	195	2.0	0.32	mg/L	

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	06/02/2010 14:05	JMC	433411
CAS#	Parameter	Result	RDL	MDL	Units	
T-005-C	Carbonate Alkalinity	ND	1.0	0.17	mg/L CaCO3	

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	06/02/2010 14:05	JMC	433411
CAS#	Parameter	Result	RDL	MDL	Units	
T-005-B	Bicarbonate Alkalinity	356	1.0	0.17	mg/L CaCO3	

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/28/2010 11:09	JEM	432992
CAS#	Parameter	Result	RDL	MDL	Units	
14808-79-8	Sulfate	ND	5.0	1.4	mg/L	

<b>GCAL ID</b> 21005266604	<b>Client ID</b> TRIP BLANK	<b>Matrix</b> Water	<b>Collect Date/Time</b>	<b>Receive Date/Time</b> 05/26/2010 16:17
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SW-846 8260B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 06/02/2010 06:11	<b>By</b> AGC	<b>Analytical Batch</b> 433337
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CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.042	mg/L	84	78 - 130
1868-53-7	Dibromofluoromethane	.05	.058	mg/L	116	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

LA1006 Hydrocarbons by Range

<b>Prep Date</b> 05/29/2010 08:00	<b>Prep Batch</b> 433247	<b>Prep Method</b> TNRCC 1006/LA 1006	<b>Dilution</b> 1	<b>Analyzed</b> 06/08/2010 12:39	<b>By</b> SMH	<b>Analytical Batch</b> 433976
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CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

# GC/MS Volatiles Quality Control Summary

Analytical Batch 433337 Prep Batch N/A		Client ID GCAL ID Sample Type Analytical Date Matrix		MB433337 838288 Method Blank 06/02/2010 05:03 Water				LCS433337 838289 LCS 06/02/2010 03:47 Water			LCSD433337 838290 LCSD 06/02/2010 04:18 Water		
SW-846 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.044	89	74 - 126	0.048	96	9	30		
1330-20-7	Xylene (total)	ND	0.01	0.150	0.138	92	74 - 127	0.149	99	8	30		
71-43-2	Benzene	ND	0.005	0.050	0.049	97	70 - 129	0.052	105	6	20		
108-88-3	Toluene	ND	0.005	0.050	0.049	98	72 - 120	0.053	106	8	20		
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene	42.6	85	50	43.8	88	78 - 130	45.9	92				
1868-53-7	Dibromofluoromethane	55	110	50	49.4	99	77 - 127	52.8	106				
2037-26-5	Toluene d8	49	98	50	45.8	92	76 - 134	47.4	95				
17060-07-0	1,2-Dichloroethane-d4	53.6	107	50	52.8	106	71 - 127	57.4	115				

Analytical Batch 433337 Prep Batch N/A		Client ID GCAL ID Sample Type Analytical Date Matrix		MPA-WW-1 21005266603 SAMPLE 06/02/2010 05:48 Water				836148MS 838490 MS 06/02/2010 08:27 Water			836148MSD 838491 MSD 06/02/2010 08:50 Water		
SW-846 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	0.00	0.005	0.050	0.048	95	74 - 126	0.043	86	11	30		
1330-20-7	Xylene (total)	0.00	0.01	0.150	0.143	95	74 - 127	0.128	85	11	30		
71-43-2	Benzene	0.00	0.005	0.050	0.048	96	70 - 129	0.046	92	4	30		
108-88-3	Toluene	0.00	0.005	0.050	0.050	99	72 - 120	0.045	90	11	30		
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene	.042	85	50	45.3	91	78 - 130	44.7	89				
1868-53-7	Dibromofluoromethane	.054	107	50	52.1	104	77 - 127	52.7	105				
2037-26-5	Toluene d8	.05	99	50	46.4	93	76 - 134	47.5	95				
17060-07-0	1,2-Dichloroethane-d4	.054	108	50	57.1	114	71 - 127	58.7	117				

# General Chromatography Quality Control Summary

Analytical Batch 433976		Client ID GCAL ID Sample Type Prep Date Analytical Date Matrix	MB433247		LCS433247			LCSD433247				
Prep Batch 433247	837901		837901		837902			837903				
Prep Method TNRCC	1006/LA 1006	Method Blank	LCS		LCS			LCS				
		05/29/2010 08:00	05/29/2010 08:00		05/29/2010 08:00			05/29/2010 08:00				
		06/07/2010 16:39	06/07/2010 17:54		06/07/2010 17:54			06/07/2010 19:10				
		Water	Water		Water			Water				
LA1006 Hydrocarbons by Range			Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
			Result	RDL	Added			Limits % R				Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150									
GCSV-02-10	Aliphatic >C8-C10	ND	0.150									
GCSV-02-11	Aliphatic >C10-C12	ND	0.150									
GCSV-02-12	Aliphatic >C12-C16	ND	0.150									
GCSV-02-31	Aliphatic >C16-C35	ND	0.150									
GCSV-02-14	Aromatic >C8-C10	ND	0.150									
GCSV-02-15	Aromatic >C10-C12	ND	0.150									
GCSV-02-16	Aromatic >C12-C16	ND	0.150									
GCSV-02-17	Aromatic >C16-C21	ND	0.150									
GCSV-05-18	Aromatic >C21-C35	ND	0.150									
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	60.4	41.3	68	60 - 140	41.0	68	0.7	20	
<b>Surrogate</b>												
84-15-1	o-Terphenyl	10200	68	15100	9450	63	60 - 140	10300	68			

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433375 <b>Prep Batch</b> 432866 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB432866 <b>GCAL ID</b> 836273 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/28/2010 16:30 <b>Analytical Date</b> 06/02/2010 16:04 <b>Matrix</b> Water	LCS432866 836274 LCS 05/28/2010 16:30 06/02/2010 16:11 Water				
<b>SW-846 6010B</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	ND	0.010	0.50	0.48	96	80 - 120
7440-70-2 Calcium	ND	0.10	5.00	4.66	93	80 - 120
7439-89-6 Iron	ND	0.10	5.00	4.66	93	80 - 120
7439-95-4 Magnesium	ND	0.10	5.00	4.69	94	80 - 120
7439-96-5 Manganese	0.00064B	0.015	0.50	0.48	96	80 - 120
7440-09-7 Potassium	ND	0.50	10.0	9.52	95	80 - 120
7782-49-2 Selenium	ND	0.040	0.50	0.49	98	80 - 120
7440-23-5 Sodium	0.45B	1.00	20.0	18.9	95	80 - 120

<b>Analytical Batch</b> 433375 <b>Prep Batch</b> 432866 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MPA-WW-1 <b>GCAL ID</b> 21005266603 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/28/2010 16:30 <b>Analytical Date</b> 06/02/2010 16:52 <b>Matrix</b> Water	836148MS 836361 MS 05/28/2010 16:30 06/02/2010 17:05 Water				
<b>SW-846 6010B</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	0.47	0.010	0.50	0.96	99	75 - 125
7440-70-2 Calcium	49.9	0.10	5.00	57.7	155*	75 - 125
7439-89-6 Iron	0.75	0.10	5.00	5.48	94	75 - 125
7439-95-4 Magnesium	17.7	0.10	5.00	23.7	122	75 - 125
7439-96-5 Manganese	0.082	0.015	0.50	0.56	96	75 - 125
7440-09-7 Potassium	2.47	0.50	10.0	13.3	108	75 - 125
7782-49-2 Selenium	0.0	0.040	0.50	0.50	101	75 - 125
7440-23-5 Sodium	161	1.00	20.0	191	150*	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433375	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Prep Date</b> <b>Analytical Date</b> <b>Matrix</b>	MPA-VW-1	836148DUP			
<b>Prep Batch</b> 432866		21005266603	836360			
<b>Prep Method</b> SW-846		SAMPLE	DUP			
3010A		05/28/2010 16:30	05/28/2010 16:30			
		06/02/2010 16:52	06/02/2010 16:59			
		Water	Water			
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>			<b>Limit</b>
7440-39-3	Barium	0.47	0.010	0.48	2	20
7440-70-2	Calcium	49.9	0.10	51.3	3	20
7439-89-6	Iron	0.75	0.10	0.78	4	20
7439-95-4	Magnesium	17.7	0.10	18.4	4	20
7439-96-5	Manganese	0.082	0.015	0.083	1	20
7440-09-7	Potassium	2.47	0.50	2.59	5	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20
7440-23-5	Sodium	161	1.00	165	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433084 <b>Prep Batch</b> 432770 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB432770 <b>GCAL ID</b> 835823 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/28/2010 08:20 <b>Analytical Date</b> 05/29/2010 13:03 <b>Matrix</b> Water	LCS432770 835824 LCS 05/28/2010 08:20 05/29/2010 13:09 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> ND	<b>RDL</b> 0.010	<b>Spike Added</b> 0.040
7440-38-2 Arsenic		<b>Result</b> 0.036 <b>% R</b> 89 <b>Control Limits % R</b> 80 - 120

<b>Analytical Batch</b> 433084 <b>Prep Batch</b> 432770 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> B-60 <b>GCAL ID</b> 21005260102 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/28/2010 08:20 <b>Analytical Date</b> 06/01/2010 12:22 <b>Matrix</b> Water	835744MS 835826 MS 05/28/2010 08:20 05/29/2010 13:27 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> 0.0069	<b>RDL</b> 0.010	<b>Spike Added</b> 0.040
7440-38-2 Arsenic		<b>Result</b> 0.049 <b>% R</b> 106 <b>Control Limits % R</b> 75 - 125

<b>Analytical Batch</b> 433084 <b>Prep Batch</b> 432770 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> B-60 <b>GCAL ID</b> 21005260102 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/28/2010 08:20 <b>Analytical Date</b> 06/01/2010 12:22 <b>Matrix</b> Water	835744DUP 835825 DUP 05/28/2010 08:20 05/29/2010 13:21 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> 0.0069	<b>RDL</b> 0.010	<b>Result</b> 0.0065
7440-38-2 Arsenic		<b>RPD</b> 6 <b>RPD Limit</b> 20



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433151 <b>Prep Batch</b> 433132 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB433132 <b>GCAL ID</b> 837487 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/30/2010 07:30 <b>Analytical Date</b> 05/30/2010 20:27 <b>Matrix</b> Water	LCS433132 837488 LCS 05/30/2010 07:30 05/30/2010 20:34 Water					
<b>SW-846 6010B SPLP</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010	<b>Spike Added</b> 0.50	<b>Result</b> 0.49	<b>% R</b> 98	<b>Control Limits % R</b> 80 - 120	
7440-47-3	Chromium	ND	0.010	0.50	0.49	98	80 - 120

<b>Analytical Batch</b> 433151 <b>Prep Batch</b> 433132 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MPA-SPLP-5 <b>GCAL ID</b> 21005266602 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/30/2010 07:30 <b>Analytical Date</b> 05/30/2010 20:40 <b>Matrix</b> Solid	836147MS 837490 MS 05/30/2010 07:30 05/30/2010 20:53 Solid					
<b>SW-846 6010B SPLP</b>		<b>Units</b> mg/L <b>Result</b> 0.00053 <b>RDL</b> 0.010	<b>Spike Added</b> 0.50	<b>Result</b> 0.48	<b>% R</b> 95	<b>Control Limits % R</b> 75 - 125	
7440-47-3	Chromium	0.00053	0.010	0.50	0.48	95	75 - 125

<b>Analytical Batch</b> 433151 <b>Prep Batch</b> 433132 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MPA-SPLP-5 <b>GCAL ID</b> 21005266602 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/30/2010 07:30 <b>Analytical Date</b> 05/30/2010 20:40 <b>Matrix</b> Solid	836147DUP 837489 DUP 05/30/2010 07:30 05/30/2010 20:47 Solid				
<b>SW-846 6010B SPLP</b>		<b>Units</b> mg/L <b>Result</b> 0.00053 <b>RDL</b> 0.010	<b>Result</b> 0.00068	<b>RPD</b> 25*	<b>RPD Limit</b> 20	
7440-47-3	Chromium	0.00053	0.010	0.00068	25*	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433150 <b>Prep Batch</b> 433134 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB433134 <b>GCAL ID</b> 837495 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/30/2010 07:30 <b>Analytical Date</b> 05/30/2010 15:46 <b>Matrix</b> Water	LCS433134 837496 LCS 05/30/2010 07:30 05/30/2010 15:47 Water				
<b>SW-846 7470A SPLP</b>		<b>Units</b> mg/L <b>Result</b> ND	<b>RDL</b> 0.00020	<b>Spike Added</b> 0.00500	<b>Result</b> 0.00406	<b>% R</b> 81 <b>Control Limits % R</b> 80 - 120
7439-97-6	Mercury	ND	0.00020	0.00500	0.00406	81 80 - 120

<b>Analytical Batch</b> 433150 <b>Prep Batch</b> 433134 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MPA-SPLP-4 <b>GCAL ID</b> 21005266601 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/30/2010 07:30 <b>Analytical Date</b> 05/30/2010 15:49 <b>Matrix</b> Solid	836146MS 837498 MS 05/30/2010 07:30 05/30/2010 15:52 Solid				
<b>SW-846 7470A SPLP</b>		<b>Units</b> mg/L <b>Result</b> 0.00000	<b>RDL</b> 0.00020	<b>Spike Added</b> 0.00500	<b>Result</b> 0.00422	<b>% R</b> 84 <b>Control Limits % R</b> 75 - 125
7439-97-6	Mercury	0.00000	0.00020	0.00500	0.00422	84 75 - 125

<b>Analytical Batch</b> 433150 <b>Prep Batch</b> 433134 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MPA-SPLP-4 <b>GCAL ID</b> 21005266601 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/30/2010 07:30 <b>Analytical Date</b> 05/30/2010 15:49 <b>Matrix</b> Solid	836146DUP 837497 DUP 05/30/2010 07:30 05/30/2010 15:50 Solid				
<b>SW-846 7470A SPLP</b>		<b>Units</b> mg/L <b>Result</b> 0.00000	<b>RDL</b> 0.00020	<b>Result</b> 0.00000	<b>RPD</b> 0	<b>RPD Limit</b> 20
7439-97-6	Mercury	0.00000	0.00020	0.00000	0	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432918 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432918 <b>GCAL ID</b> 836484 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/27/2010 13:55 <b>Matrix</b> Water	LCS432918 836485 LCS 05/27/2010 13:55 Water					
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	988	98.8	80 - 120

<b>Analytical Batch</b> 432918 <b>Prep Batch</b> N/A	<b>Client ID</b> MPA-WW-1 <b>GCAL ID</b> 21005266603 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/27/2010 13:55 <b>Matrix</b> Water	836148DUP 836486 DUP 05/27/2010 13:55 Water				
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
WET-035	Total Dissolved Solids(TDS)	616	10.0	618	0.32	5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 433005 <b>Prep Batch</b> N/A	<b>Client ID</b> MB433005 <b>GCAL ID</b> 836819 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/28/2010 12:04 <b>Matrix</b> Water	LCS433005 836820 LCS 05/28/2010 12:04 Water	LCSD433005 836821 LCSD 05/28/2010 12:06 Water							
<b>SM 4500 CL E Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	0.31B	1.0	60.0	60.9	101	80 - 120	60.9	102	0	25

<b>Analytical Batch</b> 433005 <b>Prep Batch</b> N/A	<b>Client ID</b> 25427-052710-MW18 <b>GCAL ID</b> 21005273201 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/28/2010 12:12 <b>Matrix</b> Water	836570MS 836822 MS 05/28/2010 12:13 Water	836570MSD 836823 MSD 05/28/2010 12:14 Water							
<b>SM 4500 CL E Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	29.0	1.0	60.0	92.2	105	75 - 125	92.3	105	0.1	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 433411 <b>Prep Batch</b> N/A	<b>Client ID</b> MPA-WW-1 <b>GCAL ID</b> 21005266603 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 06/02/2010 14:05 <b>Matrix</b> Water	836148DUP 838570 DUP 06/02/2010 14:05 Water
<b>SM 2320B Carbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	356 1.0	376 5 11
T-005-C Carbonate Alkalinity	0.00 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432992 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432992 <b>GCAL ID</b> 836786 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/28/2010 10:41 <b>Matrix</b> Water	<b>LCS432992</b> 836787 LCS 05/28/2010 10:41 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	ND	5.0	20.0	21.1	106 80 - 120

<b>Analytical Batch</b> 432992 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21005252601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/28/2010 10:47 <b>Matrix</b> Water	<b>835567MS</b> 836789 MS 05/28/2010 10:50 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	166	50.0	200	329	81 75 - 125

<b>Analytical Batch</b> 432992 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21005252601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/28/2010 10:47 <b>Matrix</b> Water	<b>835567DUP</b> 836788 DUP 05/28/2010 10:48 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
14808-79-8	Sulfate	166	50.0	166	0	25

## CHAIN OF CUSTODY RECORD

Lab use only

P. Sani

9271

210052666

6-7-10

Client Name

Client #

Workorder #

Due Date

### Report to:

Client: Michael Pisanit+Assoc  
Address: 100 Poydras St. Suite 1430  
NOLA 70163  
Contact: Jon Miller  
Phone: (504) 582-2468  
Fax:

### Bill to:

Client: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact: SAME  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

### Analytical Requests & Method

SPLP - Hg  
SPLP - Cr  
BTEX  
TPH 100-1006  
Total Metals (As, Ba, Ca, Fe, Mg, Mn, Ni, Pb)  
Bicarbonate + Carbonate Alkalinity  
Chlorides  
Sulfate  
TDS

### Lab use only:

Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 30

P.O. Number 07-47 Project Name/Number East White Lake VPSB

Sampled By: PMR & JQM

Matrix <sup>1</sup>	Date	Time (2400)	COED	Grab	Sample Description	Preservatives	No Containers	SPLP - Hg	SPLP - Cr	BTEX	TPH 100-1006	Total Metals (As, Ba, Ca, Fe, Mg, Mn, Ni, Pb)	Bicarbonate + Carbonate Alkalinity	Chlorides	Sulfate	TDS	Remarks:	Lab ID
S	5-25-10	1340		X	MPA - SPLP-4	None	1	X										1
S	5-25-10	1500		X	MPA - SPLP-5	None	1		X									2
W	5-25-10	1440		X	MPA - WW-1	None HCl	8			X	X	X	X	X	X	X		3
					Trip Blank - BTEX	HCl	3			X								4
					Trip Blank - 1006	HCl	3				X							

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5-26-10</u>	Time: <u>12:15</u>
Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5-26-10</u>	Time: <u>16:17</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: Email results to jqmiller@ix.net.com.com  
pmritchie@ix.net.com.com

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

**MICHAEL PISANI & ASSOCIATES**

**07-47 East White Lake**

**STANDARD LEVEL IV  
REPORT OF ANALYSIS**

**WORK ORDER #10-05084-OR**

**June 11, 2010**

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY  
OAK RIDGE, TN**



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**STANDARD OPERATING PROCEDURE**

Sample Receiving

MP-001, Rev. 10  
Effective: 4/27/09  
Page 13 of 13

**Eberline Services – Oak Ridge Laboratory  
LABORATORY DATA SUPPORT CHECKLIST**


MP-001-3

Eberline Services Work Order # 10 05084

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		5-18-10	DD	Sample Log-In
		6-3-10	KEW	Data Compilation
		6-4-10	MT	First Technical Data Review
		6/4/10	CD	Second Technical Data Review
		6/7/10	J	Data Entry/Electronic Deliverable
		6/7/10	J	Case Narrative
		06/10/10	eyt	Electronic Deliverable Proof
		6/10/10	J.H.	Samples Analyzed within Holding Time Yes? <input type="checkbox"/> No? <input type="checkbox"/> <b>YES</b>
		6/10/10	J.H.	QA/QC Review
		06/07/10	eyt	Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:  Laboratory Manager 6/10/10 Date

Copy No. \_\_\_\_\_

Radiochemistry Services



**SECTION I**  
**CHAIN OF CUSTODY & pH CHECK SHEET**



Richmond Laboratory

# Chain of Custody

10 050 84

CLIENT: **MP&A**

ADDRESS: **1100 Boyd Ave, Suite 1430  
New Orleans, LA 70163**

PROJECT: **27-47**

SAMPLER'S SIGNATURE: **J. Miller 504.582.2468**  
*[Signature]*

SAMPLE NO.	DATE	TIME	LOCATION
4 MW-4D	5-12-10	0805	East White Lake
5 MW-5D	5-12-10	1140	
6 MW-6D	5-12-10	1540	
7 MW-6S	5-12-10	1715	
8 MW-1C9	5-13-10	1140	

PURCHASE ORDER NO. \_\_\_\_\_

PARAMETERS

	Rad 238	Gross Alpha	Net Alpha	Net Beta	Net Gamma	Net Neutron	Net Proton	Net Electron	Net Neutrino	Net Photon	Net Neutron	Net Proton	Net Electron	Net Neutrino	Net Photon
4	X														
5															
6															
7															
8															

# CONTAINERS

SAMPLE TYPE OR MATRIX

W  
W  
W  
W  
W

DATE \_\_\_\_\_ PAGE \_\_\_\_\_ OF \_\_\_\_\_

TAT (IN DAYS) \_\_\_\_\_

OBSERVATIONS, COMMENTS, VOLUMES, SPECIAL OR ADDITIONAL TEST

RECEIVED

MAY 18 2010

BY: *DP*

1) RELINQUISHED BY / DATE: *MP&A* 5-14-10

2) RECEIVED BY / DATE: *Steve G...* 5/14/10  
COMPANY: **MP&A**

3) RELINQUISHED BY / DATE: *Steve G...* 5-16-10  
COMPANY: **MP&A**

4) RECEIVED BY / DATE: *Steve G...* 5/17/10  
COMPANY: **FEDX**

5) RELINQUISHED BY / DATE: *MP&A*

6) RECEIVED BY / DATE: *Steve G...* 5-18-10  
COMPANY: **Eberline**

7) RELINQUISHED BY / DATE: \_\_\_\_\_

8) RECEIVED BY / DATE: \_\_\_\_\_  
COMPANY: \_\_\_\_\_

TOTAL NO. OF CONTAINERS: \_\_\_\_\_

METHOD OF SHIPMENT: \_\_\_\_\_

SPECIAL SHIPMENT-HANDLING, STORAGE REQUIREMENTS, OR POSSIBLE HAZARDS

2030 Wright Avenue P.O. Box 4040 Richmond, CA 94804-0040 (510) 235-2633 FAX No. (510) 235-0438



# Internal Chain of Custody

Work Order #

**10-05084**

Lab Deadline

**6/2/2010**

Analysis

**Ra226 - Level 4**

Sample Matrix

**Water**

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Filter samples & analyze liquid fraction.	04	25	Q1.4
	05	31	Q1.4
	06	27	Q1.4
	07	28	Q1.4
	08	32	Q1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	[Signature]	5/19/10 2000
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	[Signature]	5/19/10 2000
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	[Signature]	5/20/10 0600
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	[Signature]	5/24/10 1340
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	[Signature]	5/24/10 1345
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	[Signature]	5/25/10 0832
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #	<b>10-05084</b>
Lab Deadline	<b>6/2/2010</b>
Analysis	<b>Ra228 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Filter samples &amp; analyze liquid fraction.</b>	<b>04</b>	25	Q1.4
	<b>05</b>	31	Q1.4
	<b>06</b>	27	Q1.4
	<b>07</b>	28	Q1.4
	<b>08</b>	32	Q1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>JR</i>	5/19/10 0500
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>GOA</i>	5/19/10 2000
Received by	Sample Storage	Rough Prep	Prep	<del>Separations</del>	Count Room	<i>SR</i>	5/20/10 0600
Relinquished by	Sample Storage	Rough Prep	Prep	<del>Separations</del>	Count Room	<i>SR</i>	5/20/10 1300
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>KCB</i>	5/24/10 1345
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>KMCA</i>	5/28/10 0830
Received by	Sample Storage	Rough Prep	Prep	<del>Separations</del>	Count Room	<i>SR</i>	5/28/10 0830
Relinquished by	Sample Storage	Rough Prep	Prep	<del>Separations</del>	Count Room	<i>SR</i>	6/2/10 1034
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>KCB</i>	6/2/10 1040
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>KCB</i>	6/2/10 1303
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		




# Internal Chain of Custody

Work Order #	<b>10-05084</b>
Lab Deadline	<b>6/2/2010</b>
Analysis	<b>GaGdT_ThSr - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Filter samples &amp; analyze liquid fraction.</b>	<b>04</b>	25	Q1.4
	<b>05</b>	31	Q1.4
	<b>06</b>	27	Q1.4
	<b>07</b>	28	Q1.4
	<b>08</b>	32	Q1.4

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	BL	6.1.2010 1350
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	BL	6.2.2010 1350
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	ICB	6/2/10 1350
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	ICB	6/2/10 1609
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

	<b>Sample Receiving Report</b> (Volumes, pH, & CPM)	Internal Work Order
		<b>10-05084</b>
		Received By <b>KFOX</b>

FR	ClientID	# BtIs	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max
01	LCS	0		WA	Q1.4		
02	BLANK	0		WA	Q1.4		
03	DUP	0		WA	Q1.4		
04	MW-4D DIS	1		WA	Q1.4	3.76	25
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.7600	25
05	MW-5D DIS	1		WA	Q1.4	3.76	31
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.7600	31
06	MW-6D DIS	1		WA	Q1.4	3.76	27
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.7600	27
07	MW-65 DIS	1		WA	Q1.4	3.65	28
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.6500	28
08	MW-1C DIS	1		WA	Q1.4	3.65	32
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.6500	32

*EyF*  
*05/18/10*

Received by: 

Date: 5-18-10

MP-001, Rev 5  
Effective: 11/22/02



**SECTION II**  
**SAMPLE ACKNOWLEDGEMENT**





**Eberline Services – Oak Ridge Laboratory**

**SAMPLE RECEIPT CHECKLIST**  
MP-001-2

WORK ORDER # 10 05084

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<input checked="" type="radio"/>	N	
If aqueous, properly preserved	<input checked="" type="radio"/>	N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/>	N	
Unbroken on outside of package?	<input checked="" type="radio"/>	N	
Present on samples?	<input checked="" type="radio"/>	N	
Unbroken on samples?	<input checked="" type="radio"/>	N	
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/>	N	

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SIGNATURE: *[Signature]* DATE: 5-18-10

**SECTION III**  
**CASE NARRATIVE**



EBERLINE ANALYTICAL CORPORATION  
601 SCARBORO ROAD  
OAK RIDGE, TENNESSEE 37830  
PHONE (865) 481-0683  
FAX (865) 483-4621

EBS-OR-30456

June 11, 2010

Jonathan Miller  
Michael Pisani & Associates  
1100 Poydras Street, 1430 Energy Center  
New Orleans, LA 70163

CASE NARRATIVE  
Work Order # 10-05084-OR

SAMPLE RECEIPT

This work order contains five water samples received 05/18/2010. All samples were analyzed as dissolved for Radium-226/228 and Gross Alpha/Beta.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
MW-4D-DIS	10-05084-04	MW-6S-DIS	10-05084-07
MW-5D-DIS	10-05084-05	MW-1C-DIS	10-05084-08
MW-6D-DIS	10-05084-06		

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0 Modified. Gross Alpha/Beta was performed using EPA Method 900.0 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

RADIUM-226

Samples were prepared by removing aliquots followed by filtering to disassociate the dissolved and suspended fractions. This was followed by selective sulfate precipitations of the Radium from all samples. Samples were then mounted by semi-micro-precipitations onto micro-porous filters. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. Chemical recovery was calculated by the use of a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

Samples demonstrated acceptable results for Radium-226 activity. Chemical recovery was acceptable for all samples. Results for the Radium-226 method blank demonstrated acceptable activity. Results for the Radium-226 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

ANALYTICAL RESULTS CONTINUED

RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were then counted on a gas proportional counter. Chemical recovery was determined by the use of a Barium-133 tracer determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for Radium-228 activity. Chemical recovery was acceptable for all samples except for the laboratory control sample, which demonstrated a low chemical recovery. Results for the Radium-228 method blank demonstrated acceptable activity. Results for the Radium-228 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery.

GROSS ALPHA/BETA

Samples were filtered to disassociate the dissolved and suspended fractions. Volumetric aliquots from dissolved fractions were acidified with HNO<sub>3</sub>. Reduced samples were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Samples were then counted on a gas proportional counter. Results were corrected as required for inherent self-absorption based on residual mass present.

Samples demonstrated acceptable results for Gross Alpha and Beta activity. Due to high total dissolved solids, all results demonstrated slightly high detection limits. Results for the Gross Alpha and Beta method blank demonstrated acceptable activity. Results for the Gross Alpha replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Gross Beta replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Gross Alpha and Beta laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall  
Laboratory Manager

Date: 6/11/2010

**SECTION IV**  
**ANALYTICAL RESULTS SUMMARY**

# Eberline Analytical

## Final Report of Analysis

**Jonathan Miller**  
**Michael Pisani & Associates**  
**1100 Poydras St. #1430**  
**New Orleans, LA 70163**

**10-05084**

**SDG:**  
**Project:** 07-47 East White Lake  
**Analysis Category:** ENVIRONMENTAL  
**Sample Matrix:** WA

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
10-05084-01	LCS	KNOWN	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	3.13E+02	1.35E+01			pCi/l
10-05084-01	LCS	SPIKE	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	2.95E+02	7.86E+00	7.78E+00	3.64E-01	pCi/l
10-05084-02	MBL	BLANK	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	2.66E-02	6.39E-02	6.39E-02	1.47E-01	pCi/l
10-05084-03	DUP	MW-4D-DIS	05/12/10 08:25	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	2.68E+00	3.15E+00	3.15E+00	5.92E+00	pCi/l
10-05084-04	DO	MW-4D-DIS	05/12/10 08:25	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	2.96E+00	3.05E+00	3.05E+00	5.45E+00	pCi/l
10-05084-05	TRG	MW-5D-DIS	05/12/10 11:40	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	8.42E+00	6.74E+00	6.74E+00	1.19E+01	pCi/l
10-05084-06	TRG	MW-6D-DIS	05/12/10 15:40	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	-5.85E+00	6.62E+00	6.62E+00	1.77E+01	pCi/l
10-05084-07	TRG	MW-55-DIS	05/12/10 17:15	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	3.08E+00	5.54E+00	5.54E+00	1.18E+01	pCi/l
10-05084-08	TRG	MW-1C-DIS	05/13/10 11:40	5/18/2010	6/2/2010	10-05084	Gross Alpha	EPA 900.0 Modified	4.24E+00	5.18E+00	5.18E+00	1.02E+01	pCi/l
10-05084-01	LCS	KNOWN	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	2.36E+02	7.09E+00			pCi/l
10-05084-01	LCS	SPIKE	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	2.52E+02	5.86E+00	5.89E+00	7.59E-01	pCi/l
10-05084-02	MBL	BLANK	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	3.07E-02	2.37E-01	2.37E-01	5.07E-01	pCi/l
10-05084-03	DUP	MW-4D-DIS	05/12/10 08:25	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	4.33E+00	7.11E+00	7.11E+00	1.47E+01	pCi/l
10-05084-04	DO	MW-4D-DIS	05/12/10 08:25	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	1.15E+01	6.55E+00	6.55E+00	1.26E+01	pCi/l
10-05084-05	TRG	MW-5D-DIS	05/12/10 11:40	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	4.58E+00	7.94E+00	7.94E+00	1.65E+01	pCi/l
10-05084-06	TRG	MW-6D-DIS	05/12/10 15:40	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	3.78E+00	5.24E+00	5.24E+00	1.08E+01	pCi/l
10-05084-07	TRG	MW-55-DIS	05/12/10 17:15	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	7.80E+00	7.95E+00	7.95E+00	1.62E+01	pCi/l
10-05084-08	TRG	MW-1C-DIS	05/13/10 11:40	5/18/2010	6/2/2010	10-05084	Gross Beta	EPA 900.0 Modified	6.47E+00	8.16E+00	8.16E+00	1.67E+01	pCi/l
10-05084-01	LCS	KNOWN	05/18/10 00:00	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	1.99E+01	9.14E-01			pCi/l
10-05084-01	LCS	SPIKE	05/18/10 00:00	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	1.73E+01	1.91E+00	1.91E+00	1.44E-01	pCi/l
10-05084-02	MBL	BLANK	05/18/10 00:00	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	9.66E-02	1.15E-01	1.15E-01	1.51E-01	pCi/l
10-05084-03	DUP	MW-4D-DIS	05/12/10 08:25	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	8.69E-01	3.82E-01	3.82E-01	2.95E-01	pCi/l
10-05084-04	DO	MW-4D-DIS	05/12/10 08:25	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	7.14E-01	3.40E-01	3.40E-01	1.05E-01	pCi/l
10-05084-05	TRG	MW-5D-DIS	05/12/10 11:40	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	1.44E+00	5.26E-01	5.26E-01	2.12E-01	pCi/l
10-05084-06	TRG	MW-6D-DIS	05/12/10 15:40	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	1.26E+00	4.93E-01	4.93E-01	2.13E-01	pCi/l
10-05084-07	TRG	MW-55-DIS	05/12/10 17:15	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	1.44E+00	5.13E-01	5.13E-01	1.16E-01	pCi/l
10-05084-08	TRG	MW-1C-DIS	05/13/10 11:40	5/18/2010	5/27/2010	10-05084	Radium-226	EPA 903.0 Modified	1.42E+00	5.24E-01	5.24E-01	2.76E-01	pCi/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE**  
SERVICES

**EBERLINE ANALYTICAL CORPORATION**

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621



Eberline Analytical Final Report of Analysis		Report To:										Work Order Details:				
		Jonathan Miller										SDG: 10-05084				
		Michael Pisani & Associates										Project: 07-47 East White Lake				
		1100 Poydras St. #1430										Analysis Category: ENVIRONMENTAL				
		New Orleans, LA 70163										Sample Matrix: WA				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units			
10-05084-01	LCS	KNOWN	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	1.68E+01	8.57E-01			pCi/l			
10-05084-01	LCS	SPIKE	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	1.78E+01	4.10E+00	4.14E+00	6.94E+00	pCi/l			
10-05084-02	MBL	BLANK	05/18/10 00:00	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	3.66E-01	5.60E-01	5.60E-01	1.16E+00	pCi/l			
10-05084-03	DUP	MW-4D-DIS	05/12/10 08:25	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	2.31E-01	4.94E-01	4.94E-01	1.03E+00	pCi/l			
10-05084-04	DO	MW-4D-DIS	05/12/10 08:25	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	-8.07E-02	7.42E-01	7.42E-01	1.59E+00	pCi/l			
10-05084-05	TRG	MW-5D-DIS	05/12/10 11:40	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	7.26E-01	8.99E-01	8.99E-01	1.84E+00	pCi/l			
10-05084-06	TRG	MW-6D-DIS	05/12/10 15:40	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	1.15E+00	6.16E-01	6.17E-01	1.19E+00	pCi/l			
10-05084-07	TRG	MW-6S-DIS	05/12/10 17:15	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	1.01E+00	4.59E-01	4.60E-01	8.58E-01	pCi/l			
10-05084-08	TRG	MW-1C-DIS	05/13/10 11:40	5/18/2010	6/2/2010	10-05084	Radium-228	EPA 904.0 Modified	3.12E-01	5.42E-01	5.42E-01	1.12E+00	pCi/l			

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

**SECTION V**  
**ANALYTICAL STANDARD**



# National Institute of Standards & Technology

## Certificate

### Standard Reference Material 4251C Barium-133 Radioactivity Standard

Ba-6  
(+6a)

This Standard Reference Material (SRM) consists of radioactive barium-133 chloride, non-radioactive barium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of ionization chambers and solid-state gamma-ray spectrometry systems.

#### Radiological Hazard

The SRM ampoule contains barium-133 with a total activity of approximately 2.5 MBq. Barium-133 decays by electron capture and during the decay process X-rays and gamma rays with energies from 4 to 400 keV are emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
October 1994

Thomas E. Gills, Chief  
Standard Reference Materials Program



# QUALITY CONTROL PROGRAM

QCP-009

Rev.8; 11/10/03

Title: Radioactive Reference Standards Solutions & Records

## EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE SOLUTIONS PRIMARY DILUTION RECERTIFICATION QCP 009-1

SOLUTION REFERENCE # NIST SRM4251C CURRENT DATE 10/28/2009 0:00  
SOLUTION # Ba-6

Principal Radionuclide <sup>133</sup>Barium Half Life, Years 1.048E+01 Half Life, Days 3.828E+03

Radionuclide <sup>133</sup>Barium Reference Date 9/1/1993 0:00  
Certified Activity                       $\mu\text{Ci}$   
Certified Concentration 1.318E+01  $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.3081</u>	Weight, Grams
Empty Ampoule	<u>4.2582</u>	Weight, Grams
Solution Net	<u>5.0499</u>	Weight, Grams
Total Activity in Ampoule	<u>66.5577</u>	$\mu\text{Ci}$

### Chemical Composition of Standard Solution

<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions: Dilution Solvent Used 1M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 66.5577  $\mu\text{Ci}$  Which Equals 1.478E+08 dpm at the date listed above

And after dilution the activity of this solution is 1.478E+05 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 28, 2010

Recertified By *[Signature]*

Date: 10/28/09

Verified & Approved By *[Signature]*

Date: 11/4/09

QC Approval *[Signature]*

Date: 11/4/09



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # **QCP-009-1-A**  
**NIST SRM4251C**

Date: **10/28/09**  
Solution #: **Ba-6a**

Principal Radionuclide	Half Life, Years	Half Life, Days
<sup>133</sup> Ba	1.048E+01	3.828E+03

Radionuclide of Interest: <sup>133</sup>Ba  
Parent Solution Conc.: 1.48E+05 dpm/ml  
Reference Date: 9/1/1993 0:00

**Chemical Composition of Standard Solution**

<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions: Dilution Solvent Used: **1M HCl**

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution:	25.0000 ml	Final Activity Concentration:	3.6950E+03 dpm/ml
Total Activity:	3.6950E+06 dpm		
Final Volume:	1000.00 ml		

**NOTES:**

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: **October 28, 2010**

Recertified By: [Signature] Date: 10/28/09  
Verified & Approved By: [Signature] Date: 11/4/09  
QC Approval: [Signature] Date: 11/4/09

# CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

<sup>Ra-5</sup>  
QA/QC REVIEWED  
Date 2/8/94 Initials W

Radionuclide: Ra-226  
Half Life: 1600 ± 7 years  
Catalog No.: 7226  
Source No.: 453-26

Customer: TMA EBERLINE  
P.O.No.: VH1888  
Reference Date: February 1 1994 12:00 PST.  
Contained Radioactivity: (Ra-226) 1.001 μCi.  
Contained Radioactivity: (Ra-226) 37.0 kBq.

### Description of Solution

a. Mass of solution: 5.1864 g (in a 5 ml Flame Sealed Ampoule)  
b. Chemical form: Ra(NO<sub>3</sub>)<sub>2</sub> in 1 N HNO<sub>3</sub>  
c. Carrier content: None added  
d. Density: 1.0318 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters)

### Radioactive Daughters

Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

### Radionuclide Concentration

(Ra-226) 0.1929 μCi/g.

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:  
Energy peak(s) integrated under: 186 keV.  
Branching ratio(s) used: 0.0351 gamma rays per decay.

### Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration: ±3.4%  
b. Random uncertainty in assay: ±3.1%  
c. Random uncertainty in weighing(s): ±0.2%  
d. Total uncertainty at the 99% confidence level: ±4.6%

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

Anna U. Krum  
QUALITY CONTROL

Feb. 3, 1994  
Date Signed



# QUALITY CONTROL PROGRAM

MP 009

Rev. 8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

## EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE SOLUTIONS PRIMARY DILUTION RECERTIFICATION MP 009

SOLUTION REFERENCE # IPL 453-26

CURRENT DATE 12/17/2009 0:00

SOLUTION # Ra-5

Principal Radionuclide

Half Life, Years

Half Life, Days

<sup>226</sup>Radium

1.600E+03

5.844E+05

Radionuclide <sup>226</sup>Radium

Reference Date 2/1/1994 0:00

Certified Activity 1.001E+00  $\mu\text{Ci}$

Certified Concentration             $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>          </u>	Weight, Grams
Empty Ampoule	<u>          </u>	Weight, Grams
Solution Net	<u>          </u>	Weight, Grams
Total Activity in Ampoule	<u>1.0010</u>	$\mu\text{Ci}$

### Chemical Composition of Standard Solution

<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions:

Dilution Solvent Used

1M HNO<sub>3</sub>

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0010  $\mu\text{Ci}$

Which Equals 2.222E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.222E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Diluted By [Signature]

Date: 12/17/2009

Verified & Approved By [Signature]

Date: 11/5/10

QC Approval [Signature]

Date: 11/5/10



QUALITY CONTROL PROGRAM

MP 009

Rev.8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP 009  
IPL-453-28 Date 12/17/2009 0:00  
Solution # Ra-5b

Principal Radionuclide <sup>226</sup>Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide of Interest <sup>226</sup>Radium Reference Date 2/1/1994 0:00  
Parent Solution Conc. 2.22E+03 dpm/ml

Chemical Composition of Standard Solution  
<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions: Dilution Solvent Used 1M HNO<sub>3</sub>

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml  
Total Activity: 4.4440E+04 dpm Final Activity Concentration: 4.4440E+01 dpm/ml  
Final Volume: 1000.00 ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: December 17, 2010

Recertified By [Signature] Date: 12/17/2009 0:00

Verified & Approved By [Signature] Date: 1/15/10

QC Approval [Signature] Date: 1/15/10



# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

61680-416

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	3.586 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	June 4, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.1%
SYSTEMATIC:	3.6%
RANDOM:	1.5%

RECEIVED  
 DATE 6/11/01 INITIALS *SP*

\*99% Confidence Level

Impurities:  $\gamma$ -impurities (other than decay products) <0.1%5.00872 grams 0.1M HCl solution with 50  $\mu$ g/g Ba carrier.

P O NUMBER 00008864, Item 1

SOURCE PREPARED BY:

*M. D. Currie*  
 M. D. Currie, Radiochemist

Q A APPROVED:

*RCM* 6/8/01



QUALITY CONTROL PROGRAM  
MP-009

Rev.8; 1/10/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE SOLUTIONS  
PRIMARY DILUTION RECERTIFICATION  
MP 009

SOLUTION REFERENCE # Analytics 61680-416

CURRENT DATE 12/17/2009 0:00

SOLUTION # Ra-10

Principal Radionuclide

Half Life, Years

Half Life, Days

<sup>228</sup>Ra

5.750E+00

2.100E+03

Radionuclide

<sup>228</sup>Ra

Reference Date

6/4/2001 0:00

Certified Activity

9.692E-02  $\mu$ Ci

Certified Concentration

$\mu$ Ci per gram

Ampoule /Solution Gross

9.4982

Weight, Grams

Empty Ampoule

4.4895

Weight, Grams

Solution Net

5.0087

Weight, Grams

Total Activity in Ampoule

0.0969

$\mu$ Ci

Chemical Composition of Standard Solution

<sup>228</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 0.5 M HCl

Dilution Instructions:

Dilution Solvent Used

0.5 M HCl

Dilute to a volume of

1000.00

milliliters

Certified Total Activity of

0.0969  $\mu$ Ci

Which Equals

2.152E+05

dpm at the date listed above

And after dilution the activity of this solution is 2.152E+02 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Recertified By

Date: 12/17/2009 0:00

Verified & Approved By

Date: 1/4/10

QC Approval

Date: 1/5/10

ANALYTICS

QA/QC REVIEWED  
Date 4/30/96 Initials WT

Am-4

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677  
Fax (404) 352-2837

# CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

52094-416

Am-241 10 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Am-241
ACTIVITY (dps):	1.975 E+05
HALF-LIFE:	432.2 years
CALIBRATION DATE:	March 19, 1996 12:00 EST
TOTAL ERROR:	3.0%
SYSTEMATIC ERROR:	2.37%
RANDOM ERROR:	0.63%

10.01177 grams of solution 1M HCl.

P O NUMBER OR3830, Item 1

SOURCE PREPARED BY:

Kare O'Brien Beverly  
K. O. Beverly, Radiochemist

Q A APPROVED:

DM. Poling 4-26-96



QUALITY CONTROL PROGRAM  
MP-009

Rev.8; 1/10/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference #	Analytics 52094-416	Date	11/9/2009 0:00
		Solution #	A/B-7 (alpha)
Principal Radionuclide	Half Life, Years	Half Life, Days	
<sup>241</sup> Americium	4.322E+02	1.579E+05	
Radionuclide of Interest	<sup>241</sup> Am	Reference Date	3/19/1996 0:00
Parent Solution Conc.	1.19E+04 dpm/ml		
Chemical Composition of Standard Solution			
<sup>241</sup> AmCl <sub>3</sub> in 1M HCL			

Dilution Instructions: Dilution Solvent Used 1 M HNO<sub>3</sub>

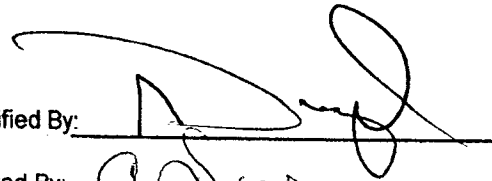
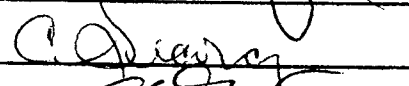
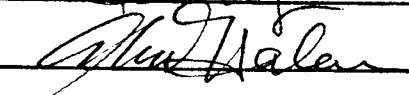
SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	60.0000 ml	Final Activity Concentration:	7.1100E+02 dpm/ml
Total Activity:	7.1100E+05 dpm		
Final Volume:	1000.00 ml		

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: November 9, 2010

Recertified By:  Date: 11/9/09  
Verified & Approved By:  Date: 12/11/09  
QC Approval:  Date: 12/11/09



5-75  
13-11

# National Institute of Standards & Technology

## Certificate

### Standard Reference Material 4234A Strontium-90 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive strontium-90 chloride, non-radioactive strontium chloride, non-radioactive yttrium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

#### Radiological Hazard

The SRM ampoule contains strontium-90 with a total activity of approximately 13 MBq. Strontium-90 decays by beta-particle emission to yttrium-90, which also decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. The beta particles emitted from strontium-90 and yttrium-90 produce bremsstrahlung photons with energies up to 2 MeV. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least March 2005.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
May 1995 (Text only revised November 1997)

Thomas E. Gills, Chief  
Standard Reference Materials Program



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.7; 9/29/99

Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference # QCP-009-1-A      Date 11/9/2009 0:00  
NIST 4234A      Solution # A/B-7 (beta)

Principal Radionuclide <sup>90</sup> Sr	Half Life, Years 2.878E+01	Half Life, Days 1.051E+04
--	-------------------------------	------------------------------

Radionuclide of Interest <sup>90</sup>Sr      Reference Date 3/13/1995 0:00  
Parent Solution Conc. 1.52E+06 dpm/ml

The beta activity of solution reflects the original <sup>90</sup>Sr concentration and an equal concentration of <sup>90</sup>Yttrium.

**Chemical Composition of Standard Solution**

<sup>90</sup>SrCl<sub>2</sub> in 1 M HCl

Dilution Instructions:      Dilution Solvent Used 1 M HNO<sub>3</sub>

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution:	<u>0.5000</u> ml	Final Activity Concentration:	<u>7.5764E+02</u> dpm/ml
Total Activity:	<u>7.5764E+05</u> dpm		
Final Volume:	<u>1000.00</u> ml		

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

**NOTES:**

Expiration Date: November 9, 2010

Recertified By: [Signature]      Date: 11/09/09

Verified & Approved By: [Signature]      Date: 12/11/09

QC Approval: [Signature]      Date: 12/11/09

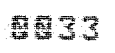
**SECTION VI**  
**QUALITY CONTROL SAMPLE RESULTS SUMMARY**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05084</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>

Laboratory Control Sample													
Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	2.52	87.09%	11.02%	100.00%	4.60%	1.99E+01	9.14E-01	1.73E+01	1.91E+00	Ra-5b	4.41E+01	4.60E+00	1.00E+00

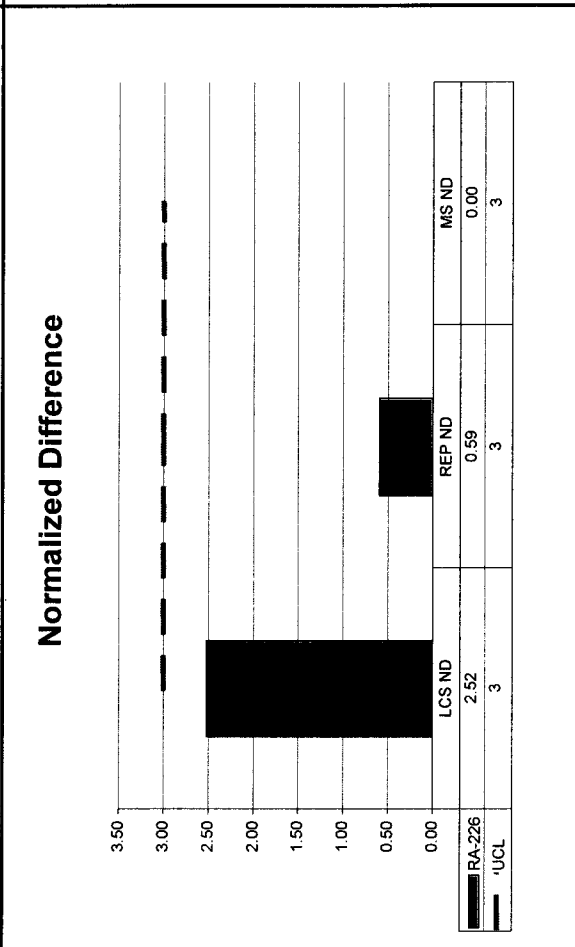
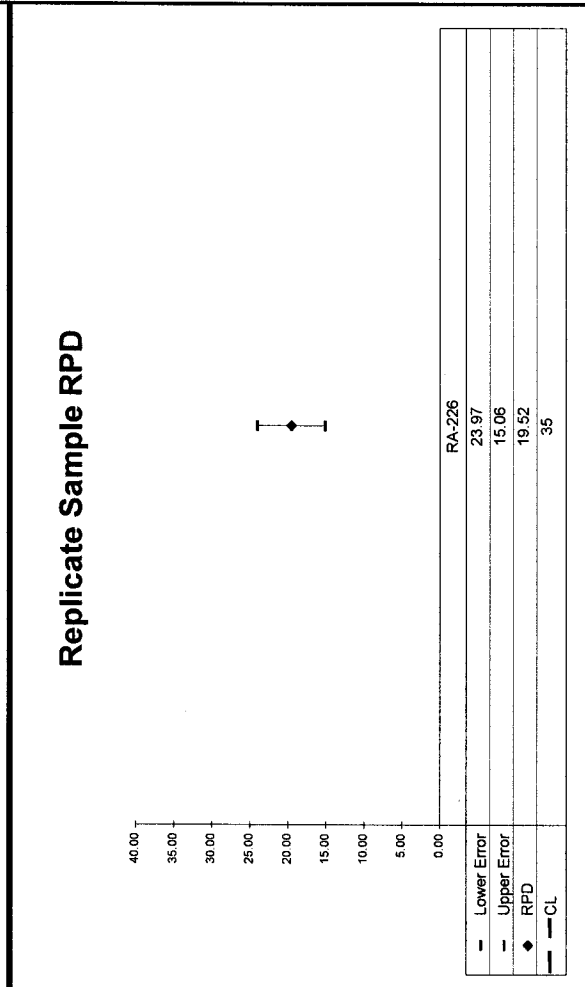
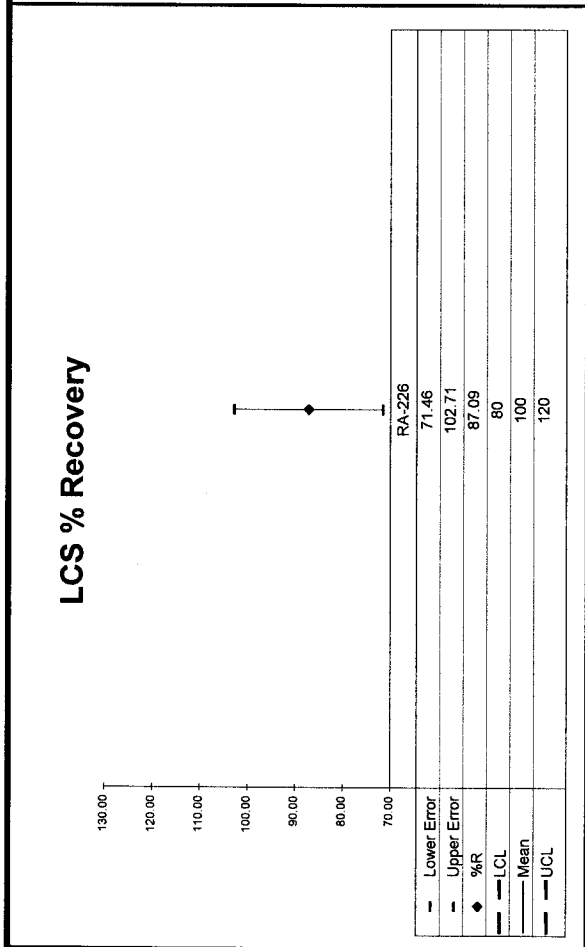
Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample										QC Summary			
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.59	19.52	7.14E-01	3.40E-01	8.69E-01	3.82E-01	0.87	OK	OK			OK	OK





WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05084</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05084</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	0.37	104.63%	23.52%	100.00%	5.10%	1.68E+01	8.57E-01	1.76E+01	4.14E+00	Ra-10	7.31E+01	5.10E+00	5.11E-01

**Matrix Spike**

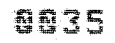
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

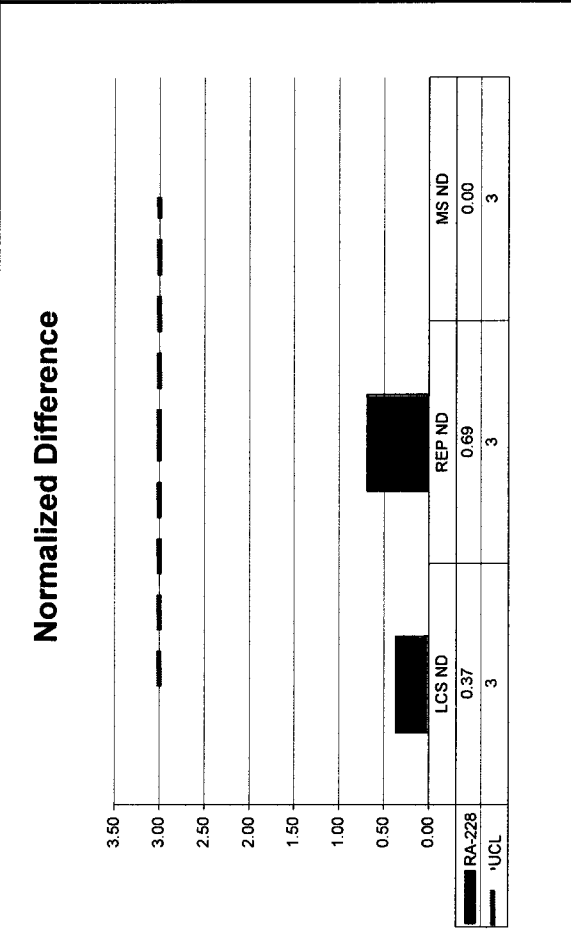
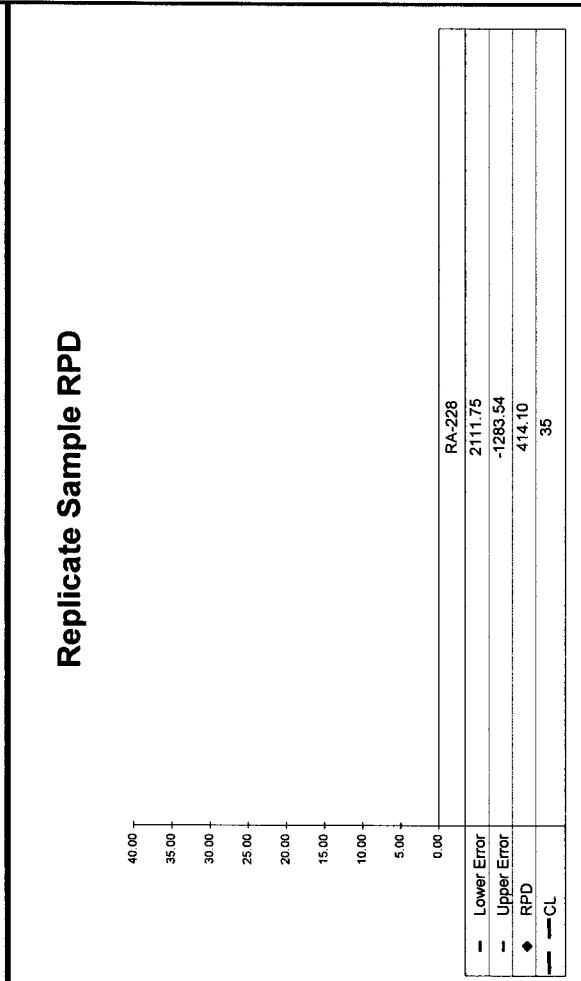
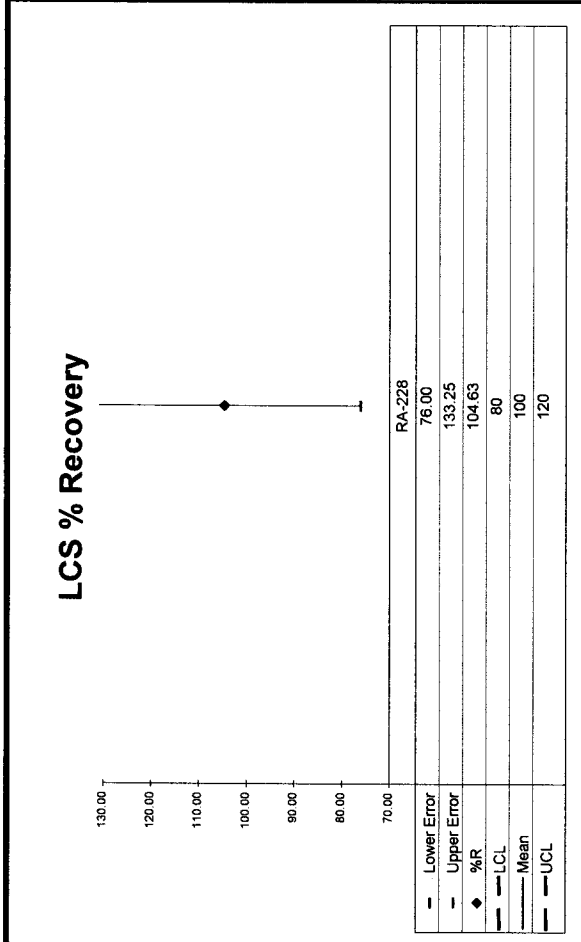
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	0.69	414.10	-8.07E-02	7.42E-01	2.31E-01	4.94E-01	1.05	OK	OK			INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	0.69	414.10	-8.07E-02	7.42E-01	2.31E-01	4.94E-01	1.05	OK	OK			INV	OK



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05084</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05084</b>	<b>GaGbT_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
GROSS ALPHA_TH	3.12	94.02%	2.64%	100.00%	4.30%	3.13E+02	1.35E+01	2.95E+02	7.78E+00	A/B-07	6.95E+02	4.30E+00	1.00E+00
GROSS BETA_SR	4.02	106.51%	2.34%	100.00%	3.00%	2.36E+02	7.09E+00	2.52E+02	5.89E+00	A/B-07	5.24E+02	3.00E+00	1.00E+00

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

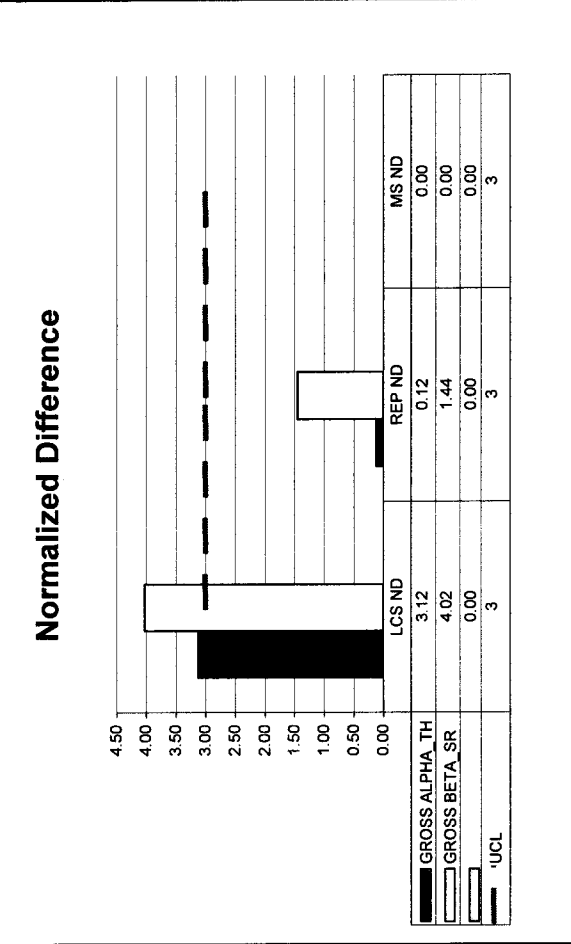
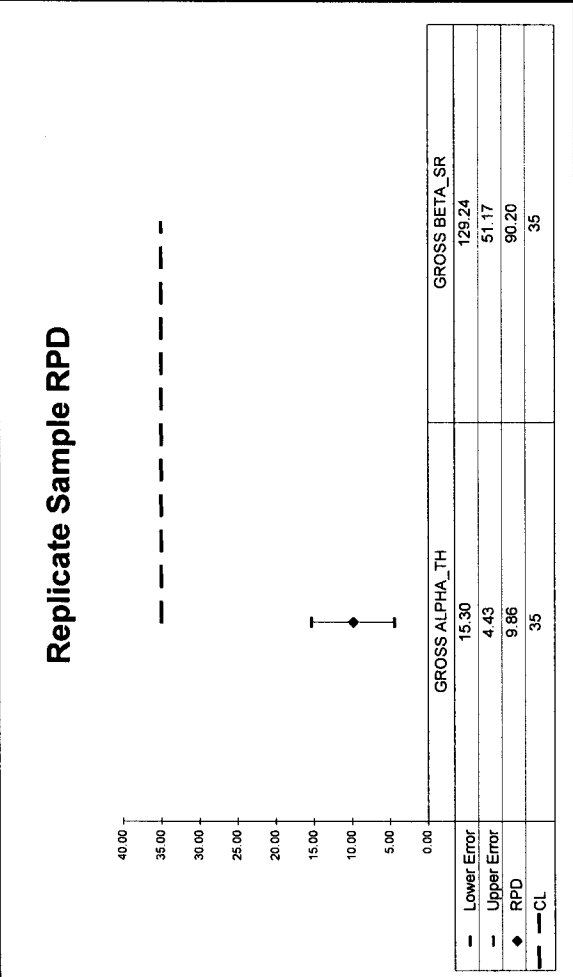
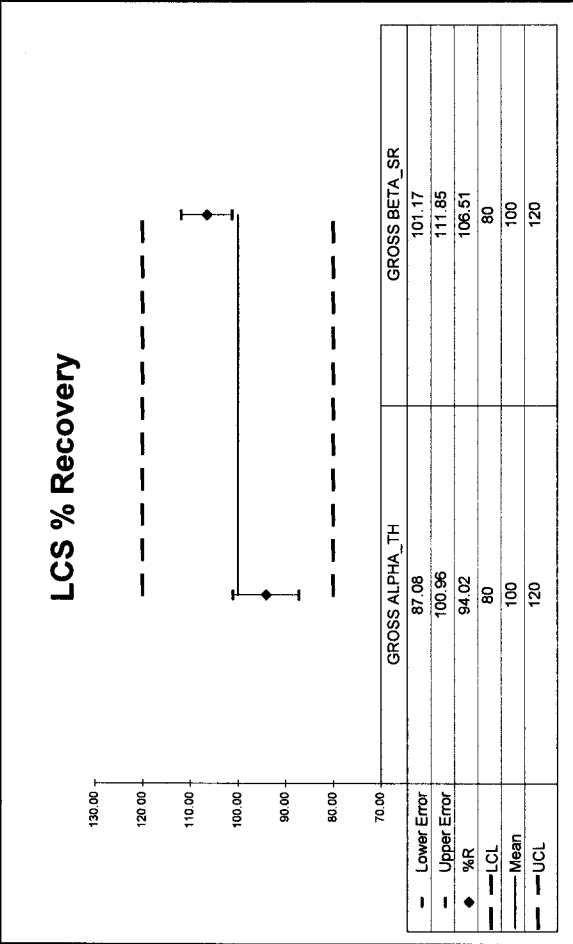
**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	0.12	9.86	2.96E+00	3.05E+00	2.68E+00	3.15E+00	0.94	OK	INV			OK	OK
GROSS BETA_SR	1.44	90.20	1.15E+01	6.55E+00	4.33E+00	7.11E+00	1.07	OK	INV			INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	0.12	9.86	2.96E+00	3.05E+00	2.68E+00	3.15E+00	0.94	OK	INV			OK	OK
GROSS BETA_SR	1.44	90.20	1.15E+01	6.55E+00	4.33E+00	7.11E+00	1.07	OK	INV			INV	OK


WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05084</b>	<b>GaGbt_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**

**SECTION VII**  
**LABORATORY TECHNICIAN'S NOTES**


**RA-226 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05084
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	05/19/10 12:01	PREP	JBARNARD	ALIQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS


*JB*  
 5/19/10



 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05084
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	05/19/10 12:01	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/20/10 06:48	CHEM	TSMITH	Dissolved samples from prep in EDTA.
3	05/24/10 12:34	CHEM	TSMITH	Followed steps 12.2 to 12.8 in AP-006 rev. 9 . ( Sringe filtered samples. Precipitated and filtered samples, obtained final weights, and took to count room )

*5-24-10*  
*TSM*


 <b>Reagents Used in an Analysis</b>		Internal Work Order		
		10-05084		
		Analysis Code		Run
		Ra226		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	5/19/2010
008327D07	Barium Carrier	1 mg/ml	JBARNARD	5/19/2010
008973D12	Lead Carrier	166 mg/ml	JBARNARD	5/19/2010
009536P	Nitric Acid	Reagent Grade	JBARNARD	5/19/2010
009343D05	Ammonium Sulfate	200 mg/ml	JBARNARD	5/19/2010
009662S	EDTA	0.25M	TSMITH	5/20/2010
008735P	Acetic Acid	Reagent Grade	TSMITH	5/24/2010
009323D03	Ammonium Sulfate	200 mg/ml	TSMITH	5/24/2010

# Alpha #3

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Date	Sample #	Client	Lead Time	CT Time	Analysis	Tech
5/24/10	1005088A(1-2)	Energy Solvts	1318	2hrs00m	YH	ICB
5/24/10	1005088A(1)	Energy Solvts	1319	2hrs00m	UU	ICB
5/24/10	1005089A(3,5)	Sevenson	1640	2hrs50mh	UU	ICB
5/24/10	1005089A(1-2)	Energy Solvts	1643	2hrs50mh	Ra6	ICB
5/24/10	1005092A(1-4)	Unitech	1644	2hrs50mh	UU	ICB
5/25/10	Daily Pulsers	Lab	0524	10 mn	NA	KM
5/25/10	1005085A(1-7)	Aecom	0824	2hrs.50mh	Ra6	KM
5/25/10	1005066A(1-7)	MPA	1059	2hrs.50mh	Ra6	KM
5/25/10	1005066A(8-9)	MPA	1135	2hrs50mh.	Ra6	KM
5/25/10	1005073A(1-5)	Weston	1137	2hrs.50mh	UU	KM
5/25/10	1005076A(2-2)	Weston	1359	2hrs50mh	UU	ICB
5/25/10	1005093A(6-4,6-7,9)	RTI	1448	2hrs00m	Th	ICB
5/25/10	1005093A(10-11)	RTI		2hrs00m		
5/25/10	1005067A(15-19)	MP&A	1811	2hrs00m	Ra6	ICB
5/26/10	Daily Pulsers	Lab	0577	10 mn.	NA	KM
5/26/10	1005098A(1-12)	RTI Lab.	0938	2hr.50mh	UU	KM
5/26/10	1005080A(17-19)	Weston	1136	2hr.50mh	UU	KM
5/26/10	1005082A(1-10)	Weston	1239	2hr.50mh	UU	KM
5/26/10	1005067A(10-13)	MP&A	1523	2hrs00m	Ra6	ICB
5/26/10	1005067A(14-19)	MP&A	1536	2hrs00m	Ra6	ICB
5/26/10	1005105A(1-2)	TVA	1935	2hrs50mh	Ra6	ICB
5/27/10	Daily Pulsers	Lab	0446	10 mn	NA	ICB
5/27/10	1005080A(17)red.	Weston	0914	2hrs00m	UU	ICB
5/27/10	1005097A(1-5,8)	RTI Lab.	1125	2hr.50mh	Th	KM
5/27/10	1005097A(1-3,6,7)	RTI Lab.	1126	2hr.50mh	Pu	KM
5/27/10	1005097A(1-2)	RTI Lab.	1127	2hr.50mh	UU	KM
5/27/10	1005099A(6-11)	RTI Lab.	1538	2hr.50mh	Th	KM
5/27/10	1005084A(18)	MPA	1627	2hrs50mh	Ra6	KM

**RA-228 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05084
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	05/19/10 12:01	PREP	JBARNARD	ALIQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JRf*  
*5/19/10*

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05084
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	05/19/10 12:01	PREP	JBARNARD	ALIQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/28/10 11:12	CHEM	TSMITH	Placed filters from count room into labeled centrifuge tubes. Added EDTA to samples and swirled.
3	06/02/10 06:16	CHEM	TSMITH	Followed steps 12.2 to 12.9 in AP-007 rev. 14 . ( Chemical cleanup for Ra 228 )
4	06/02/10 09:01	CHEM	TSMITH	Followed steps 12.10 to 12.18 in AP-007 rev. 14 . ( Precipitated samples, centrifuged, and discarded supernate. Dissolved precip, precipitated samples, hot bathed, centrifuged, and discarded supernate. Dissolved precip, precipitated and filtered samples, obtained final weights, covered with aluminum foil, and took to count room )

*WVH  
Jm*



Reagents Used in an Analysis

Internal Work Order

10-05084

Analysis Code

Run

Ra228

1


Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	5/19/2010
008327D07	Barium Carrier	1 mg/ml	JBARNARD	5/19/2010
008973D12	Lead Carrier	166 mg/ml	JBARNARD	5/19/2010
009536P	Nitric Acid	Reagent Grade	JBARNARD	5/19/2010
009343D05	Ammonium Sulfate	200 mg/ml	JBARNARD	5/19/2010
009713S	EDTA	0.25M	TSMITH	5/28/2010
009040D11	Ammonium Sulfide	2%	TSMITH	6/2/2010
007701D11	Lead Carrier	1.5 mg/ml	TSMITH	6/2/2010
009621P	Nitric Acid	Reagent Grade	TSMITH	6/2/2010
008736D16	Sodium Hydroxide	10M	TSMITH	6/2/2010
009625S	Yttrium Carrier	9 mg/ml	TSMITH	6/2/2010
008974D03	Ammonium Oxalate	5%	TSMITH	6/2/2010
009621D03	Nitric Acid	1N	TSMITH	6/2/2010
009424D02	Nitric Acid	6N	TSMITH	6/2/2010
008736D17	Sodium Hydroxide	10M	TSMITH	6/2/2010
008736D19	Sodium Hydroxide	18M	TSMITH	6/2/2010

LB4110 Red

Date	Sample #	Client	Lead Time	Cr. Time	Analyst	Tech
6/1/10	1004041AB2(2-14)	MWRD	1702	8 hrs	αβ	ICB
6/2/10	Daily Bkgd/QC	Lab	0512/0014	1hr/30min	αβ	KM
6/2/10	1006005AB(27)	BTC	0950	1hr	αβ	KM
6/2/10	1006005AB(1)	BTC	0950	30min	αβ	KM
6/2/10	Std Cert	Lab	1044	15min	αβ	KM
6/2/10	1005084RA(1-9)	MPE A	1102	2 hrs	Ray	CB




**ALPHA/BETA NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05084
		Analysis Code	GaGbT_ThSr
		Run Number	1

#	Date	Dept	User	Notes
1	06/02/10 08:39	PREP	BLESTER	Determined total dissolved and suspended solids concentration for maximum aliquot volume. Samples were aliquoted into beakers and placed on a hot plate. Once dry, the solids were nitrated and transferred to a pre-weighed planchet under a heat lamp. Spike and blank fractions were prepared. The samples were flamed, reweighed, and submitted to the count room.

*Brian P. Zentler*

6.2.2010

 <p><b>EBERLINE</b> SERVICES</p> <p>Reagents Used in an Analysis</p>		Internal Work Order		
		10-05084		
		Analysis Code		Run
		GaGbT_ThSr		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
009536D13	Nitric Acid	3N	BLESTER	6/2/2010

LB4110 Ked

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Date	Sample #	Client	Lead Time	Cr. Time	Analysis	Tech
6/1/10	1004041AB2(2-14)	MWRD	1702	8 hrs	αβ	ICB
6/2/10	Daily Bkgd/QC	Lab	0512/0014	1hr/30min	αβ	KM
6/2/10	1006005AR(27)	BTC	0950	1hr	αβ	KM
6/2/10	1006005AB(1)	BTC	0950	30min	αβ	KM
6/2/10	Std Cert	Lab	1044	15min	αβ	KM
6/2/10	1005084RA(1-8)	MPA	1102	2hrs	Rad	CB
6/2/10	1005060AB1(1)	MWRD	1204	30min	αβ	KM
6/2/10	1005084AB(2-8)	MPA	1407	2hrs	αβ	KBS
6/2/10	1005084AB(1)	MPA	1407	30min	αβ	KB

**SECTION VIII**  
**ANALYTICAL DATA (RADIUM-226)**

10-05084

Ra226

Run 1

Work Order	<b>10-05084</b>
Analysis Code	<b>Ra226</b>
Run	<b>1</b>
Date Received	<b>5/18/2010</b>
Lab Deadline	<b>6/2/2010</b>
Client	Michael Pisani & Associates
Project	ENV
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 903.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-6a
Tracer Act (dpm/g)	1225.215
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/18/10 00:00	1.0000E+00
02	MBL	BLANK		05/18/10 00:00	1.0000E+00
03	DUP	MW-4D-DIS	25	05/12/10 08:25	1.0000E+00
04	DO	MW-4D-DIS	25	05/12/10 08:25	1.0000E+00
05	TRG	MW-5D-DIS	31	05/12/10 11:40	1.0000E+00
06	TRG	MW-6D-DIS	27	05/12/10 15:40	1.0000E+00
07	TRG	MW-65-DIS	28	05/12/10 17:15	1.0000E+00
08	TRG	MW-1C-DIS	32	05/13/10 11:40	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8152	998.8	446.1	99.15		0.0229	0.0294	0.0065		99.15	2.34	1.00
02	MBL	0.8123	995.2	428.9	95.67		0.0225	0.0292	0.0067		95.67	2.40	1.00
03	DUP	0.8062	987.8	404.0	90.80		0.0231	0.0310	0.0079		90.80	2.74	1.00
04	DO	0.8045	985.7	376.3	84.75		0.0234	0.0311	0.0077		84.75	2.69	1.00
05	TRG	0.8063	987.9	363.4	81.66		0.0227	0.0310	0.0083		81.66	2.84	1.00
06	TRG	0.8051	986.4	378.2	85.12		0.0231	0.0318	0.0087		85.12	2.94	1.00
07	TRG	0.8060	987.5	463.6	104.22		0.0231	0.0319	0.0088		104.22	2.96	1.00
08	TRG	0.8059	987.4	421.9	94.86		0.0235	0.0325	0.0090		94.86	3.01	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

10-05084  
Ra226  
Run 1

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
02	MBL			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
03	DUP			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
04	DO			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
05	TRG			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
06	TRG			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
07	TRG			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		
08	TRG			05/19/10 12:07	JBARNARD	05/24/10 11:39	TSMITH		

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.







1 Run

Ra226 Analysis Code

10-05084 Eberline Services Work Order

Michael Pisani & Associates Client

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	1.73E+01	1.91E+00	1.44E-01	1.99E+01	87.09	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	9.66E-02	1.15E-01	1.51E-01					OK	INV
03	RA-226	DUP	MW-4D-DIS	pCi/l	8.69E-01	3.82E-01	2.95E-01				OK	OK	
04	RA-226	DO	MW-4D-DIS	pCi/l	7.14E-01	3.40E-01	1.05E-01					OK	
05	RA-226	TRG	MW-5D-DIS	pCi/l	1.44E+00	5.26E-01	2.12E-01					OK	
06	RA-226	TRG	MW-6D-DIS	pCi/l	1.26E+00	4.93E-01	2.13E-01					OK	
07	RA-226	TRG	MW-65-DIS	pCi/l	1.44E+00	5.13E-01	1.16E-01					OK	
08	RA-226	TRG	MW-1C-DIS	pCi/l	1.42E+00	5.24E-01	2.76E-01					OK	

05 03 02

	Run	1
Analysis Code		Ra226
Eberline Services Work Order		10-05084
Client		Michael Pisani & Associates

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	05/18/10 00:00	1.00E+00	99.15		99.15		5/24/2010 11:39	
02	RA-226	MBL	05/18/10 00:00	1.00E+00	95.67		95.67		5/24/2010 11:39	
03	RA-226	DUP	05/12/10 08:25	1.00E+00	90.80		90.80		5/24/2010 11:39	
04	RA-226	DO	05/12/10 08:25	1.00E+00	84.75		84.75		5/24/2010 11:39	
05	RA-226	TRG	05/12/10 11:40	1.00E+00	81.66		81.66		5/24/2010 11:39	
06	RA-226	TRG	05/12/10 15:40	1.00E+00	85.12		85.12		5/24/2010 11:39	
07	RA-226	TRG	05/12/10 17:15	1.00E+00	100.00		104.22		5/24/2010 11:39	
08	RA-226	TRG	05/13/10 11:40	1.00E+00	94.86		94.86		5/24/2010 11:39	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	05/27/10 16:26		A_Spec	39	170	1.28 E+03	1.00 E-03	19.8
02	RA-226	MBL	05/27/10 16:26		A_Spec	40	170	7.03 E+00	1.00 E-03	20.2
03	RA-226	DUP	05/27/10 16:26		A_Spec	42	170	5.93 E+01	6.00 E-03	19.9
04	RA-226	DO	05/27/10 16:26		A_Spec	43	170	4.84 E+01	0.00 E+00	21.2
05	RA-226	TRG	05/27/10 16:27		A_Spec	45	170	8.79 E+01	1.00 E-03	19.9
06	RA-226	TRG	05/27/10 16:27		A_Spec	46	170	7.92 E+01	1.00 E-03	19.6
07	RA-226	TRG	05/27/10 16:27		A_Spec	47	170	9.77 E+01	0.00 E+00	17.9
08	RA-226	TRG	05/27/10 16:27		A_Spec	48	170	9.28 E+01	3.00 E-03	18.2

	1	Ra226	10-05084	Michael Pisani & Associates
Run		Analysis Code	Eberline Services Work Order	Client

10-05084-Ra226-1 (pCi/l) in WA  
Tracer ID: Ba-6a

Count Room Report  
Client: Michael Pisani Associat

2.5

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
<del>01</del>	LCS	LCS	05/18/10 00:00	1.0000	0.8152	998.7953	446.1000	<del>89.15</del>	2.34	1.00
<del>02</del>	MBL	BLANK	05/18/10 00:00	1.0000	0.8123	995.2421	428.9000	<del>95.67</del>	2.40	1.00
<del>03</del>	DUP	MW-4D-DIS	05/12/10 08:25	1.0000	0.8062	987.7683	404.0000	<del>90.80</del>	2.74	1.00
<del>04</del>	DO	MW-4D-DIS	05/12/10 08:25	1.0000	0.8045	985.6855	376.3000	<del>84.75</del>	2.69	1.00
<del>05</del>	TRG	MW-5D-DIS	05/12/10 11:40	1.0000	0.8063	987.8909	363.4000	<del>81.66</del>	2.84	1.00
<del>06</del>	TRG	MW-6D-DIS	05/12/10 15:40	1.0000	0.8051	986.4206	378.2000	<del>85.12</del>	2.94	1.00
<del>07</del>	TRG	MW-65-DIS	05/12/10 17:15	1.0000	0.8060	987.5233	463.6000	<del>104.22</del>	2.96	1.00
<del>08</del>	TRG	MW-1C-DIS	05/13/10 11:40	1.0000	0.8059	987.4008	421.9000	<del>94.86</del>	3.01	1.00

31-  
118

Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials		
<b>10-05084</b>		<b>1</b>	<b>Ra226</b>		<b>5/28/2010 11:27</b>	<b>MMCDUGALL</b>		<b>M</b>				
<b>LCS &amp; Matrix Spikes</b>												
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	MSD Added pCi	Error Estimate
Ra-226	Ra-5b	44.127	5/28/2010	0.500	1.0000		19.88	0.914	0.00	0.00	0.00	0.000

<b>Tracers</b>												
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer					LCS
01	Ba-133	Ba-6a	1223.220	5/28/2010	0.8152	0.8300	<div style="font-size: 2em; font-family: cursive;">                     W. J. ...                      5-28-10                 </div>					
02	Ba-133	Ba-6a	1223.220	5/28/2010	0.8123	0.8300						
03	Ba-133	Ba-6a	1223.220	5/28/2010	0.8062	0.8300						
04	Ba-133	Ba-6a	1223.220	5/28/2010	0.8045	0.8300						
05	Ba-133	Ba-6a	1223.220	5/28/2010	0.8063	0.8300						
06	Ba-133	Ba-6a	1223.220	5/28/2010	0.8051	0.8300						
07	Ba-133	Ba-6a	1223.220	5/28/2010	0.8060	0.8300						
08	Ba-133	Ba-6a	1223.220	5/28/2010	0.8059	0.8300						
<b>Matrix Spike</b>												

Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials		
10-05084		1	Ra226		5/19/2010 12:06	JBARNARD		<i>JB</i>				
LCS & Matrix Spikes												
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Error Estimate	LCSD Known pCi	MSD Error Estimate
Ra-226	Ra-5b	44,127	5/19/2010	0.500	0.5096				10.13	0.466	0.00	0.000
							<i>+ 12</i>		<i>10 pCi Ra-226</i>		0.00	0.000

Balance Printer Tapes														
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer				LCS			
							Volume Used (g)	Approx Addition	Known pCi	Error Estimate	Volume Used (g)	Approx Addition	Known pCi	Error Estimate
01	Ba-133	Ba-6a	1225.215	5/19/2010	0.8152	0.8300	0.8152 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
02	Ba-133	Ba-6a	1225.215	5/19/2010	0.8123	0.8300	0.8123 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
03	Ba-133	Ba-6a	1225.215	5/19/2010	0.8062	0.8300	-0.8062 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
04	Ba-133	Ba-6a	1225.215	5/19/2010	0.8045	0.8300	-0.8045 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
05	Ba-133	Ba-6a	1225.215	5/19/2010	0.8063	0.8300	-0.8063 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
06	Ba-133	Ba-6a	1225.215	5/19/2010	0.8051	0.8300	-0.8051 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
07	Ba-133	Ba-6a	1225.215	5/19/2010	0.8060	0.8300	-0.8060 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000
08	Ba-133	Ba-6a	1225.215	5/19/2010	0.8059	0.8300	-0.8059 g	0.8300 g	10.13 pCi	0.466	0.00	0.000	0.00	0.000

# Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
<b>10-05084</b>		<b>1</b>		<b>Ra226</b>		<b>liters</b>		<b>6/2/2010</b>		<b>JBARNARD</b>	

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq		
01	LCS	LCS						1.0000E+00	1.0000E+00					
02	BLANK	MBL						1.0000E+00	1.0000E+00					
03	MW-4D-DIS	DUP						1.0000E+00	1.0000E+00					
04	MW-4D-DIS	DO						1.0000E+00	1.0000E+00					
05	MW-5D-DIS	TRG						1.0000E+00	1.0000E+00					
06	MW-6D-DIS	TRG						1.0000E+00	1.0000E+00					
07	MW-65-DIS	TRG						1.0000E+00	1.0000E+00					
08	MW-1C-DIS	TRG						1.0000E+00	1.0000E+00					

Comments

Technician: JB Date: 5/19/10

# Gravimetric Worksheet

Work Order		Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05084</b>		<b>1</b>				
			<b>Ra226</b>			<b>TSMITH</b>

TRetec Fraction	Michael Pisani & Associates		Sample Type	Carrier Data		Filter Data			Gravimetric	
	Client ID			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)	% Recovery		
01	LCS		LCS		0.0229	0.0294	0.0065			
02	BLANK		MBL		0.0225	0.0292	0.0067			
03	DUP		DUP		0.0231	0.0310	0.0079			
04	MW-4D-DIS		DO		0.0234	0.0311	0.0077			
05	MW-5D-DIS		TRG		0.0227	0.0310	0.0083			
06	MW-6D-DIS		TRG		0.0231	0.0318	0.0087			
07	MW-65-DIS		TRG		0.0231	0.0319	0.0088			
08	MW-1C-DIS		TRG		0.0235	0.0325	0.0090			

Technician: *SM* Date: *5, 24, 10*



Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:35:55

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_C:C\_1005084A-RA\$01\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005084A-RA	*	SAMPLE ID:	01
SAMPLE DATE:	27-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	SPIKE	*	DETECTOR NUMBER:	039
ACQ DATE:	27-MAY-2010 16:26	*	AVERAGE EFFICIENCY:	19.79%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	99.15%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	21-MAY-2010 12:05	*	EFF CAL DATE:	18-APR-2010 11:15
BKG FILENAME:	B_039_21MAY10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.34

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	1813.33	0.17	100.0	2.449E+01	2.451E+00	1.443E-01
RN-222	5490.0	1951.39	0.17	99.9	2.637E+01	2.590E+00	1.444E-01
RA-226	4785.0	1282.15	0.17	100.0	1.731E+01	1.908E+00	1.443E-01

\*\*\*\*\*

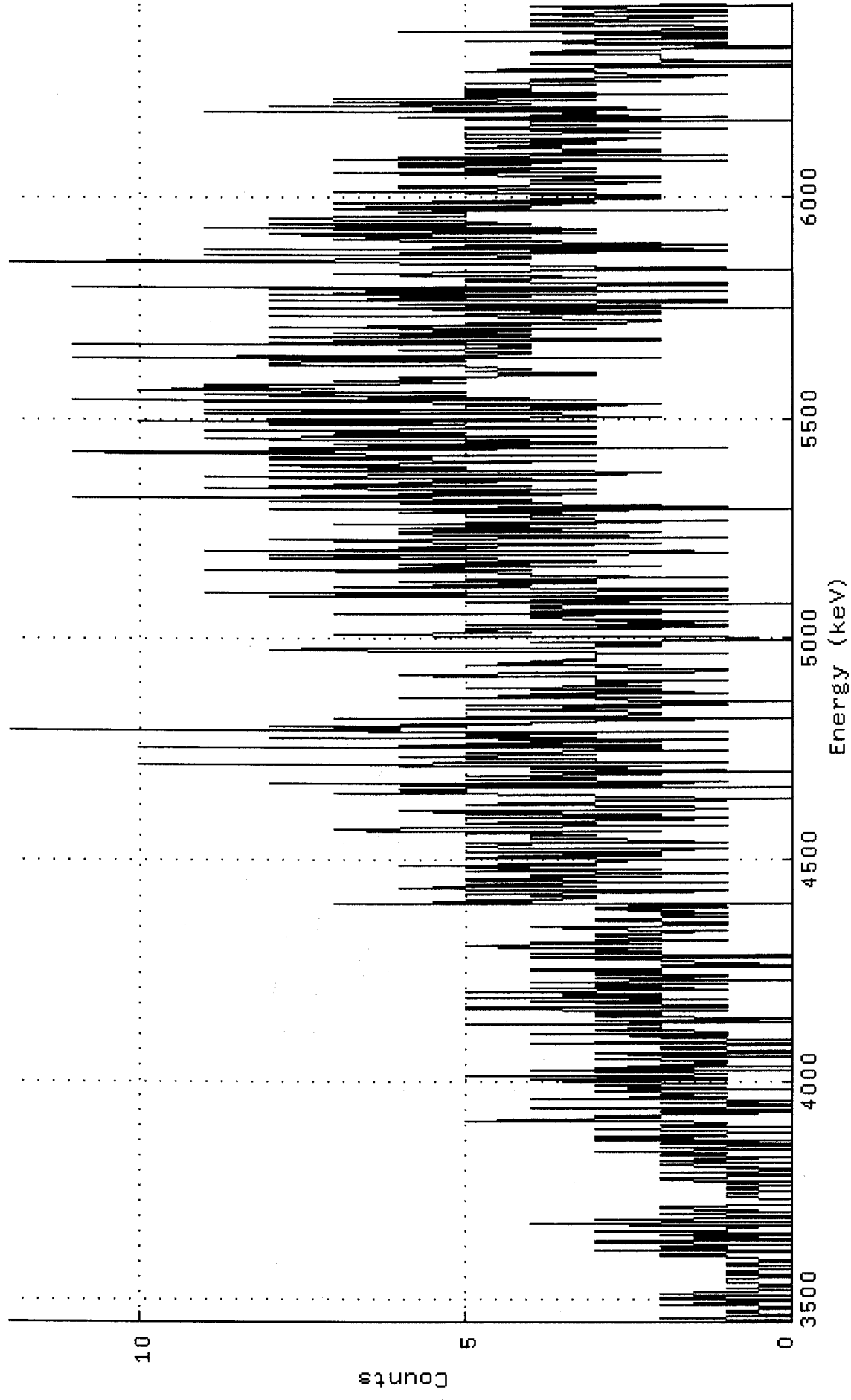
          
Analyst

05-28-10  
Date

          
Reviewer

5/28/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.C]C\_1005084A-RA\$01\_RA.CNF;1  
Title : 039  
Sample Title: SPIKE  
Start Time: 27-MAY-2010 16:26 Sample Time: 27-MAY-2010 00:00 Energy Offset: 3.43934E+03  
Real Time : 0 02:50:00.40 Sample ID : 01 Energy Slope : 3.13485E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -2.06058E-04



Channel Contents for ND\_AMS\_ARCHIVE\_C:C\_1005084A-RA\$01\_RA

Channel

1:	1	1	0	1	0	2	0	0	0	1	1	0	0
15:	1	2	1	0	2	0	2	0	1	2	1	0	1
29:	0	0	0	1	1	1	1	0	1	0	1	0	0
43:	0	0	1	1	0	0	0	1	1	2	0	1	0
57:	1	1	2	0	3	0	3	0	1	2	0	3	1
71:	1	1	0	1	4	0	0	3	0	1	0	0	1
85:	1	2	1	2	0	0	0	0	2	1	2	1	2
99:	0	1	1	1	0	1	0	1	1	1	0	0	1
113:	1	0	1	0	1	2	1	0	2	1	0	2	1
127:	1	3	0	1	2	0	2	0	1	3	0	3	1
141:	2	0	2	1	3	1	2	2	1	2	5	2	3
155:	3	1	0	2	0	4	2	0	0	2	1	2	4
169:	1	2	1	1	3	2	0	2	3	1	1	3	1
183:	1	5	2	1	2	4	0	3	2	0	2	2	1
197:	3	1	0	2	3	0	0	2	2	2	0	4	2
211:	0	2	2	1	4	1	1	2	3	2	2	5	0
225:	1	3	0	3	3	2	3	1	2	5	5	1	3
239:	2	4	1	3	5	2	3	2	5	1	4	2	3
253:	1	4	1	0	3	1	1	3	2	4	2	0	2
267:	0	1	2	2	2	4	4	0	4	2	4	2	4
281:	5	3	2	4	1	3	2	3	3	2	2	2	3
295:	4	3	1	1	3	3	3	1	1	2	2	2	3
309:	1	3	2	0	7	4	5	4	3	3	5	2	1
323:	4	6	5	3	5	2	1	5	5	2	4	2	1
337:	5	2	4	5	3	6	3	3	2	1	5	2	2
351:	5	2	2	1	4	5	4	5	1	2	3	4	4
365:	3	5	2	6	7	5	2	1	5	4	4	1	5
379:	2	5	2	5	6	2	1	2	4	5	4	2	0
393:	3	2	4	5	7	5	6	4	0	4	8	2	5
407:	4	3	5	5	2	4	0	2	4	3	2	1	3
421:	3	3	4	6	3	4	5	2	1	3	2	2	5
435:	3	3	1	8	3	5	4	5	1	3	6	5	8
449:	4	4	3	3	0	7	3	2	2	2	3	4	2
463:	5	1	2	0	2	3	2	6	3	4	1	4	2
477:	5	2	3	3	3	1	3	3	3	5	6	2	1
491:	1	2	3	2	5	4	3	4	3	3	3	3	1
505:	5	8	7	4	2	3	2	4	0	0	1	4	7
519:	4	4	5	5	3	1	5	1	2	3	3	4	4
533:	4	2	7	1	3	3	4	4	3	0	5	1	3
547:	1	8	5	9	5	1	3	1	7	4	3	6	3
561:	5	1	1	4	4	4	5	9	4	6	5	6	3
575:	5	3	6	8	6	8	4	1	2	9	5	5	4
589:	2	4	7	6	8	1	4	5	6	6	2	6	3
603:	5	3	7	3	1	2	4	4	5	3	4	5	0
617:	8	1	3	3	4	8	4	4	7	11	4	6	5
631:	3	4	9	7	4	7	5	6	3	8	4	9	3
645:	2	4	8	5	5	7	8	4	6	3	8	8	3
659:	3	10	11	7	8	1	8	5	3	7	3	5	7
673:	6	3	7	5	5	9	3	6	3	7	8	8	10
687:	6	2	3	3	4	9	6	9	3	3	5	3	4
701:	7	11	3	5	8	5	9	6	5	10	9	7	9
715:	7	5	6	7	5	6	6	3	3	4	4	4	5
729:	5	8	8	7	5	8	2	11	6	5	4	4	6
743:	4	5	4	4	11	5	7	2	2	6	8	4	7
757:	4	6	3	8	5	4	5	3	2	2	3	4	8
771:	2	2	4	3	8	0	4	6	5	1	4	5	5
785:	4	8	3	7	6	1	5	11	5	1	1	3	4
799:	5	3	4	5	7	4	4	4	0	2	4	3	7
813:	12	9	5	4	4	5	9	3	4	1	2	2	5
827:	1	3	4	5	7	6	4	7	8	3	4	7	4
841:	9	5	8	4	5	5	6	8	6	5	5	5	5
855:	1	7	6	4	4	3	7	4	2	4	2	4	3
869:	7	5	4	3	6	6	5	3	2	2	4	2	2
883:	4	5	7	3	5	3	4	6	6	4	6	3	7
897:	2	6	2	1	5	2	3	5	5	4	4	3	3
911:	5	3	2	5	5	5	5	2	3	4	1	5	3
925:	4	4	4	0	4	6	1	4	4	3	3	9	3
939:	3	8	4	4	7	6	3	6	7	3	5	1	4
953:	5	5	4	4	4	3	5	3	2	4	2	2	2
967:	3	3	5	4	2	0	3	0	4	0	1	2	2
981:	2	2	4	3	4	3	1	0	0	3	1	2	5
995:	1	3	1	1	3	1	6	3	1	1	1	4	4
1009:	2	1	4	3	2	1	3	4	2	1	1	3	4
1023:	0	0											

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:35:48.22

Detector ID: 39                                      Acquisition Start: 27-MAY-2010 16:26:11.01  
Live Time: 0 02:50:00.00                              Real Time: 0 02:50:00.40  
Batch Id: 1005084A-RA                                  Sample Id: 01  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4618.15	548	0443.13	385.82	305	155	5.37E-02	4.3		
2	0	5298.52	834	0501.15	618.19	522	177	8.18E-02	3.5		
3	0	5807.51	775	0 0.00	797.21	718	165	7.60E-02	3.6		

Background Counts Within Peak Regions      Generated: 28-MAY-2010 08:35:53.19

Live Time: 0 16:40:00.00                              Acquisition Start: 21-MAY-2010 15:36:52.01  
Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.97	1	0	3.11	382.00	305	155	1.67E-05	100.0	
2	0	5274.91	1	0	3.11	610.00	522	177	1.67E-05	100.0	
3	0	5816.81	1	0	3.11	800.00	718	165	1.67E-05	100.0	

Net Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:35:53.60

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4618.15*	1282	0443.13	385.82	305	155	1.26E-01	4.3		
2	0	5298.52*	1951	0501.15	618.19	522	177	1.91E-01	3.5		
3	0	5807.51*	1813	0 0.00	797.21	718	165	1.78E-01	3.6		

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : MCA0:[AMSCOUNT]00003742$1
Analyses by       : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : SPIKE
Sample date       : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:26:11
Sample ID        : 01 Sample quantity : 1.0000 liter
Sample type      : RA Sample geometry :
Detector name    : 039 Detector geometry:
Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.40 0.0%
Energy tolerance : 100.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 3.00 %
Efficiency type  : Average value Efficiencies at : Peak Energy
Abundance limit  : 75.00
    
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4618.15*	1282443.13	385.82	305	155	8.5			RA-226	17.2
0	5298.52*	1951501.15	618.19	522	177	6.9			RN-222	26.1
0	5807.51*	1813	0.00	797.21	718	165	7.2		PO-218	24.3

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ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:36:10

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_R:R\_1005084A-RA\$02\_RA.CNF  
\*\*\*\*\*

```

*
BATCH ID:          1005084A-RA *      SAMPLE ID:          02
SAMPLE DATE:      27-MAY-2010 00:00 *      ALIQUOT:          1.000E+00 liter
SAMPLE TITLE:    BLANK *      DETECTOR NUMBER:    040
ACQ DATE:        27-MAY-2010 16:26 *      AVERAGE EFFICIENCY: 20.17%
ELAPSED LIVE TIME: 10200. *      RECOVERY:          95.67%
TRACER ID:       NONE *      TRACER FWHM (kev): 0.00
LAMBDA VALUE:    0. *      ROI TYPE:          STANDARD
TRACER DPM AT SAMPLE DATE: 0.000 *      CONFIDENCE FACTOR: 4.65
SAMPLE MATRIX:   WATER *      LLD CONSTANT:      2.65
ENERGY CAL DATE: 21-MAY-2010 12:05 *      EFF CAL DATE:     18-APR-2010 11:15
BKG FILENAME:    B_040_21MAY10 *      BKG ELAPSED TIME: 60000.
*      SAF:          2.40
*

```

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	12.00	0.00	100.0	1.648E-01	1.479E-01	8.736E-02
RN-222	5490.0	11.66	0.34	99.9	1.603E-01	1.481E-01	1.769E-01
RA-226	4785.0	7.03	0.17	100.0	9.655E-02	1.145E-01	1.505E-01

\*\*\*\*\*

*KM*

Analyst

*05-28-10*

Date

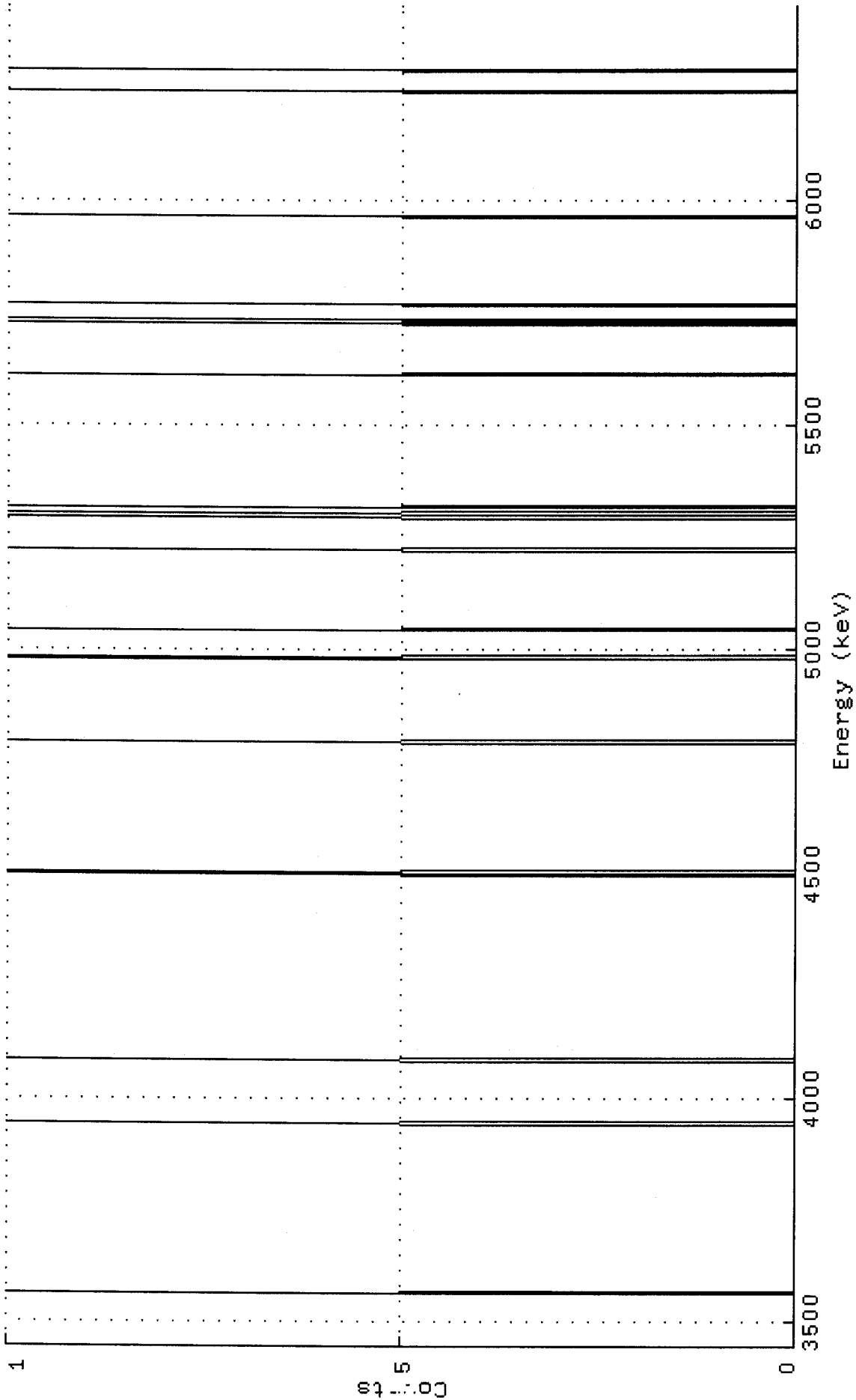
*[Signature]*

Reviewer

*5/28/10*

Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.RJR\_1005084A-RA\$02\_RA.CNF; 1  
Title : 040  
Sample Title: BLANK  
Start Time: 27-MAY-2010 16:26 Sample Time: 27-MAY-2010 00:00 Energy Offset: 3.43391E+03  
Real Time : 0 02:50:00.30 Sample ID : 02 Energy Slope : 3.12058E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.91013E-04



Channel Contents for ND\_AMS\_ARCHIVE\_R:R\_1005084A-RA\$02\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	1	0	1
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	1	1	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	1	0	0	0	1	0	0	0	1	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
771:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
785:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Gross Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:02.68

Detector ID: 40	Acquisition Start: 27-MAY-2010 16:26:25.01
Live Time: 0 02:50:00.00	Real Time: 0 02:50:00.30
Batch Id: 1005084A-RA	Sample Id: 02
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4598.10	3	0315.18	382.00	307	156	2.94E-04	57.7		
2	0	5234.60	5	0296.46	599.00	525	177	4.90E-04	44.7		
3	0	5759.09	5	0393.19	782.60	721	164	4.90E-04	44.7		

Background Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:07.18

Live Time: 0 16:40:00.00	Acquisition Start: 21-MAY-2010 15:36:55.01
	Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.47	1	0	3.12	384.50	307	156	1.67E-05	100.0	
2	0	5274.36	2	0	96.59	613.00	525	177	3.33E-05	70.7	
3	0	5814.13	0	0	0.00	802.50	721	164	0.00E+00	0.0	

Net Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:07.54

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4598.10*	7	0315.18	382.00	307	156	6.89E-04	59.2		
2	0	5234.60*	12	0296.46	599.00	525	177	1.14E-03	46.1		
3	0	5759.09*	12	0393.19	782.60	721	164	1.18E-03	44.7		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : BLANK  
 Sample date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:26:25  
 Sample ID : 02 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 040 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.30 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4598.10*	7315.18	382.00	307	156118.4				RA-226	9.236E-02
0	5234.60*	12296.46	599.00	525	177 92.1				RN-222	0.153
0	5759.09*	12393.19	782.60	721	164 89.4				PO-218	0.158

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:36:22

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$03\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005084A-RA	*	SAMPLE ID:	03
SAMPLE DATE:	12-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	MW-4D-DIS	*	DETECTOR NUMBER:	042
ACQ DATE:	27-MAY-2010 16:26	*	AVERAGE EFFICIENCY:	19.90%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	90.80%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	21-MAY-2010 12:05	*	EFF CAL DATE:	7-NOV-2009 11:51
BKG FILENAME:	B_042_21MAY10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.74
		*		

\*\*\*\*\*

NUCLIDE ACTIVITY SUMMARY

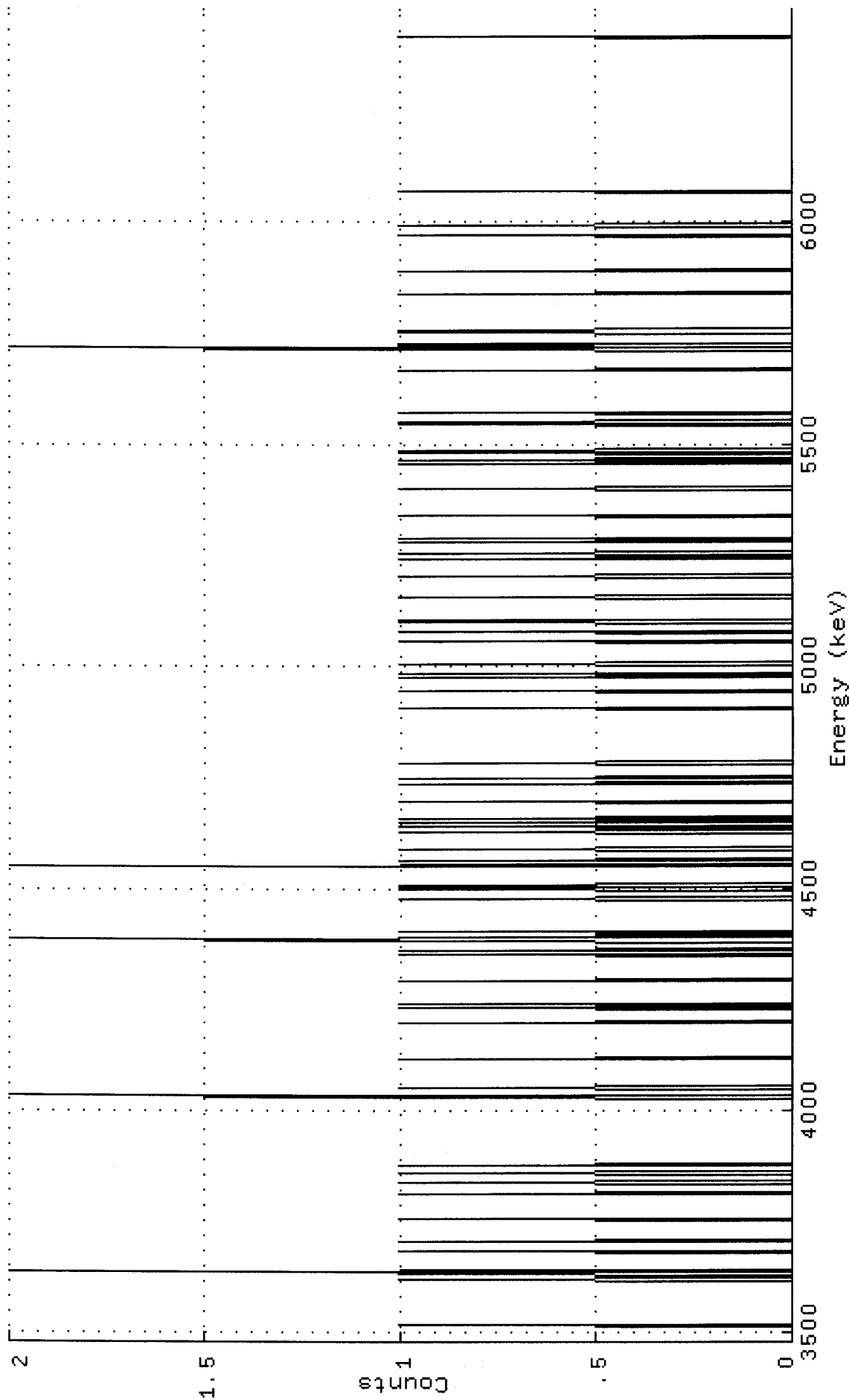
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	33.41	2.21	100.0	4.900E-01	2.923E-01	3.843E-01
RN-222	5490.0	40.61	3.23	99.9	5.959E-01	3.251E-01	4.426E-01
RA-226	4785.0	59.26	1.02	100.0	8.689E-01	3.819E-01	2.951E-01

\*\*\*\*\*

km  
Analyst  
[Signature]  
Reviewer

05-28-10  
Date  
5/28/10  
Date

Spectrum : DKA100:[ALPHA:ALUSR.ARCHIVE.SJS\_1005084A-RA#03\_RA.CNF;1  
Title : 042  
Sample Title: MW-4D-DIS  
Start Time: 27-MAY-2010 16:26 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.46942E+03  
Real Time : 0 02:50:00.30 Sample ID : 03 Energy Slope : 3.09566E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.59715E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$03\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	1	0	0	0	1	0	2	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
71:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
113:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
127:	1	0	0	0	0	0	1	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	1	2	0	0	0	0	0	1	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	1	0	0	0	0	0	0	0	0	0	1	0	0	1
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	1	0	0	0	1	0
295:	0	0	0	0	1	1	2	0	1	0	0	1	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
337:	0	1	0	1	1	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	2	0	0	0	1	0	0	0	0
365:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
379:	0	0	1	0	0	0	1	0	0	0	1	0	0	1
393:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
421:	0	1	0	0	0	0	0	0	0	0	0	0	1	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
477:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
491:	0	0	0	0	0	0	0	0	1	0	1	0	0	0
505:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
533:	1	0	0	0	0	0	0	0	1	1	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	1	0	0	0	1	0	0	0	0	0	0	0	0
603:	1	0	1	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	1	0	0	0	0	0	0	0	1
673:	0	1	0	0	0	0	0	0	1	0	0	0	0	0
687:	0	0	0	0	0	0	0	1	0	1	0	0	0	0
701:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	1	2	0	1
757:	1	0	0	0	0	0	0	0	0	1	1	1	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	1	0	0	0	0	0	0	0	1	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
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Gross Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:15.66

Detector ID: 42                                      Acquisition Start: 27-MAY-2010 16:26:41.01  
Live Time: 0 02:50:00.00                              Real Time: 0 02:50:00.30  
Batch Id: 1005084A-RA                                  Sample Id: 03  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4550.15	22	0174.81	355.64	297	156	2.16E-03	21.3		
2	0	5271.86	16	0461.25	600.87	515	176	1.57E-03	25.0		
3	0	5782.05	13	0 4.55	778.31	709	162	1.27E-03	27.7		

Background Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:19.78

Live Time: 0 16:40:00.00                                  Acquisition Start: 21-MAY-2010 15:36:58.01  
Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.73	6	0317.77	374.50	297	156	1.00E-04	40.8		
2	0	5276.52	19	0 3.12	602.50	515	176	3.17E-04	22.9		
3	0	5812.92	13	0405.00	789.50	709	162	2.17E-04	27.7		

Net Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:20.22

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4550.15*	59	0174.81	355.64	297	156	5.81E-03	21.7		
2	0	5271.86*	41	0461.25	600.87	515	176	3.98E-03	27.1		
3	0	5782.05*	33	0 4.55	778.31	709	162	3.28E-03	29.6		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2010 08:36:21

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-4D-DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:26:41  
 Sample ID : 03 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 042 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.30 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4550.15*	59174.81	355.64	297	156	43.4			RA-226	0.789
0	5271.86*	41461.25	600.87	515	176	54.1			RN-222	0.541
0	5782.05*	33	4.55	778.31	709	162	59.3		PO-218	0.445

Eberline Services  
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ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:36:34

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$04\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005084A-RA	*	SAMPLE ID:	04
SAMPLE DATE:	12-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	MW-4D-DIS	*	DETECTOR NUMBER:	043
ACQ DATE:	27-MAY-2010 16:26	*	AVERAGE EFFICIENCY:	21.19%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	84.75%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	21-MAY-2010 12:06	*	EFF CAL DATE:	18-APR-2010 11:15
BKG FILENAME:	B_043_21MAY10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.69
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	16.96	1.87	100.0	2.503E-01	2.114E-01	3.576E-01
RN-222	5490.0	50.43	0.68	99.9	7.447E-01	3.503E-01	2.576E-01
RA-226	4785.0	48.42	0.00	100.0	7.144E-01	3.404E-01	1.052E-01

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Analyst

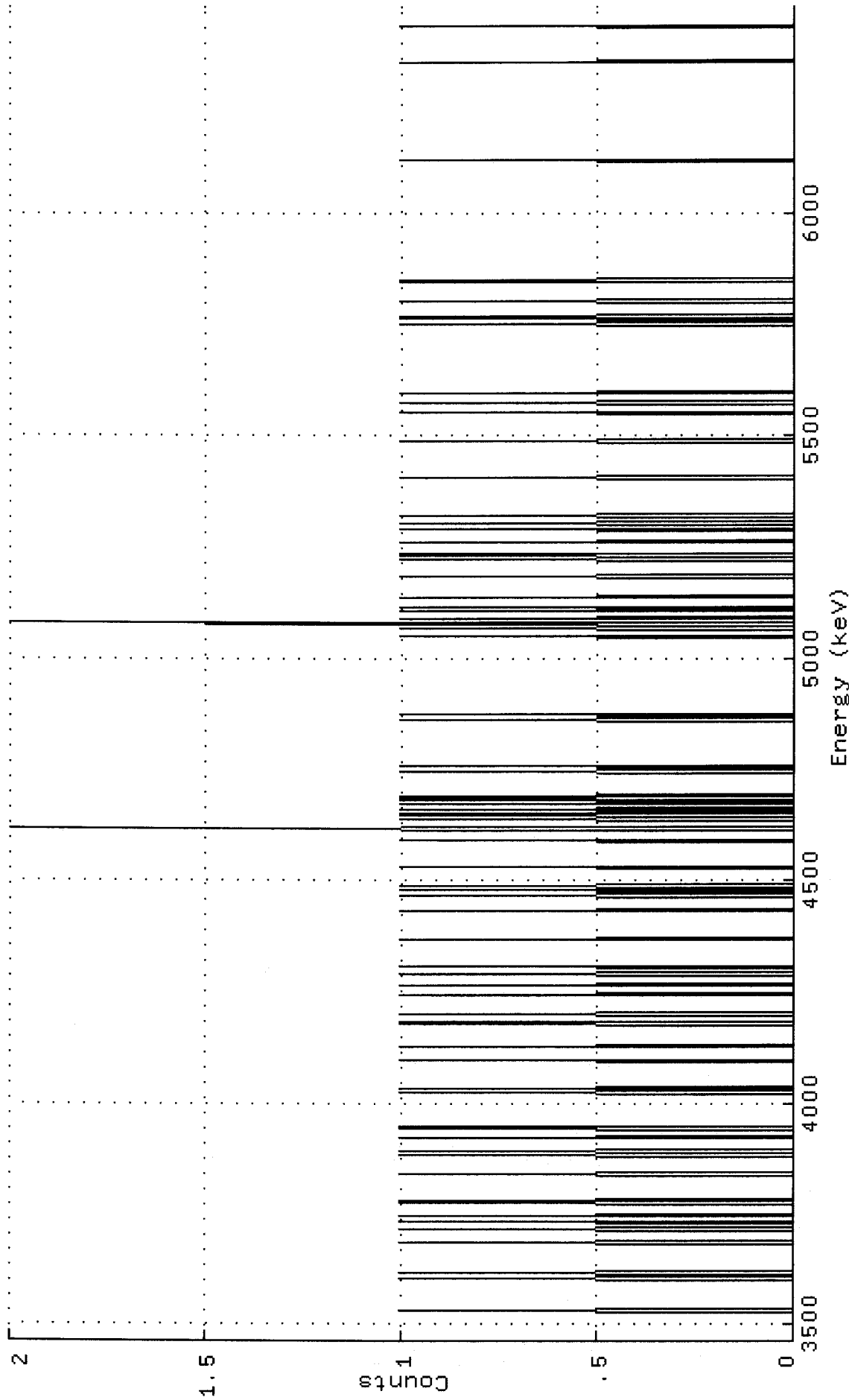
          
Date

          
Reviewer

          
Date



Spectrum : DKA100: [ALPHA:ALUSR.ARCHIVE.S]S\_1005084A-RA\$04\_RA.CNF;1  
Title : 043  
Sample Title: MW-4D-DIS  
Start Time: 27-MAY-2010 16:26 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.45238E+03  
Real Time : 0 02:50:00.30 Sample ID : 04 Energy Slope : 3.14397E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -2.04122E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$04\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	1	0	0	0	1	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	1	0	0	0	0	0	0	0	0	0	1
85:	0	0	0	0	1	0	0	0	0	1	0	0	0	0
99:	0	0	0	0	1	0	1	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	1	0	1
141:	1	0	0	0	0	0	0	0	0	0	1	0	0	0
155:	0	0	1	1	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	1	0	0	1	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
211:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	1	1	0	0	0
239:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	1	0	0	0	0	0	0	1	0	0	0
267:	0	0	0	0	1	0	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
323:	0	0	0	0	0	0	1	0	0	0	1	0	0	1
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
379:	2	0	0	0	0	0	0	1	0	0	1	0	1	0
393:	0	1	0	0	0	1	0	1	0	1	0	1	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	1	0	0	0	1	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
463:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	1	0	0	0	0	0	1	0
533:	0	1	2	0	0	0	1	0	0	0	0	0	1	0
547:	1	0	0	0	0	0	0	0	1	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
575:	0	0	0	0	0	0	0	0	0	1	0	0	1	1
589:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
603:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
617:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
701:	0	0	0	0	0	1	0	0	0	0	0	0	0	1
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
771:	0	1	0	1	0	0	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	1	1	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:26.78

Detector ID: 43	Acquisition Start: 27-MAY-2010 16:26:55.01
Live Time: 0 02:50:00.00	Real Time: 0 02:50:00.30
Batch Id: 1005084A-RA	Sample Id: 04
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4611.97	18	0	3.14	378.11	299	155	1.76E-03	23.6	
2	0	5194.21	19	0	4.62	575.53	516	176	1.86E-03	22.9	
3	0	5763.93	7	0	282.96	774.14	711	164	6.86E-04	37.8	

Background Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:31.75

Live Time: 0 16:40:00.00	Acquisition Start: 21-MAY-2010 15:37:01.01
	Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4603.26	0	0	0.00	376.00	299	155	0.00E+00	0.0	
2	0	5273.44	4	0	393.81	603.50	516	176	6.67E-05	50.0	
3	0	5815.78	11	0	418.81	792.50	711	164	1.83E-04	30.2	

Net Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:36:32.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4611.97*	48	0	3.14	378.11	299	155	4.75E-03	23.6	
2	0	5194.21*	50	0	4.62	575.53	516	176	4.94E-03	23.3	
3	0	5763.93*	17	0	282.96	774.14	711	164	1.66E-03	42.1	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 28-MAY-2010 08:36:33

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-4D-DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:26:55  
 Sample ID : 04 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 043 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.30 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4611.97*	48	3.14	378.11	299	155	47.1		RA-226	0.605
0	5194.21*	50	4.62	575.53	516	176	46.5		RN-222	0.631
0	5763.93*	17282.96	774.14	711	164	84.2			PO-218	0.212

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:36:45

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$05\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005084A-RA \* SAMPLE ID: 05  
SAMPLE DATE: 12-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: MW-5D-DIS \* DETECTOR NUMBER: 045  
ACQ DATE: 27-MAY-2010 16:27 \* AVERAGE EFFICIENCY: 19.86%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 81.66%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_045\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.84  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	48.11	0.17	100.0	7.862E-01	3.866E-01	2.120E-01
RN-222	5490.0	62.14	0.34	99.9	1.016E+00	4.414E-01	2.490E-01
RA-226	4785.0	87.87	0.17	100.0	1.436E+00	5.263E-01	2.119E-01

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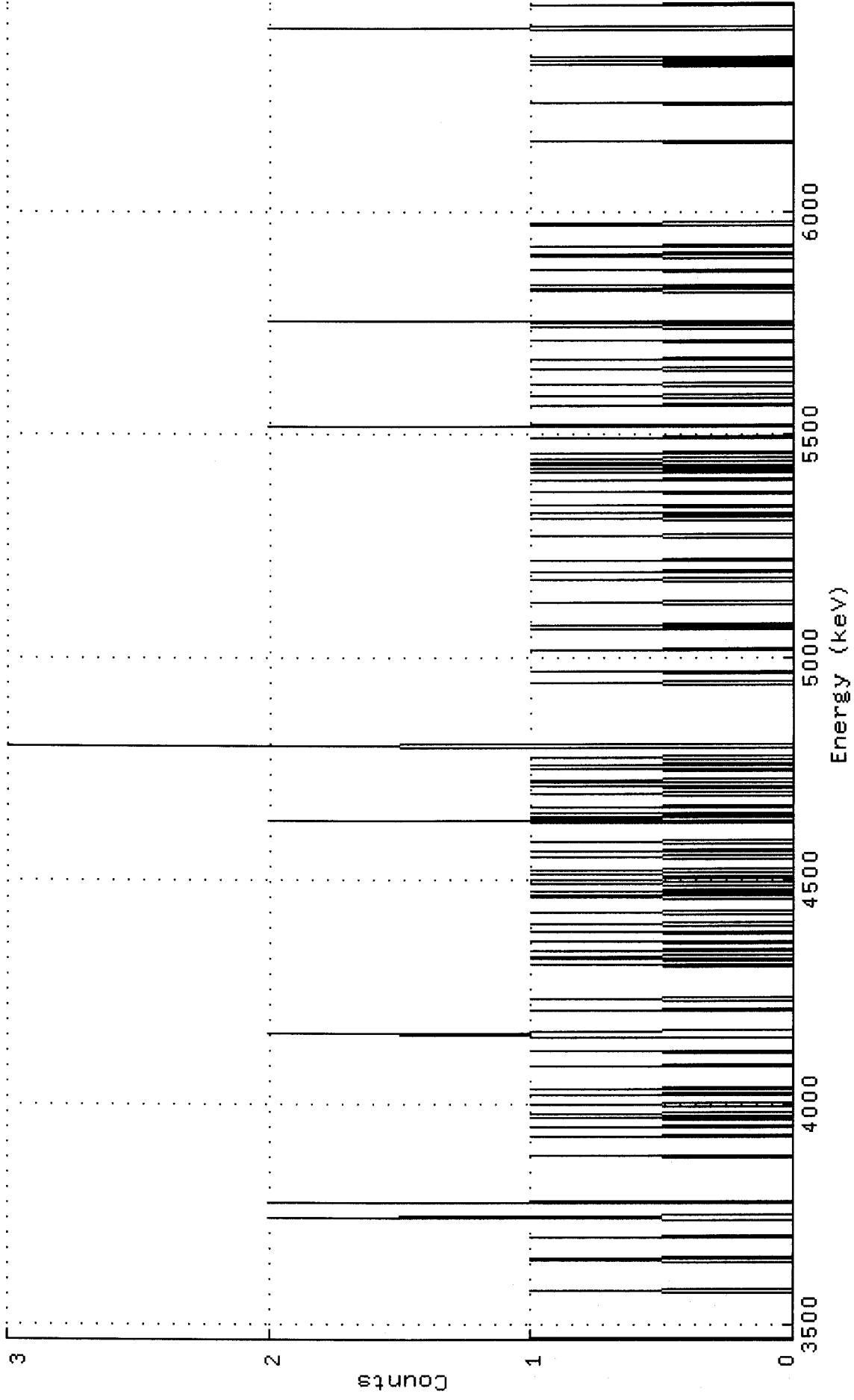
KM  
Analyst

05-28-10  
Date

[Signature]  
Reviewer

5/28/10  
Date

Spectrum : OKA100:[ALPHA:ALUSR.ARCHIVE.S]S\_1005084A-RA\$05\_RA.CNF;1  
Title : 045  
Sample Title: MW-50-DIS  
Start Time: 27-MAY-2010 16:27 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.45824E+03  
Real Time : 0 02:50:00.10 Sample ID : 05 Energy Slope : 3.11431E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.77214E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$05\_RA

Channel

1:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0
99:	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
183:	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
211:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
225:	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
253:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0
295:	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
323:	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
337:	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0
351:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
365:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0
393:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
407:	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
421:	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
575:	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
631:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
645:	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0
659:	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
687:	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
729:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
813:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
827:	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 28-MAY-2010 08:36:38.53

Detector ID: 45 Acquisition Start: 27-MAY-2010 16:27:12.01  
Live Time: 0 02:50:00.00 Real Time: 0 02:50:00.10  
Batch Id: 1005084A-RA Sample Id: 05  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4610.61	31	0	179.85	378.16	299	156	3.04E-03	18.0	
2	0	5328.75	22	0	3.11	622.68	517	176	2.16E-03	21.3	
3	0	5790.10	17	0	3.11	783.71	711	163	1.67E-03	24.3	

Background Counts Within Peak Regions Generated: 28-MAY-2010 08:36:43.19

Acquisition Start: 21-MAY-2010 15:37:04.01  
Live Time: 0 16:40:00.00 Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4615.87	1	0	3.11	376.50	299	156	1.67E-05	100.0	
2	0	5288.02	2	0	17.32	604.50	517	176	3.33E-05	70.7	
3	0	5827.56	1	0	3.11	792.00	711	163	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 28-MAY-2010 08:36:43.52

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4610.61*	88	0	179.85	378.16	299	156	8.61E-03	18.0	
2	0	5328.75*	62	0	3.11	622.68	517	176	6.09E-03	21.4	
3	0	5790.10*	48	0	3.11	783.71	711	163	4.72E-03	24.3	

Flag: "\*" = Peak area was modified by background subtraction



Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-5D-DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:27:12  
 Sample ID : 05 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 045 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4610.61*	88179.85	378.16	299	156	36.0			RA-226	1.17
0	5328.75*	62	3.11	622.68	517	176	42.9		RN-222	0.830
0	5790.10*	48	3.11	783.71	711	163	48.7		PO-218	0.642

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:36:57

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$06\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005084A-RA \* SAMPLE ID: 06  
SAMPLE DATE: 12-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: MW-6D-DIS \* DETECTOR NUMBER: 046  
ACQ DATE: 27-MAY-2010 16:27 \* AVERAGE EFFICIENCY: 19.61%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 85.12%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_046\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.94  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	49.98	0.00	100.0	7.937E-01	3.890E-01	1.237E-01
RN-222	5490.0	46.87	0.17	99.9	7.448E-01	3.774E-01	2.134E-01
RA-226	4785.0	79.21	0.17	100.0	1.258E+00	4.930E-01	2.132E-01

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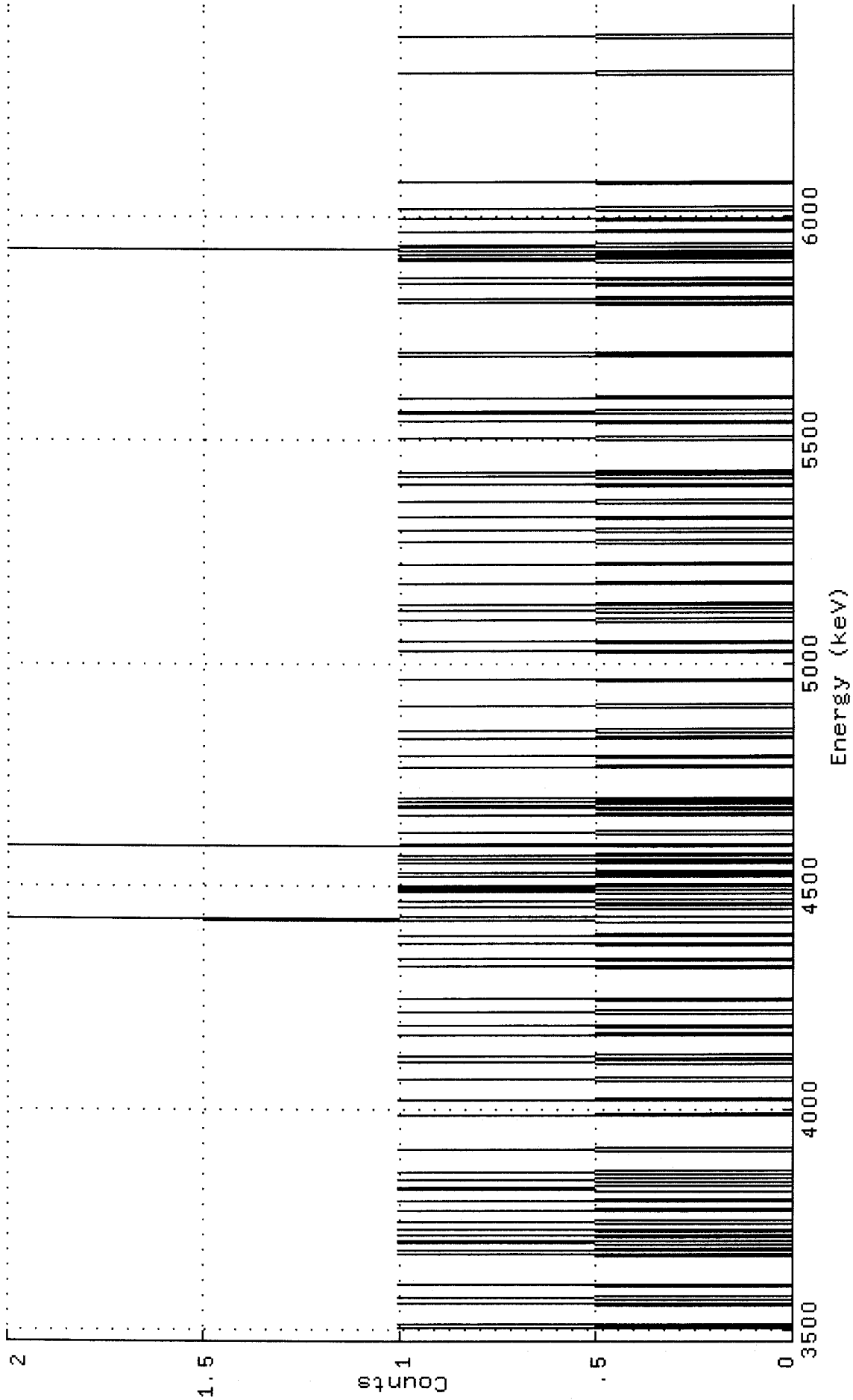
                    KM                      
Analyst

                    05-28-10                      
Date

                    [Signature]                      
Reviewer

                    [Signature]                      
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1005084A-RA\$06\_RA.CNF;1  
 Title : 046  
 Sample Title: MW-6D-DIS  
 Start Time: 27-MAY-2010 16:27 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.46625E+03  
 Real Time : 0 02:50:00.10 Sample ID : 06 Energy Slope : 3.11016E+00  
 Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.73226E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$06\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	1	0	0	0	0	1	0	0	0	0	0	0	0
43:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	1	0	0	0	1
71:	0	0	0	0	1	1	0	0	0	1	0	0	0	1
85:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
99:	1	0	0	0	0	0	0	1	0	0	0	0	0	0
113:	0	1	1	0	0	0	0	0	1	0	0	0	0	1
127:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	0	0	0	1	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
197:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
211:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	1	0	0	0	0	0	1	0	0	0	0
239:	0	0	0	0	0	1	1	0	0	0	0	0	0	0
253:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
281:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
295:	1	0	0	0	0	0	0	1	0	0	0	0	0	0
309:	0	0	0	0	1	2	0	0	0	0	0	0	0	0
323:	1	0	0	0	1	0	0	0	0	0	0	1	0	1
337:	1	0	1	0	0	0	0	0	0	1	0	0	1	0
351:	0	0	0	0	0	1	0	1	0	0	0	1	0	0
365:	0	0	0	0	2	0	0	0	0	0	0	0	0	1
379:	1	0	0	0	0	0	0	0	0	0	0	0	0	1
393:	0	0	0	0	1	0	1	0	1	0	0	1	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
435:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	1	0	0	0	0	1	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
519:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
547:	1	0	0	0	0	1	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
603:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
617:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
631:	1	0	0	0	0	0	0	0	0	0	0	0	0	1
645:	0	0	0	0	0	1	1	0	0	1	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
687:	0	0	0	0	0	0	1	0	0	0	0	0	0	1
701:	1	0	0	0	0	0	0	0	0	0	0	1	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	1	0	1	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	1	0	0	0	0	0	0	0	0
799:	0	0	1	0	0	0	0	1	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	1	0	1	0	0	1	0
827:	1	0	2	0	0	1	0	0	0	0	0	0	0	0
841:	0	0	1	0	0	0	0	0	0	0	0	0	1	0
855:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions     Generated: 28-MAY-2010 08:36:50.02

Detector ID: 46                                    Acquisition Start: 27-MAY-2010 16:27:25.01  
Live Time:    0 02:50:00.00                    Real Time:       0 02:50:00.10  
Batch Id:     1005084A-RA                     Sample Id:     06  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4573.63	27	0	175.63	363.41	297	156	2.65E-03	19.2	
2	0	5264.00	16	0	513.18	597.94	514	176	1.57E-03	25.0	
3	0	5864.84	17	0	3.11	807.53	709	163	1.67E-03	24.3	

Background Counts Within Peak Regions     Generated: 28-MAY-2010 08:36:54.69

Live Time:    0 16:40:00.00                    Acquisition Start: 21-MAY-2010 15:37:07.01  
Real Time:    0 16:40:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4604.60	1	0	3.11	374.50	297	156	1.67E-05	100.0	
2	0	5273.55	1	0	3.11	601.50	514	176	1.67E-05	100.0	
3	0	5816.33	0	0	0.00	790.00	709	163	0.00E+00	0.0	

Net Sample Counts Within Peak Regions     Generated: 28-MAY-2010 08:36:55.51

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4573.63*	79	0	175.63	363.41	297	156	7.77E-03	19.3	
2	0	5264.00*	47	0	513.18	597.94	514	176	4.60E-03	25.1	
3	0	5864.84*	50	0	3.11	807.53	709	163	4.90E-03	24.3	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-6D-DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:27:25  
 Sample ID : 06 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 046 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4573.63*	79175.63	363.41	297	156	38.6			RA-226	1.07
0	5264.00*	47513.18	597.94	514	176	50.2			RN-222	0.634
0	5864.84*	50	3.11	807.53	709	163	48.5		PO-218	0.676

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Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:37:09

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$07\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005084A-RA	*	SAMPLE ID:	07
SAMPLE DATE:	12-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	MW-65-DIS	*	DETECTOR NUMBER:	047
ACQ DATE:	27-MAY-2010 16:27	*	AVERAGE EFFICIENCY:	17.92%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	100.00%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	21-MAY-2010 12:06	*	EFF CAL DATE:	17-APR-2010 13:09
BKG FILENAME:	B_047_21MAY10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	2.96
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	43.89	0.51	100.0	6.492E-01	3.423E-01	2.614E-01
RN-222	5490.0	67.74	0.34	99.9	1.003E+00	4.261E-01	2.349E-01
RA-226	4785.0	97.68	0.00	100.0	1.444E+00	5.130E-01	1.160E-01

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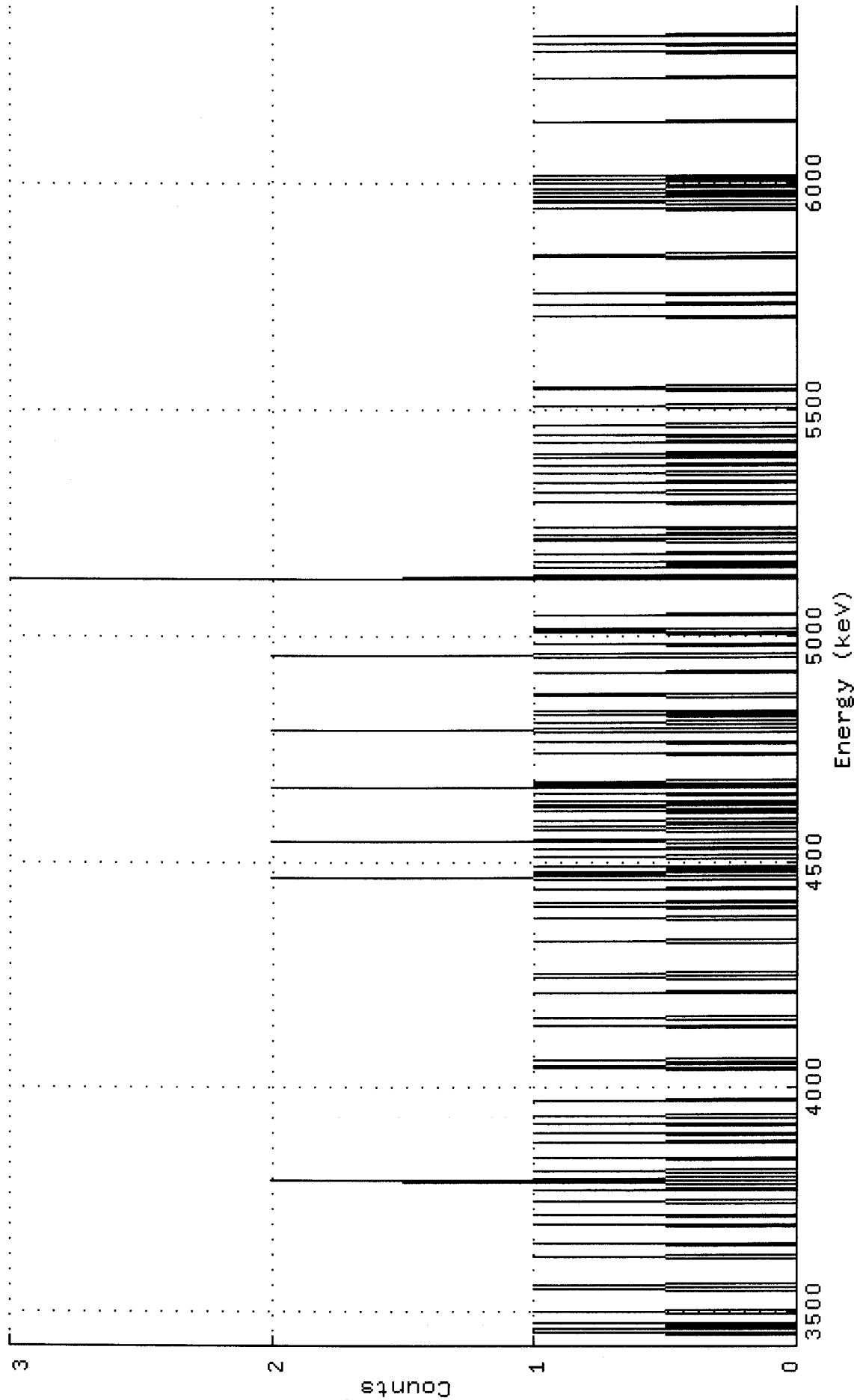
        KM          
Analyst

        05-28-10          
Date

        [Signature]          
Reviewer

        5/28/10          
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.SJS\_1005084A-RA\$07\_RA.CNF]; 1  
Title : 047  
Sample Title: MW-65-DIS  
Start Time: 27-MAY-2010 16:27 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.41533E+03  
Real Time : 0 02:50:00.10 Sample ID : 07 Energy Slope : 3.07896E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.72095E-04





Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$07\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
15:	0	1	0	0	1	0	0	0	0	0	0	0	0	1
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	1	1	0	1	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
71:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	1	0	0	0	0	0	0	1
99:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
113:	0	0	0	0	1	0	0	0	0	1	2	0	1	0
127:	0	0	0	1	1	0	0	0	0	0	0	0	0	1
141:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
155:	0	0	0	1	0	0	0	0	0	0	1	0	0	0
169:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
183:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	1	0	1	0	0
211:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
239:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
267:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
323:	0	0	1	0	0	0	1	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0	0	0	2	0	0	1
351:	0	1	0	0	1	0	0	0	0	0	0	0	1	0
365:	0	0	0	0	1	0	0	0	0	1	2	0	0	0
379:	0	0	0	0	1	0	0	1	0	0	0	1	0	0
393:	0	0	0	0	1	0	0	1	1	0	0	1	0	0
407:	0	0	0	1	0	0	0	0	2	0	0	1	1	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
449:	1	0	0	0	0	0	0	0	0	2	0	0	0	0
463:	0	1	0	0	0	0	1	0	0	1	0	0	0	0
477:	0	0	0	0	0	0	0	1	1	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
505:	0	0	0	0	0	0	0	0	0	0	2	0	0	0
519:	0	0	0	0	1	0	0	0	0	0	0	0	0	1
533:	0	1	1	0	0	0	0	0	0	0	0	0	0	1
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	3
575:	0	1	0	0	0	0	0	0	1	0	0	1	0	0
589:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
603:	1	1	0	0	0	1	0	0	0	0	1	0	0	0
617:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	1	0	0	0	0	0	0	0	1	0	0	0	0
645:	0	0	0	1	0	0	0	0	0	0	1	0	0	0
659:	0	0	1	0	0	0	0	0	1	0	0	1	0	0
673:	0	0	0	0	0	0	1	0	0	0	0	1	0	0
687:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
715:	0	0	0	0	0	1	0	1	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
785:	0	0	1	0	0	0	0	0	0	0	1	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	1	0	1
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	1	0	0	0	0	1	1
869:	0	0	0	1	0	0	1	0	1	1	0	0	0	1
883:	0	0	1	0	0	1	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	1	0	0	0	0	0	1
995:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions     Generated: 28-MAY-2010 08:37:02.37

Detector ID: 47                             Acquisition Start: 27-MAY-2010 16:27:38.01  
Live Time: 0 02:50:00.00                    Real Time: 0 02:50:00.10  
Batch Id: 1005084A-RA                      Sample Id: 07  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4598.43	33	0344.84	392.88	317	158	158	3.24E-03	17.4	
2	0	5271.71	23	0 3.08	624.74	537	179	179	2.25E-03	20.9	
3	0	5910.53	15	0344.84	850.87	735	165	165	1.47E-03	25.8	

Background Counts Within Peak Regions     Generated: 28-MAY-2010 08:37:06.77

Live Time: 0 16:40:00.00                    Acquisition Start: 21-MAY-2010 15:37:10.01  
Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.87	0	0 0.00	395.50	317	158	158	0.00E+00	0.0	
2	0	5275.69	2	0 27.67	626.00	537	179	179	3.33E-05	70.7	
3	0	5817.43	3	0 79.94	817.00	735	165	165	5.00E-05	57.7	

Net Sample Counts Within Peak Regions     Generated: 28-MAY-2010 08:37:07.08

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4598.43*	98	0344.84	392.88	317	158	158	9.58E-03	17.4	
2	0	5271.71*	68	0 3.08	624.74	537	179	179	6.64E-03	21.0	
3	0	5910.53*	44	0344.84	850.87	735	165	165	4.30E-03	26.1	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-65-DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:27:38  
 Sample ID : 07 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 047 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4598.43*	98344.84	392.88	317	158	34.8			RA-226	1.44
0	5271.71*	68	3.08	624.74	537	179	41.9		RN-222	1.00
0	5910.53*	44344.84	850.87	735	165	52.3			PO-218	0.649

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
28-MAY-2010 08:37:21

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$08\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005084A-RA \* SAMPLE ID: 08  
SAMPLE DATE: 13-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: MW-1C-DIS \* DETECTOR NUMBER: 048  
ACQ DATE: 27-MAY-2010 16:27 \* AVERAGE EFFICIENCY: 18.20%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 94.86%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_048\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 3.01  
\*

\*\*\*\*\*

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	47.99	0.17	100.0	7.367E-01	3.732E-01	2.110E-01
RN-222	5490.0	56.17	1.02	99.9	8.627E-01	4.077E-01	3.396E-01
RA-226	4785.0	92.80	0.51	100.0	1.424E+00	5.240E-01	2.758E-01

\*\*\*\*\*

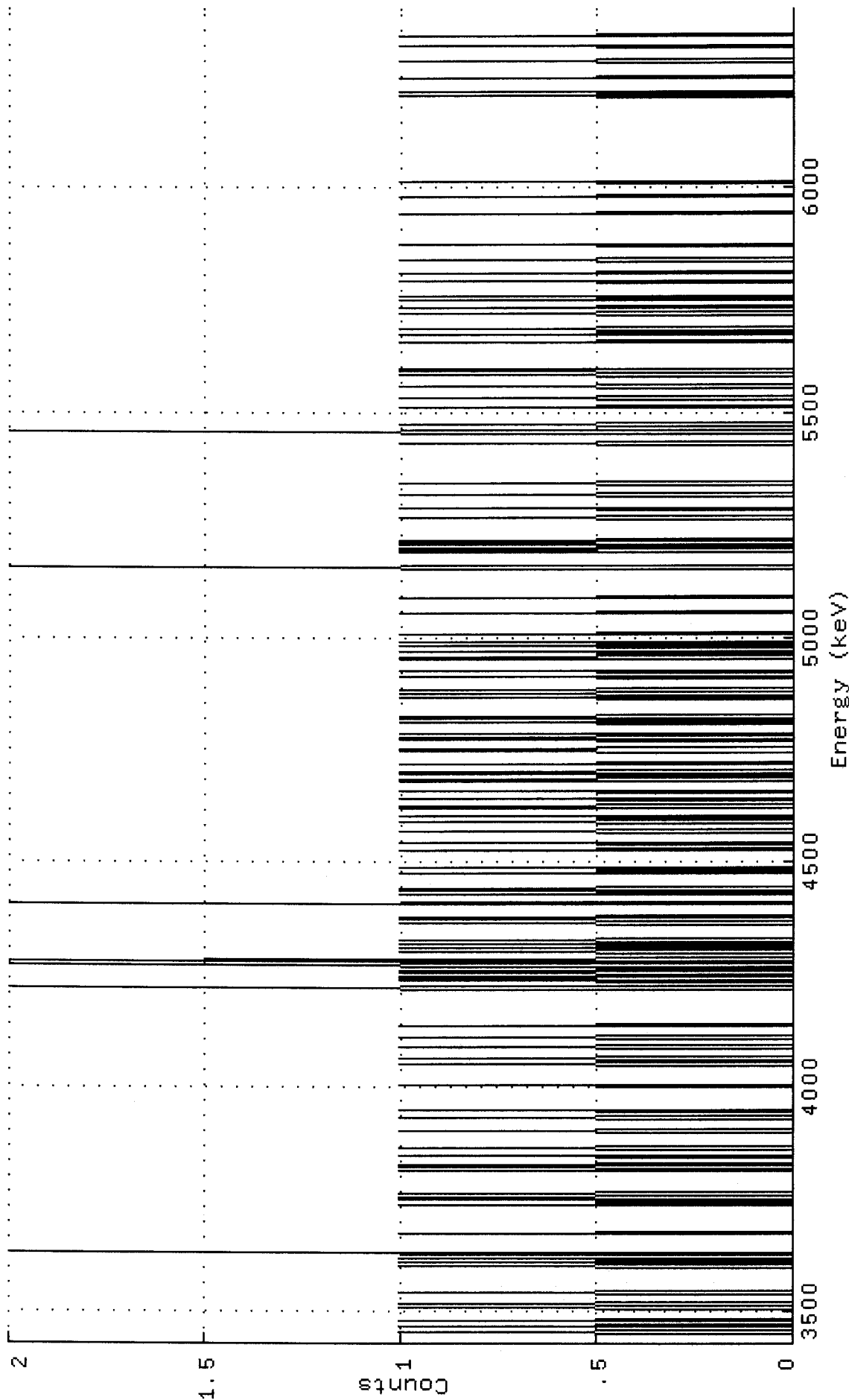
        KM          
Analyst

        05-28-10          
Date

        [Signature]          
Reviewer

        5/28/10          
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1005084A-RA\$08\_RA.CNF;1  
Title : 048  
Sample Title: MW-1C-DIS  
Start Time: 27-MAY-2010 16:27 Sample Time: 13-MAY-2010 00:00 Energy Offset: 3.41824E+03  
Real Time : 0 02:50:00.10 Sample ID : 08 Energy Slope : 3.07216E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.65861E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005084A-RA\$08\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	1	0	0
15:	0	1	0	0	0	1	0	0	0	0	0	0	0
29:	1	0	0	1	0	0	0	0	0	0	0	1	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	1	0	1	0	0	1	0	0	0	2
71:	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	1	0	0	1	0	0	0
113:	1	0	0	0	0	0	0	0	0	0	0	1	0
127:	0	0	0	1	0	1	0	1	0	0	0	0	0
141:	0	0	0	0	0	1	0	0	0	0	0	0	0
155:	0	0	0	0	1	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	1	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	1	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	1	0
211:	0	1	1	0	0	0	0	0	0	0	1	0	0
225:	0	0	0	1	0	0	0	0	0	0	0	0	1
239:	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	2	0
267:	0	0	0	1	0	1	0	1	0	1	0	1	0
281:	0	2	0	0	2	1	0	0	0	0	0	1	0
295:	1	0	1	0	0	1	1	0	0	0	0	0	0
309:	0	0	0	0	1	0	0	1	0	1	0	0	0
323:	0	0	0	0	0	2	0	0	0	0	0	0	1
337:	0	1	1	0	0	0	0	0	0	0	0	0	0
351:	1	0	0	1	0	0	0	0	0	0	0	0	0
365:	0	0	0	1	0	0	0	0	1	0	0	0	0
379:	0	0	0	1	0	0	0	0	0	0	1	0	0
393:	1	0	0	0	0	0	0	1	1	0	0	0	1
407:	0	0	0	0	0	1	0	0	0	0	0	0	1
421:	1	0	0	0	1	0	1	0	0	0	0	0	1
435:	0	0	0	0	0	0	0	1	1	1	0	0	0
449:	0	0	1	0	1	0	1	0	0	0	0	0	0
463:	0	1	0	0	1	0	1	0	0	0	0	0	0
477:	0	0	0	0	0	0	1	0	0	1	0	0	1
491:	0	0	0	0	0	0	0	0	1	0	0	0	0
505:	0	0	0	0	0	0	0	0	1	1	0	0	1
519:	0	0	0	1	0	0	1	0	0	0	0	0	1
533:	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	1	0	0	0	0	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	2	0	0	0	0
589:	0	0	0	0	0	0	1	1	0	1	0	0	1
603:	0	1	0	0	0	0	0	0	0	0	0	1	1
617:	0	0	0	0	1	0	0	0	0	0	0	1	0
631:	0	0	0	0	0	0	0	0	1	0	0	0	0
645:	0	0	0	1	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	0	0	0	0	0	0
687:	0	2	0	0	0	0	0	1	0	0	0	0	0
701:	0	0	0	0	0	0	0	1	0	0	0	0	0
715:	1	0	0	0	0	0	0	0	0	1	0	0	0
729:	0	0	0	0	1	0	0	1	1	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	1	0	0	0	0	0	1	0	0	1	0
771:	0	0	0	0	0	0	0	0	0	0	1	0	0
785:	0	1	0	0	0	0	0	1	0	1	0	0	0
799:	0	0	0	0	0	0	0	1	0	0	0	0	0
813:	1	0	0	0	0	0	0	0	0	0	1	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	1	0	0	0	0
855:	0	0	0	0	0	1	0	0	0	0	0	0	0
869:	0	0	0	0	0	1	0	0	0	0	0	0	0
883:	0	0	1	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	1	0	0	1	0	0	0	0	0	0	0	0
967:	0	0	1	0	0	0	0	0	0	0	0	0	0
981:	0	1	0	0	0	0	0	0	0	0	0	0	1
995:	0	0	0	0	0	0	0	0	1	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:37:13.93

Detector ID: 48	Acquisition Start: 27-MAY-2010 16:27:52.01
Live Time: 0 02:50:00.00	Real Time: 0 02:50:00.10
Batch Id: 1005084A-RA	Sample Id: 08
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4623.32	31	0	3.07	400.94	317	158	3.04E-03	18.0	
2	0	5271.74	19	0	325.65	624.37	537	178	1.86E-03	22.9	
3	0	5772.45	16	0	460.44	800.94	734	165	1.57E-03	25.0	

Background Counts Within Peak Regions      Generated: 28-MAY-2010 08:37:18.84

Live Time: 0 16:40:00.00	Acquisition Start: 21-MAY-2010 15:37:13.01
	Real Time: 0 16:40:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.14	3	0	393.77	395.50	317	158	5.00E-05	57.7	
2	0	5274.47	6	0	387.56	625.50	537	178	1.00E-04	40.8	
3	0	5811.57	1	0	3.10	816.00	734	165	1.67E-05	100.0	

Net Sample Counts Within Peak Regions      Generated: 28-MAY-2010 08:37:19.19

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4623.32*	93	0	3.07	400.94	317	158	9.10E-03	18.1	
2	0	5271.74*	56	0	325.65	624.37	537	178	5.51E-03	23.4	
3	0	5772.45*	48	0	460.44	800.94	734	165	4.70E-03	25.1	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : MW-1C-DIS  
 Sample date : 13-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 16:27:52  
 Sample ID : 08 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 048 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.10 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4623.32*	93	3.07	400.94	317	158	36.1		RA-226	1.35
0	5271.74*	56325.65	624.37	624.37	537	178	46.7		RN-222	0.818
0	5772.45*	48460.44	800.94	800.94	734	165	50.2		PO-218	0.699



Detector	Parameter	Flag	Filename
1	OFFLINE		
2	OFFLINE		
3	OFFLINE		
4	ALL	Passed	D_004_NONE
5	ALL	Passed	D_005_NONE
6	ALL	Passed	D_006_NONE
7	OFFLINE		
8	OFFLINE		
9	OFFLINE		
10	ALL	Passed	D_010_NONE
11	ALL	Passed	D_011_NONE
12	ALL	Passed	D_012_NONE
13	ALL	Passed	D_013_NONE
14	ALL	Passed	D_014_NONE
15	ALL	Passed	D_015_NONE
16	OFFLINE		
17	OFFLINE		
18	ALL	Passed	D_018_NONE
19	ALL	Passed	D_019_NONE
20	OFFLINE		
21	ALL	Passed	D_021_NONE
22	OFFLINE		
23	ALL	Passed	D_023_NONE
24	ALL	Passed	D_024_NONE
25	OFFLINE		
26	OFFLINE		
27	ALL	Passed	D_027_NONE
28	OFFLINE		
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	OFFLINE		
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	OFFLINE		
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	OFFLINE		
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 5/27/10

APPROVAL TIME: \_\_\_\_\_

APPROVED BY: ICB

PROCEDURE # \_\_\_\_\_

**SECTION IX**  
**ANALYTICAL DATA (RADIUM-228)**

10-05084  
Ra228  
Run 1

<b>Work Order</b>	<b>10-05084</b>
<b>Analysis Code</b>	<b>Ra228</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>5/18/2010</b>
<b>Lab Deadline</b>	<b>6/2/2010</b>
<b>Client</b>	Michael Pisani & Associates
<b>Project</b>	ENV
<b>Report Level</b>	4
<b>Activity Units</b>	pCi
<b>Aliquot Units</b>	I
<b>Matrix</b>	WA
<b>Method</b>	EPA 904.0 Modified
<b>Instrument Type</b>	Alpha/Beta GPC
<b>Radiometric Tracer</b>	Ba-133
<b>Radiometric Sol#</b>	Ba-6a
<b>Tracer Act (dpm/g)</b>	1225.215
<b>Carrier</b>	Yttrium
<b>Carrier Conc (mg/ml)</b>	30.2

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/18/10 00:00	1.0000E+00
02	MBL	BLANK		05/18/10 00:00	1.0000E+00
03	DUP	MW-4D-DIS	25	05/12/10 08:25	1.0000E+00
04	DO	MW-4D-DIS	25	05/12/10 08:25	1.0000E+00
05	TRG	MW-5D-DIS	31	05/12/10 11:40	1.0000E+00
06	TRG	MW-6D-DIS	27	05/12/10 15:40	1.0000E+00
07	TRG	MW-65-DIS	28	05/12/10 17:15	1.0000E+00
08	TRG	MW-1C-DIS	32	05/13/10 11:40	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

10-05084  
Ra228  
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8152	998.8	446.1	99.15	2.000	0.1013	0.1103	0.0090	14.90	14.77	1.00	1.00
02	MBL	0.8123	995.2	428.9	95.67	2.000	0.1020	0.1529	0.0509	84.27	80.62	1.00	1.00
03	DUP	0.8062	987.8	404.0	90.80	2.000	0.1016	0.1608	0.0592	98.01	88.99	1.00	1.00
04	DO	0.8045	985.7	376.3	84.75	2.000	0.1018	0.1511	0.0493	81.62	69.18	1.00	1.00
05	TRG	0.8063	987.9	363.4	81.66	2.000	0.1019	0.1387	0.0368	60.93	49.76	1.00	1.00
06	TRG	0.8051	986.4	378.2	85.12	2.000	0.1016	0.1621	0.0605	100.17	85.26	1.00	1.00
07	TRG	0.8060	987.5	463.6	104.22	2.000	0.1021	0.1615	0.0594	98.34	102.49	1.00	1.00
08	TRG	0.8059	987.4	421.9	94.86	2.000	0.1018	0.1610	0.0592	98.01	92.97	1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



10-05084  
Ra228  
Run 1

Eberline Services  
Oak Ridge Laboratory  
Analysis Sheet

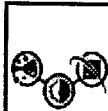
Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
02	MBL			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
03	DUP			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
04	DO			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
05	TRG			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
06	TRG			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
07	TRG			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH
08	TRG			05/19/10 12:08	JBARNARD	05/24/10 11:39	TSMITH	06/02/10 06:53	TSMITH

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



	<b>1</b>
Run	
Analysis Code	<b>Ra228</b>
Eberline Services Work Order	<b>10-05084</b>
Client	<b>Michael Pisani &amp; Associates</b>

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	1.76E+01	4.10E+00	6.94E+00	1.68E+01	104.63	OK		INV	
02	RA-228	MBL	BLANK	pCi/l	3.66E-01	5.60E-01	1.16E+00					OK	OK
03	RA-228	DUP	MW-4D-DIS	pCi/l	2.31E-01	4.94E-01	1.03E+00				INV	OK	
04	RA-228	DO	MW-4D-DIS	pCi/l	-8.07E-02	7.42E-01	1.59E+00					OK	
05	RA-228	TRG	MW-5D-DIS	pCi/l	7.26E-01	8.99E-01	1.84E+00					OK	
06	RA-228	TRG	MW-6D-DIS	pCi/l	1.15E+00	6.16E-01	1.19E+00					OK	
07	RA-228	TRG	MW-55-DIS	pCi/l	1.01E+00	4.59E-01	8.58E-01					OK	
08	RA-228	TRG	MW-1C-DIS	pCi/l	3.12E-01	5.42E-01	1.12E+00					OK	



Run

Analysis Code

Eberline Services Work Order

Client

1

Ra228

10-05084

Michael Pisani & Associates

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	05/18/10 00:00	1.00E+00	99.15	14.90	14.77	1.00	5/24/2010 11:39	6/2/2010 6:53
02	RA-228	MBL	05/18/10 00:00	1.00E+00	95.87	84.27	80.62	1.00	5/24/2010 11:39	6/2/2010 6:53
03	RA-228	DUP	05/12/10 08:25	1.00E+00	90.90	98.01	88.99	1.00	5/24/2010 11:39	6/2/2010 6:53
04	RA-228	DO	05/12/10 08:25	1.00E+00	84.75	81.62	69.18	1.00	5/24/2010 11:39	6/2/2010 6:53
05	RA-228	TRG	05/12/10 11:40	1.00E+00	81.66	60.93	49.76	1.00	5/24/2010 11:39	6/2/2010 6:53
06	RA-228	TRG	05/12/10 15:40	1.00E+00	85.12	100.17	85.26	1.00	5/24/2010 11:39	6/2/2010 6:53
07	RA-228	TRG	05/12/10 17:15	1.00E+00	104.22	98.34	102.49	1.00	5/24/2010 11:39	6/2/2010 6:53
08	RA-228	TRG	05/13/10 11:40	1.00E+00	94.86	98.01	92.97	1.00	5/24/2010 11:39	6/2/2010 6:53

	1 Run	Ra228 Analysis Code	10-05084 Eberline Services Work Order	Michael Pisani & Associates Client
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Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-228	LCS	06/02/10 10:51		LB4110R	A1	120	344	1.3	0.4776
02	RA-228	MBL	06/02/10 10:51		LB4110R	A2	120	145	1.033333333	0.4699
03	RA-228	DUP	06/02/10 10:51		LB4110R	A3	120	141	1.05	0.4809
04	RA-228	DO	06/02/10 10:51		LB4110R	A4	120	174	1.483333333	0.4732
05	RA-228	TRG	06/02/10 10:51		LB4110R	B1	120	148	1.016666667	0.4754
06	RA-228	TRG	06/02/10 10:51		LB4110R	B2	120	213	1.2	0.4658
07	RA-228	TRG	06/02/10 10:51		LB4110R	B3	120	184	0.916666667	0.4713
08	RA-228	TRG	06/02/10 10:51		LB4110R	B4	120	183	1.35	0.4773



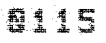
Count Room Report  
Client: Michael Pisani Associat  
10-05084-Ra228-1 (pCi/l) in WA  
Tracer ID: Ba-6a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/18/10 00:00	1.0000	0.8152	998.7953	446.1000	99.15	1.00	1.00
02	MBL	BLANK	05/18/10 00:00	1.0000	0.8123	995.2421	428.9000	95.67	1.00	1.00
03	DUP	MW-4D-DIS	05/12/10 08:25	1.0000	0.8062	987.7683	404.0000	90.80	1.00	1.00
04	DO	MW-4D-DIS	05/12/10 08:25	1.0000	0.8045	985.6855	376.3000	84.75	1.00	1.00
05	TRG	MW-5D-DIS	05/12/10 11:40	1.0000	0.8063	987.8909	363.4000	81.66	1.00	1.00
06	TRG	MW-6D-DIS	05/12/10 15:40	1.0000	0.8051	986.4206	378.2000	85.12	1.00	1.00
07	TRG	MW-65-DIS	05/12/10 17:15	1.0000	0.8060	987.5233	463.6000	104.22	1.00	1.00
08	TRG	MW-1C-DIS	05/13/10 11:40	1.0000	0.8059	987.4008	421.9000	94.86	1.00	1.00

Spike and Tracer Worksheet

Internal Work Order <b>10-05084</b>	Run <b>1</b>	Analysis Code <b>Ra228</b>	Date <b>5/19/2010 12:08</b>	Technician <b>JBARNARD</b>	Technician Initials 	Witness Initials											
<b>LCS &amp; Matrix Spikes</b>		<b>LCS</b>	<b>MS</b>	<b>LCS</b>	<b>MS</b>	<b>LCS</b>	<b>MS</b>										
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	LCS	MS	LCS	MS	LCS	MS	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
Ra-228	Ra-10	73.106	5/19/2010	0.560	0.5105			16.81	0.857	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000

Tracers															Balance Printer Tapes														
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Approx Addition	Tracer								LCS													
01	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8152	0.8300																						
02	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8123	0.8300																						
03	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8062	0.8300																						
04	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8045	0.8300																						
05	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8063	0.8300																						
06	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8051	0.8300																						
07	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8060	0.8300																						
08	Ba-133	Ba-6a	1225.215	5/19/2010	0.8300	0.8059	0.8300																						
																Matrix Spike													



# Aliquot Worksheet

<b>Work Order</b>	<b>Run</b>	<b>Analysis Code</b>	<b>Rpt Units</b>	<b>Lab Deadline</b>	<b>Technician</b>
<b>10-05084</b>	<b>1</b>	<b>Ra228</b>	<b>liters</b>	<b>6/2/2010</b>	<b>JBARNARD</b>

Lab Fraction	Michael Pisani & Associates		Sample Type	Muffle Data		Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only	
	Client ID	Ratio Post/Pre		No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq			
01	LCS		LCS					1.0000E+00	1.0000E+00						
02	BLANK		MBL					1.0000E+00	1.0000E+00						
03	MW-4D-DIS		DUP					1.0000E+00	1.0000E+00						
04	MW-4D-DIS		DO					1.0000E+00	1.0000E+00						
05	MW-5D-DIS		TRG					1.0000E+00	1.0000E+00						
06	MW-6D-DIS		TRG					1.0000E+00	1.0000E+00						
07	MW-65-DIS		TRG					1.0000E+00	1.0000E+00						
08	MW-1C-DIS		TRG					1.0000E+00	1.0000E+00						

<b>Comments</b>	
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Technician: JBARNARD Date: 5/19/10

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05084</b>	<b>1</b>	<b>Ra228</b>	<b>Yttrium</b>	<b>30.2000</b>	<b>TSMITH</b>

TRetec Fraction	Michael Pisani & Associates		Sample		Carrier Data		Filter Data			Gravimetric	
	Client ID		Type		Carrier Added (ml)		Filter Tare (g)	Filter Final (g)	Filter Net (g)	% Recovery	
01	LCS		LCS		2.0000		0.1013	0.1103	0.0090	14.90	*
02	BLANK		MBL		2.0000		0.1020	0.1529	0.0509	84.27	
03	DUP		DUP		2.0000		0.1016	0.1608	0.0592	98.01	
04	MW-4D-DIS		DO		2.0000		0.1018	0.1511	0.0493	81.62	
05	MW-5D-DIS		TRG		2.0000		0.1019	0.1387	0.0368	60.93	
06	MW-6D-DIS		TRG		2.0000		0.1016	0.1621	0.0605	100.17	
07	MW-65-DIS		TRG		2.0000		0.1021	0.1615	0.0594	98.34	
08	MW-1C-DIS		TRG		2.0000		0.1018	0.1610	0.0592	98.01	

*ESIMATED CR -*

Technician: *M* Date: *6/2/10*

(R) 6/2/10 JCB

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
A1	1005084-01	7	344	120		1400	6/2/10 12:51
A2	1005084-02	10	145	120		1400	6/2/10 12:51
A3	1005084-03	6	141	120		1400	6/2/10 12:51
A4	1005084-04	7	174	120		1400	6/2/10 12:51
B1	1005084-05	7	148	120		1400	6/2/10 12:51
B2	1005084-06	10	213	120		1400	6/2/10 12:51
B3	1005084-07	6	184	120		1400	6/2/10 12:51
B4	1005084-08	3	183	120		1400	6/2/10 12:51

GPC Detector Report  
(ALL Backgrounds)

KM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-5.53E-02	7.04E-02	1.96E-01
LB4110A - A2	Alpha	11/18/2007	6/2/2010	1.50E-01	P	-5.68E-02	1.01E-01	2.59E-01
LB4110A - A3	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-4.91E-02	5.06E-02	1.50E-01
LB4110A - A4	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-6.18E-02	5.91E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	6/2/2010	5.00E-02	P	-1.34E-01	8.36E-02	3.02E-01
LB4110A - B2	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-6.60E-02	7.77E-02	2.21E-01
LB4110A - B3	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-5.45E-02	4.47E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	6/2/2010	3.33E-02	P	-4.60E-02	5.35E-02	1.53E-01
LB4110A - C1	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-6.36E-02	8.20E-02	2.28E-01
LB4110A - C2	Alpha	11/18/2007	6/2/2010	1.00E-01	P	-2.03E-01	1.23E-01	4.48E-01
LB4110A - C3	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-2.46E-01	1.22E-01	4.91E-01
LB4110A - C4	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-7.11E-02	7.83E-02	2.28E-01
LB4110A - D1	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-4.60E-02	8.40E-02	2.14E-01
LB4110A - D2	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-6.87E-02	6.95E-02	2.08E-01
LB4110A - D3	Alpha	11/18/2007	6/2/2010	8.33E-02	P	-3.67E-02	6.27E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	6/2/2010	1.50E-01	P	-5.93E-02	7.81E-02	2.16E-01
LB4110R - A1	Alpha	11/24/2006	6/2/2010	5.00E-02	P	-1.11E-01	8.40E-02	2.79E-01
LB4110R - A2	Alpha	11/24/2006	6/2/2010	1.00E-01	P	-9.80E-02	9.68E-02	2.92E-01
LB4110R - A3	Alpha	11/24/2006	6/2/2010	8.33E-02	P	-8.98E-02	7.76E-02	2.45E-01
LB4110R - A4	Alpha	11/24/2006	6/2/2010	3.33E-02	P	-5.08E-02	8.31E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	6/2/2010	1.67E-02	P	-1.17E-01	6.87E-02	2.54E-01
LB4110R - B2	Alpha	11/24/2006	6/2/2010	1.67E-02	P	-7.83E-02	7.69E-02	2.32E-01
LB4110R - B3	Alpha	11/24/2006	6/2/2010	1.67E-02	P	-7.65E-02	7.17E-02	2.20E-01
LB4110R - B4	Alpha	11/24/2006	6/2/2010	5.00E-02	P	-6.55E-02	8.50E-02	2.35E-01
LB4110R - C1	Alpha	11/24/2006	6/2/2010	1.50E-01	P	-8.43E-02	8.88E-02	2.62E-01
LB4110R - C2	Alpha	11/24/2006	6/2/2010	6.67E-02	P	-8.36E-02	8.63E-02	2.56E-01
LB4110R - C3	Alpha	11/24/2006	6/2/2010	3.33E-02	P	-1.04E-01	9.63E-02	2.97E-01
LB4110R - C4	Alpha	11/24/2006	6/2/2010	8.33E-02	P	-7.23E-02	9.27E-02	2.58E-01
LB4110R - D1	Alpha	11/24/2006	6/2/2010	0.00E+00	P	-9.13E-02	8.70E-02	2.65E-01
LB4110R - D2	Alpha	11/24/2006	6/2/2010	3.33E-02	P	-6.19E-02	8.95E-02	2.41E-01
LB4110R - D3	Alpha	11/24/2006	6/2/2010	1.00E-01	P	-5.97E-02	7.80E-02	2.16E-01
LB4110R - D4	Alpha	11/24/2006	6/2/2010	1.00E-01	P	-5.28E-02	9.40E-02	2.41E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

MM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	6/2/2010	1.42E+00	P	-7.71E+00	2.72E+00	1.32E+01
LB4110A - A2	Beta	11/18/2007	6/2/2010	1.10E+00	P	-5.88E-02	1.58E+00	3.22E+00
LB4110A - A3	Beta	11/18/2007	6/2/2010	1.15E+00	P	3.85E-01	1.29E+00	2.20E+00
LB4110A - A4	Beta	11/18/2007	6/2/2010	1.68E+00	P	4.70E-01	1.71E+00	2.95E+00
LB4110A - B1	Beta	11/18/2007	6/2/2010	1.20E+00	P	-8.54E+00	3.95E+00	1.65E+01
LB4110A - B2	Beta	11/18/2007	6/2/2010	1.63E+00	P	6.30E-02	1.49E+00	2.91E+00
LB4110A - B3	Beta	11/18/2007	6/2/2010	1.37E+00	P	1.18E-01	1.49E+00	2.86E+00
LB4110A - B4	Beta	11/18/2007	6/2/2010	1.25E+00	P	-5.72E-02	1.42E+00	2.90E+00
LB4110A - C1	Beta	11/18/2007	6/2/2010	1.33E+00	P	-7.58E+00	3.10E+00	1.38E+01
LB4110A - C2	Beta	11/18/2007	6/2/2010	1.08E+00	P	3.30E-01	1.43E+00	2.52E+00
LB4110A - C3	Beta	11/18/2007	6/2/2010	1.35E+00	P	4.46E-01	1.48E+00	2.52E+00
LB4110A - C4	Beta	11/18/2007	6/2/2010	1.37E+00	P	-1.29E+00	2.13E+00	5.55E+00
LB4110A - D1	Beta	11/18/2007	6/2/2010	1.98E+00	P	-3.94E+00	3.05E+00	1.00E+01
LB4110A - D2	Beta	11/18/2007	6/2/2010	1.32E+00	P	-1.33E+00	1.77E+00	4.86E+00
LB4110A - D3	Beta	11/18/2007	6/2/2010	5.17E+00	P	-2.89E-01	4.10E+00	8.48E+00
LB4110A - D4	Beta	11/18/2007	6/2/2010	1.12E+00	P	-9.17E-01	1.57E+00	4.05E+00
LB4110R - A1	Beta	11/24/2006	6/2/2010	1.30E+00	P	-6.17E+01	2.78E+00	6.72E+01
LB4110R - A2	Beta	11/24/2006	6/2/2010	1.03E+00	P	-6.20E+01	2.52E+00	6.70E+01
LB4110R - A3	Beta	11/24/2006	6/2/2010	1.05E+00	P	-6.13E+01	4.15E+00	6.96E+01
LB4110R - A4	Beta	11/24/2006	6/2/2010	1.48E+00	P	-6.18E+01	2.65E+00	6.71E+01
LB4110R - B1	Beta	11/24/2006	6/2/2010	1.02E+00	P	-6.50E+01	2.76E+00	7.05E+01
LB4110R - B2	Beta	11/24/2006	6/2/2010	1.20E+00	P	-6.49E+01	2.83E+00	7.05E+01
LB4110R - B3	Beta	11/24/2006	6/2/2010	9.17E-01	P	-6.42E+01	3.92E+00	7.21E+01
LB4110R - B4	Beta	11/24/2006	6/2/2010	1.35E+00	P	-6.51E+01	2.60E+00	7.03E+01
LB4110R - C1	Beta	11/24/2006	6/2/2010	1.10E+00	P	-6.41E+01	4.60E+00	7.33E+01
LB4110R - C2	Beta	11/24/2006	6/2/2010	1.90E+00	P	-6.49E+01	3.57E+00	7.21E+01
LB4110R - C3	Beta	11/24/2006	6/2/2010	1.33E+00	P	-6.53E+01	3.59E+00	7.24E+01
LB4110R - C4	Beta	11/24/2006	6/2/2010	1.23E+00	P	-7.35E+01	4.20E+00	8.20E+01
LB4110R - D1	Beta	11/24/2006	6/2/2010	7.45E+00	P	-6.21E+01	6.56E+00	7.52E+01
LB4110R - D2	Beta	11/24/2006	6/2/2010	1.02E+00	P	-6.60E+01	2.68E+00	7.13E+01
LB4110R - D3	Beta	11/24/2006	6/2/2010	3.33E+00	P	-6.98E+01	7.57E+00	8.49E+01
LB4110R - D4	Beta	11/24/2006	6/2/2010	1.30E+00	P	-6.56E+01	3.10E+00	7.17E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

GPC Detector Report  
(ALL Efficiencies)

MM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	6/2/2010	0.2511	P	0.2375	0.2505	0.2634
LB4110A - A2	Alpha	11/18/2007	6/2/2010	0.2184	P	0.1959	0.2208	0.2457
LB4110A - A3	Alpha	11/18/2007	6/2/2010	0.2141	P	0.2049	0.2178	0.2308
LB4110A - A4	Alpha	11/18/2007	6/2/2010	0.2253	P	0.2157	0.2289	0.2422
LB4110A - B1	Alpha	11/18/2007	6/2/2010	0.2219	P	0.2178	0.2317	0.2456
LB4110A - B2	Alpha	11/18/2007	6/2/2010	0.2155	W	0.2139	0.2277	0.2415
LB4110A - B3	Alpha	11/18/2007	6/2/2010	0.2377	P	0.2267	0.2423	0.2580
LB4110A - B4	Alpha	11/18/2007	6/2/2010	0.2284	F	0.2285	0.2410	0.2535
LB4110A - C1	Alpha	11/18/2007	6/2/2010	0.2173	P	0.2116	0.2226	0.2336
LB4110A - C2	Alpha	11/18/2007	6/2/2010	0.2261	P	0.2022	0.2270	0.2518
LB4110A - C3	Alpha	11/18/2007	6/2/2010	0.2487	P	0.2360	0.2494	0.2628
LB4110A - C4	Alpha	11/18/2007	6/2/2010	0.2214	P	0.2180	0.2321	0.2461
LB4110A - D1	Alpha	11/18/2007	6/2/2010	0.2415	P	0.2252	0.2398	0.2544
LB4110A - D2	Alpha	11/18/2007	6/2/2010	0.2605	P	0.2481	0.2633	0.2784
LB4110A - D3	Alpha	11/18/2007	6/2/2010	0.2570	P	0.2514	0.2689	0.2864
LB4110A - D4	Alpha	11/18/2007	6/2/2010	0.1983	P	0.1925	0.2105	0.2284
LB4110R - A1	Alpha	11/24/2006	6/2/2010	0.2269	P	0.2065	0.2425	0.2784
LB4110R - A2	Alpha	11/24/2006	6/2/2010	0.2132	P	0.1929	0.2244	0.2559
LB4110R - A3	Alpha	11/24/2006	6/2/2010	0.2203	P	0.1985	0.2283	0.2581
LB4110R - A4	Alpha	11/24/2006	6/2/2010	0.2398	P	0.2141	0.2470	0.2799
LB4110R - B1	Alpha	11/24/2006	6/2/2010	0.2297	P	0.1939	0.2306	0.2672
LB4110R - B2	Alpha	11/24/2006	6/2/2010	0.2136	P	0.1860	0.2214	0.2568
LB4110R - B3	Alpha	11/24/2006	6/2/2010	0.2387	P	0.2094	0.2477	0.2861
LB4110R - B4	Alpha	11/24/2006	6/2/2010	0.2255	P	0.2006	0.2377	0.2748
LB4110R - C1	Alpha	11/24/2006	6/2/2010	0.2131	P	0.1835	0.2173	0.2511
LB4110R - C2	Alpha	11/24/2006	6/2/2010	0.2307	P	0.1947	0.2266	0.2586
LB4110R - C3	Alpha	11/24/2006	6/2/2010	0.2422	P	0.2040	0.2426	0.2811
LB4110R - C4	Alpha	11/24/2006	6/2/2010	0.2225	P	0.1992	0.2315	0.2638
LB4110R - D1	Alpha	11/24/2006	6/2/2010	0.2295	P	0.1943	0.2296	0.2649
LB4110R - D2	Alpha	11/24/2006	6/2/2010	0.2532	P	0.2246	0.2592	0.2938
LB4110R - D3	Alpha	11/24/2006	6/2/2010	0.2520	P	0.2223	0.2548	0.2874
LB4110R - D4	Alpha	11/24/2006	6/2/2010	0.2001	P	0.1814	0.2117	0.2420
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578



GPC Detector Report  
(ALL Efficiencies)

*LM*  
*6/2/10*

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	6/2/2010	0.5939	P	0.5581	0.5899	0.6216
LB4110A - A2	Beta	11/18/2007	6/2/2010	0.5113	P	0.4657	0.5229	0.5801
LB4110A - A3	Beta	11/18/2007	6/2/2010	0.5260	P	0.4935	0.5268	0.5601
LB4110A - A4	Beta	11/18/2007	6/2/2010	0.5475	P	0.5201	0.5490	0.5778
LB4110A - B1	Beta	11/18/2007	6/2/2010	0.5256	P	0.5120	0.5424	0.5728
LB4110A - B2	Beta	11/18/2007	6/2/2010	0.5125	W	0.5100	0.5396	0.5691
LB4110A - B3	Beta	11/18/2007	6/2/2010	0.5488	P	0.5022	0.5529	0.6036
LB4110A - B4	Beta	11/18/2007	6/2/2010	0.5394	W	0.5353	0.5603	0.5853
LB4110A - C1	Beta	11/18/2007	6/2/2010	0.5001	P	0.4838	0.5061	0.5285
LB4110A - C2	Beta	11/18/2007	6/2/2010	0.4886	P	0.4359	0.5091	0.5823
LB4110A - C3	Beta	11/18/2007	6/2/2010	0.5956	P	0.5622	0.5874	0.6126
LB4110A - C4	Beta	11/18/2007	6/2/2010	0.5201	P	0.5061	0.5403	0.5746
LB4110A - D1	Beta	11/18/2007	6/2/2010	0.5476	P	0.5349	0.5727	0.6105
LB4110A - D2	Beta	11/18/2007	6/2/2010	0.5762	P	0.5533	0.6165	0.6798
LB4110A - D3	Beta	11/18/2007	6/2/2010	0.6077	P	0.5819	0.6264	0.6710
LB4110A - D4	Beta	11/18/2007	6/2/2010	0.4668	W	0.4642	0.5021	0.5399
LB4110R - A1	Beta	11/24/2006	6/2/2010	0.5567	P	0.4782	0.5762	0.6742
LB4110R - A2	Beta	11/24/2006	6/2/2010	0.4790	P	0.4099	0.5132	0.6165
LB4110R - A3	Beta	11/24/2006	6/2/2010	0.5510	P	0.4559	0.5487	0.6416
LB4110R - A4	Beta	11/24/2006	6/2/2010	0.5821	P	0.4947	0.5911	0.6875
LB4110R - B1	Beta	11/24/2006	6/2/2010	0.5438	P	0.4508	0.5520	0.6533
LB4110R - B2	Beta	11/24/2006	6/2/2010	0.5203	P	0.4298	0.5292	0.6286
LB4110R - B3	Beta	11/24/2006	6/2/2010	0.5751	P	0.4924	0.5963	0.7003
LB4110R - B4	Beta	11/24/2006	6/2/2010	0.5503	P	0.4634	0.5609	0.6584
LB4110R - C1	Beta	11/24/2006	6/2/2010	0.4992	P	0.4126	0.5066	0.6005
LB4110R - C2	Beta	11/24/2006	6/2/2010	0.5397	P	0.4368	0.5316	0.6265
LB4110R - C3	Beta	11/24/2006	6/2/2010	0.5749	P	0.4633	0.5742	0.6850
LB4110R - C4	Beta	11/24/2006	6/2/2010	0.5238	P	0.4467	0.5441	0.6415
LB4110R - D1	Beta	11/24/2006	6/2/2010	0.5515	P	0.4495	0.5464	0.6432
LB4110R - D2	Beta	11/24/2006	6/2/2010	0.6198	P	0.5056	0.6091	0.7126
LB4110R - D3	Beta	11/24/2006	6/2/2010	0.5842	P	0.4922	0.5908	0.6894
LB4110R - D4	Beta	11/24/2006	6/2/2010	0.4735	P	0.4078	0.5018	0.5958
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

**SECTION X**  
**BARIUM-133 ANALYTICAL TRACER DATA**

KM  
05-27-10

VAX/VMS Peak Search Report Generated 27-MAY-2010 12:55:26.41

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100508401\_GE5\_BAFIL\_149516.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SPIKE  
Deposition Date :  
Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 12:40:05  
Sample ID : 1005084-01 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.27 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	16.18	31	4	0.44	161.03	152	18	3.42E-02	24.2	
2	1	19.98	30	34	0.65	197.57	189	29	3.31E-02	50.1	1.66E+00
3	1	20.90	66	38	0.65	206.43	189	29	7.32E-02	27.3	
4	0	25.42	20	23	0.25	249.83	238	18	2.25E-02	59.2	
5	0	30.92	2214	66	0.77	302.76	290	28	2.46E+00	2.4	
6	1	35.07	514	42	0.68	342.61	331	30	5.71E-01	5.1	1.76E+00
7	1	35.94	111	15	0.63	351.00	331	30	1.24E-01	20.4	
8	0	52.11	22	27	0.54	506.56	494	16	2.43E-02	50.2	
9	0	53.26	59	4	0.56	517.61	511	13	6.53E-02	14.5	
10	0	61.70	262	60	0.96	598.76	585	28	2.91E-01	9.4	
11	0	65.91	100	46	0.70	639.25	627	23	1.11E-01	18.0	
12	0	75.23	27	20	1.57	728.82	715	20	2.99E-02	39.7	
13	0	81.11	896	89	0.65	785.36	775	21	9.95E-01	4.0	
14	8	110.41	45	36	1.43	1067.14	1058	35	4.96E-02	26.8	2.40E+00
15	8	111.96	191	25	0.87	1082.08	1058	35	2.12E-01	9.5	
16	0	116.43	31	48	0.30	1125.06	1109	22	3.46E-02	51.2	
17	0	120.44	8	15	0.51	1163.60	1152	13	9.23E-03	90.0	
18	0	134.26	15	12	0.17	1296.43	1288	17	1.69E-02	50.5	
19	0	180.12	10	17	1.44	1737.47	1718	22	1.06E-02	88.9	
20	0	191.93	14	16	0.84	1851.01	1837	22	1.52E-02	63.4	
21	0	238.55	38	0	1.14	2299.34	2288	21	4.22E-02	16.2	
22	1	276.26	42	16	0.92	2662.00	2648	25	4.64E-02	23.5	7.85E+00
23	1	276.89	58	5	0.92	2668.00	2648	25	6.48E-02	10.7	
24	1	302.57	46	4	0.95	2915.00	2906	25	5.10E-02	22.9	7.39E+00
25	1	303.20	128	5	0.95	2921.00	2906	25	1.43E-01	9.0	
26	0	307.45	26	3	0.82	2961.89	2949	20	2.89E-02	22.9	
27	0	333.70	56	2	1.21	3214.30	3200	24	6.18E-02	14.7	
28	0	356.19	432	7	0.89	3430.58	3416	29	4.80E-01	5.0	
29	5	383.68	70	7	1.11	3694.97	3685	24	7.79E-02	14.9	1.51E+00
30	5	384.82	28	3	0.59	3705.93	3685	24	3.16E-02	18.4	
31	0	387.03	135	23	0.81	3727.16	3713	24	1.50E-01	11.2	

Total number of lines in spectrum 31  
Number of unidentified lines 24  
Number of lines tentatively identified by NID 7 22.58%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
CO-57	270.90D	1.00	2.946E+00	2.950E+00	5.319E+00	180.32	
BA-133	10.50Y	1.00	4.461E+02	4.461E+02	0.761E+02	17.07	
Total Activity :			4.490E+02	4.491E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	7.211E+02	7.211E+02	1.411E+02	19.57	
Total Activity :			7.211E+02	7.211E+02			

Grand Total Activity : 1.170E+03 1.170E+03

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
CO-57	122.06	85.51*	9.901E+00	2.946E+00	2.950E+00	180.32	OK
	136.48	10.60	8.630E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 2.950E+00 +/- 5.319E+00 (180.32%)

BA-133	81.00	33.00*	1.827E+01	4.461E+02	4.461E+02	17.07	OK
	302.84	17.80	4.662E+00	1.661E+02	1.661E+02	49.48	OK
	356.01	60.00	4.450E+00	4.856E+02	4.857E+02	17.05	OK

Final Mean for 3 Valid Peaks = 4.461E+02 +/- 7.615E+01 ( 17.07%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	7.211E+02	7.211E+02	19.57	OK

Final Mean for 1 Valid Peaks = 7.211E+02 +/- 1.411E+02 ( 19.57%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	2.950E+00	5.319E+00	7.866E+00	7.753E-01	0.375
BA-133	4.461E+02	7.615E+01	1.847E+01	2.675E+00	24.153
TH-234	7.211E+02	1.411E+02	1.063E+02	3.829E+00	6.786

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CD-109	4.020E+01		7.966E+01	1.515E+02	9.742E+00	0.265
PA-231	-1.479E+00		1.134E+00	1.721E+00	1.777E-02	-0.859
PA-234	3.050E+00	+	1.672E+00	2.246E+00	2.319E-02	1.358
NP-237	4.752E+00		2.349E+01	4.312E+01	2.700E+00	0.110
AM-241	4.206E+00		5.796E+00	9.655E+00	3.083E-01	0.436

12M  
5-27-10

VAX/VMS Peak Search Report Generated 27-MAY-2010 13:13:55.73

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100508402\_GE5\_BAFIL\_149517.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : BLANK  
Deposition Date :  
Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 12:58:42  
Sample ID : 1005084-02 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.28 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	21.09	48	70	0.67	208.21	200	18	5.32E-02	44.9	
2	0	30.91	2122	72	0.77	302.61	290	28	2.36E+00	2.5	
3	4	35.02	462	37	0.64	342.14	331	26	5.13E-01	5.5	1.44E+00
4	4	35.86	126	14	0.56	350.26	331	26	1.40E-01	15.5	
5	3	55.18	17	3	0.67	536.00	531	18	1.89E-02	25.9	7.90E-01
6	3	55.87	23	5	0.64	542.67	531	18	2.52E-02	29.2	
7	0	61.77	213	44	0.69	599.38	587	26	2.37E-01	9.9	
8	1	65.82	95	27	0.76	638.32	623	30	1.06E-01	16.1	9.93E-01
9	1	66.54	39	11	0.76	645.31	623	30	4.31E-02	32.1	
10	2	79.56	50	27	0.86	770.44	760	35	5.57E-02	27.8	9.28E-01
11	2	81.05	861	19	0.66	784.81	760	35	9.57E-01	3.6	
12	0	101.53	33	20	1.45	981.74	963	28	3.71E-02	35.5	
13	0	111.97	140	60	0.75	1082.13	1068	22	1.56E-01	14.5	
14	0	116.26	30	46	0.39	1123.38	1107	22	3.30E-02	53.3	
15	0	160.48	26	15	0.36	1548.62	1536	19	2.85E-02	37.2	
16	0	276.41	44	2	0.65	2663.39	2650	22	4.87E-02	16.7	
17	5	302.41	47	5	0.84	2913.44	2907	20	5.18E-02	17.1	3.30E+00
18	5	303.13	28	5	0.56	2920.40	2907	20	3.07E-02	37.4	
19	5	303.40	14	3	0.95	2923.00	2907	20	1.59E-02	54.9	
20	0	307.36	23	4	0.60	2961.06	2946	23	2.53E-02	29.0	
21	0	333.68	48	11	0.31	3214.11	3200	23	5.33E-02	20.9	
22	0	356.10	398	14	0.85	3429.75	3414	29	4.42E-01	5.4	
23	0	383.99	84	0	0.92	3697.92	3683	28	9.33E-02	10.9	
24	0	386.94	141	9	1.18	3726.31	3712	26	1.56E-01	9.6	

Total number of lines in spectrum 24  
Number of unidentified lines 18  
Number of lines tentatively identified by NID 6 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.289E+02	4.289E+02	0.713E+02	16.63	
Total Activity :			4.289E+02	4.289E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	5.878E+02	5.878E+02	1.205E+02	20.50	
Total Activity :			5.878E+02	5.878E+02			

Grand Total Activity : 1.017E+03 1.017E+03

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.289E+02	4.289E+02	16.63	OK
	302.84	17.80	4.662E+00	1.001E+02	1.001E+02	77.23	OK
	356.01	60.00	4.450E+00	4.478E+02	4.479E+02	17.56	OK

Final Mean for 3 Valid Peaks = 4.289E+02 +/- 7.132E+01 ( 16.63%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	5.878E+02	5.878E+02	20.50	OK

Final Mean for 1 Valid Peaks = 5.878E+02 +/- 1.205E+02 ( 20.50%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.289E+02	7.132E+01	1.187E+01	1.718E+00	36.149
TH-234	5.878E+02	1.205E+02	1.142E+02	4.114E+00	5.148

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-9.125E-01		4.146E+00	7.491E+00	7.384E-01	-0.122
CD-109	2.414E+01		7.315E+01	1.381E+02	8.881E+00	0.175
PA-231	-2.293E-02		1.044E+00	1.906E+00	1.969E-02	-0.012
PA-234	2.217E+00	+	1.992E+00	2.042E+00	2.109E-02	1.086
NP-237	-7.209E+00		2.237E+01	3.868E+01	2.422E+00	-0.186
AM-241	1.912E+00		4.819E+00	7.905E+00	2.524E-01	0.242

KM  
05-27-10

VAX/VMS Peak Search Report Generated 27-MAY-2010 13:32:42.61

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100508403\_GE5\_BAFIL\_149518.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-4D DIS  
Deposition Date :  
Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 13:17:23  
Sample ID : 1005084-03 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.13 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	21.07	81	38	0.47	208.01	199	15	9.01E-02	19.9	
2	0	25.12	29	7	0.71	246.96	240	13	3.17E-02	26.3	
3	0	28.04	26	27	0.87	275.01	269	12	2.92E-02	44.0	
4	0	30.90	2266	123	0.68	302.54	288	31	2.52E+00	2.6	
5	2	35.03	410	41	0.64	342.23	329	31	4.56E-01	6.1	1.40E+00
6	2	35.94	134	33	0.63	351.00	329	31	1.49E-01	16.9	
7	0	53.31	44	23	0.18	518.05	509	15	4.93E-02	25.0	
8	2	61.77	195	37	0.83	599.40	588	27	2.16E-01	10.2	1.73E+00
9	2	62.25	46	28	0.68	604.00	588	27	5.08E-02	41.2	
10	0	66.08	128	26	0.71	640.86	629	28	1.42E-01	13.2	
11	0	79.82	26	33	0.47	772.98	763	14	2.85E-02	47.2	
12	0	81.04	811	54	0.59	784.75	776	19	9.01E-01	4.0	
13	0	112.05	167	61	0.66	1082.89	1070	20	1.86E-01	12.2	
14	0	160.84	28	11	0.81	1552.04	1543	16	3.15E-02	29.0	
15	0	276.54	46	5	1.04	2664.71	2654	21	5.08E-02	17.6	
16	0	302.97	152	0	0.97	2918.82	2905	26	1.69E-01	8.1	
17	0	307.22	22	2	0.55	2959.72	2947	22	2.39E-02	26.1	
18	3	333.16	23	3	1.07	3209.15	3203	23	2.50E-02	26.5	8.26E-01
19	3	333.78	29	3	0.71	3215.12	3203	23	3.23E-02	27.8	
20	3	334.29	19	1	0.97	3220.00	3203	23	2.08E-02	34.7	
21	2	355.60	39	0	0.91	3424.93	3415	30	4.31E-02	47.9	1.11E+00
22	2	356.16	348	0	0.89	3430.34	3415	30	3.87E-01	5.7	
23	0	383.89	86	5	0.66	3696.96	3683	24	9.56E-02	12.1	
24	0	387.00	124	7	0.85	3726.92	3713	28	1.38E-01	10.1	

Total number of lines in spectrum 24  
 Number of unidentified lines 18  
 Number of lines tentatively identified by NID 6 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.039E+02	4.040E+02	0.687E+02	17.01	
Total Activity :			4.039E+02	4.040E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	1.260E+02	1.260E+02	1.040E+02	82.55	
Total Activity :			1.260E+02	1.260E+02			

Grand Total Activity : 5.299E+02 5.299E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.039E+02	4.040E+02	17.01	OK
	302.84	17.80	4.662E+00	5.500E+02	5.501E+02	24.96	OK
	356.01	60.00	4.450E+00	3.915E+02	3.915E+02	17.88	OK

Final Mean for 3 Valid Peaks = 4.040E+02 +/- 6.871E+01 ( 17.01%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	1.260E+02	1.260E+02	82.55	OK

Final Mean for 1 Valid Peaks = 1.260E+02 +/- 1.040E+02 ( 82.55%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.040E+02	6.871E+01	1.187E+01	1.718E+00	34.046
TH-234	1.260E+02	1.040E+02	9.583E+01	3.453E+00	1.314

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	1.598E+00		4.327E+00	8.472E+00	8.350E-01	0.189
CD-109	1.491E+01		6.708E+01	1.265E+02	8.132E+00	0.118
PA-231	-6.946E-01		1.124E+00	1.892E+00	1.954E-02	-0.367
PA-234	3.752E+00	+	1.499E+00	2.287E+00	2.362E-02	1.641
NP-237	5.506E+00		2.029E+01	3.824E+01	2.395E+00	0.144
AM-241	1.448E+00		4.627E+00	7.537E+00	2.406E-01	0.192

KM  
052710

VAX/VMS Peak Search Report Generated 27-MAY-2010 14:09:35.53

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100508404\_GE5\_BAFIL\_149520.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-4D DIS  
Deposition Date :  
Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 13:54:15  
Sample ID : 1005084-04 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.24 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	11.19	16	22	0.11	113.00	101	22	1.78E-02	78.8	
2	0	13.77	20	7	0.12	137.82	131	14	2.22E-02	35.9	
3	0	15.05	14	5	0.79	150.18	145	10	1.56E-02	40.1	
4	0	21.09	92	37	0.60	208.26	199	17	1.02E-01	18.6	
5	0	30.90	2146	180	0.73	302.54	289	28	2.38E+00	2.8	
6	3	35.03	439	29	0.68	342.25	329	28	4.88E-01	5.7	7.76E-01
7	3	35.94	115	10	0.54	350.99	329	28	1.28E-01	13.6	
8	0	53.55	25	36	0.56	520.34	507	18	2.79E-02	51.9	
9	2	61.72	187	35	0.71	598.93	585	26	2.08E-01	10.8	1.56E+00
10	2	62.18	47	24	0.62	603.39	585	26	5.20E-02	38.2	
11	1	65.37	35	17	0.69	634.00	625	30	3.94E-02	35.6	1.01E+00
12	1	65.99	68	17	0.69	640.00	625	30	7.56E-02	20.9	
13	0	81.08	756	91	0.62	785.07	775	22	8.39E-01	4.6	
14	0	111.95	205	40	0.61	1081.97	1071	27	2.28E-01	10.1	
15	0	116.55	23	41	0.67	1126.18	1110	23	2.52E-02	66.3	
16	0	134.25	24	6	0.90	1296.39	1286	18	2.67E-02	28.9	
17	0	276.44	53	3	0.75	2663.67	2650	24	5.94E-02	15.1	
18	0	303.00	106	5	0.93	2919.09	2905	25	1.17E-01	10.8	
19	1	333.87	29	3	0.97	3216.00	3203	25	3.19E-02	32.1	7.58E-01
20	1	334.44	26	1	0.87	3221.48	3203	25	2.94E-02	26.9	
21	0	356.20	403	5	0.94	3430.66	3416	25	4.48E-01	5.1	
22	0	384.10	85	0	1.16	3698.96	3683	28	9.44E-02	10.8	
23	9	386.24	32	0	1.09	3719.58	3713	29	3.54E-02	24.2	4.57E+00
24	9	387.01	82	3	1.11	3726.97	3713	29	9.13E-02	16.1	
25	9	387.64	43	4	1.01	3733.00	3713	29	4.76E-02	27.5	
26	2	390.96	51	0	1.01	3765.00	3752	28	5.67E-02	12.8	8.67E-01
27	2	392.26	23	0	0.82	3777.44	3752	28	2.55E-02	10.7	

Total number of lines in spectrum 27  
 Number of unidentified lines 20  
 Number of lines tentatively identified by NID 7 25.93%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.763E+02	3.763E+02	0.663E+02	17.62	
Total Activity :			3.763E+02	3.763E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	1.144E+00	1.144E+00	1.804E+00	157.67	
PA-234	4.47E+09Y	1.00	4.240E+00	4.240E+00	1.590E+00	37.50	
TH-234	4.47E+09Y	1.00	1.290E+02	1.290E+02	0.989E+02	76.67	
Total Activity :			1.344E+02	1.344E+02			

Grand Total Activity : 5.107E+02 5.107E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	3.763E+02	3.763E+02	17.62	OK
	302.84	17.80	4.662E+00	3.821E+02	3.821E+02	28.78	OK
	356.01	60.00	4.450E+00	4.531E+02	4.532E+02	17.22	OK

Final Mean for 3 Valid Peaks = 3.763E+02 +/- 6.631E+01 ( 17.62%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
PA-231	9.28	42.00*	1.000E+02	1.144E+00	1.144E+00	157.67	OK
	10.11	20.20	1.000E+02	2.379E+00	2.379E+00	157.67	OK
	283.67	1.60	4.787E+00	-----	Line Not Found	-----	Absent
	302.67	2.30	4.663E+00	2.956E+03	2.956E+03	26.94	OK

Final Mean for 3 Valid Peaks = 1.144E+00 +/- 1.804E+00 (157.67%)

PA-234	9.89	89.00	1.000E+02	5.399E-01	5.399E-01	157.67	OK
	21.72	64.90*	1.000E+02	4.240E+00	4.240E+00	37.50	OK
	37.93	23.75	8.878E+01	1.644E+01	1.644E+01	27.55	OK
	131.42	20.40	9.027E+00	-----	Line Not Found	-----	Absent

Final Mean for 3 Valid Peaks = 4.240E+00 +/- 1.590E+00 ( 37.50%)

TH-234	63.29	3.80*	2.867E+01	1.290E+02	1.290E+02	76.67	OK
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Final Mean for 1 Valid Peaks = 1.290E+02 +/- 9.889E+01 ( 76.67%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.763E+02	6.631E+01	2.529E+01	3.663E+00	14.879
PA-231	1.144E+00	1.804E+00	1.660E+00	1.714E-02	0.689
PA-234	4.240E+00	1.590E+00	1.142E+00	1.180E-02	3.711
TH-234	1.290E+02	9.889E+01	7.732E+01	2.786E+00	1.668

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.729E+00	4.996E+00	8.464E+00	8.343E-01	-0.322
CD-109	-9.196E-01	7.114E+01	1.291E+02	8.300E+00	-0.007
NP-237	2.018E+00	2.110E+01	3.873E+01	2.425E+00	0.052
AM-241	5.187E+00	4.622E+00	8.440E+00	2.695E-01	0.615

km  
05-22-10

VAX/VMS Peak Search Report Generated 27-MAY-2010 14:24:59.69

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100508405\_GE5\_BAFIL\_149523.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-5D DIS  
Deposition Date :  
Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 14:09:42  
Sample ID : 1005084-05 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.16 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	21.07	88	20	0.98	208.00	200	17	9.80E-02	16.0	
2	0	30.89	1889	78	0.70	302.43	288	32	2.10E+00	2.7	
3	0	35.20	432	61	0.59	343.89	330	29	4.80E-01	6.5	
4	0	53.24	40	12	0.62	517.38	510	15	4.48E-02	22.6	
5	1	61.52	127	30	0.68	597.00	583	36	1.41E-01	14.6	4.45E+00
6	1	62.14	95	31	0.68	603.00	583	36	1.05E-01	19.0	
7	4	65.77	102	30	0.68	637.87	624	26	1.13E-01	14.4	9.40E+00
8	4	66.20	7	25	0.69	642.00	624	26	7.83E-03	188.8	
9	1	79.69	65	22	0.78	771.69	760	35	7.23E-02	24.2	1.88E+00
10	1	81.07	730	9	0.70	784.98	760	35	8.11E-01	3.8	
11	0	111.89	174	31	0.75	1081.41	1070	19	1.93E-01	9.9	
12	0	116.47	36	30	0.80	1125.44	1110	22	4.04E-02	36.3	
13	0	276.63	35	11	0.40	2665.55	2652	21	3.83E-02	24.7	
14	0	302.97	100	3	0.73	2918.87	2905	26	1.11E-01	10.7	
15	1	332.96	21	3	1.07	3207.24	3202	22	2.36E-02	18.1	2.93E+00
16	1	333.87	44	4	0.97	3216.00	3202	22	4.91E-02	15.2	
17	4	356.04	263	3	0.83	3429.14	3415	30	2.93E-01	7.0	9.58E-01
18	4	356.64	41	1	0.91	3434.95	3415	30	4.54E-02	43.4	
19	1	383.68	42	3	1.01	3695.00	3684	28	4.67E-02	21.2	8.39E-01
20	1	384.20	38	7	1.01	3700.00	3684	28	4.21E-02	25.1	
21	0	387.06	115	14	0.70	3727.45	3714	23	1.28E-01	11.3	

Total number of lines in spectrum 21  
Number of unidentified lines 15  
Number of lines tentatively identified by NID 6 28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.633E+02	3.634E+02	0.612E+02	16.84	
Total Activity :			3.633E+02	3.634E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	2.608E+02	2.608E+02	0.999E+02	38.31	
AM-241	432.20Y	1.00	3.275E+01	3.275E+01	0.968E+01	29.56	
Total Activity :			2.936E+02	2.936E+02			

Grand Total Activity : 6.569E+02 6.569E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	3.633E+02	3.634E+02	16.84	OK
	302.84	17.80	4.662E+00	3.618E+02	3.618E+02	28.54	OK
	356.01	60.00	4.450E+00	2.962E+02	2.962E+02	19.63	OK

Final Mean for 3 Valid Peaks = 3.634E+02 +/- 6.118E+01 ( 16.84%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	2.608E+02	2.608E+02	38.31	OK

Final Mean for 1 Valid Peaks = 2.608E+02 +/- 9.993E+01 ( 38.31%)

AM-241	59.54	35.90*	3.235E+01	3.275E+01	3.275E+01	29.56	OK
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Final Mean for 1 Valid Peaks = 3.275E+01 +/- 9.682E+00 ( 29.56%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.634E+02	6.118E+01	9.115E+00	1.320E+00	39.862
TH-234	2.608E+02	9.993E+01	1.063E+02	3.829E+00	2.455
AM-241	3.275E+01	9.682E+00	5.515E+00	1.761E-01	5.939

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	5.936E-01		4.278E+00	8.135E+00	8.018E-01	0.073
CD-109	4.221E+01		5.546E+01	1.160E+02	7.459E+00	0.364
PA-231	3.097E-01		8.825E-01	1.726E+00	1.783E-02	0.179
PA-234	4.082E+00	+	1.314E+00	2.082E+00	2.151E-02	1.960
NP-237	-1.107E+01		1.617E+01	2.656E+01	1.663E+00	-0.417

KM  
082710

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100508406\_GE5\_BAFIL\_149524.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : MW-6D DIS  
 Deposition Date :  
 Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 15:11:11  
 Sample ID : 1005084-06 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE5 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.13 0.1%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	10.03	21	11	0.30	101.83	89	21	2.28E-02	45.3	
2	0	21.05	78	45	0.68	207.86	198	19	8.71E-02	23.8	
3	0	22.72	9	9	0.13	223.87	216	12	1.01E-02	73.9	
4	0	25.06	21	16	0.81	246.43	240	16	2.33E-02	47.9	
5	0	30.88	1910	143	0.69	302.37	289	26	2.12E+00	2.9	
6	1	35.08	453	44	0.69	342.75	330	31	5.03E-01	5.6	3.48E+00
7	1	35.94	79	24	0.63	351.00	330	31	8.82E-02	27.1	
8	0	53.27	56	10	0.46	517.67	511	15	6.22E-02	17.0	
9	0	61.77	165	54	0.61	599.43	585	27	1.83E-01	13.0	
10	0	65.75	79	32	0.81	637.63	625	24	8.80E-02	19.5	
11	2	79.53	67	36	0.86	770.15	759	40	7.45E-02	22.7	2.52E+00
12	2	81.05	759	13	0.64	784.80	759	40	8.44E-01	3.8	
13	0	84.00	21	2	0.32	813.17	806	14	2.31E-02	25.7	
14	0	112.06	134	30	0.71	1082.96	1072	27	1.49E-01	13.4	
15	0	116.18	35	13	1.04	1122.60	1111	19	3.88E-02	26.9	
16	0	123.26	8	10	0.39	1190.67	1179	16	8.40E-03	90.2	
17	0	160.54	26	10	0.23	1549.18	1537	20	2.87E-02	32.3	
18	0	302.92	105	9	0.47	2918.33	2906	22	1.17E-01	11.1	
19	0	333.92	30	8	0.48	3216.42	3203	23	3.30E-02	26.7	
20	0	356.13	345	14	0.83	3430.01	3415	29	3.84E-01	5.9	
21	1	383.48	25	3	1.01	3693.00	3684	26	2.80E-02	30.8	9.16E-01
22	1	384.31	33	6	1.01	3701.00	3684	26	3.66E-02	24.5	
23	2	386.79	25	17	1.22	3724.90	3710	28	2.72E-02	53.5	1.63E+00
24	2	387.53	66	7	0.91	3731.97	3710	28	7.29E-02	13.4	

Total number of lines in spectrum 24  
 Number of unidentified lines 16  
 Number of lines tentatively identified by NID 8 33.33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
CO-57	270.90D	1.00	2.680E+00	2.684E+00	4.851E+00	180.71	
BA-133	10.50Y	1.00	3.782E+02	3.782E+02	0.636E+02	16.82	
Total Activity :			3.808E+02	3.809E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	1.466E+00	1.466E+00	1.328E+00	90.63	
PA-234	4.47E+09Y	1.00	3.628E+00	3.628E+00	1.734E+00	47.80	
TH-234	4.47E+09Y	1.00	4.548E+02	4.548E+02	1.210E+02	26.61	
Total Activity :			4.599E+02	4.599E+02			

Grand Total Activity : 8.407E+02 8.408E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
CO-57	122.06	85.51*	9.901E+00	2.680E+00	2.684E+00	180.71	OK
	136.48	10.60	8.630E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 2.684E+00 +/- 4.851E+00 (180.71%)

BA-133	81.00	33.00*	1.827E+01	3.782E+02	3.782E+02	16.82	OK
	302.84	17.80	4.662E+00	3.817E+02	3.818E+02	29.18	OK
	356.01	60.00	4.450E+00	3.882E+02	3.883E+02	18.14	OK

Final Mean for 3 Valid Peaks = 3.782E+02 +/- 6.361E+01 (16.82%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
PA-231	9.28	42.00*	1.000E+02	1.466E+00	1.466E+00	90.63	OK
	10.11	20.20	1.000E+02	3.048E+00	3.048E+00	90.63	OK
	283.67	1.60	4.787E+00	-----	Line Not Found	-----	Absent
	302.67	2.30	4.663E+00	2.954E+03	2.954E+03	27.37	OK

Final Mean for 3 Valid Peaks = 1.466E+00 +/- 1.328E+00 (90.63%)

PA-234	9.89	89.00	1.000E+02	6.917E-01	6.917E-01	90.63	OK
	21.72	64.90*	1.000E+02	3.628E+00	3.628E+00	47.80	OK
	37.93	23.75	8.878E+01	1.131E+01	1.131E+01	54.27	OK
	131.42	20.40	9.027E+00	-----	Line Not Found	-----	Absent

Final Mean for 3 Valid Peaks = 3.628E+00 +/- 1.734E+00 (47.80%)

TH-234	63.29	3.80*	2.867E+01	4.548E+02	4.548E+02	26.61	OK
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Final Mean for 1 Valid Peaks = 4.548E+02 +/- 1.210E+02 (26.61%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	2.684E+00	4.851E+00	7.709E+00	7.598E-01	0.348
BA-133	3.782E+02	6.361E+01	1.187E+01	1.718E+00	31.873
PA-231	1.466E+00	1.328E+00	1.848E+00	1.909E-02	0.793
PA-234	3.628E+00	1.734E+00	1.017E+00	1.051E-02	3.566
TH-234	4.548E+02	1.210E+02	7.451E+00	2.685E-01	61.036

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CD-109	3.764E+01	5.851E+01	1.192E+02	7.665E+00	0.316
NP-237	4.898E+00	1.684E+01	3.173E+01	1.987E+00	0.154
AM-241	1.240E+00	4.883E+00	7.823E+00	2.498E-01	0.158

KM  
05-27-10

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100508407\_GE5\_BAFIL\_149528.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : MW-65 DIS  
 Deposition Date :  
 Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 15:27:15  
 Sample ID : 1005084-07 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE5 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.17 0.1%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	3.35	27	31	1.40	37.58	29	17	3.04E-02	52.0	
2	0	11.14	7	17	0.48	112.56	102	12	8.15E-03	120.4	
3	0	21.07	100	36	0.33	208.04	198	19	1.11E-01	17.8	
4	0	30.91	2305	122	0.72	302.68	289	30	2.56E+00	2.5	
5	2	35.06	480	34	0.70	342.59	331	30	5.33E-01	5.5	1.95E+00
6	2	35.94	116	26	0.63	351.00	331	30	1.29E-01	19.6	
7	0	61.74	312	34	0.84	599.08	584	29	3.47E-01	7.2	
8	0	66.09	148	28	0.40	640.97	627	28	1.65E-01	11.8	
9	2	79.61	61	0	0.76	770.97	763	33	6.82E-02	14.7	8.22E-01
10	2	81.07	931	3	0.63	784.97	763	33	1.03E+00	3.3	
11	4	111.54	105	38	0.92	1078.01	1069	21	1.17E-01	18.1	1.87E+00
12	4	112.15	108	26	0.53	1083.90	1069	21	1.20E-01	15.0	
13	0	116.37	29	35	0.59	1124.42	1112	19	3.27E-02	44.9	
14	2	160.30	42	10	0.99	1546.92	1539	20	4.61E-02	18.7	2.17E+00
15	2	161.02	19	2	0.73	1553.78	1539	20	2.14E-02	31.6	
16	0	276.74	48	13	0.48	2666.57	2650	24	5.30E-02	20.6	
17	1	302.57	10	3	0.95	2915.00	2905	26	1.07E-02	126.4	7.63E+00
18	1	303.09	240	6	0.95	2920.00	2905	26	2.67E-01	5.4	
19	0	333.81	65	3	0.92	3215.44	3201	26	7.24E-02	13.6	
20	1	355.44	25	1	0.89	3423.41	3416	31	2.74E-02	62.7	4.56E+00
21	1	356.09	413	3	1.08	3429.69	3416	31	4.59E-01	5.0	
22	1	383.68	18	10	1.01	3695.00	3683	26	2.01E-02	64.7	5.02E+00
23	1	384.41	81	9	1.01	3702.00	3683	26	9.00E-02	12.7	
24	0	387.07	149	30	1.05	3727.51	3713	27	1.66E-01	11.2	

Total number of lines in spectrum 24  
 Number of unidentified lines 16  
 Number of lines tentatively identified by NID 8 33.33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.635E+02	4.636E+02	0.761E+02	16.42	
Total Activity :			4.635E+02	4.636E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	5.243E-01	5.243E-01	12.63E-01	240.90	
PA-234	4.47E+09Y	1.00	4.623E+00	4.623E+00	1.657E+00	35.85	
TH-234	4.47E+09Y	1.00	8.611E+02	8.611E+02	1.328E+02	15.42	
Total Activity :			8.662E+02	8.662E+02			

Grand Total Activity : 1.330E+03 1.330E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.827E+01	4.635E+02	4.636E+02	16.42	OK
	302.84	17.80	4.662E+00	8.683E+02	8.684E+02	21.87	OK
	356.01	60.00	4.450E+00	4.651E+02	4.651E+02	17.07	OK

Final Mean for 3 Valid Peaks = 4.636E+02 +/- 7.614E+01 ( 16.42%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
PA-231	9.28	42.00*	1.000E+02	5.243E-01	5.243E-01	240.90	OK
	10.11	20.20	1.000E+02	1.090E+00	1.090E+00	240.90	OK
	283.67	1.60	4.787E+00	-----	Line Not Found	-----	Absent
	302.67	2.30	4.663E+00	2.698E+02	2.698E+02	253.29	OK

Final Mean for 3 Valid Peaks = 5.243E-01 +/- 1.263E+00 (240.90%)

PA-234	9.89	89.00	1.000E+02	2.474E-01	2.474E-01	240.90	OK
	21.72	64.90*	1.000E+02	4.623E+00	4.623E+00	35.85	OK
	37.93	23.75	8.878E+01	1.656E+01	1.656E+01	39.35	OK
	131.42	20.40	9.027E+00	-----	Line Not Found	-----	Absent

Final Mean for 3 Valid Peaks = 4.623E+00 +/- 1.657E+00 ( 35.85%)

TH-234	63.29	3.80*	2.867E+01	8.611E+02	8.611E+02	15.42	OK
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Final Mean for 1 Valid Peaks = 8.611E+02 +/- 1.328E+02 ( 15.42%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.636E+02	7.614E+01	1.263E+01	1.829E+00	36.713
PA-231	5.243E-01	1.263E+00	2.069E+00	2.137E-02	0.253
PA-234	4.623E+00	1.657E+00	9.716E-01	1.003E-02	4.759
TH-234	8.611E+02	1.328E+02	6.450E+01	2.324E+00	13.350

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-4.559E-01	5.003E+00	9.054E+00	8.924E-01	-0.050
CD-109	1.828E+01	7.385E+01	1.379E+02	8.866E+00	0.133
NP-237	-1.069E+01	2.108E+01	3.559E+01	2.228E+00	-0.301
AM-241	4.904E+00	4.731E+00	8.504E+00	2.715E-01	0.577

KM  
08-27-10

VAX/VMS Peak Search Report Generated 27-MAY-2010 16:00:01.47

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE] SMP\_100508408\_GE5\_BAFIL\_149529.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : MW-1C-DIS  
Deposition Date :  
Sample Date : 27-MAY-2010 00:00:00 Acquisition date : 27-MAY-2010 15:44:41  
Sample ID : 1005084-08 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE5 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:01.25 0.1%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	14.79	6	7	0.24	147.64	143	9	6.37E-03	92.6	
2	0	21.07	94	45	0.64	208.05	197	18	1.04E-01	19.8	
3	0	30.90	2282	113	0.73	302.59	288	32	2.54E+00	2.5	
4	3	34.96	397	18	0.56	341.63	329	32	4.41E-01	5.8	7.54E-01
5	3	35.78	147	17	0.84	349.51	329	32	1.63E-01	17.5	
6	0	53.52	22	39	0.43	520.09	510	16	2.47E-02	58.3	
7	0	61.80	189	68	0.77	599.65	584	26	2.10E-01	12.5	
8	2	65.98	107	48	0.84	639.93	625	31	1.19E-01	17.5	2.65E+00
9	2	66.72	45	36	0.69	647.00	625	31	5.02E-02	33.3	
10	0	81.05	847	68	0.59	784.85	773	22	9.41E-01	4.0	
11	0	107.33	7	13	1.31	1037.50	1021	19	8.15E-03	105.7	
12	0	111.94	192	37	0.67	1081.88	1071	21	2.13E-01	9.9	
13	0	116.28	30	42	0.65	1123.59	1111	21	3.31E-02	49.7	
14	0	123.22	16	14	1.23	1190.33	1179	21	1.75E-02	56.4	
15	3	276.08	52	2	1.02	2660.27	2651	23	5.74E-02	16.3	1.82E+00
16	3	276.73	36	3	0.67	2666.51	2651	23	3.99E-02	22.3	
17	2	302.78	93	0	0.95	2917.00	2904	25	1.03E-01	11.4	1.71E+00
18	2	303.28	41	0	1.02	2921.82	2904	25	4.58E-02	24.0	
19	0	307.82	13	12	0.71	2965.50	2948	19	1.39E-02	58.1	
20	0	333.84	38	2	0.72	3215.72	3203	22	4.19E-02	18.3	
21	0	356.21	386	7	1.03	3430.85	3416	27	4.29E-01	5.3	
22	0	384.09	81	3	0.38	3698.92	3685	26	8.96E-02	12.1	
23	1	386.39	68	2	1.01	3721.00	3713	26	7.54E-02	11.9	2.09E+00
24	1	387.22	87	9	1.01	3729.00	3713	26	9.70E-02	13.6	

Total number of lines in spectrum 24  
 Number of unidentified lines 18  
 Number of lines tentatively identified by NID 6 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
CO-57	270.90D	1.00	5.589E+00	5.598E+00	6.344E+00	113.33	
BA-133	10.50Y	1.00	4.219E+02	4.219E+02	0.719E+02	17.04	
Total Activity :			4.275E+02	4.275E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	5.202E+02	5.202E+02	1.332E+02	25.60	
Total Activity :			5.202E+02	5.202E+02			

Grand Total Activity : 9.477E+02 9.478E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
CO-57	122.06	85.51*	9.901E+00	5.589E+00	5.598E+00	113.33	OK
	136.48	10.60	8.630E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 5.598E+00+/- 6.344E+00 (113.33%)

BA-133	81.00	33.00*	1.827E+01	4.219E+02	4.219E+02	17.04	OK
	302.84	17.80	4.662E+00	3.362E+02	3.362E+02	29.73	OK
	356.01	60.00	4.450E+00	4.345E+02	4.345E+02	17.39	OK

Final Mean for 3 Valid Peaks = 4.219E+02+/- 7.188E+01 ( 17.04%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.867E+01	5.202E+02	5.202E+02	25.60	OK

Final Mean for 1 Valid Peaks = 5.202E+02+/- 1.332E+02 ( 25.60%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	5.598E+00	6.344E+00	8.075E+00	7.959E-01	0.693
BA-133	4.219E+02	7.188E+01	1.233E+01	1.786E+00	34.210
TH-234	5.202E+02	1.332E+02	8.813E+01	3.175E+00	5.903

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CD-109	4.006E+01	7.239E+01	1.405E+02	9.031E+00	0.285
PA-231	-4.825E-01	1.020E+00	1.757E+00	1.814E-02	-0.275
PA-234	4.327E+00 +	1.719E+00	2.154E+00	2.225E-02	2.008
NP-237	-1.322E+01	2.117E+01	3.508E+01	2.196E+00	-0.377
AM-241	1.978E+00	4.961E+00	8.107E+00	2.588E-01	0.244

**SECTION XI**  
**ANALYTICAL DATA (GROSS ALPHA/BETA)**

<b>Work Order</b>	<b>10-05084</b>
<b>Analysis Code</b>	<b>GaGbT_ThSr</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>5/18/2010</b>
<b>Lab Deadline</b>	<b>6/2/2010</b>
<b>Client</b>	Michael Pisani & Associates
<b>Project</b>	ENV
<b>Report Level</b>	4
<b>Activity Units</b>	pCi
<b>Aliquot Units</b>	I
<b>Matrix</b>	WA
<b>Method</b>	EPA 900.0 Modified
<b>Instrument Type</b>	Alpha/Beta GPC
<b>Radiometric Tracer</b>	
<b>Radiometric Sol#</b>	
<b>Tracer Act (dpm/g)</b>	
<b>Carrier</b>	
<b>Carrier Conc (mg/ml)</b>	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/18/10 00:00	1.0000E+00
02	MBL	BLANK		05/18/10 00:00	1.0000E+00
03	DUP	MW-4D-DIS	25	05/12/10 08:25	4.0000E-02
04	DO	MW-4D-DIS	25	05/12/10 08:25	4.0000E-02
05	TRG	MW-5D-DIS	31	05/12/10 11:40	4.0000E-02
06	TRG	MW-6D-DIS	27	05/12/10 15:40	6.0000E-02
07	TRG	MW-65-DIS	28	05/12/10 17:15	5.0000E-02
08	TRG	MW-1C-DIS	32	05/13/10 11:40	4.0000E-02

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00		7.5135	7.5142	0.0007			1.00	1.00
02	MBL				0.00		7.5766	7.5770	0.0004			1.00	1.00
03	DUP				0.00		7.5201	7.5551	0.0350			1.00	1.00
04	DO				0.00		7.5660	7.5989	0.0329			1.00	1.00
05	TRG				0.00		7.4553	7.5132	0.0579			1.00	1.00
06	TRG				0.00		7.6103	7.6979	0.0876			1.00	1.00
07	TRG				0.00		7.6057	7.6717	0.0660			1.00	1.00
08	TRG				0.00		7.5319	7.5856	0.0537			1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			06/02/10 12:32	BLESTER				
02	MBL			06/02/10 12:32	BLESTER				
03	DUP			06/02/10 12:32	BLESTER				
04	DO			06/02/10 12:32	BLESTER				
05	TRG			06/02/10 12:32	BLESTER				
06	TRG			06/02/10 12:32	BLESTER				
07	TRG			06/02/10 12:32	BLESTER				
08	TRG			06/02/10 12:32	BLESTER				

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

	Client	Michael Pisani & Associates
	Eberline Services Work Order	10-05084
Analysis Code	GaGbT	1
Run		

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS ALPHA	LCS	LCS	pCi/l	2.95E+02	7.66E+00	3.64E-01	3.13E+02	94.02	OK		OK	
02	GROSS ALPHA	MBL	BLANK	pCi/l	2.66E-02	6.39E-02	1.47E-01					OK	OK
03	GROSS ALPHA	DUP	MW-4D-DIS	pCi/l	2.68E+00	3.15E+00	5.92E+00				OK	INV	
04	GROSS ALPHA	DO	MW-4D-DIS	pCi/l	2.96E+00	3.05E+00	5.45E+00					INV	
05	GROSS ALPHA	TRG	MW-5D-DIS	pCi/l	8.42E+00	6.74E+00	1.19E+01					INV	
06	GROSS ALPHA	TRG	MW-6D-DIS	pCi/l	-5.85E+00	6.62E+00	1.77E+01					INV	
07	GROSS ALPHA	TRG	MW-65-DIS	pCi/l	3.08E+00	5.54E+00	1.18E+01					INV	
08	GROSS ALPHA	TRG	MW-1C-DIS	pCi/l	4.24E+00	5.18E+00	1.02E+01					INV	

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05084-GaGbT-1**

	Run	1
Client	Michael Pisani & Associates	
Eberline Services Work Order	10-05084	
Analysis Code	GaGbT	

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS ALPHA	LCS	05/18/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS ALPHA	MBL	05/18/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS ALPHA	DUP	05/12/10 08:25	4.00E-02	0.00	0.00	0.00	1.59		
04	GROSS ALPHA	DO	05/12/10 08:25	4.00E-02	0.00	0.00	0.00	1.53		
05	GROSS ALPHA	TRG	05/12/10 11:40	4.00E-02	0.00	0.00	0.00	2.16		
06	GROSS ALPHA	TRG	05/12/10 15:40	6.00E-02	0.00	0.00	0.00	2.92		
07	GROSS ALPHA	TRG	05/12/10 17:15	5.00E-02	0.00	0.00	0.00	2.37		
08	GROSS ALPHA	TRG	05/13/10 11:40	4.00E-02	0.00	0.00	0.00	2.06		



Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05084-GaGbt-1**

	Run <b>1</b>	Analysis Code <b>GaGbt</b>	Eberline Services Work Order <b>10-05084</b>	Client <b>Michael Pisani &amp; Associates</b>
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Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	GROSS ALPHA	LCS	06/02/10 13:55		LB4110R	D2	30	5691	0.033333333	0.2899
02	GROSS ALPHA	MBL	06/02/10 13:55		LB4110R	B1	120	4	0.016666667	0.2819
03	GROSS ALPHA	DUP	06/02/10 13:55		LB4110R	B2	120	7	0.016666667	0.2778
04	GROSS ALPHA	DO	06/02/10 13:55		LB4110R	B3	120	8	0.016666667	0.2919
05	GROSS ALPHA	TRG	06/02/10 13:55		LB4110R	B4	120	18	0.05	0.2896
06	GROSS ALPHA	TRG	06/02/10 13:55		LB4110R	C1	120	9	0.15	0.2806
07	GROSS ALPHA	TRG	06/02/10 13:55		LB4110R	C2	120	13	0.066666667	0.2886
08	GROSS ALPHA	TRG	06/02/10 13:55		LB4110R	C3	120	10	0.033333333	0.2736

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05084-GaGt-1**

	1 <i>Run</i>	GaGt <i>Analysis Code</i>	10-05084 <i>Eberline Services Work Order</i>	Michael Pisani & Associates <i>Client</i>
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS BETA	LCS	LCS	pCi/l	2.52E+02	5.86E+00	7.59E-01	2.36E+02	106.51	OK		OK	OK
02	GROSS BETA	MBL	BLANK	pCi/l	3.07E-02	2.37E-01	5.07E-01					OK	OK
03	GROSS BETA	DUP	MW-4D-DIS	pCi/l	4.33E+00	7.11E+00	1.47E+01				INV	INV	
04	GROSS BETA	DO	MW-4D-DIS	pCi/l	1.15E+01	6.55E+00	1.26E+01					INV	
05	GROSS BETA	TRG	MW-5D-DIS	pCi/l	4.58E+00	7.94E+00	1.65E+01					INV	
06	GROSS BETA	TRG	MW-6D-DIS	pCi/l	3.78E+00	5.24E+00	1.08E+01					INV	
07	GROSS BETA	TRG	MW-65-DIS	pCi/l	7.80E+00	7.95E+00	1.62E+01					INV	
08	GROSS BETA	TRG	MW-1C-DIS	pCi/l	6.47E+00	8.16E+00	1.67E+01					INV	

	<b>1</b> Run	<b>GaGt</b> Analysis Code	<b>10-05084</b> Eberline Services Work Order	<b>Michael Pisani &amp; Associates</b> Client
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Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS BETA	LCS	05/18/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS BETA	MBL	05/18/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS BETA	DUP	05/12/10 08:25	4.00E-02	0.00	0.00	0.00	1.07		
04	GROSS BETA	DO	05/12/10 08:25	4.00E-02	0.00	0.00	0.00	1.06		
05	GROSS BETA	TRG	05/12/10 11:40	4.00E-02	0.00	0.00	0.00	1.13		
06	GROSS BETA	TRG	05/12/10 15:40	6.00E-02	0.00	0.00	0.00	1.21		
07	GROSS BETA	TRG	05/12/10 17:15	5.00E-02	0.00	0.00	0.00	1.15		
08	GROSS BETA	TRG	05/13/10 11:40	4.00E-02	0.00	0.00	0.00	1.12		

	Client	Michael Pisani & Associates
	Eberline Services Work Order	10-05084
	Analysis Code	GaGbt
Run		1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff	A to B, Cor
01	GROSS BETA	LCS	06/02/10 13:55		LB4110R	D2	30	9860	1.016666667	0.4993	279.9517067
02	GROSS BETA	MBL	06/02/10 13:55		LB4110R	B1	120	126	1.016666667	0.4886	1.05
03	GROSS BETA	DUP	06/02/10 13:55		LB4110R	B2	120	165	1.2	0.486	1.375
04	GROSS BETA	DO	06/02/10 13:55		LB4110R	B3	120	167	0.916666667	0.4965	1.391666667
05	GROSS BETA	TRG	06/02/10 13:55		LB4110R	B4	120	183	1.35	0.4858	1.525
06	GROSS BETA	TRG	06/02/10 13:55		LB4110R	C1	120	156	1.1	0.4795	1.3
07	GROSS BETA	TRG	06/02/10 13:55		LB4110R	C2	120	271	1.9	0.4758	2.258333333
08	GROSS BETA	TRG	06/02/10 13:55		LB4110R	C3	120	189	1.333333333	0.4705	1.575

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/18/10 00:00	1.0000				0.00	1.00	1.00
02	MBL	BLANK	05/18/10 00:00	1.0000				0.00	1.00	1.00
03	DUP	MW-4D-DIS	05/12/10 08:25	0.0400				0.00	1.00	1.00
04	DO	MW-4D-DIS	05/12/10 08:25	0.0400				0.00	1.00	1.00
05	TRG	MW-5D-DIS	05/12/10 11:40	0.0400				0.00	1.00	1.00
06	TRG	MW-6D-DIS	05/12/10 15:40	0.0600				0.00	1.00	1.00
07	TRG	MW-65-DIS	05/12/10 17:15	0.0500				0.00	1.00	1.00
08	TRG	MW-1C-DIS	05/13/10 11:40	0.0400				0.00	1.00	1.00

Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials						
10-05084		1	GaGbT_ThSr		6/2/2010 12:31	BLESTER		BLESTER								
LCS & Matrix Spikes																
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	LCS Error Estimate	MS Added pCi	MS Error Estimate	LCSD Known pCi	LCSD Error Estimate	MSD Added pCi	MSD Error Estimate
Am-241	A/B-07	695.001	6/2/2010	0.680	1.0012				313.44	13.478	0.00	0.000	0.00	0.000	0.00	0.000
SrY-90	A/B-07	523.885	6/2/2010	1.050	1.0012				236.27	7.088	0.00	0.000	0.00	0.000	0.00	0.000
Tracers																
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes									
							Tracer					LCS				
							Matrix Spike									

# Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
<b>10-05084</b>	<b>1</b>	<b>GaGbT_ThSr</b>	<b>liters</b>	<b>6/2/2010</b>	<b>BLESTER</b>

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only		
			Ratio Post/Pre	Ratio	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq		
01	LCS	LCS						1.0000E+00	1.0000E+00						
02	BLANK	MBL						1.0000E+00	1.0000E+00						
03	MW-4D-DIS	DUP						4.0000E-02	4.0000E-02						
04	MW-4D-DIS	DO						4.0000E-02	4.0000E-02						
05	MW-5D-DIS	TRG						4.0000E-02	4.0000E-02						
06	MW-6D-DIS	TRG						6.0000E-02	6.0000E-02						
07	MW-65-DIS	TRG						5.0000E-02	5.0000E-02						
08	MW-1C-DIS	TRG						4.0000E-02	4.0000E-02						

Comments
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# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05084</b>	<b>1</b>	<b>GaGbT_ThSr</b>			<b>BLESTER</b>

TRetek Fraction	Michael Pisani & Associates		Sample Type	Carrier Data		Filter Data			Gravimetric % Recovery
	Client ID	Carrier Added (ml)		Filter Tare (g)	Filter Final (g)	Filter Net (g)			
01	LCS		LCS		7.5135	7.5142	0.0007		
02	BLANK		MBL		7.5766	7.5770	0.0004		
03	DUP		DUP		7.5201	7.5551	0.0350		
04	MW-4D-DIS		DO		7.5660	7.5989	0.0329		
05	MW-5D-DIS		TRG		7.4553	7.5132	0.0579		
06	MW-6D-DIS		TRG		7.6103	7.6979	0.0876		
07	MW-65-DIS		TRG		7.6057	7.6717	0.0660		
08	MW-1C-DIS		TRG		7.5319	7.5856	0.0537		

Technician: BL Date: 6 / 2 / 2010



# TDS / TSS Worksheet

<b>Work Order</b>	<b>Run</b>	<b>Analysis Code</b>	<b>Technician</b>
<b>10-05084</b>	<b>1</b>	<b>GaGbt_ThSr</b>	<b>BLESTER</b>

TRetek Fraction	Client ID	Aliquot ml	Filter Data			TDS/TSS (mg/L)	Maximum Aliq (mL)
			Filter Tare (g)	Filter Final (g)	Filter Net (g)		
	<b>Michael Pisani &amp; Associates</b>						
04	MW-4D-DIS	5.0000	7.5637	7.5746	0.0109	2180.0000	45.87
05	MW-5D-DIS	5.0000	7.5303	7.5424	0.0121	2420.0000	41.32
06	MW-6D-DIS	5.0000	7.5163	7.5246	0.0083	1660.0000	60.24
07	MW-65-DIS	5.0000	7.4730	7.4825	0.0095	1900.0000	52.63
08	MW-1C-DIS	5.0000	7.5414	7.5535	0.0121	2420.0000	41.32

Technician: BL Date: 6/1/2010

(R) 11/10  
6/2/10

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
D2	1005084-01	5691	9860	30	1400	6/2/10 14:25

(R) 6/2/10  
KCB

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
C1	1005084-06	9	156	120		1400	6/2/10 15:55
C2	1005084-07	13	271	120		1400	6/2/10 15:55
C3	1005084-08	10	189	120		1400	6/2/10 15:55
B1	1005084-02	4	126	120		1400	6/2/10 15:55
B2	1005084-03	7	165	120		1400	6/2/10 15:55
B3	1005084-04	8	167	120		1400	6/2/10 15:55
B4	1005084-05	18	183	120		1400	6/2/10 15:55

GPC Detector Report  
(ALL Backgrounds)

AM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-5.53E-02	7.04E-02	1.96E-01
LB4110A - A2	Alpha	11/18/2007	6/2/2010	1.50E-01	P	-5.68E-02	1.01E-01	2.59E-01
LB4110A - A3	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-4.91E-02	5.06E-02	1.50E-01
LB4110A - A4	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-6.18E-02	5.91E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	6/2/2010	5.00E-02	P	-1.34E-01	8.36E-02	3.02E-01
LB4110A - B2	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-6.60E-02	7.77E-02	2.21E-01
LB4110A - B3	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-5.45E-02	4.47E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	6/2/2010	3.33E-02	P	-4.60E-02	5.35E-02	1.53E-01
LB4110A - C1	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-6.36E-02	8.20E-02	2.28E-01
LB4110A - C2	Alpha	11/18/2007	6/2/2010	1.00E-01	P	-2.03E-01	1.23E-01	4.48E-01
LB4110A - C3	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-2.46E-01	1.22E-01	4.91E-01
LB4110A - C4	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-7.11E-02	7.83E-02	2.28E-01
LB4110A - D1	Alpha	11/18/2007	6/2/2010	1.67E-02	P	-4.60E-02	8.40E-02	2.14E-01
LB4110A - D2	Alpha	11/18/2007	6/2/2010	6.67E-02	P	-6.87E-02	6.95E-02	2.08E-01
LB4110A - D3	Alpha	11/18/2007	6/2/2010	8.33E-02	P	-3.67E-02	6.27E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	6/2/2010	1.50E-01	P	-5.93E-02	7.81E-02	2.16E-01
LB4110R - A1	Alpha	11/24/2006	6/2/2010	5.00E-02	P	-1.11E-01	8.40E-02	2.79E-01
LB4110R - A2	Alpha	11/24/2006	6/2/2010	1.00E-01	P	-9.80E-02	9.68E-02	2.92E-01
LB4110R - A3	Alpha	11/24/2006	6/2/2010	8.33E-02	P	-8.98E-02	7.76E-02	2.45E-01
LB4110R - A4	Alpha	11/24/2006	6/2/2010	3.33E-02	P	-5.08E-02	8.31E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	6/2/2010	1.67E-02	P	-1.17E-01	6.87E-02	2.54E-01
LB4110R - B2	Alpha	11/24/2006	6/2/2010	1.67E-02	P	-7.83E-02	7.69E-02	2.32E-01
LB4110R - B3	Alpha	11/24/2006	6/2/2010	1.67E-02	P	-7.65E-02	7.17E-02	2.20E-01
LB4110R - B4	Alpha	11/24/2006	6/2/2010	5.00E-02	P	-6.55E-02	8.50E-02	2.35E-01
LB4110R - C1	Alpha	11/24/2006	6/2/2010	1.50E-01	P	-8.43E-02	8.88E-02	2.62E-01
LB4110R - C2	Alpha	11/24/2006	6/2/2010	6.67E-02	P	-8.36E-02	8.63E-02	2.56E-01
LB4110R - C3	Alpha	11/24/2006	6/2/2010	3.33E-02	P	-1.04E-01	9.63E-02	2.97E-01
LB4110R - C4	Alpha	11/24/2006	6/2/2010	8.33E-02	P	-7.23E-02	9.27E-02	2.58E-01
LB4110R - D1	Alpha	11/24/2006	6/2/2010	0.00E+00	P	-9.13E-02	8.70E-02	2.65E-01
LB4110R - D2	Alpha	11/24/2006	6/2/2010	3.33E-02	P	-6.19E-02	8.95E-02	2.41E-01
LB4110R - D3	Alpha	11/24/2006	6/2/2010	1.00E-01	P	-5.97E-02	7.80E-02	2.16E-01
LB4110R - D4	Alpha	11/24/2006	6/2/2010	1.00E-01	P	-5.28E-02	9.40E-02	2.41E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

MM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	6/2/2010	1.42E+00	P	-7.71E+00	2.72E+00	1.32E+01
LB4110A - A2	Beta	11/18/2007	6/2/2010	1.10E+00	P	-5.88E-02	1.58E+00	3.22E+00
LB4110A - A3	Beta	11/18/2007	6/2/2010	1.15E+00	P	3.85E-01	1.29E+00	2.20E+00
LB4110A - A4	Beta	11/18/2007	6/2/2010	1.68E+00	P	4.70E-01	1.71E+00	2.95E+00
LB4110A - B1	Beta	11/18/2007	6/2/2010	1.20E+00	P	-8.54E+00	3.95E+00	1.65E+01
LB4110A - B2	Beta	11/18/2007	6/2/2010	1.63E+00	P	6.30E-02	1.49E+00	2.91E+00
LB4110A - B3	Beta	11/18/2007	6/2/2010	1.37E+00	P	1.18E-01	1.49E+00	2.86E+00
LB4110A - B4	Beta	11/18/2007	6/2/2010	1.25E+00	P	-5.72E-02	1.42E+00	2.90E+00
LB4110A - C1	Beta	11/18/2007	6/2/2010	1.33E+00	P	-7.58E+00	3.10E+00	1.38E+01
LB4110A - C2	Beta	11/18/2007	6/2/2010	1.08E+00	P	3.30E-01	1.43E+00	2.52E+00
LB4110A - C3	Beta	11/18/2007	6/2/2010	1.35E+00	P	4.46E-01	1.48E+00	2.52E+00
LB4110A - C4	Beta	11/18/2007	6/2/2010	1.37E+00	P	-1.29E+00	2.13E+00	5.55E+00
LB4110A - D1	Beta	11/18/2007	6/2/2010	1.98E+00	P	-3.94E+00	3.05E+00	1.00E+01
LB4110A - D2	Beta	11/18/2007	6/2/2010	1.32E+00	P	-1.33E+00	1.77E+00	4.86E+00
LB4110A - D3	Beta	11/18/2007	6/2/2010	5.17E+00	P	-2.89E-01	4.10E+00	8.48E+00
LB4110A - D4	Beta	11/18/2007	6/2/2010	1.12E+00	P	-9.17E-01	1.57E+00	4.05E+00
LB4110R - A1	Beta	11/24/2006	6/2/2010	1.30E+00	P	-6.17E+01	2.78E+00	6.72E+01
LB4110R - A2	Beta	11/24/2006	6/2/2010	1.03E+00	P	-6.20E+01	2.52E+00	6.70E+01
LB4110R - A3	Beta	11/24/2006	6/2/2010	1.05E+00	P	-6.13E+01	4.15E+00	6.96E+01
LB4110R - A4	Beta	11/24/2006	6/2/2010	1.48E+00	P	-6.18E+01	2.65E+00	6.71E+01
LB4110R - B1	Beta	11/24/2006	6/2/2010	1.02E+00	P	-6.50E+01	2.76E+00	7.05E+01
LB4110R - B2	Beta	11/24/2006	6/2/2010	1.20E+00	P	-6.49E+01	2.83E+00	7.05E+01
LB4110R - B3	Beta	11/24/2006	6/2/2010	9.17E-01	P	-6.42E+01	3.92E+00	7.21E+01
LB4110R - B4	Beta	11/24/2006	6/2/2010	1.35E+00	P	-6.51E+01	2.60E+00	7.03E+01
LB4110R - C1	Beta	11/24/2006	6/2/2010	1.10E+00	P	-6.41E+01	4.60E+00	7.33E+01
LB4110R - C2	Beta	11/24/2006	6/2/2010	1.90E+00	P	-6.49E+01	3.57E+00	7.21E+01
LB4110R - C3	Beta	11/24/2006	6/2/2010	1.33E+00	P	-6.53E+01	3.59E+00	7.24E+01
LB4110R - C4	Beta	11/24/2006	6/2/2010	1.23E+00	P	-7.35E+01	4.20E+00	8.20E+01
LB4110R - D1	Beta	11/24/2006	6/2/2010	7.45E+00	P	-6.21E+01	6.56E+00	7.52E+01
LB4110R - D2	Beta	11/24/2006	6/2/2010	1.02E+00	P	-6.60E+01	2.68E+00	7.13E+01
LB4110R - D3	Beta	11/24/2006	6/2/2010	3.33E+00	P	-6.98E+01	7.57E+00	8.49E+01
LB4110R - D4	Beta	11/24/2006	6/2/2010	1.30E+00	P	-6.56E+01	3.10E+00	7.17E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

GPC Detector Report  
(ALL Efficiencies)

MM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	6/2/2010	0.2511	P	0.2375	0.2505	0.2634
LB4110A - A2	Alpha	11/18/2007	6/2/2010	0.2184	P	0.1959	0.2208	0.2457
LB4110A - A3	Alpha	11/18/2007	6/2/2010	0.2141	P	0.2049	0.2178	0.2308
LB4110A - A4	Alpha	11/18/2007	6/2/2010	0.2253	P	0.2157	0.2289	0.2422
LB4110A - B1	Alpha	11/18/2007	6/2/2010	0.2219	P	0.2178	0.2317	0.2456
LB4110A - B2	Alpha	11/18/2007	6/2/2010	0.2155	W	0.2139	0.2277	0.2415
LB4110A - B3	Alpha	11/18/2007	6/2/2010	0.2377	P	0.2267	0.2423	0.2580
LB4110A - B4	Alpha	11/18/2007	6/2/2010	0.2284	F	0.2285	0.2410	0.2535
LB4110A - C1	Alpha	11/18/2007	6/2/2010	0.2173	P	0.2116	0.2226	0.2336
LB4110A - C2	Alpha	11/18/2007	6/2/2010	0.2261	P	0.2022	0.2270	0.2518
LB4110A - C3	Alpha	11/18/2007	6/2/2010	0.2487	P	0.2360	0.2494	0.2628
LB4110A - C4	Alpha	11/18/2007	6/2/2010	0.2214	P	0.2180	0.2321	0.2461
LB4110A - D1	Alpha	11/18/2007	6/2/2010	0.2415	P	0.2252	0.2398	0.2544
LB4110A - D2	Alpha	11/18/2007	6/2/2010	0.2605	P	0.2481	0.2633	0.2784
LB4110A - D3	Alpha	11/18/2007	6/2/2010	0.2570	P	0.2514	0.2689	0.2864
LB4110A - D4	Alpha	11/18/2007	6/2/2010	0.1983	P	0.1925	0.2105	0.2284
LB4110R - A1	Alpha	11/24/2006	6/2/2010	0.2269	P	0.2065	0.2425	0.2784
LB4110R - A2	Alpha	11/24/2006	6/2/2010	0.2132	P	0.1929	0.2244	0.2559
LB4110R - A3	Alpha	11/24/2006	6/2/2010	0.2203	P	0.1985	0.2283	0.2581
LB4110R - A4	Alpha	11/24/2006	6/2/2010	0.2398	P	0.2141	0.2470	0.2799
LB4110R - B1	Alpha	11/24/2006	6/2/2010	0.2297	P	0.1939	0.2306	0.2672
LB4110R - B2	Alpha	11/24/2006	6/2/2010	0.2136	P	0.1860	0.2214	0.2568
LB4110R - B3	Alpha	11/24/2006	6/2/2010	0.2387	P	0.2094	0.2477	0.2861
LB4110R - B4	Alpha	11/24/2006	6/2/2010	0.2255	P	0.2006	0.2377	0.2748
LB4110R - C1	Alpha	11/24/2006	6/2/2010	0.2131	P	0.1835	0.2173	0.2511
LB4110R - C2	Alpha	11/24/2006	6/2/2010	0.2307	P	0.1947	0.2266	0.2586
LB4110R - C3	Alpha	11/24/2006	6/2/2010	0.2422	P	0.2040	0.2426	0.2811
LB4110R - C4	Alpha	11/24/2006	6/2/2010	0.2225	P	0.1992	0.2315	0.2638
LB4110R - D1	Alpha	11/24/2006	6/2/2010	0.2295	P	0.1943	0.2296	0.2649
LB4110R - D2	Alpha	11/24/2006	6/2/2010	0.2532	P	0.2246	0.2592	0.2938
LB4110R - D3	Alpha	11/24/2006	6/2/2010	0.2520	P	0.2223	0.2548	0.2874
LB4110R - D4	Alpha	11/24/2006	6/2/2010	0.2001	P	0.1814	0.2117	0.2420
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578

GPC Detector Report  
(ALL Efficiencies)

LM  
6/2/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	6/2/2010	0.5939	P	0.5581	0.5899	0.6216
LB4110A - A2	Beta	11/18/2007	6/2/2010	0.5113	P	0.4657	0.5229	0.5801
LB4110A - A3	Beta	11/18/2007	6/2/2010	0.5260	P	0.4935	0.5268	0.5601
LB4110A - A4	Beta	11/18/2007	6/2/2010	0.5475	P	0.5201	0.5490	0.5778
LB4110A - B1	Beta	11/18/2007	6/2/2010	0.5256	P	0.5120	0.5424	0.5728
LB4110A - B2	Beta	11/18/2007	6/2/2010	0.5125	W	0.5100	0.5396	0.5691
LB4110A - B3	Beta	11/18/2007	6/2/2010	0.5488	P	0.5022	0.5529	0.6036
LB4110A - B4	Beta	11/18/2007	6/2/2010	0.5394	W	0.5353	0.5603	0.5853
LB4110A - C1	Beta	11/18/2007	6/2/2010	0.5001	P	0.4838	0.5061	0.5285
LB4110A - C2	Beta	11/18/2007	6/2/2010	0.4886	P	0.4359	0.5091	0.5823
LB4110A - C3	Beta	11/18/2007	6/2/2010	0.5956	P	0.5622	0.5874	0.6126
LB4110A - C4	Beta	11/18/2007	6/2/2010	0.5201	P	0.5061	0.5403	0.5746
LB4110A - D1	Beta	11/18/2007	6/2/2010	0.5476	P	0.5349	0.5727	0.6105
LB4110A - D2	Beta	11/18/2007	6/2/2010	0.5762	P	0.5533	0.6165	0.6798
LB4110A - D3	Beta	11/18/2007	6/2/2010	0.6077	P	0.5819	0.6264	0.6710
LB4110A - D4	Beta	11/18/2007	6/2/2010	0.4668	W	0.4642	0.5021	0.5399
LB4110R - A1	Beta	11/24/2006	6/2/2010	0.5567	P	0.4782	0.5762	0.6742
LB4110R - A2	Beta	11/24/2006	6/2/2010	0.4790	P	0.4099	0.5132	0.6165
LB4110R - A3	Beta	11/24/2006	6/2/2010	0.5510	P	0.4559	0.5487	0.6416
LB4110R - A4	Beta	11/24/2006	6/2/2010	0.5821	P	0.4947	0.5911	0.6875
LB4110R - B1	Beta	11/24/2006	6/2/2010	0.5438	P	0.4508	0.5520	0.6533
LB4110R - B2	Beta	11/24/2006	6/2/2010	0.5203	P	0.4298	0.5292	0.6286
LB4110R - B3	Beta	11/24/2006	6/2/2010	0.5751	P	0.4924	0.5963	0.7003
LB4110R - B4	Beta	11/24/2006	6/2/2010	0.5503	P	0.4634	0.5609	0.6584
LB4110R - C1	Beta	11/24/2006	6/2/2010	0.4992	P	0.4126	0.5066	0.6005
LB4110R - C2	Beta	11/24/2006	6/2/2010	0.5397	P	0.4368	0.5316	0.6265
LB4110R - C3	Beta	11/24/2006	6/2/2010	0.5749	P	0.4633	0.5742	0.6850
LB4110R - C4	Beta	11/24/2006	6/2/2010	0.5238	P	0.4467	0.5441	0.6415
LB4110R - D1	Beta	11/24/2006	6/2/2010	0.5515	P	0.4495	0.5464	0.6432
LB4110R - D2	Beta	11/24/2006	6/2/2010	0.6198	P	0.5056	0.6091	0.7126
LB4110R - D3	Beta	11/24/2006	6/2/2010	0.5842	P	0.4922	0.5908	0.6894
LB4110R - D4	Beta	11/24/2006	6/2/2010	0.4735	P	0.4078	0.5018	0.5958
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

**MICHAEL PISANI & ASSOCIATES**

**07-47 East White Lake**

**STANDARD LEVEL IV  
REPORT OF ANALYSIS**

**WORK ORDER #10-05066-OR**

**June 11, 2010**

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY  
OAK RIDGE, TN**



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STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 10  
Effective: 4/27/09  
Page 13 of 13

Eberline Services – Oak Ridge Laboratory  
LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

10 050 66

Eberline Services Work Order #

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		5-14-10	KF	Sample Log-In
		5/28/10	KBJ	Data Compilation
		6-1-10	MLT	First Technical Data Review
		6/1/10	CSA	Second Technical Data Review
		6/7/10	[Signature]	Data Entry/Electronic Deliverable
		6/7/10	[Signature]	Case Narrative
		6/10/10	eyt	Electronic Deliverable Proof
		6/10/10	[Signature]	Samples Analyzed within Holding Time Yes? <input type="checkbox"/> No? <input checked="" type="checkbox"/> YES
		6/10/10	[Signature]	QA/QC Review
		6/10/10	eyt	Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:

[Signature]  
Laboratory Manager

6/10/10  
Date

Copy No. \_\_\_\_\_

Radiochemistry Services

**SECTION I**  
**CHAIN OF CUSTODY & pH CHECK SHEET**



Richmond Laboratory

# Chain of Custody

PURCHASE ORDER NO. \_\_\_\_\_

CLIENT: Michael Pisani & Assoc.  
 ADDRESS: 17431 Jefferson Hwy. Ste. A  
Baton Rouge, LA 70817  
 PROJECT: 07-47 East White Lake

SAMPLERS SIGNATURE: *Rudger Danvers*

SAMPLE NO.	DATE	TIME	LOCATION
SB-2-MW-5	5.11.10	1035	4 DIS 5 SUS
SB-3-MW-5	5.12.10	1020	6 DIS 7 SUS
SB-3-MW-5D	5.12.10	1020	8 DIS 9 SUS

PARAMETERS

SAMPLE TYPE OR MATRIX	1	2	3	4	5	6	7	8
GW								

# CONTAINERS

DATE: 13 May 2010 PAGE 1 OF 1

TAT (IN DAYS) \_\_\_\_\_

**10 050 66**

OBSERVATIONS, COMMENTS, VOLUMES, SPECIAL OR ADDITIONAL TEST

**RECEIVED**  
 MAY 14 2010  
 BY: KF

1) RELINQUISHED BY / DATE:	2) RECEIVED BY / DATE:	3) RELINQUISHED BY / DATE:	4) RECEIVED BY / DATE:	TOTAL NO. OF CONTAINERS:
<u>Rudger Danvers</u> / <u>13 May 10</u> COMPANY: <u>MP&amp;A</u>	<u>FedEx</u> COMPANY:		<u>[Signature]</u> / <u>5-14-10 1000</u> COMPANY: <u>Eberline</u>	3
				METHOD OF SHIPMENT: <u>FedEx</u>
				SPECIAL SHIPMENT-HANDLING, STORAGE REQUIREMENTS, OR POSSIBLE HAZARDS <u>Patrick R. Ithey</u> <u>504.582.2468</u>

2030 Wright Avenue P.O. Box 4040 Richmond, CA 94804-0040 (510) 235-2633 (510) 235-0438 FedEx # 8672 5929467



# Internal Chain of Custody

Work Order #

**10-05066**

Lab Deadline

**5/28/2010**

Analysis

**Ra226 - Level 4**

Sample Matrix

**Water**

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 04, 06 &amp; 08 are DISSOLVED.</b>	<b>04</b>	19	R1.0
	<b>05</b>	19	R1.0
	<b>06</b>	42	R1.0
	<b>07</b>	42	R1.0
	<b>08</b>	35	R1.0
	<b>09</b>	35	R1.0

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	JB	5/17/10 050
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	JB	5/17/10 050
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	WMC	5/17/10 1230
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	WMC	5/18/10 1426
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/18/10 1430
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/25/10 1450
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #	<b>10-05066</b>
Lab Deadline	<b>5/28/2010</b>
Analysis	<b>Ra226 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05, 07 &amp; 09 are SUSPENDED.</b>	04	19	R1.0
	05	19	R1.0
	06	42	R1.0
	07	42	R1.0
	08	35	R1.0
	09	35	R1.0

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>DB</i>	5/17/10 050
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>DB</i>	5/17/10 1226
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>DB</i>	5/17/10 1230
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>DB</i>	5/18/10 1428
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>ICB</i>	5/18/10 1430
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>ICB</i>	5/25/10 1450
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #

**10-05066**

Lab Deadline

**5/28/2010**

Analysis

**Ra228 - Level 4**

Sample Matrix

**Water**

## Comments

Fractions 04, 06 & 08 are DISSOLVED.

Sample Fraction

HP 210 / 270 Detector Activity

Storage Location

04

19

R1.0

05

19

R1.0

06

42

R1.0

07

42

R1.0

08

35

R1.0

09

35

R1.0

## Location (circle one)

## Initials

## Date

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*Bel 5/11/10 1350*

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*Bel 5/12/10 1238*

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*Bel 5/17/10 1210*

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*Bel 5/18/10 1428*

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*KB 5/18/10 1430*

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*KB 5/25/10 1457*

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*Bel 5-26-10 010*

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*Bel 5-27-10 1100*

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*KMK 5-27-10 1102*

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room

*KMK 5-27-10 1355*

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room

Received by

Sample Storage

Rough Prep

Prep

Separations

Count Room

Relinquished by

Sample Storage

Rough Prep

Prep

Separations

Count Room



# Internal Chain of Custody

Work Order #

**10-05066**

Lab Deadline

**5/28/2010**

Analysis

**Ra228 - Level 4**

Sample Matrix

**Water**

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05, 07 &amp; 09 are SUSPENDED.</b>	04	19	R1.0
	05	19	R1.0
	06	42	R1.0
	07	42	R1.0
	08	35	R1.0
	09	35	R1.0

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5/17/10 0500
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5/17/10 1228
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5-12-10/230
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5-18-10 1424
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5/18/10 1430
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5/25/10 1457
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5-26-10 0610
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5-27-10 1102
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5-27-10 1350
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		





# Internal Chain of Custody

Work Order #	<b>10-05066</b>
Lab Deadline	<b>5/28/2010</b>
Analysis	<b>GaGdT_ThSr - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 04, 06 &amp; 08 are DISSOLVED.</b>	<b>04</b>	19	R1.0
	<b>05</b>	19	R1.0
	<b>06</b>	42	R1.0
	<b>07</b>	42	R1.0
	<b>08</b>	35	R1.0
	<b>09</b>	35	R1.0

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>BL</i>	5.19.2010
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>BL</i>	5.20.2010
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>ICB</i>	5/20/10 1415
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>ICB</i>	5/20/10 1632
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

1330  
1413




# Internal Chain of Custody

Work Order #	<b>10-05066</b>
Lab Deadline	<b>5/28/2010</b>
Analysis	<b>GaGbt_ThSr - Level 4</b>
Sample Matrix	<b>Water</b>


Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05, 07 &amp; 09 are SUSPENDED.</b>	<b>04</b>	19	R1.0
	<b>05</b>	19	R1.0
	<b>06</b>	42	R1.0
	<b>07</b>	42	R1.0
	<b>08</b>	35	R1.0
	<b>09</b>	35	R1.0

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	BL	5.19.2010 1330
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	BL	5.20.2010 1413
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	ICB	5/20/10 1415
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	ICB	5/20/10 1632
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

	<b>Sample Receiving Report</b> (Volumes, pH, & CPM)	Internal Work Order
		<b>10-05066</b>
		Received By <b>KFOX</b>


FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max
01	LCS	0		WA	R1.0		
02	BLANK	0		WA	R1.0		
03	DUP	0		WA	R1.0		
04	SB-2-MW-S DIS	1		WA	R1.0	4.00	19
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	4.0000	19
05	SB-2-MW-S SUS	1		WA	R1.0	0.00	19
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	4.0000	19
06	SB-3-MW-S DIS	1		WA	R1.0	4.00	42
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	4.0000	42
07	SB-3-MW-S SUS	1		WA	R1.0	0.00	42
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	4.0000	42
08	SB-3-MW-SD DIS	1		WA	R1.0	4.00	35
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	4.0000	35
09	SB-3-MW-SD SUS	1		WA	R1.0	0.00	35
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	4.0000	35

*161  
05/14/10*

Received by:  Date: 5-14-10

**SECTION II**  
**SAMPLE ACKNOWLEDGEMENT**

Client Name		Contract/PO		Project Type		Date Received		Required Turnaround Days		Eberline Services Work Order																				
Michael Pisani & Assoc., Inc.		ENV		Environmental		05/14/2010		21		10-05066																				
Project Name		Client WO		Sample Disp		Lab Deadline		Internal Deadline		Client Deadline																				
ENV		07-47 East White Lake		W		05/28/2010		06/03/2010		06/04/2010																				
Internal ID	Client ID	Sample Date	Matrix	Storage	Matrix	Sample Date	Matrix	Storage	Matrix	Sample Date	Matrix	Storage	Matrix																	
01	LCS	05/14/10	WA	R1.0	WA	05/14/10	WA	R1.0	WA	05/14/10	WA	R1.0	WA																	
02	BLANK	05/14/10	WA	R1.0	WA	05/14/10	WA	R1.0	WA	05/14/10	WA	R1.0	WA																	
03	DUP	05/14/10	WA	R1.0	WA	05/14/10	WA	R1.0	WA	05/14/10	WA	R1.0	WA																	
04	SB-2-MW-S DIS	05/11/10 10:35	WA	R1.0	WA	05/11/10 10:35	WA	R1.0	WA	05/11/10 10:35	WA	R1.0	WA																	
05	SB-2-MW-S SUS	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA																	
06	SB-3-MW-S DIS	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA																	
07	SB-3-MW-S SUS	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA																	
08	SB-3-MW-SD DIS	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA																	
09	SB-3-MW-SD SUS	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA	05/12/10 10:20	WA	R1.0	WA																	
Totals Per Analysis (non QA samples)											6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



**Sample Log In Report**

**Oak Ridge Laboratory**  
 601 Scarboro Rd.  
 Oak Ridge, TN 37830

**Voice: (865) 481-0683**  
**Fax: (865) 483-4621**

**Invoice**

Accounts Payable  
 Michael Pisani & Assoc., Inc.  
 17431 Jefferson Hwy St A  
 Baton Rouge, LA 70817

Voice: 225-755-2250  
 Fax: 225-755-2259

**Contact**  
 Anna Fix  
 Voice: Anna Fix  
 Fax: 225-755-2259

**Report Data**

Anna Fix  
 Michael Pisani & Associates, Inc.  
 17431 Jefferson Hwy Suite A  
 Baton Rouge, LA 70817

Voice: Anna Fix  
 Fax: 225-755-2259



STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 10
Effective: 4/27/09
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Eberline Services - Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 10 050 66

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Table with 4 columns: Question, Y, N, N/A. Rows: Received in good condition?, If aqueous, properly preserved

WERE CHAIN OF CUSTODY SEALS:

Table with 3 columns: Question, Y, N. Rows: Present on outside of package?, Unbroken on outside of package?, Present on samples?, Unbroken on samples?, Was chain of custody present upon sample receipt?

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: 3 cubes unpreserved

SIGNATURE: [Signature] DATE: 5-14-10

**SECTION III**  
**CASE NARRATIVE**



EBERLINE ANALYTICAL CORPORATION  
601 SCARBORO ROAD  
OAK RIDGE, TENNESSEE 37830  
PHONE (865) 481-0683  
FAX (865) 483-4621

EBS-OR-30454

June 11, 2010

Patrick Ritchie  
Michael Pisani & Associates  
17431 Jefferson Hwy Suite A  
Baton Rouge, LA 70817

CASE NARRATIVE  
Work Order # 10-05066-OR

SAMPLE RECEIPT

This work order contains three water samples received 05/14/2010. All samples were analyzed as dissolved and suspended for Radium-226/228 and Gross Alpha/Beta.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
SB-2-MW-S DIS	10-05066-04	SB-3-MW-S DIS	10-05066-07
SB-2-MW-S SUS	10-05066-05	SB-3-MW-SD DIS	10-05066-08
SB-3-MW-S DIS	10-05066-06	SB-3-MW-SD SUS	10-05066-09

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0 Modified. Gross Alpha/Beta was performed using EPA Method 900.0 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

RADIUM-226

Samples were prepared by removing aliquots followed by filtering to disassociate the dissolved and suspended fractions. Suspended sample fractions were prepared by dissolving in nitric acids followed by mixed acid digestions as appropriate. This was followed by selective sulfate precipitations of the Radium from all samples. Samples were then mounted by semi-micro-precipitations onto micro-porous filters. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. Chemical recovery was calculated by the use of a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

Samples demonstrated acceptable results for Radium-226 activity. Chemical recovery was acceptable for all samples. Results for the Radium-226 method blank demonstrated acceptable activity. Results for the Radium-226 replicate demonstrated a high relative percent difference and normalized difference. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.



## ANALYTICAL RESULTS CONTINUED

### RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were then counted on a gas proportional counter. Chemical recovery was determined by the use of a Barium-133 tracer determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for Radium-228 activity. Chemical recovery was acceptable for all samples. Results for the Radium-228 method blank demonstrated acceptable activity. Results for the Radium-228 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery.

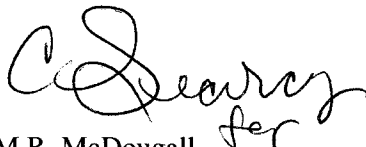
### GROSS ALPHA/BETA

Samples were filtered to disassociate the dissolved and suspended fractions. Volumetric aliquots from dissolved fractions were acidified with  $\text{HNO}_3$ . Reduced samples were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Volumetric equivalent aliquots from suspended fractions were digested in mixed acids, nitrated with  $\text{HNO}_3$ , and were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Samples were then counted on a gas proportional counter. Results were corrected as required for inherent self-absorption based on residual mass present.

Samples demonstrated acceptable results for Gross Alpha and Beta activity. Due to high total dissolved solids, most results demonstrated slightly high detection limits. Results for the Gross Alpha and Beta method blank demonstrated acceptable activity. Results for the Gross Alpha and Beta replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Gross Alpha and Beta laboratory control sample demonstrated an acceptable percent recovery.

### CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall  
Laboratory Manager

Date: 6/11/2010

**SECTION IV**  
**ANALYTICAL RESULTS SUMMARY**

# Eberline Analytical

## Final Report of Analysis

**Patrick Ritchie**  
**Michael Pisani & Associates, Inc.**  
**17431 Jefferson Hwy Suite A**  
**Baton Rouge, LA 70817**

**SDG: 10-05066**  
**Project: 07-47 East White Lake**  
**Analysis Category: ENVIRONMENTAL**  
**Sample Matrix: WA**

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
10-05066-01	LCS	KNOWN	05/14/10 00:00	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	3.17E+02	1.36E+01			pCi/l
10-05066-01	LCS	SPIKE	05/14/10 00:00	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	2.76E+02	7.41E+00	7.52E+00	4.11E-01	pCi/l
10-05066-02	MBL	BLANK	05/14/10 00:00	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	0.00E+00	1.04E-01	1.04E-01	2.55E-01	pCi/l
10-05066-03	DUP	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	-9.65E-01	7.32E+00	7.32E+00	1.84E+01	pCi/l
10-05066-04	DO	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	6.33E+00	5.37E+00	5.37E+00	8.75E+00	pCi/l
10-05066-05	TRG	SB-2-MW-S SUS	05/11/10 10:35	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	1.38E+00	8.66E-01	8.66E-01	1.50E+00	pCi/l
10-05066-06	TRG	SB-3-MW-S DIS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	6.10E+01	3.47E+01	3.47E+01	4.49E+01	pCi/l
10-05066-07	TRG	SB-3-MW-S SUS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	5.07E+00	2.02E+00	2.02E+00	2.96E+00	pCi/l
10-05066-08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	-2.90E+01	3.48E+01	3.48E+01	9.35E+01	pCi/l
10-05066-09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Alpha	EPA 900.0 Modified	4.14E+00	1.75E+00	1.75E+00	2.34E+00	pCi/l
10-05066-01	LCS	KNOWN	05/14/10 00:00	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	2.39E+02	7.18E+00			pCi/l
10-05066-01	LCS	SPIKE	05/14/10 00:00	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	2.44E+02	5.76E+00	5.78E+00	7.48E-01	pCi/l
10-05066-02	MBL	BLANK	05/14/10 00:00	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	-1.84E-01	2.43E-01	2.43E-01	5.45E-01	pCi/l
10-05066-03	DUP	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	9.04E+00	8.52E+00	8.52E+00	1.72E+01	pCi/l
10-05066-04	DO	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	1.10E+00	7.84E+00	7.84E+00	1.67E+01	pCi/l
10-05066-05	TRG	SB-2-MW-S SUS	05/11/10 10:35	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	2.26E+00	1.45E+00	1.45E+00	2.84E+00	pCi/l
10-05066-06	TRG	SB-3-MW-S DIS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	2.87E+00	3.17E+01	3.17E+01	6.77E+01	pCi/l
10-05066-07	TRG	SB-3-MW-S SUS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	1.25E+01	3.81E+00	3.81E+00	6.86E+00	pCi/l
10-05066-08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	-2.35E+01	3.35E+01	3.35E+01	7.43E+01	pCi/l
10-05066-09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	5/14/2010	5/20/2010	10-05066	Gross Beta	EPA 900.0 Modified	1.23E+01	3.40E+00	3.40E+00	6.00E+00	pCi/l
10-05066-01	LCS	KNOWN	05/14/10 00:00	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	1.02E+01	4.70E-01			pCi/l
10-05066-01	LCS	SPIKE	05/14/10 00:00	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	9.45E+00	1.26E+00	1.26E+00	1.39E-01	pCi/l
10-05066-02	MBL	BLANK	05/14/10 00:00	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	5.87E-02	8.65E-02	8.65E-02	1.39E-01	pCi/l
10-05066-03	DUP	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	1.10E-01	1.56E-01	1.56E-01	1.46E-01	pCi/l
10-05066-04	DO	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	2.27E+00	6.61E-01	6.61E-01	2.07E-01	pCi/l
10-05066-05	TRG	SB-2-MW-S SUS	05/11/10 10:35	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	1.32E-01	1.35E-01	1.35E-01	1.54E-01	pCi/l
10-05066-06	TRG	SB-3-MW-S DIS	05/12/10 10:20	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	2.26E+01	4.14E+00	4.14E+00	4.28E-01	pCi/l
10-05066-07	TRG	SB-3-MW-S SUS	05/12/10 10:20	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	1.23E+00	4.32E-01	4.32E-01	2.17E-01	pCi/l
10-05066-08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	1.22E+01	2.39E+00	2.39E+00	4.68E-01	pCi/l
10-05066-09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	5/14/2010	5/25/2010	10-05066	Radium-226	EPA 903.0 Modified	1.26E+00	4.21E-01	4.21E-01	2.17E-01	pCi/l

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty;(2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE ANALYTICAL CORPORATION**

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

# Eberline Analytical Final Report of Analysis

**Patrick Ritchie**  
**Michael Pisani & Associates, Inc.**  
**17431 Jefferson Hwy Suite A**  
**Baton Rouge, LA 70817**

SDG: **10-05066**  
 Project: **07-47 East White Lake**  
 Analysis Category: **ENVIRONMENTAL**  
 Sample Matrix: **WA**

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
10-05066-01	LCS	KNOWN	05/14/10 00:00	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	1.70E+01	8.66E-01			pCi/l
10-05066-01	LCS	SPIKE	05/14/10 00:00	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	1.28E+01	8.66E-01	9.55E-01	8.43E-01	pCi/l
10-05066-02	MBL	BLANK	05/14/10 00:00	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	3.40E-01	4.30E-01	4.30E-01	8.80E-01	pCi/l
10-05066-03	DUP	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	2.39E+00	6.73E-01	6.77E-01	1.18E+00	pCi/l
10-05066-04	DO	SB-2-MW-S DIS	05/11/10 10:35	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	1.76E+00	4.78E-01	4.81E-01	8.21E-01	pCi/l
10-05066-05	TRG	SB-2-MW-S SUS	05/11/10 10:35	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	1.28E-01	4.87E-01	4.87E-01	1.03E+00	pCi/l
10-05066-06	TRG	SB-3-MW-S DIS	05/12/10 10:20	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	9.89E+00	1.64E+00	1.67E+00	2.49E+00	pCi/l
10-05066-07	TRG	SB-3-MW-S SUS	05/12/10 10:20	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	1.18E+00	5.60E-01	5.62E-01	1.08E+00	pCi/l
10-05066-08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	5.16E+00	1.32E+00	1.33E+00	2.33E+00	pCi/l
10-05066-09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	5/14/2010	5/27/2010	10-05066	Radium-228	EPA 904.0 Modified	1.17E+00	5.16E-01	5.17E-01	9.71E-01	pCi/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE**  
SERVICES

**EBERLINE ANALYTICAL CORPORATION**

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

**SECTION V**  
**ANALYTICAL STANDARD**



# National Institute of Standards & Technology

## Certificate

Ba-6  
(f 6a)

### Standard Reference Material 4251C Barium-133 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive barium-133 chloride, non-radioactive barium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of ionization chambers and solid-state gamma-ray spectrometry systems.

#### Radiological Hazard

The SRM ampoule contains barium-133 with a total activity of approximately 2.5 MBq. Barium-133 decays by electron capture and during the decay process X-rays and gamma rays with energies from 4 to 400 keV are emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
October 1994

Thomas E. Gills, Chief  
Standard Reference Materials Program



QUALITY CONTROL PROGRAM  
QCP-009

Rev.8; 11/10/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE SOLUTIONS  
PRIMARY DILUTION RECERTIFICATION  
QCP 009-1

SOLUTION REFERENCE # NIST SRM4251C CURRENT DATE 10/28/2009 0:00  
SOLUTION # Ba-6

Principal Radionuclide <sup>133</sup>Barium Half Life, Years 1.048E+01 Half Life, Days 3.828E+03

Radionuclide <sup>133</sup>Barium Reference Date 9/1/1993 0:00  
Certified Activity                       $\mu\text{Ci}$   
Certified Concentration 1.318E+01  $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.3081</u>	Weight, Grams
Empty Ampoule	<u>4.2582</u>	Weight, Grams
Solution Net	<u>5.0499</u>	Weight, Grams
Total Activity in Ampoule	<u>66.5577</u>	$\mu\text{Ci}$

Chemical Composition of Standard Solution

<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions: Dilution Solvent Used 1M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 66.5577  $\mu\text{Ci}$  Which Equals 1.478E+08 dpm at the date listed above

And after dilution the activity of this solution is 1.478E+05 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 28, 2010

Recertified By *[Signature]*

Date: 10/28/09

Verified & Approved By *[Signature]*

Date: 11/4/09

QC Approval *[Signature]*

Date: 11/4/09



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # **QCP-009-1-A**  
**NIST SRM4251C**

Date **10/28/09**  
Solution # **Ba-6a**

Principal Radionuclide	Half Life, Years	Half Life, Days
<sup>133</sup> Ba	1.048E+01	3.828E+03

Radionuclide of Interest **<sup>133</sup>Ba** Reference Date **9/1/1993 0:00**  
Parent Solution Conc. **1.48E+05** dpm/ml

Chemical Composition of Standard Solution  
**<sup>133</sup>BaCl<sub>2</sub> in 1M HCl**

Dilution Instructions: Dilution Solvent Used **1M HCl**

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution:	<b>25.0000</b> ml	Final Activity Concentration:	<b>3.6950E+03</b> dpm/ml
Total Activity:	<b>3.6950E+06</b> dpm		
Final Volume:	<b>1000.00</b> ml		

**NOTES:**

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: **October 28, 2010**

Recertified By 

Date: **10/28/09**

Verified & Approved By 

Date: **11/4/09**

QC Approval 

Date: **11/4/09**



# CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

<sup>Ra-5</sup>  
QA/QC REVIEWED  
Date 2/8/94 Initials W

Radionuclide: Ra-226  
Half Life: 1600 ± 7 years  
Catalog No.: 7226  
Source No.: 453-26

Customer: TMA EBERLINE  
P.O.No.: VH1888  
Reference Date: February 1 1994 12:00 PST.  
Contained Radioactivity: (Ra-226) 1.001 µCi.  
Contained Radioactivity: (Ra-226) 37.0 kBq.

### Description of Solution

- a. Mass of solution: 5.1864 g (in a 5 ml Flame Sealed Ampoule)
- b. Chemical form: Ra(NO<sub>3</sub>)<sub>2</sub> in 1 N HNO<sub>3</sub>
- c. Carrier content: None added
- d. Density: 1.0318 g/ml @ 20°C.

Radioimpurities None detected (other than daughters)

### Radioactive Daughters

Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

### Radionuclide Concentration

(Ra-226) 0.1929 µCi/g.

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:

Energy peak(s) integrated under: 186 keV.

Branching ratio(s) used: 0.0351 gamma rays per decay.

### Uncertainty of Measurement

- a. Systematic uncertainty in instrument calibration: ±3.4%
- b. Random uncertainty in assay: ±3.1%
- c. Random uncertainty in weighing(s): ±0.2%
- d. Total uncertainty at the 99% confidence level: ±4.6%

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

Ana U. Kuman  
QUALITY CONTROL

Feb. 3, 1994  
Date Signed



# QUALITY CONTROL PROGRAM

MP 009

Rev.8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

## EBERLINE SERVICES - OAK RIDGE LABORATORY

### RADIOACTIVE REFERENCE SOLUTIONS

#### PRIMARY DILUTION RECERTIFICATION

MP 009

SOLUTION REFERENCE # IPL 453-26

CURRENT DATE 12/17/2009 0:00

SOLUTION # Ra-5

Principal Radionuclide

Half Life, Years

Half Life, Days

<sup>226</sup>Radium

1.600E+03

5.844E+05

Radionuclide <sup>226</sup>Radium

Reference Date 2/1/1994 0:00

Certified Activity 1.001E+00  $\mu\text{Ci}$

Certified Concentration             $\mu\text{Ci per gram}$

Ampoule /Solution Gross            Weight, Grams

Empty Ampoule            Weight, Grams

Solution Net            Weight, Grams

Total Activity in Ampoule 1.0010  $\mu\text{Ci}$

#### Chemical Composition of Standard Solution

<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions:

Dilution Solvent Used

1M HNO<sub>3</sub>

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0010  $\mu\text{Ci}$

Which Equals 2.222E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.222E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Diluted By [Signature]

Date: 12/17/2009

Verified & Approved By [Signature]

Date: 11/5/10

QC Approval [Signature]

Date: 11/5/10



QUALITY CONTROL PROGRAM  
MP 009

Rev.8; 11/01/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # <u>MP 009</u> <u>IPL-453-28</u>		Date <u>12/17/2009 0:00</u> <u>Ra-5b</u>
Principal Radionuclide <u><sup>226</sup>Radium</u>	Half Life, Years <u>1.600E+03</u>	Half Life, Days <u>5.844E+05</u>
Radionuclide of Interest <u><sup>226</sup>Radium</u>	Parent Solution Conc. <u>2.22E+03</u> dpm/ml	Reference Date <u>2/1/1994 0:00</u>
Chemical Composition of Standard Solution <u><sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub></u>		

Dilution Instructions: Dilution Solvent Used 1M HNO<sub>3</sub>

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	<u>20.0000</u> ml	Final Activity Concentration:	<u>4.4440E+01</u> dpm/ml
Total Activity:	<u>4.4440E+04</u> dpm	This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.	
Final Volume:	<u>1000.00</u> ml		

NOTES:

Expiration Date: December 17, 2010

Recertified By [Signature] Date: 12/17/2009 0:00  
Verified & Approved By [Signature] Date: 1/15/10  
QC Approval [Signature] Date: 1/15/10

# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

61680-416

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	3.586 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	June 4, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.1%
SYSTEMATIC:	3.6%
RANDOM:	1.5%

RECEIVED  
 DIRECTOR  
 DATE 6/11/01 INITIALS *PK*

\*99% Confidence Level

Impurities:  $\gamma$ -impurities (other than decay products) <0.1%5.00872 grams 0.1M HCl solution with 50  $\mu$ g/g Ba carrier.

P O NUMBER 00008864, Item 1

SOURCE PREPARED BY:

*M. D. Currie*  
 M. D. Currie, Radiochemist

Q A APPROVED:

*ACM* 6/8/01



QUALITY CONTROL PROGRAM  
MP-009

Rev.8; 1/10/03

Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE SOLUTIONS  
PRIMARY DILUTION RECERTIFICATION  
MP 009

SOLUTION REFERENCE # Analytics 61680-416 CURRENT DATE 12/17/2009 0:00  
SOLUTION # Ra-10

Principal Radionuclide <sup>228</sup>Ra Half Life, Years 5.750E+00 Half Life, Days 2.100E+03

Radionuclide <sup>228</sup>Ra Reference Date 6/4/2001 0:00  
Certified Activity 9.692E-02  $\mu\text{Ci}$   
Certified Concentration                       $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.4982</u>	Weight, Grams
Empty Ampoule	<u>4.4895</u>	Weight, Grams
Solution Net	<u>5.0087</u>	Weight, Grams
Total Activity in Ampoule	<u>0.0969</u>	$\mu\text{Ci}$

Chemical Composition of Standard Solution  
<sup>228</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 0.5 M HCl

Dilution Instructions: Dilution Solvent Used 0.5 M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.0969  $\mu\text{Ci}$  Which Equals 2.152E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.152E+02 dpm/ml This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Recertified By [Signature] Date: 12/17/2009 0:00

Verified & Approved By [Signature] Date: 1/4/10

QC Approval [Signature] Date: 1/5/10

ANALYTICS

QA/QC REVIEWED  
Date 4/30/96 Initials WT

Am-4

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677  
Fax (404) 352-2837

# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

52094-416

Am-241 10 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Am-241
ACTIVITY (dps):	1.975 E+05
HALF-LIFE:	432.2 years
CALIBRATION DATE:	March 19, 1996 12:00 EST
TOTAL ERROR:	3.0%
SYSTEMATIC ERROR:	2.37%
RANDOM ERROR:	0.63%

10.01177 grams of solution 1M HCl.

P O NUMBER OR3830, Item 1

SOURCE PREPARED BY:

Kare O'Brien Beverly  
K. O. Beverly, Radiochemist

Q A APPROVED:

D.M. [Signature] 4-26-96



### QUALITY CONTROL PROGRAM

MP-009

Rev. 8; 1/10/03

Title: Radioactive Reference Standards Solutions & Records

## EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE STANDARD SOLUTIONS SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference #	Analytics 52094-416	Date	11/9/2009 0:00
Principal Radionuclide		Solution #	A/B-7 (alpha)
<sup>241</sup> Americium	Half Life, Years	Half Life, Days	
	4.322E+02	1.579E+05	
Radionuclide of Interest	<sup>241</sup> Am	Reference Date	3/19/1996 0:00
Parent Solution Conc.	1.19E+04 dpm/ml		
Chemical Composition of Standard Solution			
<sup>241</sup> AmCl <sub>3</sub> in 1M HCL			

Dilution Instructions: Dilution Solvent Used 1 M HNO<sub>3</sub>

### SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	60.0000 ml	Final Activity Concentration:	7.1100E+02 dpm/ml
Total Activity:	7.1100E+05 dpm		
Final Volume:	1000.00 ml		

#### NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: November 9, 2010

Recertified By: 

Date: 11/9/09

Verified & Approved By: 

Date: 12/11/09

QC Approval: 

Date: 12/11/09



# National Institute of Standards & Technology

## Certificate

### Standard Reference Material 4234A Strontium-90 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive strontium-90 chloride, non-radioactive strontium chloride, non-radioactive yttrium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

#### Radiological Hazard

The SRM ampoule contains strontium-90 with a total activity of approximately 13 MBq. Strontium-90 decays by beta-particle emission to yttrium-90, which also decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. The beta particles emitted from strontium-90 and yttrium-90 produce bremsstrahlung photons with energies up to 2 MeV. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least March 2005.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
May 1995 (Text only revised November 1997)

Thomas E. Gills, Chief  
Standard Reference Materials Program





QUALITY CONTROL PROGRAM  
QCP-009

Rev.7: 9/29/99  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference # <u>QCP-009-1-A</u>		Date	<u>11/9/2009 0:00</u>
Solution # <u>NIST 4234A</u>		Solution #	<u>A/B-7 (beta)</u>
Principal Radionuclide	Half Life, Years	Half Life, Days	
<u><sup>90</sup>Sr</u>	<u>2.878E+01</u>	<u>1.051E+04</u>	
Radionuclide of Interest	Parent Solution Conc.	Reference Date	
<u><sup>90</sup>Sr</u>	<u>1.52E+06</u> dpm/ml	<u>3/13/1995 0:00</u>	
The beta activity of solution reflects the original <sup>90</sup> Sr concentration and an equal concentration of <sup>90</sup> Yttrium.			
Chemical Composition of Standard Solution			
<u><sup>90</sup>SrCl<sub>2</sub> in 1 M HCl</u>			

Dilution Instructions: Dilution Solvent Used 1 M HNO<sub>3</sub>

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 0.5000 ml  
Total Activity: 7.5764E+05 dpm  
Final Volume: 1000.00 ml  
Final Activity Concentration: 7.5764E+02 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: November 9, 2010

Recertified By: [Signature]

Date: 11/09/09

Verified & Approved By: [Signature]

Date: 12/11/09

QC Approval: [Signature]

Date: 12/11/09

**SECTION VI**  
**QUALITY CONTROL SAMPLE RESULTS SUMMARY**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05066</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Assoc., Inc.</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	1.15	92.53%	13.32%	100.00%	4.60%	1.02E+01	4.70E-01	9.45E+00	1.26E+00	Ra-5b	4.41E+01	4.60E+00	5.14E-01

**Matrix Spike**

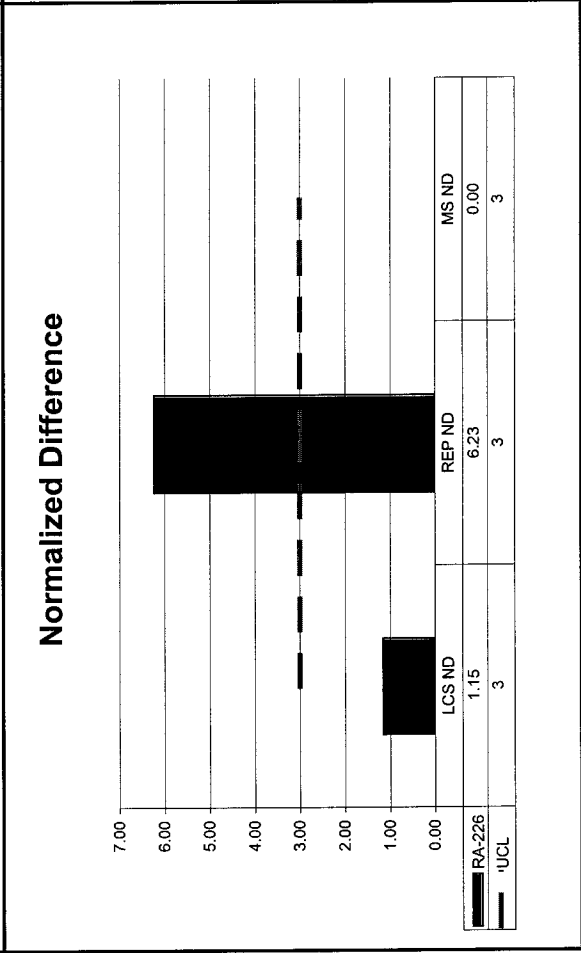
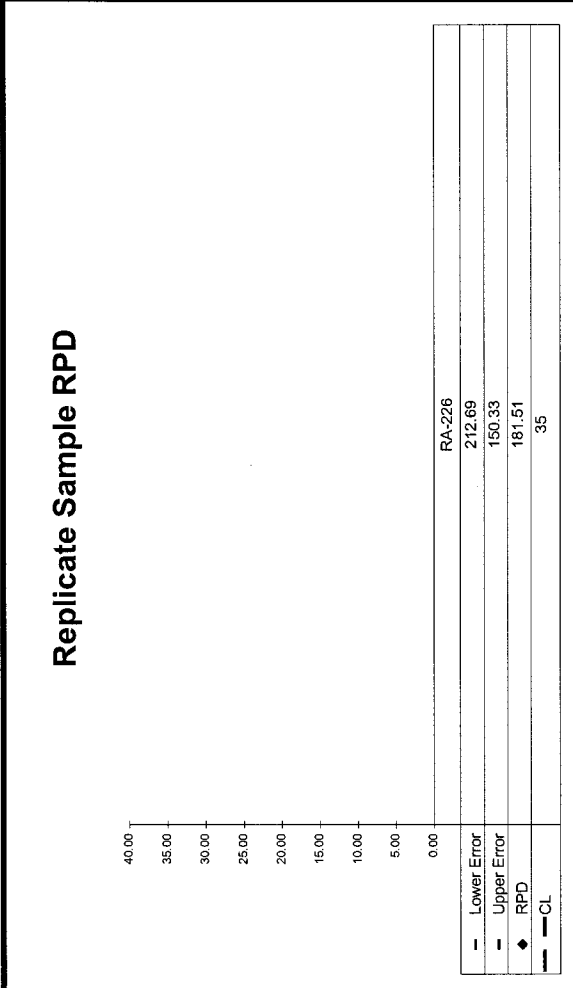
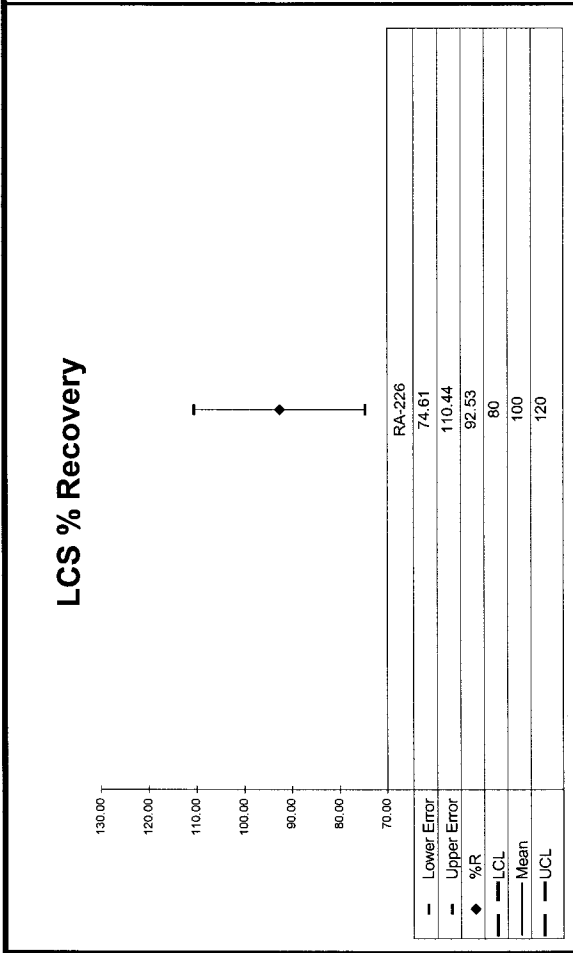
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	6.23	181.51	2.27E+00	6.61E-01	1.10E-01	1.56E-01	0.93	OK	OK	OK	INV	INV	INV

**QC Summary**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05066</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Asoc.,Inc.</b>



**No Matrix Spike**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05066</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Asoc., Inc.</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	7.37	75.43%	7.46%	100.00%	5.10%	1.70E+01	8.66E-01	1.28E+01	9.55E-01	Ra-10	7.32E+01	5.10E+00	5.15E-01

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

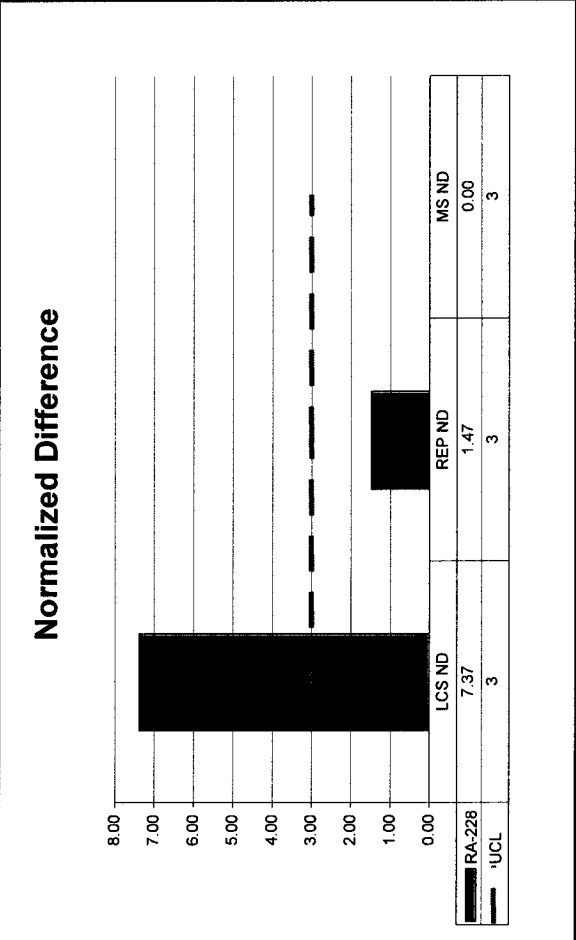
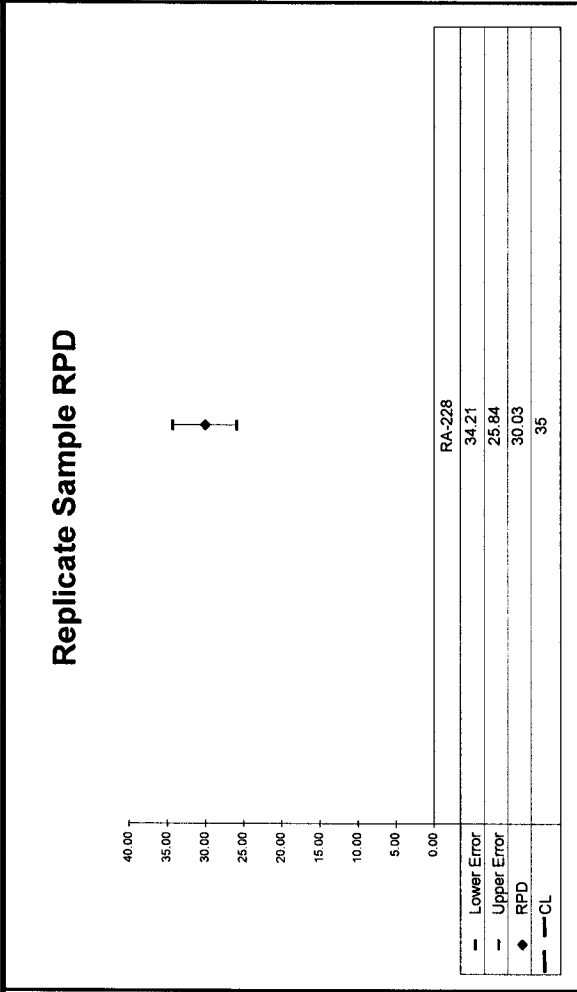
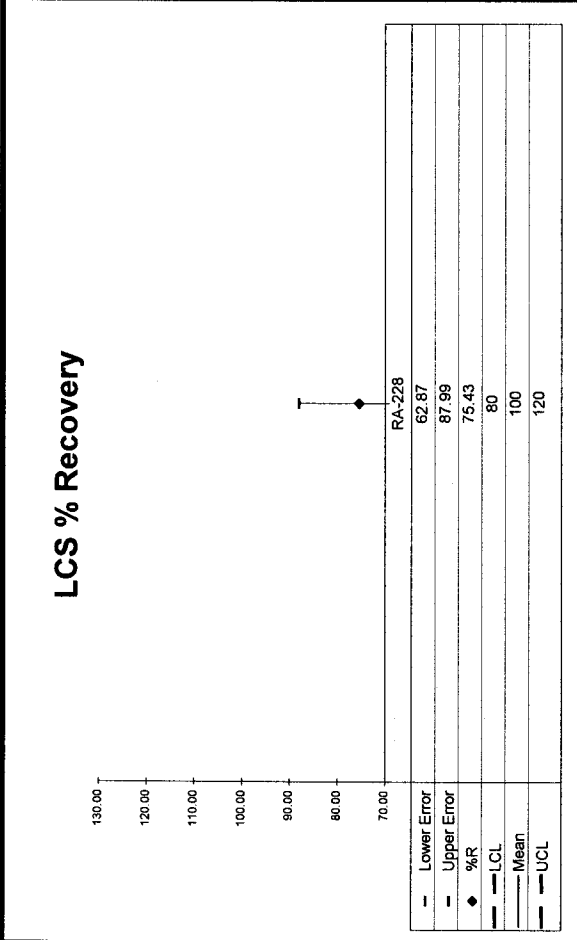
**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	1.47	30.03	1.76E+00	4.81E-01	2.39E+00	6.77E-01	0.75	OK	INV	INV	INV	INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	1.47	30.03	1.76E+00	4.81E-01	2.39E+00	6.77E-01	0.75	OK	INV	INV	INV	INV	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05066</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Assoc.,Inc.</b>



**No Matrix Spike**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05066</b>	<b>GaGbt_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Asoc., Inc.</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
GROSS ALPHA_TH	6.95	86.95%	2.73%	100.00%	4.30%	3.17E+02	1.36E+01	2.76E+02	7.52E+00	A/B-07	6.95E+02	4.30E+00	1.01E+00
GROSS BETA_SR	1.29	102.04%	2.37%	100.00%	3.00%	2.39E+02	7.18E+00	2.44E+02	5.78E+00	A/B-07	5.24E+02	3.00E+00	1.01E+00

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

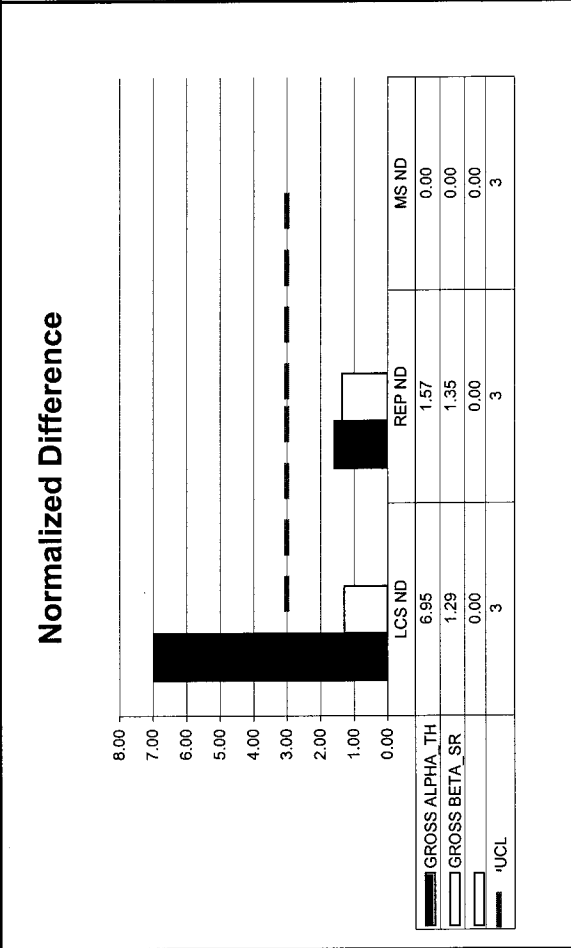
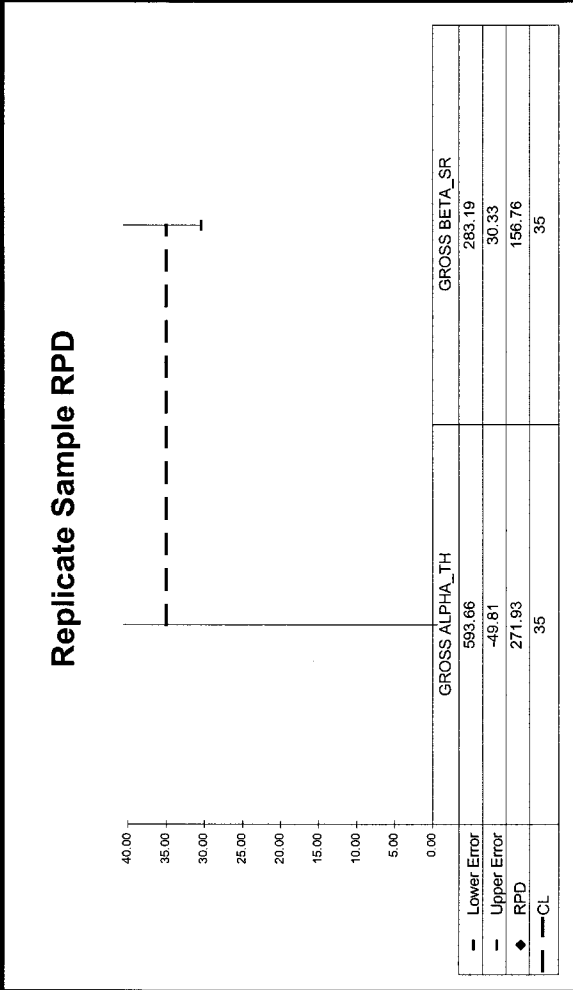
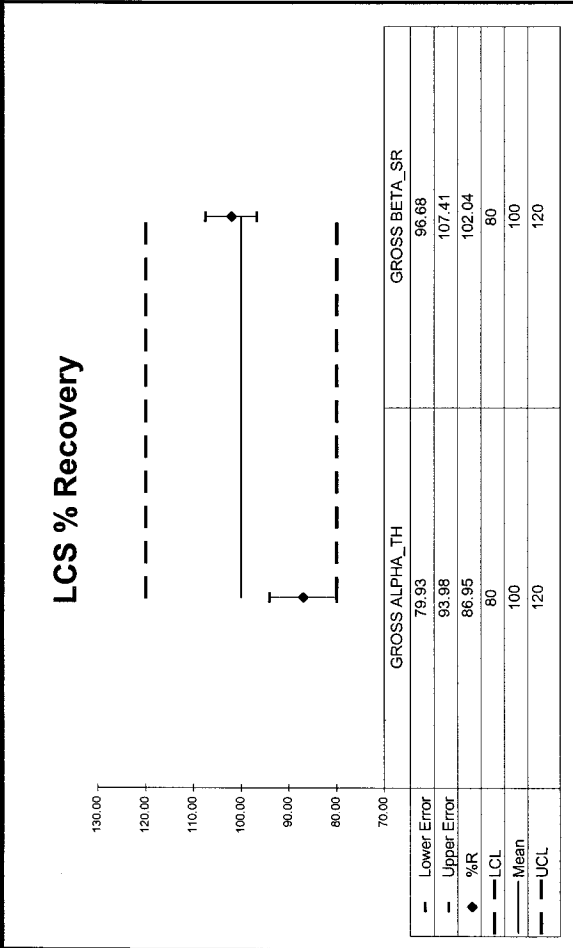
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	1.57	271.93	6.33E+00	5.37E+00	-9.65E-01	7.32E+00	0.87	OK	INV			INV	OK
GROSS BETA_SR	1.35	156.76	1.10E+00	7.84E+00	9.04E+00	8.52E+00	1.02	OK	OK			INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	1.57	271.93	6.33E+00	5.37E+00	-9.65E-01	7.32E+00	0.87	OK	INV			INV	OK
GROSS BETA_SR	1.35	156.76	1.10E+00	7.84E+00	9.04E+00	8.52E+00	1.02	OK	OK			INV	OK



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05066</b>	<b>GaGbT_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Asoc.,Inc.</b>



**No Matrix Spike**




**SECTION VII**  
**LABORATORY TECHNICIAN'S NOTES**

**RA-226 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05066
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	05/17/10 06:46	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JB*  
*5/17/10*

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05066
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	05/17/10 06:46	PREP	JBARNARD	ALIQUTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/17/10 14:37	CHEM	TSMITH	Dissolved samples from prep in EDTA.
3	05/18/10 12:14	CHEM	TSMITH	Followed steps 12.2 to 12.8 in AP-006 rev. 9 . ( Sringe filtered samples. Precipitated and filtered samples, obtained final weights, and took to count room )

*S-18-10  
JM*



Reagents Used in an Analysis

Internal Work Order

10-05066

Analysis Code

Run

Ra226

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	5/17/2010
009343D04	Ammonium Sulfate	200 mg/ml	JBARNARD	5/17/2010
008327D07	Barium Carrier	1 mg/ml	JBARNARD	5/17/2010
008973D12	Lead Carrier	166 mg/ml	JBARNARD	5/17/2010
009536P	Nitric Acid	Reagent Grade	JBARNARD	5/17/2010
009472P	Perchloric Acid	Reagent Grade	JBARNARD	5/17/2010
006799P	Sulfuric Acid	Reagent Grade	JBARNARD	5/17/2010
009662S	EDTA	0.25M	TSMITH	5/17/2010
008735P	Acetic Acid	Reagent Grade	TSMITH	5/18/2010
009323D03	Ammonium Sulfate	200 mg/ml	TSMITH	5/18/2010

# Alpha #3

Date	Sample #	Client	Load Time	CT Time	Analysis	Tech
5/24/10	1005082A(1-2)	Energy Solvts	1318	2hr 50 min	TH	ICB
5/24/10	1005082A(1)	Energy Solvts	1319	2hr 50 min	ULL	ICB
5/24/10	1005089A(3,5)	Sevenson	1640	2hr 50 min	ULL	ICB
5/24/10	1005082A(1-2)	Energy Solvts	1643	2hr 50 min	Ra6	ICB
5/24/10	1005092A(1-4)	Uni Tech Lab	1644	2hr 50 min	ULL	ICB
5/25/10	Daily Pulvers	Lab	0524	10 min	NA	KM
5/25/10	1005085A(1-7)	Aecom	0824	2hr 50 min	Ra6	KM
5/25/10	1005066A(1-7)	MPA	1059	2hr 50 min	Ra6	KM
5/25/10	1005066A(8-9)	MPA	1135	2hr 50 min	Ra6	KM
5/25/10	1005073A(1-5)	Weston	1137	2hr 50 min	ULL	KM


**RA-228 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05066
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	05/17/10 06:46	PREP	JBARNARD	ALIQOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JB*  
*5/17/10*



 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05066
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	05/17/10 06:46	PREP	JBARNARD	ALIQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/26/10 14:27	CHEM	TSMITH	Placed filters from count room into labeled centrifuge tubes. Added EDTA to samples and swirled.
3	05/27/10 10:25	CHEM	TSMITH	Followed steps 12.2 to 12.9 in AP-007 rev. 14 . ( Chemical cleanup fro Ra 228 ) Followed steps 12.10 to 12.18 in AP-007 rev. 14 . ( Precipitated samples, centrifuged, and discarded supernate. Dissolved precip, precipitated samples, hot bathed, centrifuged, and discarded supernate. Dissolved precip, precipitated and filterd samples, obtained final weights, covered with aluminum foil, and took to count room )

52710  
 TSM



Reagents Used in an Analysis

Internal Work Order

10-05066

Analysis Code

Run

Ra228

1


Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	5/17/2010
009343D04	Ammonium Sulfate	200 mg/ml	JBARNARD	5/17/2010
008327D07	Barium Carrier	1 mg/ml	JBARNARD	5/17/2010
008973D12	Lead Carrier	166 mg/ml	JBARNARD	5/17/2010
009536P	Nitric Acid	Reagent Grade	JBARNARD	5/17/2010
009472P	Perchloric Acid	Reagent Grade	JBARNARD	5/17/2010
006799P	Sulfuric Acid	Reagent Grade	JBARNARD	5/17/2010
009713S	EDTA	0.25M	TSMITH	5/26/2010
008974D03	Ammonium Oxalate	5%	TSMITH	5/27/2010
009040D12	Ammonium Sulfide	2%	TSMITH	5/27/2010
007701D11	Lead Carrier	1.5 mg/ml	TSMITH	5/27/2010
009327D04	Nitric Acid	1N	TSMITH	5/27/2010
009424D02	Nitric Acid	6N	TSMITH	5/27/2010
009621P	Nitric Acid	Reagent Grade	TSMITH	5/27/2010
008736D16	Sodium Hydroxide	10M	TSMITH	5/27/2010
008736D17	Sodium Hydroxide	10M	TSMITH	5/27/2010
008736D18	Sodium Hydroxide	18M	TSMITH	5/27/2010
009625S	Yttrium Carrier	9 mg/ml	TSMITH	5/27/2010

# LB4110 Agua

59


Date	Sample #	Client	Load Time	CT TIME	Analysis	Tech
5/21/10	1005067AB(16-19)	MP&A	1227	2hrs	αβ	ICB
5/21/10	1005067AB(1)	MP&A	1227	30min	αβ	ICB
5/21/10	1005068AB(16-19)	MP&A	1440	2hrs	αβ	ICB
5/21/10	1005068AB(1)	MP&A	1440	30min	αβ	ICB
5/22/10	Weekly Bkgd	Lab	0901	8 hrs	αβ	ICB
5/24/10	Daily Bkgd/QC	Lab	0552/0511	1hr/30min	αβ	KM
5/24/10	1005070AB(1-3,5)	NYC Dept. Env.	1010	15min	αβ	KM
5/24/10	1005070AB(1)	Louisiana Energy	1011	30min	αβ	KM
5/24/10	1005070AB(14)	NYC Dept. Env.	1039	15min	αβ	KM
5/24/10	1005089AB(2-5)	SES	1105	2hrs	αβ	KM
5/24/10	1005089AB(1)	SES	1106	30min	αβ	KM
5/24/10	100501254(2-7,6)	BSC	1159	2hrs	Sr90/Y	ICB
5/24/10	100501254(1)	BSC	1159	30min	Sr90/Y	ICB
5/24/10	1005032AB(2-12)	TDX	1445	2hrs	αβ	ICB
5/24/10	1005032AB(1)	TDX	1446	30min	αβ	ICB
5/25/10	1005044EA(15)	M&P	1024	2hrs	Ra8	KM
5/25/10	100508912A(1-3,5)	SES	1025	2hrs	Ra8	KM
5/25/10	1005048PB(2-4)	BJC	<del>1025</del> 1026	4hrs	Pb	KM
5/25/10	1005048PB(1)	BJC	1026	30min	Pb	KM
5/25/10	1005111AB(1-4)	BJC	1140	1 hr	αβ	ICB
5/26/10	Daily Bkgd/QC	Lab	0554/0512	1hr/30min	αβ	KM
5/26/10	1005046RA(2-13)	MP&A	1209	2hrs	Ra8	ICB
5/26/10	1005046RA(1)	MP&A	1210	30min	Ra8	ICB
5/26/10	1005116AB(2-3)	ALMAC	1355	2hrs	αβ	ICB
5/26/10	1005074RA(1-4)	BJC	1446	2hrs	Ra8/Ei	ICB
5/26/10	1005114AB(2-5)	BJC	1457	2hrs	αβ	ICB
5/26/10	1005110ABA(4)	ALMAC	1604	2hrs	αβ	ICB
5/26/10	1005048CL(13,5)	BJC	1609	30min	CL36	ICB
5/27/10	Daily Bkgd/QC	Lab	0513/0513	1hr/30min	αβ	ICB
5/27/10	1005124AB(1-3,5-8)	Clean Harbors	0937	15min	αβ	ICB
5/27/10	1005124AB(1)	Clean Harbors	0954	15min	αβ	ICB
5/27/10	1005060RA(1-9)	M&P	1107	2hrs	Ra8	KM

**ALPHA/BETA NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05066
		Analysis Code	GaGbT_ThSr
		Run Number	1

#	Date	Dept	User	Notes
1	05/20/10 14:02	PREP	BLESTER	Determined total dissolved solids concentration for maximum aliquot volume. Each fraction was suction filtered through a pre-weighed .45 mm filter to separate the suspended from dissolved solids. The filter was dried, reweighed, and glued to planchets. The dissolved solids fractions were placed in beakers on a hot plate. Once dry, the dissolved solids were transferred to a pre-weighed planchet under a heat lamp. Spike and blank fractions were prepared. The samples were flamed, reweighed, and submitted to the count room.

*Brian P. Zetter*  
 5.20.2010

 <p><b>Reagents Used in an Analysis</b></p>		Internal Work Order		
		10-05066		
		Analysis Code		Run
		GaGbT_ThSr		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
009424D05	Nitric Acid	3N	BLESTER	5/20/2010

# LB4110 Red

Date	Sample #	Client	Load Time	CT Time	Analysis	Tech
5/17/10	1004069B(1G,143)	Eberline	1021	2 hrs.	RaP	KM
5/17/10	1005008AB(1)	MWRD	1435	30 mins	αβ	KB
5/17/10	1005008AB(2-15)	MWRD	1722	8 hrs	αβ	ICB
5/18/10	Daily Bldg/QC	Lab	0511/0620	1hr/30min	αβ	KM
5/18/10	1005035NP(1-4)	BTC	0961	10 min.	NP	KM
5/18/10	1005075AB(2-4)	BTC	0951	1 hr.	αβ	KM
5/18/10	1005075AB(1)	BTC	0951	30 min	αβ	KM
5/18/10	1005055RA(1-4)	Univ. Lab.	1050	2 hrs	RaP	KM
5/18/10	1005028RA(1-4)	North Dakota	1051	2 hrs	RaP	KM
5/18/10	1005027AB(1)	Bionomics	1211	30 min.	αβ	KM
5/18/10	1005056AAB(1-4-13)	MWRD	1807	8 hrs	αβ	KB
5/18/10	1005057AB(2-9)	MWRD	1807	8 hrs	αβ	ICB
5/19/10	Daily Bldg/QC	Lab	0509/0617	1hr/30min	αβ	KM
5/19/10	1005055AB(1)	MWRD	0844	30 min	αβ	KM
5/19/10	1005028NP(1-4)	BTC	0933	10 min.	NP	KM
5/19/10	1005026Ph(2-4)	BTC	1057	4 hrs	Pbcp	ICB
5/19/10	1005026Ph(1)	BTC	1059	30 min.	Pb <sup>200</sup>	KB
5/19/10	100414654(2-4,6)	BSC	1123	2 hrs	Sr <sup>90</sup> /Y	KB
5/19/10	100414654(1)	BSC	1124	30 min.	Sr <sup>90</sup> /Y	KB
5/19/10	1005032SR(1-3,19)	TDX	1223	2 hrs	TJ SR	KB
5/19/10	1005044AB(2-15)	MPFA	1517	2 hrs	αβ	KB
5/19/10	1005058AB(2-15)	MWRD	1807	8 hrs	αβ	ICB
5/20/10	Daily Bldg/QC	Lab	0511/0619	1hr/30min	αβ	KM
5/20/10	1005066AB(2-9)	MPFA	1418	2 hrs	αβ	KB
5/20/10	1005066AB(1)	MPFA	1419	30 min	αβ	KB

**SECTION VIII**  
**ANALYTICAL DATA (RADIUM-226)**



Work Order	10-05066
Analysis Code	Ra226
Run	1
Date Received	5/14/2010
Lab Deadline	5/28/2010
Client	Michael Pisani & Assoc., Inc.
Project	ENV
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 903.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-6a
Tracer Act (dpm/g)	1225.659
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/14/10 00:00	1.0000E+00
02	MBL	BLANK		05/14/10 00:00	1.0000E+00
03	DUP	SB-2-MW-S DIS	19	05/11/10 10:35	1.0000E+00
04	DO	SB-2-MW-S DIS	19	05/11/10 10:35	1.0000E+00
05	TRG	SB-2-MW-S SUS	19	05/11/10 10:35	1.0000E+00
06	TRG	SB-3-MW-S DIS	42	05/12/10 10:20	5.0000E-01
07	TRG	SB-3-MW-S SUS	42	05/12/10 10:20	1.0000E+00
08	TRG	SB-3-MW-SD DIS	35	05/12/10 10:20	5.0000E-01
09	TRG	SB-3-MW-SD SUS	35	05/12/10 10:20	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8223	1007.9	464.2	102.25		0.0227	0.0290	0.0063		102.25	2.27	1.00
02	MBL	0.8185	1003.2	433.9	96.02		0.0227	0.0289	0.0062		96.02	2.23	1.00
03	DUP	0.8105	993.4	337.3	75.38		0.0220	0.0321	0.0101		75.38	3.31	1.00
04	DO	0.8091	991.7	449.8	100.69		0.0221	0.0325	0.0104		100.69	3.40	1.00
05	TRG	0.8088	991.3	419.3	93.90		0.0223	0.0288	0.0065		93.90	2.34	1.00
06	TRG	0.8075	989.7	323.4	72.54		0.0227	0.0345	0.0118		72.54	3.96	1.00
07	TRG	0.8095	992.2	406.6	90.98		0.0228	0.0291	0.0063		90.98	2.27	1.00
08	TRG	0.8143	998.1	380.3	84.59		0.0228	0.0327	0.0099		84.59	3.25	1.00
09	TRG	0.8099	992.7	393.5	88.00		0.0229	0.0290	0.0061		88.00	2.20	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
02	MBL			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
03	DUP			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
04	DO			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
05	TRG			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
06	TRG			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
07	TRG			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
08	TRG			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		
09	TRG			05/17/10 11:06	JBARNARD	05/18/10 10:51	TSMITH		

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

	<b>Run</b>	<b>1</b>
<b>Eberline Services Work Order</b>	<b>Analysis Code</b>	<b>Ra226</b>
<b>10-05066</b>		<b>Ra226</b>
<b>Michael Pisani &amp; Assoc., Inc.</b>		

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	9.45E+00	1.26E+00	1.39E-01	1.02E+01	92.53	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	5.87E-02	8.65E-02	1.39E-01					OK	INV
03	RA-226	DUP	SB-2-MW-S DIS	pCi/l	1.10E-01	1.56E-01	1.46E-01				INV	OK	
04	RA-226	DO	SB-2-MW-S DIS	pCi/l	2.27E+00	6.61E-01	2.07E-01					OK	
05	RA-226	TRG	SB-2-MW-S SUS	pCi/l	1.32E-01	1.35E-01	1.54E-01					OK	
06	RA-226	TRG	SB-3-MW-S DIS	pCi/l	2.26E+01	4.14E+00	4.28E-01					OK	
07	RA-226	TRG	SB-3-MW-S SUS	pCi/l	1.23E+00	4.32E-01	2.17E-01					OK	
08	RA-226	TRG	SB-3-MW-SD DIS	pCi/l	1.22E+01	2.39E+00	4.68E-01					OK	
09	RA-226	TRG	SB-3-MW-SD SUS	pCi/l	1.26E+00	4.21E-01	2.17E-01					OK	

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05066-Ra226-1**

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	05/14/10 00:00	1.00E+00	100.00		102.25		5/18/2010 10:51	
02	RA-226	MBL	05/14/10 00:00	1.00E+00	96.02		96.02		5/18/2010 10:51	
03	RA-226	DUP	05/11/10 10:35	1.00E+00	75.38		75.38		5/18/2010 10:51	
04	RA-226	DO	05/11/10 10:35	1.00E+00	100.00		100.69		5/18/2010 10:51	
05	RA-226	TRG	05/11/10 10:35	1.00E+00	93.90		93.90		5/18/2010 10:51	
06	RA-226	TRG	05/12/10 10:20	5.00E-01	72.54		72.54		5/18/2010 10:51	
07	RA-226	TRG	05/12/10 10:20	1.00E+00	90.98		90.98		5/18/2010 10:51	
08	RA-226	TRG	05/12/10 10:20	5.00E-01	84.59		84.59		5/18/2010 10:51	
09	RA-226	TRG	05/12/10 10:20	1.00E+00	88.00		88.00		5/18/2010 10:51	

Client	Michael Pisani & Assoc., Inc.	
Eberline Services Work Order	10-05066	
Analysis Code	Ra226	
Run	1	



### Preliminary Data Report & Analytical Calculations **Work Order: 10-05066-Ra226-1**

	Run	1	Ra226	10-05066	Client Michael Pisani & Assoc, Inc.
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Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	05/25/10 10:57		A_Spec	39	170	7.06 E+02	1.00 E-03	19.8
02	RA-226	MBL	05/25/10 10:57		A_Spec	40	170	4.29 E+00	1.00 E-03	20.2
03	RA-226	DUP	05/25/10 10:57		A_Spec	43	170	6.62 E+00	0.00 E+00	21.2
04	RA-226	DO	05/25/10 10:58		A_Spec	45	170	1.70 E+02	1.00 E-03	19.9
05	RA-226	TRG	05/25/10 10:58		A_Spec	46	170	9.19 E+00	1.00 E-03	19.6
06	RA-226	TRG	05/25/10 10:58		A_Spec	47	170	5.54 E+02	0.00 E+00	17.9
07	RA-226	TRG	05/25/10 10:59		A_Spec	48	170	7.67 E+01	3.00 E-03	18.2
08	RA-226	TRG	05/25/10 11:35		A_Spec	33	170	3.87 E+02	1.00 E-03	19.9
09	RA-226	TRG	05/25/10 11:35		A_Spec	34	170	8.29 E+01	4.00 E-03	19.8

2.5

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/14/10 00:00	1.0000	0.8223	1007.8594	464.2000	102.25	2.27	1.00
02	MBL	BLANK	05/14/10 00:00	1.0000	0.8185	1003.2019	433.9000	96.02	2.23	1.00
03	DUP	SB-2-MW-S DIS	05/11/10 10:35	1.0000	0.8105	993.3966	337.3000	115.38	3.31	1.00
04	DO	SB-2-MW-S DIS	05/11/10 10:35	1.0000	0.8091	991.6807	449.8000	100.69	3.40	1.00
05	TRG	SB-2-MW-S SUS	05/11/10 10:35	1.0000	0.8088	991.3130	419.3000	93.90	2.34	1.00
06	TRG	SB-3-MW-S DIS	05/12/10 10:20	0.5000	0.8075	989.7196	323.4000	112.54	3.96	1.00
07	TRG	SB-3-MW-S SUS	05/12/10 10:20	1.0000	0.8095	992.1710	406.6000	90.98	2.27	1.00
08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	0.5000	0.8143	998.0541	380.3000	84.59	3.25	1.00
09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	1.0000	0.8099	992.6612	393.5000	88.00	2.20	1.00

3944  
 48  
 03  
 04

# Spike and Tracer Worksheet

Internal Work Order		Run		Analysis Code		Date		Technician		Technician Initials		Witness Initials	
<b>10-05066</b>		<b>1</b>		<b>Ra226</b>		<b>5/17/2010 11:05</b>		<b>JBARNARD</b>					
LCS & Matrix Spikes													
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	LCSD Known pCi	MSD Added pCi	Error Estimate
Ra-226	Ra-5b	44.128	5/17/2010	0.500	0.5137				10.21	0.00	0.00	0.00	0.000
													0.000

Tracers														
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes							
01	Ba-133	Ba-6a	1225.659	5/17/2010	0.8223	0.8300	Tracer							LCS
02	Ba-133	Ba-6a	1225.659	5/17/2010	0.8185	0.8300	0.8223 g							0.5137 g
03	Ba-133	Ba-6a	1225.659	5/17/2010	0.8105	0.8300	0.8185 g							0.5151 g
04	Ba-133	Ba-6a	1225.659	5/17/2010	0.8091	0.8300	-0.8105 g							
05	Ba-133	Ba-6a	1225.659	5/17/2010	0.8088	0.8300	-0.8091 g							
06	Ba-133	Ba-6a	1225.659	5/17/2010	0.8075	0.8300	-0.8088 g							
07	Ba-133	Ba-6a	1225.659	5/17/2010	0.8095	0.8300	-0.8075 g							
08	Ba-133	Ba-6a	1225.659	5/17/2010	0.8143	0.8300	-0.8095 g							
09	Ba-133	Ba-6a	1225.659	5/17/2010	0.8099	0.8300	-0.8143 g							
							-0.8099 g							
							Matrix Spike							



# Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
<b>10-05066</b>	<b>1</b>	<b>Ra226</b>	<b>liters</b>	<b>5/28/2010</b>	<b>TSMITH</b>

Lab Fraction	Michael Pisani & Assoc., Inc.		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID		Type		Ratio Post/Pre		No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS		LCS						1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK		MBL						1.00E+00	1.0000E+00	1.0000E+00				
03	SB-2-MW-S DIS		DUP						1.00E+00	1.0000E+00	1.0000E+00				
04	SB-2-MW-S DIS		DO						1.00E+00	1.0000E+00	1.0000E+00				
05	SB-2-MW-S SUS		TRG						1.00E+00	1.0000E+00	1.0000E+00				
06	SB-3-MW-S DIS		TRG						1.00E+00	5.0000E-01	5.0000E-01				
07	SB-3-MW-S SUS		TRG						1.00E+00	1.0000E+00	1.0000E+00				
08	SB-3-MW-SD DIS		TRG						1.00E+00	5.0000E-01	5.0000E-01				
09	SB-3-MW-SD SUS		TRG						1.00E+00	1.0000E+00	1.0000E+00				

Comments

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05066</b>	<b>1</b>	<b>Ra226</b>			<b>TSMITH</b>

TRetec Fraction	Client ID		Sample Type	Carrier Added (ml)	Filter Data			Carrier Net (g)	Gravimetric % Recovery
	Michael Pisani & Asoc., Inc.	Asoc., Inc.			Filter Tare (g)	Filter Final (g)	Filter Net (g)		
01	LCS		LCS		0.0227	0.0290	0.0063		
02	BLANK		MBL		0.0227	0.0289	0.0062		
03	DUP		DUP		0.0220	0.0321	0.0101		
04	SB-2-MW-S DIS		DO		0.0221	0.0325	0.0104		
05	SB-2-MW-S SUS		TRG		0.0223	0.0288	0.0065		
06	SB-3-MW-S DIS		TRG		0.0227	0.0345	0.0118		
07	SB-3-MW-S SUS		TRG		0.0228	0.0291	0.0063		
08	SB-3-MW-SD DIS		TRG		0.0228	0.0327	0.0099		
09	SB-3-MW-SD SUS		TRG		0.0229	0.0290	0.0061		

Technician: *TSM* Date: 5/18/10

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
26-MAY-2010 11:00:14

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_C:C\_1005066A-RA\$01\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 01  
SAMPLE DATE: 25-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SPIKE \* DETECTOR NUMBER: 039  
ACQ DATE: 25-MAY-2010 10:57 \* AVERAGE EFFICIENCY: 19.79%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 100.00%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: MANUAL  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:05 \* EFF CAL DATE: 18-APR-2010 11:15  
BKG FILENAME: B\_039\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.27  
\*

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

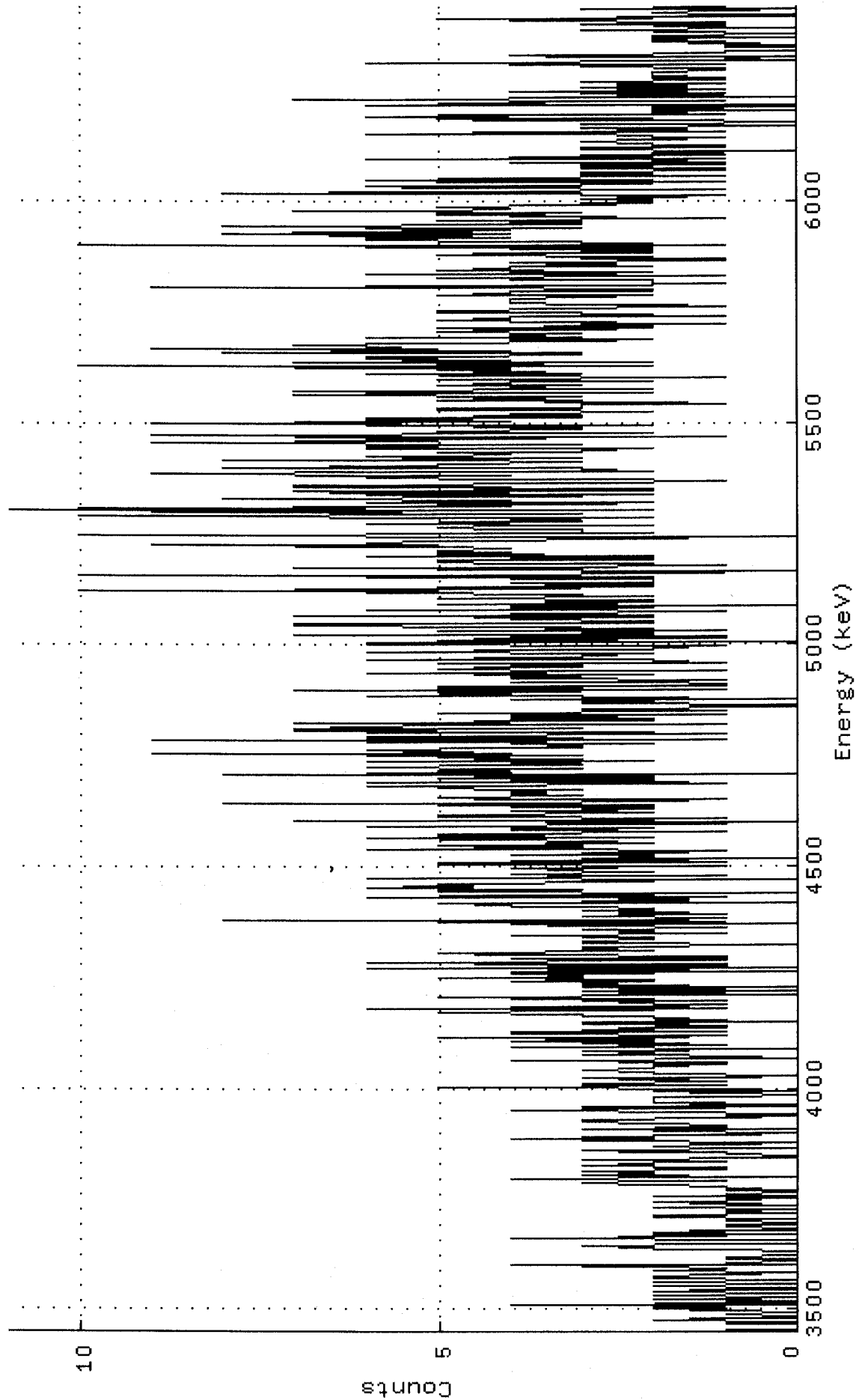
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	1434.47	0.17	100.0	1.921E+01	2.031E+00	1.388E-01
RN-222	5490.0	1706.87	0.17	99.9	2.287E+01	2.307E+00	1.389E-01
RA-226	4785.0	705.80	0.17	100.0	9.448E+00	1.258E+00	1.388E-01

\*\*\*\*\*

Alan Mezley  
Analyst  
5/27/10  
Date

Alan Mezley  
Reviewer  
5/27/10  
Date

Spectrum : DKA100:[ALPHA:ALUSR:ARCHIVE.C]C\_1005066A-RA\$01\_RA.CNF;2  
Title : 039  
Sample Title: SPIKE  
Start Time: 25-MAY-2010 10:57 Sample Time: 25-MAY-2010 00:00 Energy Offset: 3.43934E+03  
Real Time : 0 02:50:00.40 Sample ID : 01 Energy Slope : 3.13485E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -2.06058E-04



Channel Contents for ND\_AMS\_ARCHIVE\_C:C\_1005066A-RA\$01\_RA

Channel

1:	1	0	0	1	0	0	0	0	1	0	2	1	0	0
15:	1	1	0	1	2	1	2	0	4	0	0	2	1	0
29:	2	0	0	2	1	0	0	2	0	0	2	0	0	2
43:	2	1	1	0	2	1	1	2	4	0	1	0	0	1
57:	1	0	0	0	0	1	2	2	3	1	0	0	0	0
71:	4	1	2	0	2	1	0	0	1	1	0	0	1	1
85:	0	2	1	2	0	1	1	0	2	0	0	1	2	1
99:	1	0	2	0	1	0	1	0	1	1	1	2	3	2
113:	1	4	1	0	3	2	2	3	1	2	1	3	2	2
127:	1	3	0	0	0	1	1	2	3	0	1	2	1	1
141:	0	3	2	4	2	2	1	0	2	0	3	1	1	1
155:	2	3	3	3	1	0	1	0	2	3	4	2	0	3
169:	0	2	2	2	2	2	1	0	1	2	0	1	4	5
183:	1	3	3	1	2	3	1	0	2	2	2	3	2	2
197:	2	1	2	1	4	4	0	1	2	3	2	2	3	0
211:	4	1	1	2	4	2	2	5	2	1	4	2	1	3
225:	2	1	1	3	0	3	1	2	2	2	4	3	5	3
239:	1	6	2	1	2	2	3	1	3	5	1	0	2	3
253:	0	2	3	0	3	3	2	4	2	5	3	3	4	0
267:	4	3	0	6	1	1	3	6	1	1	4	1	4	4
281:	5	2	2	3	2	3	0	3	3	3	2	2	2	4
295:	1	2	2	3	1	1	3	4	0	2	8	2	1	3
309:	2	1	2	3	2	2	3	4	4	5	0	3	2	1
323:	6	4	0	1	5	5	3	6	5	4	5	2	2	0
337:	6	1	3	4	2	3	3	4	1	1	5	1	5	3
351:	0	3	2	2	4	2	1	4	6	3	3	5	2	3
365:	3	4	6	2	5	5	1	1	4	2	2	6	1	3
379:	0	7	3	1	5	5	5	2	3	4	2	2	4	2
393:	8	4	2	1	4	5	3	4	4	4	3	4	5	4
407:	6	1	2	6	2	2	5	4	0	8	4	5	3	4
421:	6	4	3	4	2	6	3	5	5	3	9	4	5	6
435:	4	3	3	4	2	6	1	9	3	6	6	1	3	5
449:	7	3	7	6	5	1	7	2	4	2	4	1	3	5
463:	1	2	3	0	1	0	3	2	2	4	0	3	3	6
477:	4	5	1	7	3	5	1	1	2	4	1	4	3	4
491:	2	3	6	1	3	5	4	3	3	5	1	2	2	6
505:	3	3	2	2	6	3	2	2	1	2	6	6	0	5
519:	4	1	1	7	2	3	1	5	2	4	4	7	7	2
533:	2	4	4	2	7	2	4	1	4	6	2	4	0	5
547:	2	3	2	5	5	2	4	3	6	5	10	4	2	5
561:	2	4	2	2	2	4	2	10	4	2	0	3	3	7
575:	4	1	3	4	5	5	2	2	6	2	5	5	4	5
589:	4	4	5	9	5	6	5	4	3	0	2	10	2	3
603:	3	3	4	5	4	2	6	4	3	4	2	3	10	3
617:	4	7	11	2	10	4	7	3	2	6	4	7	8	3
631:	6	2	6	7	2	2	7	4	7	2	3	1	3	4
645:	6	4	5	9	5	2	3	3	8	5	5	5	3	5
659:	8	3	6	5	4	5	3	3	2	6	6	4	3	9
673:	5	5	6	1	5	9	2	5	5	3	4	3	6	2
687:	9	5	4	6	3	6	3	4	4	2	4	5	5	3
701:	3	3	1	2	5	3	4	5	3	7	5	2	7	2
715:	4	4	3	5	4	4	2	5	1	2	4	6	3	4
729:	5	4	4	10	2	5	2	7	4	4	6	6	5	3
743:	3	8	4	9	5	6	6	7	5	3	3	2	6	3
757:	4	3	3	5	4	3	2	5	2	3	1	4	4	5
771:	4	4	1	3	3	5	5	3	4	1	2	3	4	4
785:	4	4	4	3	2	5	4	4	2	2	5	9	3	1
799:	2	2	2	3	5	2	1	4	6	2	5	5	4	4
813:	2	3	4	4	1	3	1	3	4	5	4	2	2	4
827:	2	2	10	1	3	3	4	6	6	4	5	8	4	5
841:	7	4	6	3	8	3	5	3	3	5	1	4	3	5
855:	4	3	7	5	4	5	5	3	2	3	2	2	3	2
869:	1	3	3	8	5	1	1	5	6	3	3	1	5	2
883:	6	4	2	1	3	3	3	1	3	1	3	3	1	4
897:	1	2	1	6	2	3	1	2	0	1	3	3	1	1
911:	2	2	3	3	2	1	2	2	3	6	3	1	2	3
925:	3	0	3	2	0	2	4	5	2	6	4	1	2	2
939:	0	2	2	0	0	6	4	3	1	7	1	0	2	3
953:	1	2	4	1	2	3	2	1	2	3	1	1	2	1
967:	2	2	2	2	1	1	1	1	3	1	2	6	0	1
981:	1	0	3	4	3	1	1	0	0	0	1	1	0	1
995:	2	1	2	2	0	2	0	1	1	1	3	0	1	1
1009:	3	1	2	1	4	2	5	0	0	1	2	2	1	0
1023:	0	0												



Configuration : MCA0:[AMSCOUNT]00001E30\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SPIKE  
 Sample date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:57:27  
 Sample ID : 01 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 039 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.40 0.0%  
 Energy tolerance : 150.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4726.40*	706227.66	422.29	382	78	11.3			RA-226	9.45
0	5287.14*	1707	0.00	614.24	522	177	7.3		RN-222	22.9
0	5808.40*	1434475.93	797.53	718	165	8.0			PO-218	19.2

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:50:59

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE R:R\_1005066A-RA\$02\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 02  
SAMPLE DATE: 25-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: BLANK \* DETECTOR NUMBER: 040  
ACQ DATE: 25-MAY-2010 10:57 \* AVERAGE EFFICIENCY: 20.17%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 96.02%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:05 \* EFF CAL DATE: 18-APR-2010 11:15  
BKG FILENAME: B\_040\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.23  
\*

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	0.00	0.00	100.0	0.000E+00	0.000E+00	8.088E-02
RN-222	5490.0	4.12	0.34	99.9	5.642E-02	8.671E-02	1.637E-01
RA-226	4785.0	4.29	0.17	100.0	5.870E-02	8.653E-02	1.394E-01

\*\*\*\*\*  
IC Bannister  
Analyst

5/25/10  
Date

Alan Greigley  
Reviewer

5/26/10  
Date

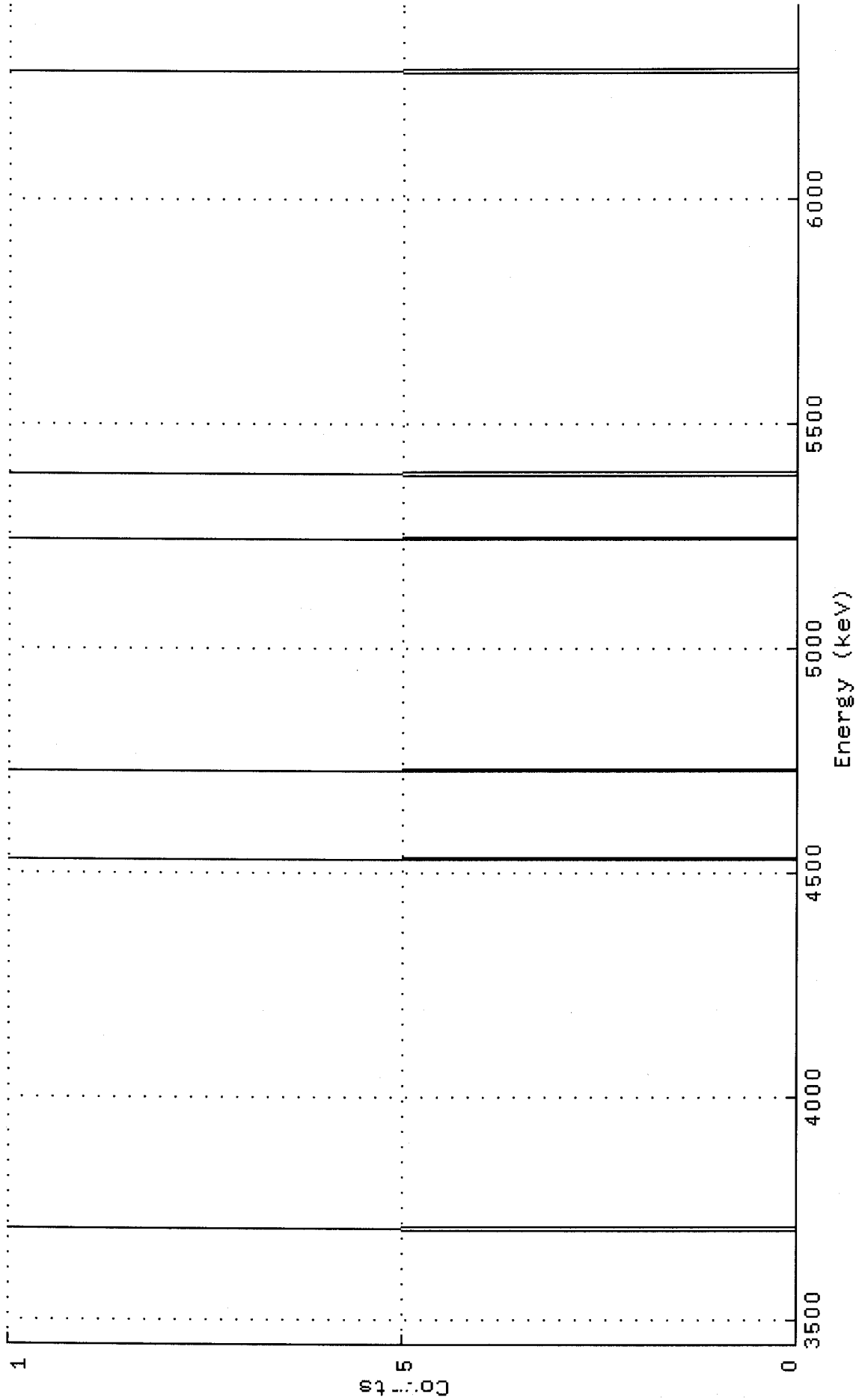


Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.R]R\_1005066A-RA#02\_RA.CNF; 1

Title : 040

Sample Title: BLANK

Start Time: 25-MAY-2010 10:57    Sample Time: 25-MAY-2010 00:00    Energy Offset: 3.43391E+03  
Real Time : 0 02:50:00.40    Sample ID : 02    Energy Slope : 3.12058E+00  
Live Time : 0 02:50:00.00    Sample Type: RA    Energy Quad : -1.91013E-04



Channel Contents for ND\_AMS\_ARCHIVE\_R:R\_1005066A-RA\$02\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 25-MAY-2010 14:50:43.51

Detector ID: 40 Acquisition Start: 25-MAY-2010 10:57:39.01  
Live Time: 0 02:50:00.00 Real Time: 0 02:50:00.40  
Batch Id: 1005066A-RA Sample Id: 02  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4627.83	2		0209.08	392.00	307	156	1.96E-04	70.7	
2	0	5315.42	2		0159.15	627.00	525	177	1.96E-04	70.7	
3	0	5815.16	0		0 0.00	802.50	721	164	0.00E+00	0.0	

Background Counts Within Peak Regions Generated: 25-MAY-2010 14:50:54.33

Acquisition Start: 21-MAY-2010 15:36:55.01  
Live Time: 0 16:40:00.00 Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.47	1	0	3.12	384.50	307	156	1.67E-05	100.0	
2	0	5274.36	2	0	96.59	613.00	525	177	3.33E-05	70.7	
3	0	5814.13	0	0	0.00	802.50	721	164	0.00E+00	0.0	

Net Sample Counts Within Peak Regions Generated: 25-MAY-2010 14:50:55.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4627.83*	4		0209.08	392.00	307	156	4.21E-04	73.6	
2	0	5315.42*	4		0159.15	627.00	525	177	4.04E-04	76.8	
3	0	5815.16*	0		0 0.00	802.50	721	164	0.00E+00	0.0	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 25-MAY-2010 14:50:57

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : BLANK  
 Sample date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:57:39  
 Sample ID : 02 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 040 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.40 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4627.83*	4209.08	392.00	307	156147.2				RA-226	5.636E-02
0	5315.42*	4159.15	627.00	525	177153.5				RN-222	5.417E-02
0	5815.16*	0	0.00	802.50	721	164	0.0		PO-218	0.000E+00

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:51:24

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$03\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005066A-RA	*	SAMPLE ID:	03
SAMPLE DATE:	11-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	SB-2-MW-S DIS	*	DETECTOR NUMBER:	043
ACQ DATE:	25-MAY-2010 10:57	*	AVERAGE EFFICIENCY:	21.19%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	75.38%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	21-MAY-2010 12:06	*	EFF CAL DATE:	18-APR-2010 11:15
BKG FILENAME:	B_043_21MAY10	*	BKG ELAPSED TIME:	60000.
		*	SAF:	3.31
		*		

\*\*\*\*\*

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	-1.87	1.87	100.0	-3.103E-02	1.883E-02	4.947E-01
RN-222	5490.0	2.63	0.68	99.9	4.366E-02	1.105E-01	3.563E-01
RA-226	4785.0	6.62	0.00	100.0	1.098E-01	1.555E-01	1.455E-01

\*\*\*\*\*

K Bannister  
Analyst

5/25/10  
Date

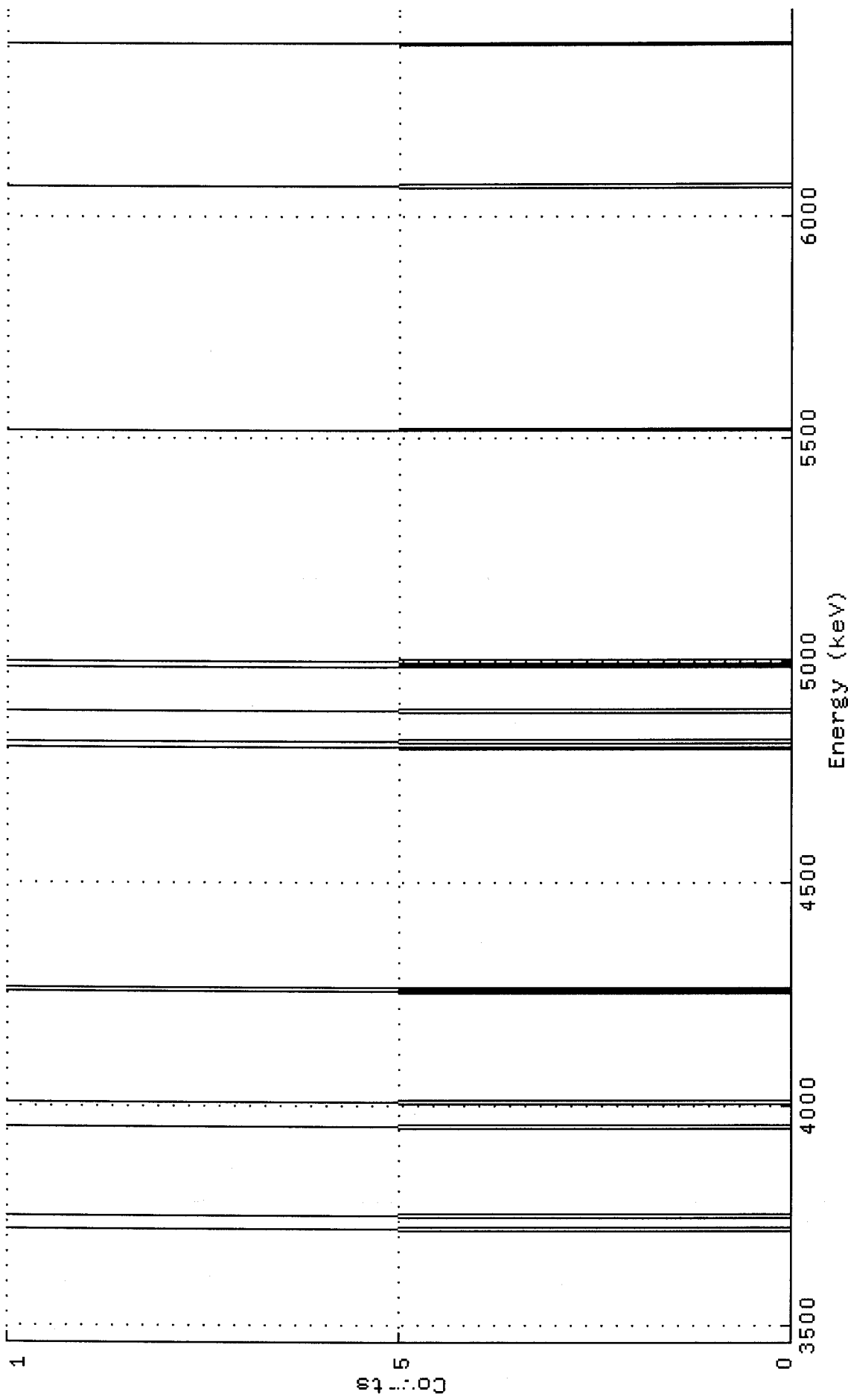
Alan Oring  
Reviewer

5/26/10  
Date

Spectrum : DKA100: [ALPHA,ALUSR,ARCHIVE,SJS\_1005066A-RA#03\_RA.CNF;1  
Title : 043

Sample Title: SB-2-Mu-S DIS

Start Time: 25-MAY-2010 10:57 Sample Time: 11-MAY-2010 00:00 Energy Offset: 3.45238E+03  
Real Time : 0 02:50:00.40 Sample ID : 03 Energy Slope : 3.14397E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -2.04122E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$03\_RA

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
687:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated:    25-MAY-2010 14:51:11.72

Detector ID: 43                                      Acquisition Start:    25-MAY-2010 10:57:55.01  
Live Time:    0 02:50:00.00                       Real Time:        0 02:50:00.40  
Batch Id:     1005066A-RA                        Sample Id:        03  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4809.54	2	0	18.86	444.50	299	155	1.96E-04	70.7	
2	0	5515.95	1	0	3.14	687.00	516	176	9.80E-05	100.0	
3	0	5815.77	0	0	0.00	792.50	711	164	0.00E+00	0.0	

Background Counts Within Peak Regions      Generated:    25-MAY-2010 14:51:19.98

Live Time:    0 16:40:00.00                       Acquisition Start:    21-MAY-2010 15:37:01.01  
Real Time:        0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4603.26	0	0	0.00	376.00	299	155	0.00E+00	0.0	
2	0	5273.44	4	0	393.81	603.50	516	176	6.67E-05	50.0	
3	0	5815.78	11	0	418.81	792.50	711	164	1.83E-04	30.2	

Net Sample Counts Within Peak Regions      Generated:    25-MAY-2010 14:51:20.65

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4809.54*	7	0	18.86	444.50	299	155	6.49E-04	70.7	
2	0	5515.95*	3	0	3.14	687.00	516	176	2.58E-04	126.5	
3	0	5815.77*	-2	0	0.00	792.50	711	164	-1.83E-04	30.2	

Flag: "\*" = Peak area was modified by background subtraction



VMS Nuclide Identification Report V3.0 Generated 25-MAY-2010 14:51:22

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-2-MW-S DIS  
 Sample date : 11-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:57:55  
 Sample ID : 03 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 043 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.40 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4809.54*	7	18.86	444.50	299	155141.4			RA-226	8.278E-02
0	5515.95*	3	3.14	687.00	516	176253.0			RN-222	3.291E-02
0	5815.77*	-2	0.00	792.50	711	164	60.3		PO-218	-2.339E-02

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:51:49

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$04\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 04  
SAMPLE DATE: 11-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SB-2-MW-S DIS \* DETECTOR NUMBER: 045  
ACQ DATE: 25-MAY-2010 10:58 \* AVERAGE EFFICIENCY: 19.86%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 100.00%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_045\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 3.40  
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	115.43	0.17	100.0	1.540E+00	5.399E-01	2.072E-01
RN-222	5490.0	173.06	0.34	99.9	2.311E+00	6.681E-01	2.434E-01
RA-226	4785.0	169.83	0.17	100.0	2.266E+00	6.607E-01	2.072E-01

\*\*\*\*\*

IC Bannister  
Analyst

5/25/10  
Date

Alan Orszag  
Reviewer

5/26/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1005066A-RA\$04\_RA.CNF; 1

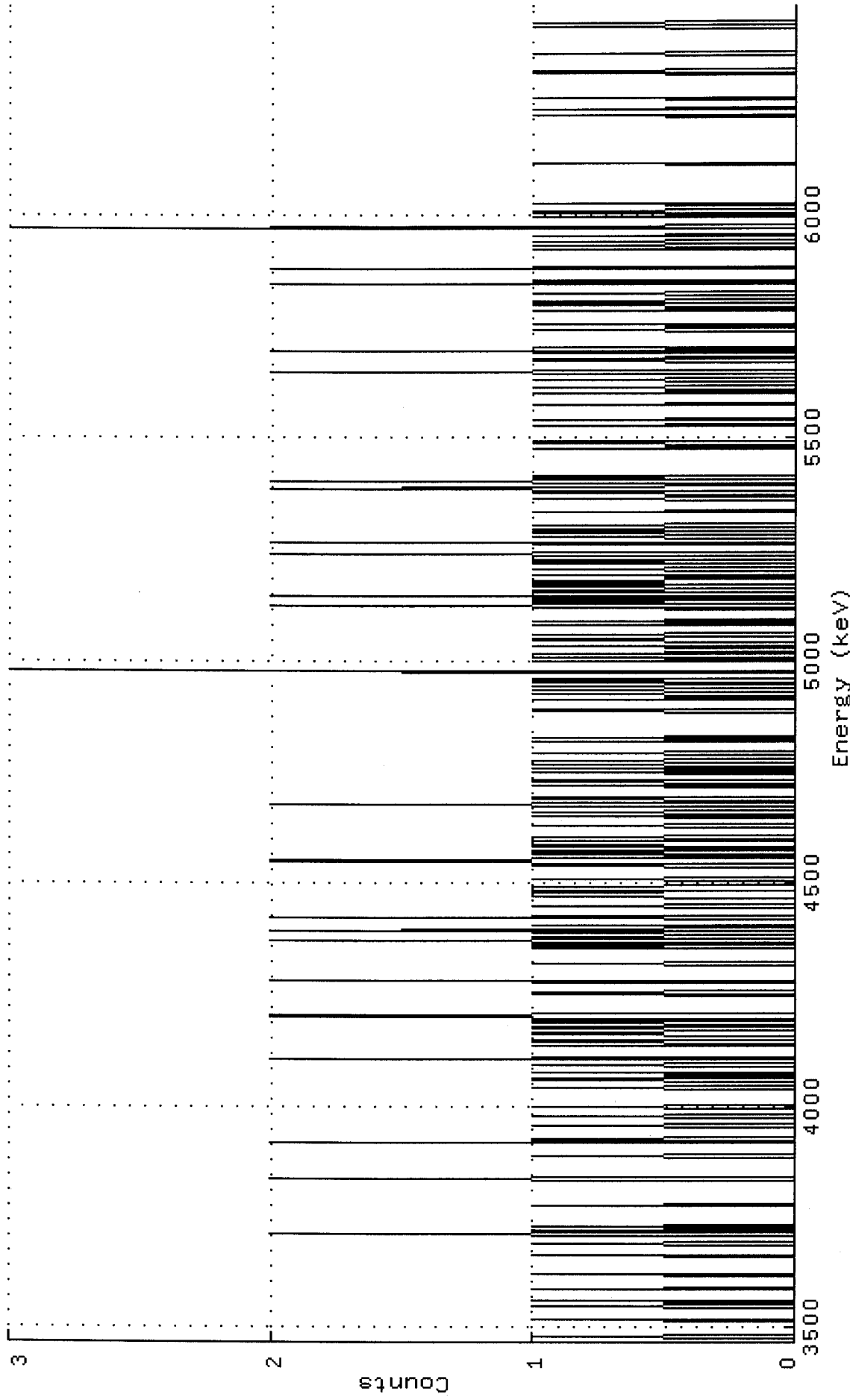
Title : 045

Sample Title: SB-2-MU-S DIS

Start Time: 25-MAY-2010 10:58 Sample Time: 11-MAY-2010 00:00 Energy Offset: 3.45824E+03

Real Time : 0 02:50:05.40 Sample ID : 04 Energy Slope : 3.11431E+00

Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.77214E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$04\_RA

Channel

1:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
15:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
29:	1	0	0	0	1	0	0	0	0	0	0	0	0	1
43:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
71:	0	0	0	0	1	0	0	0	0	0	0	2	0	0
85:	1	0	0	1	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	2	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
141:	0	0	0	0	0	0	0	0	2	0	1	1	0	0
155:	0	0	0	0	0	0	1	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	1	1	0	0	0	0	1	0
197:	1	0	0	1	0	0	0	0	0	1	0	0	0	0
211:	2	0	0	0	0	0	0	0	0	0	1	0	1	1
225:	0	0	0	0	1	1	0	0	1	0	1	0	1	0
239:	1	0	2	1	2	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	1	0	1	0	0	0	0	0	0
267:	0	2	0	0	0	0	0	0	0	0	0	0	0	0
281:	1	0	0	0	0	0	0	0	0	0	0	0	1	1
295:	0	1	0	2	0	0	1	0	0	1	0	2	1	0
309:	1	0	0	0	0	0	1	2	0	0	0	0	0	0
323:	0	1	0	0	0	0	0	0	1	1	1	0	0	1
337:	1	1	0	0	0	0	0	1	0	0	0	1	0	0
351:	0	0	0	1	0	0	2	2	0	1	0	0	1	1
365:	0	1	0	1	0	1	1	1	0	0	1	1	0	0
379:	0	0	0	0	0	1	0	0	0	0	0	0	1	0
393:	0	1	0	0	0	0	0	2	0	0	0	1	1	0
407:	0	0	0	0	0	0	0	1	0	0	1	1	0	0
421:	0	0	0	1	0	0	1	0	0	1	0	0	1	0
435:	0	0	0	0	1	0	0	0	0	0	0	0	0	1
449:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	1	1	0	0	0	0
477:	0	0	0	1	0	0	0	1	0	0	1	0	0	1
491:	0	1	0	1	1	0	0	0	0	0	3	0	0	0
505:	0	0	0	0	1	0	1	0	0	0	1	0	0	0
519:	0	1	0	0	0	0	1	1	0	0	1	0	0	0
533:	0	0	0	0	1	0	0	1	0	0	0	0	0	0
547:	0	0	1	0	2	0	0	1	1	0	0	2	0	0
561:	0	1	1	0	0	1	1	1	1	1	0	0	0	1
575:	0	0	0	0	1	0	0	0	0	1	1	0	1	1
589:	1	0	2	0	0	0	0	0	0	0	2	0	0	0
603:	0	1	0	0	1	1	0	1	0	0	1	0	0	0
617:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
631:	0	0	1	1	0	0	0	1	0	0	2	1	1	0
645:	0	0	2	0	0	1	1	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	1	0	0	0	1	1	0	0	0	0	0	0	0	0
687:	0	0	0	0	1	0	0	0	1	0	0	0	0	0
701:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
715:	0	1	0	0	0	1	0	0	0	0	0	0	0	0
729:	0	0	0	2	0	0	0	0	0	0	0	1	0	1
743:	1	0	0	0	0	2	0	0	1	0	0	0	0	0
757:	0	0	0	0	0	0	0	0	1	0	0	0	1	0
771:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
785:	1	0	1	1	0	0	0	0	0	1	0	0	0	0
799:	0	0	0	2	0	1	0	0	0	0	0	0	0	0
813:	0	2	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	1	0	0	1	0	0	1	0	0	0	0	1
841:	0	0	0	0	0	3	1	0	0	0	0	0	0	0
855:	1	0	0	1	1	0	0	0	0	0	1	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
939:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
967:	0	0	1	0	1	1	0	0	0	0	0	0	0	0
981:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	1	0	0	0	0	0	0	0	0	0	0	1	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0



VMS Nuclide Identification Report V3.0 Generated 25-MAY-2010 14:51:47

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-2-MW-S DIS  
 Sample date : 11-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:58:11  
 Sample ID : 04 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 045 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:05.40 0.1%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4576.55*	170295.79	366.74	299	156	28.3			RA-226	2.27
0	5249.83*	173302.09	595.45	517	176	28.1			RN-222	2.31
0	5821.28*	115358.11	794.71	711	163	34.4			PO-218	1.54

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:52:33

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$05\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 05  
SAMPLE DATE: 11-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SB-2-MW-S SUS \* DETECTOR NUMBER: 046  
ACQ DATE: 25-MAY-2010 10:58 \* AVERAGE EFFICIENCY: 19.61%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 93.90%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_046\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.34  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	4.68	0.00	100.0	6.737E-02	9.540E-02	8.927E-02
RN-222	5490.0	16.21	0.17	99.9	2.335E-01	1.792E-01	1.539E-01
RA-226	4785.0	9.19	0.17	100.0	1.323E-01	1.351E-01	1.538E-01

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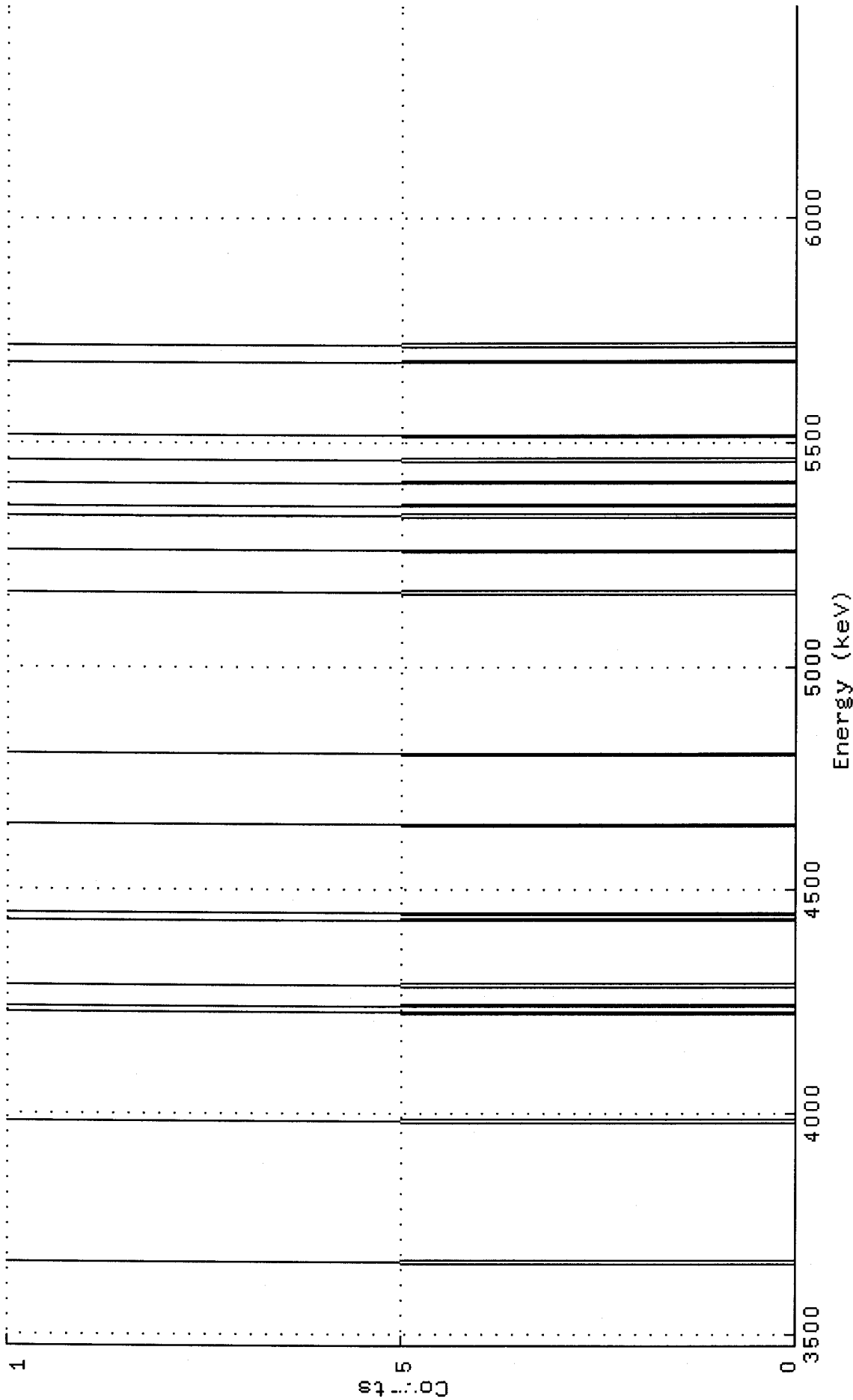
IC Bannister  
Analyst

5/25/10  
Date

Alan Gregory  
Reviewer

5/26/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1005066A-RA\$05\_RA.CNF; 1  
 Title : 046  
 Sample Title: SB-2-MW-S SUS  
 Start Time: 25-MAY-2010 10:58 Sample Time: 11-MAY-2010 00:00 Energy Offset: 3.46625E+03  
 Real Time : 0 02:50:05.40 Sample ID : 05 Energy Slope : 3.11016E+00  
 Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.73226E-04





Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$05\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	1	0	0	0	0	1
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	1	0	0	0	0	1	0
323:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	1	0	0	0	0	0	0	0	1
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
687:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
743:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:52:10.59

Detector ID: 46	Acquisition Start: 25-MAY-2010 10:58:30.01
Live Time: 0 02:50:00.00	Real Time: 0 02:50:05.40
Batch Id: 1005066A-RA	Sample Id: 05
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4581.37	4	0388.77	366.00	297	156	3.92E-04	50.0		
2	0	5355.66	7	0379.44	629.57	514	176	6.86E-04	37.8		
3	0	5697.16	2	0 43.54	748.50	709	163	1.96E-04	70.7		

Background Counts Within Peak Regions      Generated: 25-MAY-2010 14:52:28.63

Live Time: 0 16:40:00.00	Acquisition Start: 21-MAY-2010 15:37:07.01
	Real Time: 0 16:40:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4604.60	1	0	3.11	374.50	297	156	1.67E-05	100.0	
2	0	5273.55	1	0	3.11	601.50	514	176	1.67E-05	100.0	
3	0	5816.33	0	0	0.00	790.00	709	163	0.00E+00	0.0	

Net Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:52:29.31

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4581.37*	9	0388.77	366.00	297	156	9.01E-04	51.0		
2	0	5355.66*	16	0379.44	629.57	514	176	1.59E-03	38.2		
3	0	5697.16*	5	0 43.54	748.50	709	163	4.59E-04	70.7		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-2-MW-S SUS  
 Sample date : 11-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:58:30  
 Sample ID : 05 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 046 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:05.40 0.1%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4581.37*	9388.77	366.00	297	156101.9				RA-226	0.124
0	5355.66*	16379.44	629.57	514	17676.4				RN-222	0.219
0	5697.16*	543.54	748.50	709	163141.4				PO-218	6.326E-02

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:54:01

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$06\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 06  
SAMPLE DATE: 12-MAY-2010 00:00 \* ALIQUOT: 5.000E-01 liter  
SAMPLE TITLE: SB-3-MW-S DIS \* DETECTOR NUMBER: 047  
ACQ DATE: 25-MAY-2010 10:58 \* AVERAGE EFFICIENCY: 17.92%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 72.54%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_047\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 3.96  
\*

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	351.93	0.51	100.0	1.435E+01	3.208E+00	9.642E-01
RN-222	5490.0	506.54	0.34	99.9	2.067E+01	3.932E+00	8.663E-01
RA-226	4785.0	554.40	0.00	100.0	2.260E+01	4.135E+00	4.279E-01

\*\*\*\*\*

K Bannister  
Analyst

5/25/10  
Date

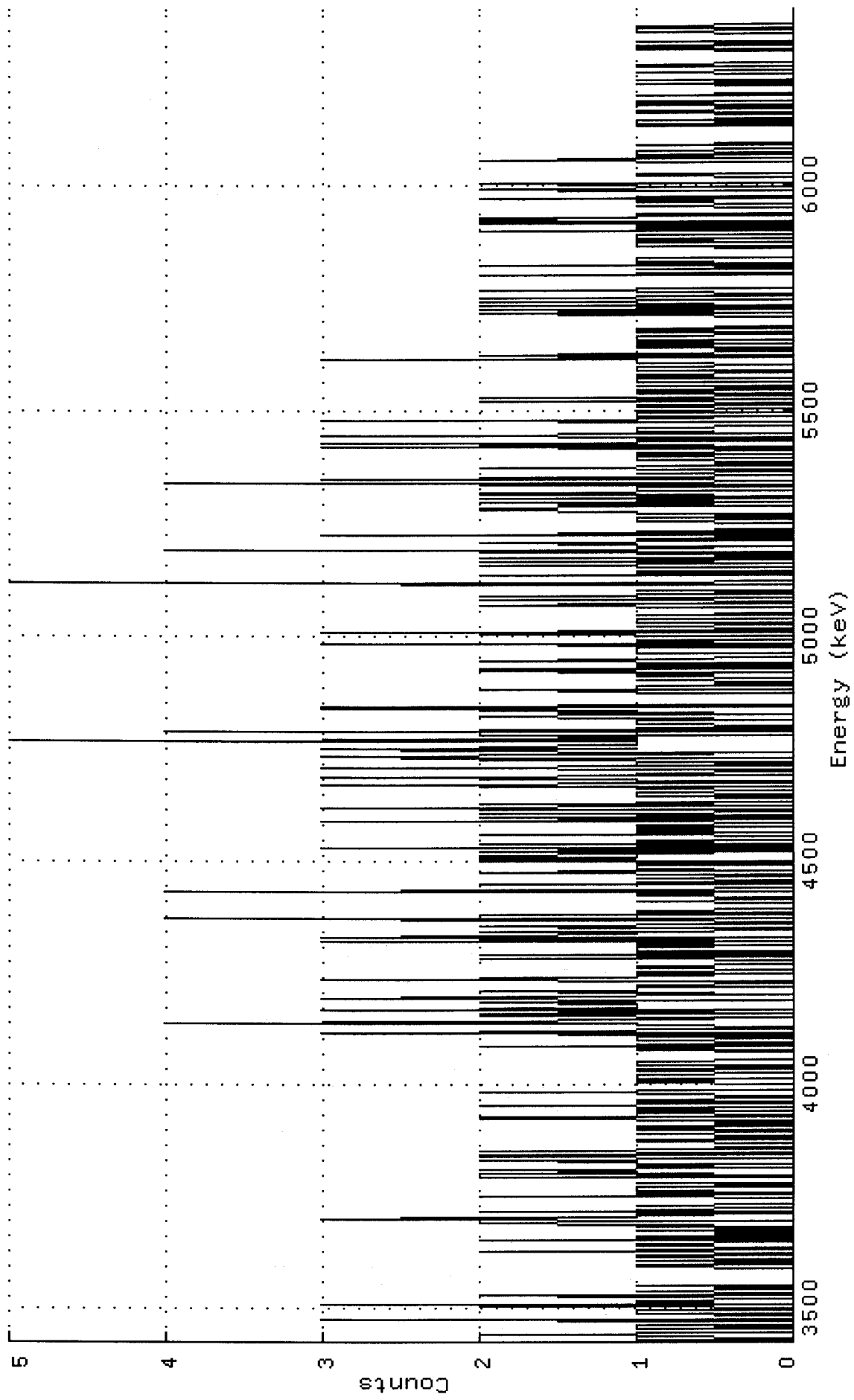
Alan Magaly  
Reviewer

5/26/10  
Date

Spectrum : DKA100: [ALPHA,ALUSR.ARCHIVE.SJS\_1005066A-RA#06-RA.CNF;1  
Title : 047

Sample Title: SB-3-MU-S DIS

Start Time: 25-MAY-2010 10:58 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.41533E+03  
Real Time : 0 02:50:05.40 Sample ID : 06 Energy Slope : 3.07896E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.72095E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$06\_RA

Channel

1:	0	1	0	1	0	0	1	1	2	0	0	0	1	0
15:	1	0	0	0	3	0	0	0	1	0	0	0	1	0
29:	1	3	0	1	1	1	0	1	2	0	0	1	0	0
43:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	1	1	0	0	1	0	0	1	1	0	0	1	2
71:	0	0	1	1	1	0	0	2	0	0	1	0	0	1
85:	0	0	1	0	1	2	1	0	3	2	1	1	0	2
99:	0	1	0	0	1	0	0	0	0	0	1	2	0	1
113:	0	1	1	1	0	0	1	0	0	0	0	2	0	1
127:	2	1	2	0	1	1	0	1	1	2	0	0	2	2
141:	0	0	2	0	1	0	0	0	0	1	0	1	0	2
155:	0	1	0	1	0	1	0	1	0	0	1	0	2	0
169:	0	0	1	1	0	1	1	0	2	0	1	0	1	0
183:	0	0	1	1	2	0	0	0	0	0	0	1	1	0
197:	1	1	1	1	0	1	0	1	0	0	1	1	1	0
211:	0	0	0	0	0	0	1	0	1	0	2	0	0	0
225:	1	0	1	0	0	3	0	2	0	0	0	1	1	4
239:	2	1	0	0	2	0	0	1	0	3	1	1	1	1
253:	2	0	0	3	2	0	0	1	2	1	1	1	0	1
267:	0	1	0	3	1	1	1	0	1	1	0	1	1	1
281:	0	0	0	0	1	2	0	0	2	0	0	1	1	1
295:	0	1	1	0	3	1	0	3	2	1	2	1	0	0
309:	1	2	0	1	0	1	4	0	0	0	2	0	1	1
323:	0	0	0	0	0	0	1	0	0	0	1	1	0	4
337:	1	0	0	0	0	2	0	0	1	1	0	1	0	2
351:	1	0	1	1	1	0	0	2	0	2	1	2	2	1
365:	0	2	0	3	0	0	2	0	1	1	0	0	0	1
379:	2	0	1	1	1	0	1	0	0	0	3	0	2	0
393:	0	2	1	0	0	1	3	0	1	2	0	0	0	0
407:	1	0	0	1	1	0	1	0	1	3	0	1	0	2
421:	1	3	0	1	1	0	1	0	3	0	1	0	1	0
435:	2	0	2	3	1	0	1	2	3	1	2	1	1	1
449:	1	5	1	1	2	0	0	0	4	0	0	1	0	1
463:	1	1	1	0	1	2	1	0	1	2	1	3	0	3
477:	0	0	0	0	0	0	0	0	0	1	1	2	0	0
491:	0	1	0	0	0	1	0	0	1	1	0	1	2	0
505:	2	0	0	1	0	2	1	0	0	0	0	0	1	1
519:	1	1	0	0	3	0	1	1	0	0	0	0	2	0
533:	3	0	0	0	1	0	0	1	1	1	0	0	0	1
547:	0	0	0	0	0	0	2	1	0	0	1	2	0	2
561:	0	0	0	1	0	0	0	0	0	5	1	0	0	0
575:	0	0	2	0	1	0	0	0	0	2	0	1	2	0
589:	2	0	0	1	0	0	4	1	1	0	1	1	2	2
603:	0	0	1	0	0	3	0	0	1	0	0	0	0	0
617:	1	1	0	0	1	0	0	1	1	2	2	2	1	0
631:	1	2	0	1	0	2	0	1	2	2	0	0	0	0
645:	1	0	4	1	0	1	3	1	0	0	1	0	0	0
659:	2	0	1	0	0	0	1	0	0	1	1	0	1	0
673:	0	0	3	0	1	3	2	0	0	1	0	3	3	0
687:	1	1	1	1	1	0	0	0	0	3	1	1	0	1
701:	1	1	0	1	0	0	1	0	1	0	1	2	0	2
715:	1	0	0	1	1	0	1	0	1	0	0	0	1	1
729:	1	0	1	1	1	0	0	1	1	1	1	0	1	1
743:	1	1	3	0	0	2	1	0	0	0	1	0	1	1
757:	0	1	0	1	1	1	1	0	0	1	1	0	1	0
771:	0	0	0	0	0	0	0	0	1	2	0	1	2	0
785:	0	2	0	1	1	2	0	2	2	0	0	0	1	1
799:	2	0	0	0	0	0	0	0	0	0	0	0	2	0
813:	0	0	0	1	0	0	2	0	1	1	1	1	0	0
827:	0	0	0	0	0	0	1	0	0	0	1	1	0	1
841:	1	1	0	0	0	2	0	0	1	0	2	0	0	2
855:	2	1	2	0	1	0	0	0	0	0	1	1	0	1
869:	1	1	0	2	0	0	0	0	0	1	2	0	1	1
883:	2	0	0	0	0	0	0	1	0	0	0	0	0	0
897:	0	0	0	0	0	2	1	0	1	1	0	0	0	1
911:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	1	0	1	0	0	1	0	0	0
939:	0	1	0	1	0	0	0	0	1	0	1	0	0	0
953:	0	0	1	0	0	0	0	0	0	0	1	0	0	1
967:	0	0	0	0	0	0	1	0	0	0	0	1	1	0
981:	0	0	0	0	0	0	0	0	0	0	1	0	1	0
995:	0	0	1	0	0	0	0	0	0	0	1	1	0	0
1009:	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:52:44.50

Detector ID: 47    Acquisition Start: 25-MAY-2010 10:58:51.01  
Live Time: 0 02:50:00.00                              Real Time: 0 02:50:05.40  
Batch Id: 1005066A-RA                                  Sample Id: 06  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4635.45	140	0	0.00	405.46	317	158	1.37E-02	8.5	
2	0	5295.74	128	0390.24	633.13	537	179	1.25E-02	8.8		
3	0	5795.56	89	0427.94	809.71	735	165	8.73E-03	10.6		

Background Counts Within Peak Regions      Generated: 25-MAY-2010 14:53:57.08

Live Time: 0 16:40:00.00                              Acquisition Start: 21-MAY-2010 15:37:10.01  
Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.87	0	0	0.00	395.50	317	158	0.00E+00	0.0	
2	0	5275.69	2	0	27.67	626.00	537	179	3.33E-05	70.7	
3	0	5817.43	3	0	79.94	817.00	735	165	5.00E-05	57.7	

Net Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:53:57.73

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4635.45*	554	0	0.00	405.46	317	158	5.44E-02	8.5	
2	0	5295.74*	507	0390.24	633.13	537	179	4.97E-02	8.8		
3	0	5795.56*	352	0427.94	809.71	735	165	3.45E-02	10.6		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-3-MW-S DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:58:51  
 Sample ID : 06 Sample quantity : 0.50000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 047 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:05.40 0.1%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4635.45*	554	0.00	405.46	317	158	16.9		RA-226	16.4
0	5295.74*	507390.24	633.13	633.13	537	179	17.7		RN-222	15.0
0	5795.56*	352427.94	809.71	809.71	735	165	21.2		PO-218	10.4



Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:55:12

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$07\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 07  
SAMPLE DATE: 12-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SB-3-MW-S SUS \* DETECTOR NUMBER: 048  
ACQ DATE: 25-MAY-2010 10:59 \* AVERAGE EFFICIENCY: 18.20%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 90.98%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:06 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_048\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 2.27  
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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	36.15	0.17	100.0	5.786E-01	2.935E-01	1.659E-01
RN-222	5490.0	60.27	1.02	99.9	9.652E-01	3.840E-01	2.671E-01
RA-226	4785.0	76.67	0.51	100.0	1.227E+00	4.323E-01	2.169E-01

\*\*\*\*\*

IC Bannister  
Analyst

5/25/10  
Date

Alan Gregory  
Reviewer

5/26/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.SJS\_1005066A-RA\$07\_RA.CNF;1

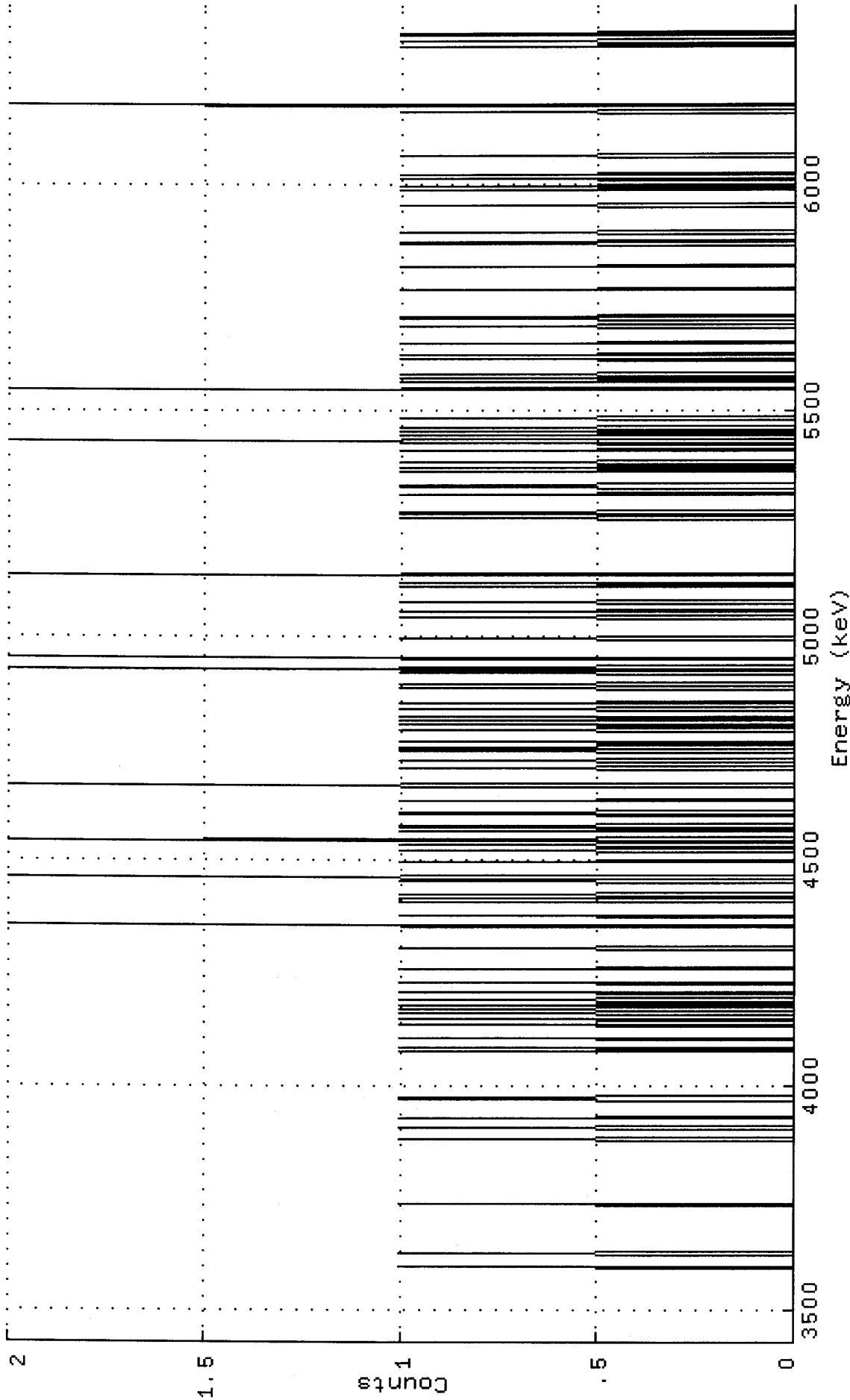
Title : 048

Sample Title: SB-3-MW-S SUS

Start Time: 25-MAY-2010 10:59 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.41824E+03

Real Time : 0 02:50:05.40 Sample ID : 07 Energy Slope : 3.07216E+00

Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.65861E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$07\_RA

Channel

1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	1	0	0	0	0	0	0	0	0	0	1	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	1	0	0	0	0	0	1	0	1
169:	0	0	0	0	0	0	0	0	0	0	0	0	1	1
183:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	1	0	1	0	0	0	0	0
225:	0	1	0	0	0	0	0	0	0	0	0	1	0	0
239:	0	1	0	0	0	0	1	0	0	1	0	0	1	0
253:	0	0	1	0	0	0	0	1	0	0	0	0	0	0
267:	1	0	0	0	0	0	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	2	0	0	0	0	0	0	1	0	0	0	0	0
323:	0	0	0	0	0	1	1	1	0	0	1	0	0	0
337:	0	0	0	0	0	0	1	0	0	2	0	0	0	0
351:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
365:	0	1	0	0	0	1	1	0	0	2	1	0	0	0
379:	0	0	1	0	0	1	1	0	0	0	0	0	0	0
393:	1	0	1	0	0	0	0	0	0	0	0	1	0	0
407:	0	0	0	0	0	0	0	0	2	0	0	0	0	0
421:	0	0	0	0	0	0	0	1	0	0	0	0	0	1
435:	0	0	0	0	0	0	1	1	0	1	0	0	0	0
449:	0	0	0	0	0	0	0	0	1	0	0	0	1	0
463:	0	0	1	0	0	1	0	0	0	0	1	0	0	0
477:	0	1	0	0	0	0	0	0	0	0	0	0	1	0
491:	0	1	0	0	0	0	0	0	0	0	1	0	0	0
505:	1	0	0	0	0	0	0	2	0	0	0	0	2	0
519:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
533:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
547:	0	1	0	0	0	0	0	0	1	0	0	0	0	0
561:	0	0	0	0	0	0	1	0	1	0	0	0	0	0
575:	0	2	0	0	0	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
617:	0	0	0	1	0	1	0	1	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	1	0	0	0	0	1	1
645:	1	0	0	0	0	0	0	0	0	0	0	1	0	0
659:	1	0	0	1	1	0	0	0	0	0	0	0	0	1
673:	0	0	0	0	1	0	2	0	0	0	0	1	0	0
687:	1	0	1	1	0	0	0	0	0	0	1	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	2	0	0	0	0	0	1	0	0
729:	1	0	1	1	0	0	0	0	0	0	0	0	0	0
743:	1	0	0	0	1	0	0	0	0	0	0	0	0	1
757:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
771:	0	0	0	0	1	0	1	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
841:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
869:	0	0	0	0	0	0	0	0	1	0	0	1	0	0
883:	0	0	1	0	0	0	1	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	1	0	0	0	0	1	2	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	1	0	0	0	0	1	0	1	0	0	1	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated:    25-MAY-2010 14:54:15.50

Detector ID: 48    Acquisition Start: 25-MAY-2010 10:59:09.01  
 Live Time:    0 02:50:00.00                                      Real Time:    0 02:50:05.40  
 Batch Id:     1005066A-RA                                        Sample Id:    07  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4602.49	34	0215.05	393.85	317	158	3.33E-03	17.1		
2	0	5304.20	27	0319.50	635.70	537	178	2.65E-03	19.2		
3	0	5820.46	16	0451.61	818.06	734	165	1.57E-03	25.0		

Background Counts Within Peak Regions      Generated:    25-MAY-2010 14:55:06.98

Acquisition Start: 21-MAY-2010 15:37:13.01  
 Live Time:    0 16:40:00.00                                      Real Time:    0 16:40:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.14	3	0393.77	395.50	317	158	5.00E-05	57.7		
2	0	5274.47	6	0387.56	625.50	537	178	1.00E-04	40.8		
3	0	5811.57	1	0	3.10	816.00	734	165	1.67E-05	100.0	

Net Sample Counts Within Peak Regions      Generated:    25-MAY-2010 14:55:07.74

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4602.49*	77	0215.05	393.85	317	158	7.52E-03	17.3		
2	0	5304.20*	60	0319.50	635.70	537	178	5.91E-03	19.6		
3	0	5820.46*	36	0451.61	818.06	734	165	3.54E-03	25.1		

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0: [AMSCOUNT] 00003742\$1  
 Analyses by : ROIPEAK V1.2, PEAKEFF V2.2, ENBACK V1.6, NID V3.3  
 Sample title : SB-3-MW-S SUS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 10:59:09  
 Sample ID : 07 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 048 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:05.40 0.1%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4602.49*	77215.05	393.85	317	158	34.5			RA-226	1.12
0	5304.20*	60319.50	635.70	537	178	39.2			RN-222	0.878
0	5820.46*	36451.61	818.06	734	165	50.2			PO-218	0.526

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:55:41

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$08\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005066A-RA \* SAMPLE ID: 08  
SAMPLE DATE: 12-MAY-2010 00:00 \* ALIQUOT: 5.000E-01 liter  
SAMPLE TITLE: SB-3-MW-SD DIS \* DETECTOR NUMBER: 033  
ACQ DATE: 25-MAY-2010 11:35 \* AVERAGE EFFICIENCY: 19.88%  
ELAPSED LIVE TIME: 10200. \* RECOVERY: 84.59%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 21-MAY-2010 12:05 \* EFF CAL DATE: 17-APR-2010 13:09  
BKG FILENAME: B\_033\_21MAY10 \* BKG ELAPSED TIME: 60000.  
\* SAF: 3.25  
\*

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	239.99	0.51	100.0	7.564E+00	1.840E+00	6.116E-01
RN-222	5490.0	295.58	0.17	99.9	9.322E+00	2.061E+00	4.681E-01
RA-226	4785.0	386.58	0.17	100.0	1.218E+01	2.391E+00	4.678E-01

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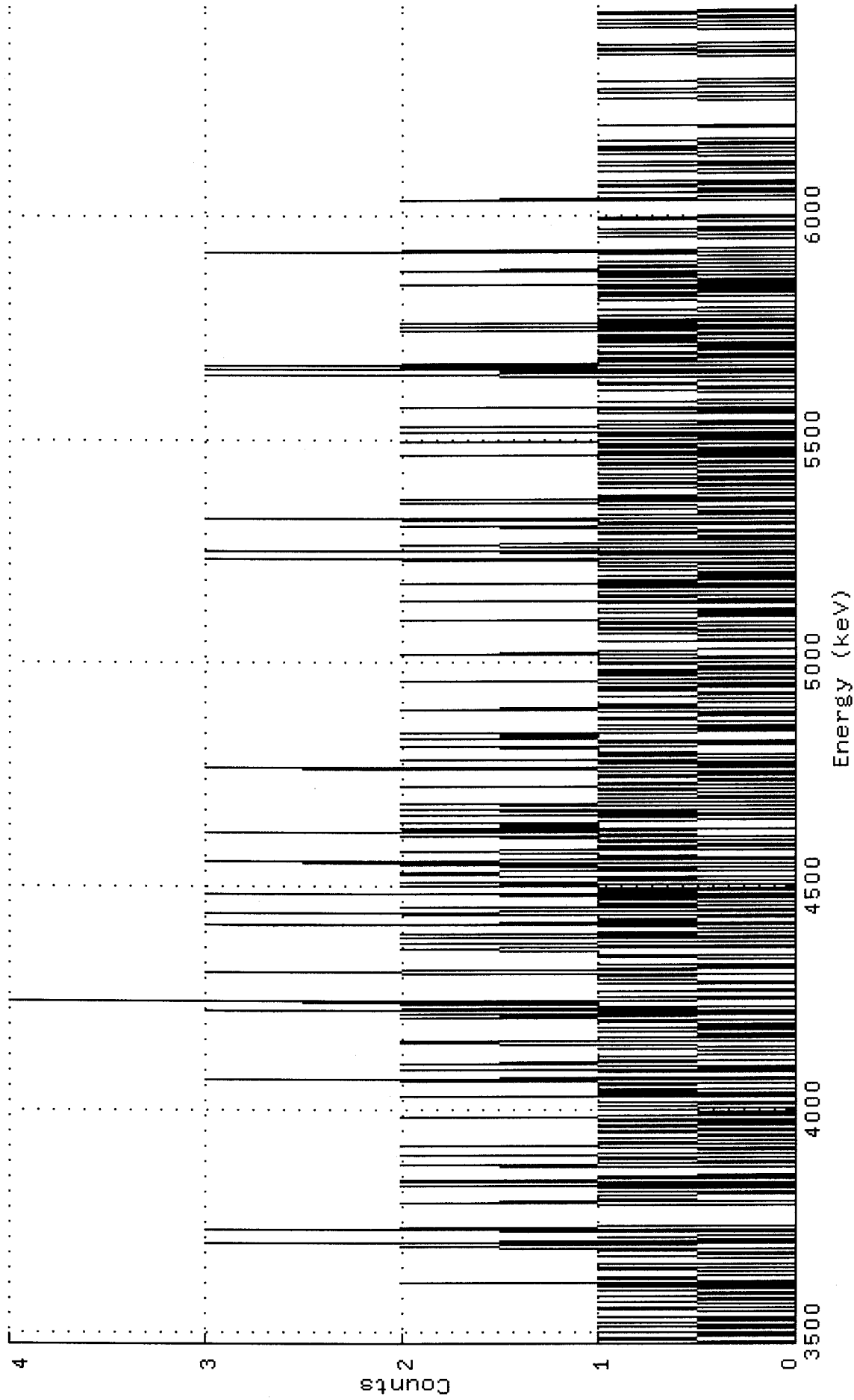
K Bannister  
Analyst

5/25/10  
Date

Alan Gregory  
Reviewer

5/26/10  
Date

Spectrum : DKA100:[ALPHA..ALUSR.ARCHIVE.S]S\_1005066A-RA\$08\_RA.CNF;1  
Title : 033  
Sample Title: SB-3-MW-SD DIS  
Start Time: 25-MAY-2010 11:35 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.46352E+03  
Real Time : 0 02:50:00.30 Sample ID : 08 Energy Slope : 3.08993E+00  
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.57123E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$08\_RA

Channel

1:	0	1	1	0	0	1	1	0	0	0	1	0	0
15:	1	0	0	1	0	0	0	1	0	0	0	0	1
29:	1	0	0	0	1	1	0	0	1	1	0	0	1
43:	0	1	0	0	2	0	0	1	1	1	0	0	0
57:	1	0	1	1	1	0	0	0	0	0	1	0	0
71:	1	0	1	2	1	0	3	0	0	0	1	0	0
85:	0	3	0	2	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	2	1	0	1	1	1
113:	0	1	0	0	0	2	0	0	2	0	2	0	1
127:	0	0	0	0	0	0	1	2	0	0	0	1	0
141:	2	0	0	0	0	1	0	2	0	0	1	0	1
155:	0	0	0	1	0	0	1	1	0	1	0	0	1
169:	2	0	1	0	0	0	1	0	1	1	0	1	0
183:	0	0	2	0	0	1	1	0	1	1	1	0	2
197:	0	3	0	0	0	0	0	2	0	0	1	0	2
211:	0	1	1	1	1	0	0	0	0	1	0	0	1
225:	2	0	0	0	1	0	0	0	1	0	0	1	0
239:	0	1	0	0	2	1	0	2	0	0	3	1	2
253:	1	1	4	1	0	1	0	0	0	0	1	0	0
267:	0	0	1	0	1	1	1	1	0	1	3	1	1
281:	0	1	0	0	0	0	0	1	0	1	1	1	2
295:	1	0	0	2	0	0	0	0	2	0	1	2	0
309:	0	0	1	0	3	0	1	1	1	0	0	1	0
323:	0	0	1	2	0	1	0	0	1	1	0	3	0
337:	1	0	1	0	2	1	0	2	0	1	1	0	2
351:	2	1	0	1	0	1	2	0	2	3	0	1	1
365:	1	1	2	1	0	1	0	1	0	1	0	1	2
379:	0	1	1	3	1	0	2	1	1	2	1	0	0
393:	1	0	2	0	1	2	0	0	0	1	2	0	0
407:	0	1	0	1	0	0	1	0	0	2	0	0	0
421:	0	0	1	1	0	0	1	0	2	3	0	0	1
435:	0	2	1	0	1	1	0	1	1	1	1	2	0
449:	1	0	0	2	1	1	1	2	1	0	1	0	1
463:	0	0	0	0	1	1	0	0	0	1	0	2	0
477:	1	1	1	0	0	0	0	1	0	0	0	1	1
491:	0	1	0	0	0	2	0	0	0	1	0	1	0
505:	1	0	0	0	1	0	1	1	1	0	0	1	2
519:	1	0	0	0	0	0	0	0	1	0	0	0	1
533:	1	0	1	0	1	0	1	1	0	2	1	1	0
547:	0	1	0	0	1	0	0	0	0	0	2	0	1
561:	0	1	1	1	0	0	0	1	0	2	0	1	0
575:	0	0	1	0	0	0	1	0	0	1	0	0	1
589:	3	0	0	0	1	0	3	0	0	0	1	2	0
603:	0	0	1	0	0	0	1	1	0	0	1	2	1
617:	0	1	1	3	0	0	0	1	0	0	0	1	0
631:	1	1	2	0	0	2	0	1	1	0	0	0	1
645:	1	0	0	1	1	0	1	0	0	1	1	0	0
659:	1	0	0	1	0	1	0	1	1	0	0	2	0
673:	1	0	1	0	1	0	0	2	0	0	0	1	0
687:	2	0	0	0	0	2	0	0	0	1	0	0	0
701:	0	0	1	0	0	2	0	0	0	0	1	0	0
715:	0	0	0	0	0	1	0	0	0	1	1	0	0
729:	0	0	0	3	0	0	0	3	0	2	0	3	1
743:	0	1	1	0	0	1	0	1	0	0	0	1	0
757:	1	0	1	1	0	1	1	0	0	1	2	0	2
771:	0	1	2	0	0	1	1	1	0	0	0	0	0
785:	0	0	0	0	0	1	1	1	1	0	1	0	0
799:	0	1	0	2	0	0	1	0	0	1	1	1	1
813:	0	2	1	1	0	1	0	0	1	0	0	0	0
827:	1	0	3	1	0	0	0	0	0	0	0	0	1
841:	1	0	1	1	0	0	1	0	0	0	0	0	1
855:	0	1	0	0	0	0	0	0	0	0	0	0	0
869:	0	2	1	0	0	0	0	1	0	0	0	1	0
883:	0	1	0	0	0	0	0	0	0	1	0	0	0
897:	1	0	1	0	0	0	0	0	0	1	0	1	0
911:	1	1	0	0	0	1	1	0	0	0	0	0	0
925:	0	0	0	1	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	1	0
953:	0	0	1	1	1	1	0	0	0	0	0	1	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	1	1	0	1	0	1	0	1	0
995:	0	0	0	0	0	0	0	0	0	0	0	1	0
1009:	0	1	0	0	1	0	0	0	0	1	0	0	0
1023:	0	0	0	0	1	0	0	0	0	1	0	1	0



Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:55:29.53

Detector ID: 33                                      Acquisition Start: 25-MAY-2010 11:35:03.01  
 Live Time: 0 02:50:00.00                      Real Time: 0 02:50:00.30  
 Batch Id: 1005066A-RA                      Sample Id: 08  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.82	119		0462.72	377.24	300	156	1.17E-02	9.2	
2	0	5277.36	91	0	0.00	605.67	517	177	8.92E-03	10.5	
3	0	5791.75	74		0429.50	784.81	712	163	7.25E-03	11.6	

Background Counts Within Peak Regions      Generated: 25-MAY-2010 14:55:37.77

Live Time: 0 16:40:00.00                      Acquisition Start: 21-MAY-2010 15:36:34.01  
 Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.85	1	0	3.12	377.50	300	156	1.67E-05	100.0	
2	0	5274.84	1	0	3.12	605.00	517	177	1.67E-05	100.0	
3	0	5813.54	3		0240.11	793.00	712	163	5.00E-05	57.7	

Net Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:55:38.47

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.82*	387		0462.72	377.24	300	156	3.79E-02	9.2	
2	0	5277.36*	296	0	0.00	605.67	517	177	2.90E-02	10.5	
3	0	5791.75*	240		0429.50	784.81	712	163	2.35E-02	11.7	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0:[AMSCOUNT]00003742\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-3-MW-SD DIS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 11:35:03  
 Sample ID : 08 Sample quantity : 0.50000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 033 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.30 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4606.82*	387462.72	377.24	300	156	18.3			RA-226	10.3
0	5277.36*	296	0.00	605.67	517	177	21.0		RN-222	7.89
0	5791.75*	240429.50	784.81	712	163	23.3			PO-218	6.40

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
25-MAY-2010 14:56:08

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$09\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005066A-RA	SAMPLE ID:	09
SAMPLE DATE:	12-MAY-2010 00:00	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	SB-3-MW-SD SUS	DETECTOR NUMBER:	034
ACQ DATE:	25-MAY-2010 11:35	AVERAGE EFFICIENCY:	19.83%
ELAPSED LIVE TIME:	10200.	RECOVERY:	88.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	LLD CONSTANT:	2.65
ENERGY CAL DATE:	21-MAY-2010 12:05	EFF CAL DATE:	17-APR-2010 13:09
BKG FILENAME:	B_034_21MAY10	BKG ELAPSED TIME:	60000.
		SAF:	2.20

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	34.52	0.68	100.0	5.244E-01	2.700E-01	2.167E-01
RN-222	5490.0	83.09	0.51	99.9	1.263E+00	4.216E-01	1.997E-01
RA-226	4785.0	82.92	0.68	100.0	1.259E+00	4.213E-01	2.167E-01

\*\*\*\*\*

K Bannister  
Analyst

5/25/10  
Date

Alan Gray  
Reviewer

5/26/10  
Date

Spectrum : DKA100:[ALPHA]ALUSR.ARCHIVE.S]S\_1005066A-RA#09\_RA.CNF;1

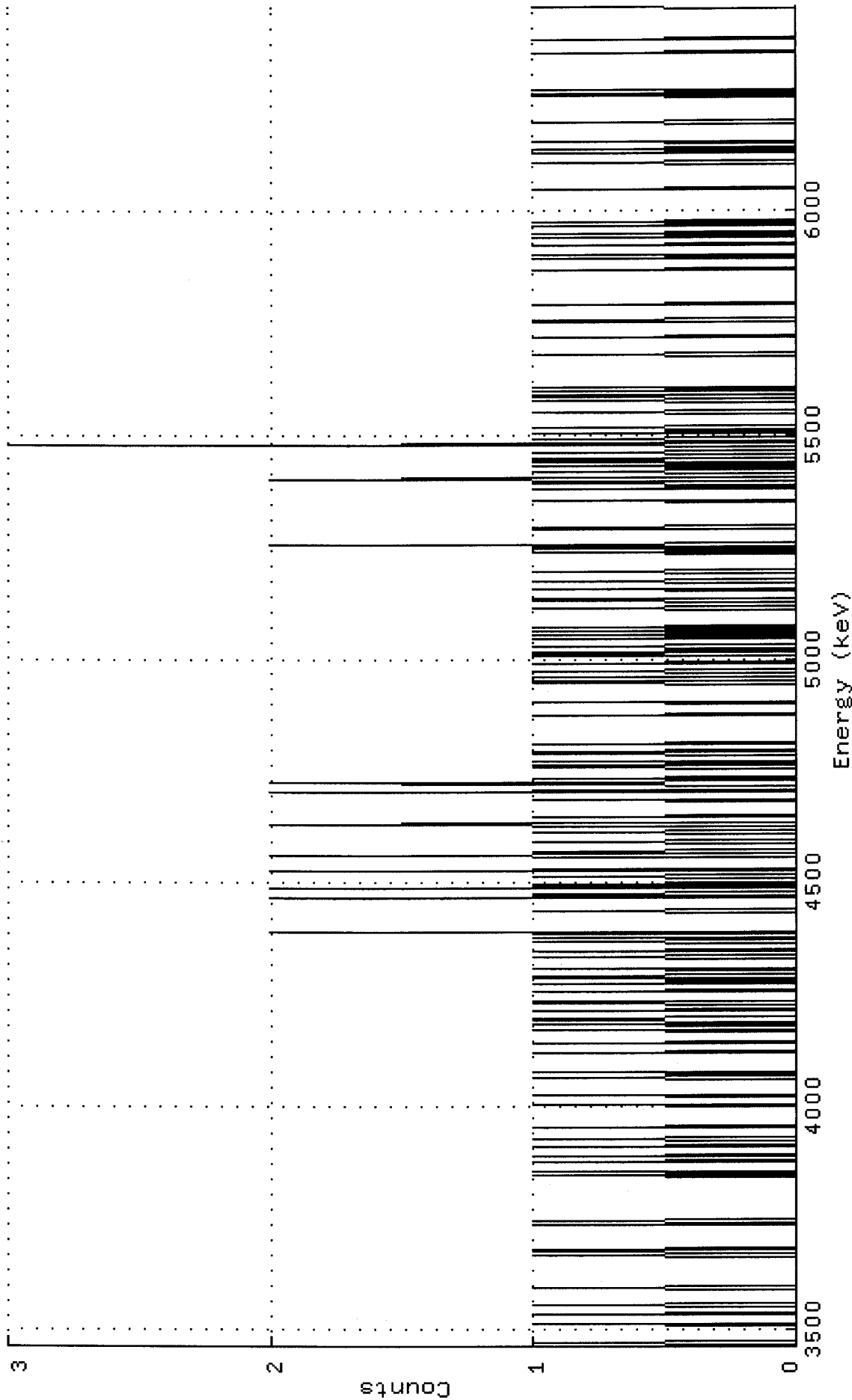
Title : 034

Sample Title: SB-3-MU-SD SUS

Start Time: 25-MAY-2010 11:35 Sample Time: 12-MAY-2010 00:00 Energy Offset: 3.45114E+03

Real Time : 0 02:50:00.30 Sample ID : 09 Energy Slope : 3.11165E+00

Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : -1.78210E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005066A-RA\$09\_RA

Channel

1:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
15:	0	0	0	0	1	0	0	0	0	0	0	0	1	0
29:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
43:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
71:	0	1	0	1	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	1	0	1	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	1	0	0	1	0	0	0	0	0	0	0	1	0	0
141:	0	1	0	0	0	0	0	0	1	0	0	0	0	1
155:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
183:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
197:	0	0	1	0	0	0	1	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
225:	1	0	0	0	0	0	0	0	0	1	0	0	0	1
239:	0	0	1	1	1	0	0	0	0	0	1	0	0	0
253:	0	1	1	0	0	0	0	0	0	0	1	0	0	0
267:	0	0	1	0	0	1	0	1	0	0	0	0	1	0
281:	0	0	0	0	0	0	0	1	0	0	0	0	1	0
295:	0	0	0	0	1	1	0	1	0	0	0	2	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
323:	1	0	0	0	0	0	0	0	0	0	2	0	1	0
337:	0	0	0	2	0	0	1	0	0	0	0	1	0	0
351:	0	0	2	0	0	0	0	0	0	0	0	0	0	2
365:	0	1	1	0	0	0	0	0	0	1	0	0	0	0
379:	0	0	1	0	0	0	0	0	2	1	0	0	0	0
393:	1	0	0	0	0	0	0	0	0	0	0	0	1	0
407:	0	0	0	0	0	2	0	0	0	0	1	2	1	0
421:	0	1	0	0	0	0	0	0	0	1	1	0	0	1
435:	0	0	0	0	0	1	0	1	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
477:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	1	1	1	1	1	0	0	0	0	1	0
505:	0	0	0	0	1	0	0	0	0	0	1	1	0	1
519:	0	0	0	1	0	0	0	0	0	1	0	0	1	0
533:	0	1	0	0	1	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	1	0	0	0	0	0	1	1	0	0
561:	0	0	0	0	1	0	0	0	0	0	1	1	0	0
575:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
589:	0	0	0	0	1	0	0	1	0	0	2	1	0	0
603:	0	0	0	0	0	0	0	0	0	1	1	0	0	0
617:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	1	0	0	0	0	0	0	0	0	0	1	0
645:	0	0	1	0	0	2	1	0	0	0	0	1	0	0
659:	0	1	0	0	1	0	1	1	0	0	0	0	1	0
673:	0	0	0	1	3	0	0	0	1	0	0	0	0	1
687:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
701:	0	1	0	0	0	0	0	0	0	0	1	0	0	1
715:	1	0	0	0	1	0	1	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
757:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
771:	0	0	1	1	0	0	0	0	0	0	0	0	0	0
785:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
813:	0	1	0	0	0	0	0	0	0	0	1	0	1	0
827:	0	0	0	0	0	0	0	1	0	0	0	0	0	1
841:	0	0	1	0	0	0	0	0	1	0	0	1	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	1	0	0	0	0	0	0	0	1	0	0	1
911:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	1
953:	0	0	1	0	1	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
995:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:55:55.74

Detector ID: 34      Acquisition Start: 25-MAY-2010 11:35:23.01  
 Live Time: 0 02:50:00.00      Real Time: 0 02:50:00.30  
 Batch Id: 1005066A-RA      Sample Id: 09  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4601.25	38		0353.17	377.79	302	156	3.73E-03	16.2	
2	0	5302.42	38		0245.01	616.74	520	176	3.73E-03	16.2	
3	0	5804.66	16		0 0.00	792.31	715	163	1.57E-03	25.0	

Background Counts Within Peak Regions      Generated: 25-MAY-2010 14:56:03.88

Live Time: 0 16:40:00.00      Acquisition Start: 21-MAY-2010 15:36:37.01  
    Real Time: 0 16:40:00.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.42	4	0	3.13	379.50	302	156	6.67E-05	50.0	
2	0	5275.65	3		0109.54	607.50	520	176	5.00E-05	57.7	
3	0	5813.46	4		0215.94	796.00	715	163	6.67E-05	50.0	

Net Sample Counts Within Peak Regions      Generated: 25-MAY-2010 14:56:04.55

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4601.25*	83		0353.17	377.79	302	156	8.13E-03	16.4	
2	0	5302.42*	83		0245.01	616.74	520	176	8.15E-03	16.3	
3	0	5804.66*	35		0 0.00	792.31	715	163	3.38E-03	25.5	

Flag: "\*" = Peak area was modified by background subtraction

Configuration : MCA0: [AMSCOUNT] 00003742\$1  
 Analyses by : ROIPEAK V1.2, PEAKEFF V2.2, ENBACK V1.6, NID V3.3  
 Sample title : SB-3-MW-SD SUS  
 Sample date : 12-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 11:35:23  
 Sample ID : 09 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 034 Detector geometry:  
 Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:50:00.30 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4601.25*	83353.17	377.79	302	156	32.7			RA-226	1.11
0	5302.42*	83245.01	616.74	520	176	32.7			RN-222	1.11
0	5804.66*	35	0.00	792.31	715	163	51.0		PO-218	0.461

Detector	Parameter	Flag	Filename
1	OFFLINE		
2	OFFLINE		
3	OFFLINE		
4	ALL	Passed	D_004_NONE
5	ALL	Passed	D_005_NONE
6	ALL	Passed	D_006_NONE
7	OFFLINE		
8	OFFLINE		
9	OFFLINE		
10	ALL	Passed	D_010_NONE
11	ALL	Passed	D_011_NONE
12	ALL	Passed	D_012_NONE
13	ALL	Passed	D_013_NONE
14	ALL	Passed	D_014_NONE
15	ALL	Passed	D_015_NONE
16	OFFLINE		
17	OFFLINE		
18	ALL	Passed	D_018_NONE
19	ALL	Passed	D_019_NONE
20	OFFLINE		
21	ALL	Passed	D_021_NONE
22	OFFLINE		
23	ALL	Passed	D_023_NONE
24	ALL	Passed	D_024_NONE
25	OFFLINE		
26	OFFLINE		
27	ALL	Passed	D_027_NONE
28	OFFLINE		
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	OFFLINE		
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	OFFLINE		
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	OFFLINE		
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 5/25/10

APPROVAL TIME: \_\_\_\_\_

APPROVED BY: KM

PROCEDURE # \_\_\_\_\_

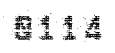


**SECTION IX**  
**ANALYTICAL DATA (RADIUM-228)**

Work Order	<b>10-05066</b>
Analysis Code	<b>Ra228</b>
Run	<b>1</b>
Date Received	<b>5/14/2010</b>
Lab Deadline	<b>5/28/2010</b>
Client	Michael Pisani & Assoc., Inc.
Project	ENV
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 904.0 Modified
Instrument Type	Alpha/Beta GPC
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-6a
Tracer Act (dpm/g)	1225.659
Carrier	Yttrium
Carrier Conc (mg/ml)	30.2

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/14/10 00:00	1.0000E+00
02	MBL	BLANK		05/14/10 00:00	1.0000E+00
03	DUP	SB-2-MW-S DIS	19	05/11/10 10:35	1.0000E+00
04	DO	SB-2-MW-S DIS	19	05/11/10 10:35	1.0000E+00
05	TRG	SB-2-MW-S SUS	19	05/11/10 10:35	1.0000E+00
06	TRG	SB-3-MW-S DIS	42	05/12/10 10:20	5.0000E-01
07	TRG	SB-3-MW-S SUS	42	05/12/10 10:20	1.0000E+00
08	TRG	SB-3-MW-SD DIS	35	05/12/10 10:20	5.0000E-01
09	TRG	SB-3-MW-SD SUS	35	05/12/10 10:20	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8223	1007.9	464.2	102.25	2.000	0.1024	0.1628	0.0604	100.00	102.25	1.00	1.00
02	MBL	0.8185	1003.2	433.9	96.02	2.000	0.1028	0.1626	0.0598	99.01	95.06	1.00	1.00
03	DUP	0.8105	993.4	337.3	75.38	2.000	0.1020	0.1620	0.0600	99.34	74.88	1.00	1.00
04	DO	0.8091	991.7	449.8	100.69	2.000	0.1026	0.1621	0.0595	98.51	99.19	1.00	1.00
05	TRG	0.8088	991.3	419.3	93.90	2.000	0.1026	0.1632	0.0606	100.33	94.21	1.00	1.00
06	TRG	0.8075	989.7	323.4	72.54	2.000	0.1018	0.1588	0.0570	94.37	68.46	1.00	1.00
07	TRG	0.8095	992.2	406.6	90.98	2.000	0.1024	0.1628	0.0604	100.00	90.98	1.00	1.00
08	TRG	0.8143	998.1	380.3	84.59	2.000	0.1027	0.1623	0.0596	98.68	83.47	1.00	1.00
09	TRG	0.8099	992.7	393.5	88.00	2.000	0.1014	0.1607	0.0593	98.18	86.40	1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
02	MBL			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
03	DUP			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
04	DO			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
05	TRG			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
06	TRG			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
07	TRG			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
08	TRG			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH
09	TRG			05/17/10 11:07	JBARNARD	05/18/10 10:51	TSMITH	05/27/10 08:11	TSMITH

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

	Client	Michael Pisani & Assoc., Inc.
Run	Analysis Code	Eberline Services Work Order
1	Ra228	10-05066

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	1.28E+01	8.66E-01	8.43E-01	1.70E+01	75.43	OK		OK	
02	RA-228	MBL	BLANK	pCi/l	3.40E-01	4.30E-01	8.80E-01					OK	OK
03	RA-228	DUP	SB-2-MW-S DIS	pCi/l	2.39E+00	6.73E-01	1.18E+00				INV	OK	
04	RA-228	DO	SB-2-MW-S DIS	pCi/l	1.76E+00	4.78E-01	8.21E-01					OK	
05	RA-228	TRG	SB-2-MW-S SUS	pCi/l	1.28E-01	4.87E-01	1.03E+00					OK	
06	RA-228	TRG	SB-3-MW-S DIS	pCi/l	9.89E+00	1.64E+00	2.49E+00					OK	
07	RA-228	TRG	SB-3-MW-S SUS	pCi/l	1.18E+00	5.60E-01	1.08E+00					OK	
08	RA-228	TRG	SB-3-MW-SD DIS	pCi/l	5.16E+00	1.32E+00	2.33E+00					OK	
09	RA-228	TRG	SB-3-MW-SD SUS	pCi/l	1.17E+00	5.16E-01	9.71E-01					OK	

		Client	Michael Pisani & Assoc., Inc.
Run	1	Eberline Services Work Order	10-05066
		Analysis Code	Ra228

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	05/14/10 00:00	1.00E+00	102.25	100.00	102.25	1.00	5/18/2010 10:51	5/27/2010 8:11
02	RA-228	MBL	05/14/10 00:00	1.00E+00	96.02	99.01	95.06	1.00	5/18/2010 10:51	5/27/2010 8:11
03	RA-228	DUP	05/11/10 10:35	1.00E+00	75.38	99.34	74.88	1.00	5/18/2010 10:51	5/27/2010 8:11
04	RA-228	DO	05/11/10 10:35	1.00E+00	100.69	98.51	99.19	1.00	5/18/2010 10:51	5/27/2010 8:11
05	RA-228	TRG	05/11/10 10:35	1.00E+00	93.90	100.33	94.21	1.00	5/18/2010 10:51	5/27/2010 8:11
06	RA-228	TRG	05/12/10 10:20	5.00E-01	72.54	94.37	68.46	1.00	5/18/2010 10:51	5/27/2010 8:11
07	RA-228	TRG	05/12/10 10:20	1.00E+00	90.98	100.00	90.98	1.00	5/18/2010 10:51	5/27/2010 8:11
08	RA-228	TRG	05/12/10 10:20	5.00E-01	84.59	98.68	83.47	1.00	5/18/2010 10:51	5/27/2010 8:11
09	RA-228	TRG	05/12/10 10:20	1.00E+00	88.00	98.18	86.40	1.00	5/18/2010 10:51	5/27/2010 8:11

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05066-Ra228-1**

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-228	LCS	05/27/10 10:43		LB4110A	B1	120	1191	1.133333333	0.4626
02	RA-228	MBL	05/27/10 10:43		LB4110A	B2	120	165	1.15	0.4691
03	RA-228	DUP	05/27/10 10:43		LB4110A	B3	120	283	1.166666667	0.449
04	RA-228	DO	05/27/10 10:43		LB4110A	B4	120	270	1.05	0.4619
05	RA-228	TRG	05/27/10 10:43		LB4110A	C1	120	194	1.533333333	0.4667
06	RA-228	TRG	05/27/10 10:43		LB4110A	C2	120	412	1.133333333	0.4578
07	RA-228	TRG	05/27/10 10:43		LB4110A	C3	120	282	1.6	0.4699
08	RA-228	TRG	05/27/10 10:43		LB4110A	C4	120	368	1.566666667	0.4692
09	RA-228	TRG	05/27/10 10:43		LB4110A	D2	120	222	1.15	0.4682

	<b>1</b>	<b>Ra228</b>	<b>10-05066</b>	<b>Michael Pisani &amp; Assoc., Inc.</b>
Run	Analysis Code	Eberline Services Work Order	Client	

**10-05066-Ra228-1 (pCi/l) in WA  
Tracer ID: Ba-6a**

**Count Room Report  
Client: Michael Pisani Assoc., Inc**

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/14/10 00:00	1.0000	0.8223	1007.8594	464.2000	102.25	1.00	1.00
02	MBL	BLANK	05/14/10 00:00	1.0000	0.8185	1003.2019	433.9000	96.02	1.00	1.00
03	DUP	SB-2-MW-S DIS	05/11/10 10:35	1.0000	0.8105	993.3966	337.3000	75.38	1.00	1.00
04	DO	SB-2-MW-S DIS	05/11/10 10:35	1.0000	0.8091	991.6807	449.8000	100.69	1.00	1.00
05	TRG	SB-2-MW-S SUS	05/11/10 10:35	1.0000	0.8088	991.3130	419.3000	93.90	1.00	1.00
06	TRG	SB-3-MW-S DIS	05/12/10 10:20	0.5000	0.8075	989.7196	323.4000	72.54	1.00	1.00
07	TRG	SB-3-MW-S SUS	05/12/10 10:20	1.0000	0.8095	992.1710	406.6000	90.98	1.00	1.00
08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	0.5000	0.8143	998.0541	380.3000	84.59	1.00	1.00
09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	1.0000	0.8099	992.6612	393.5000	88.00	1.00	1.00



Internal Work Order		Run	Analysis Code		Date		Technician			Technician Initials			Witness Initials		
10-05066		1	Ra228		5/17/2010 11:06		JBARNARD			JB					

LCS & Matrix Spikes															
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	MSD Error Estimate	LCS Known pCi	MS Error Estimate	MSD Added pCi	MSD Error Estimate
Ra-228	Ra-10	73.154	5/17/2010	0.560	0.5151				16.97	0.866	0.000	0.00	0.000	0.00	0.000

Tracers																					
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes									Tracer			LCS		
01	Ba-133	Ba-6a	1225.659	5/17/2010	0.8223	0.8300															
02	Ba-133	Ba-6a	1225.659	5/17/2010	0.8185	0.8300															
03	Ba-133	Ba-6a	1225.659	5/17/2010	0.8105	0.8300															
04	Ba-133	Ba-6a	1225.659	5/17/2010	0.8091	0.8300															
05	Ba-133	Ba-6a	1225.659	5/17/2010	0.8088	0.8300															
06	Ba-133	Ba-6a	1225.659	5/17/2010	0.8075	0.8300															
07	Ba-133	Ba-6a	1225.659	5/17/2010	0.8095	0.8300															
08	Ba-133	Ba-6a	1225.659	5/17/2010	0.8143	0.8300															
09	Ba-133	Ba-6a	1225.659	5/17/2010	0.8099	0.8300															

Matrix Spike																					
																Matrix Spike					



# Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
<b>10-05066</b>	<b>1</b>	<b>Ra228</b>	<b>liters</b>	<b>5/28/2010</b>	<b>TSMITH</b>

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS					1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.00E+00	1.0000E+00	1.0000E+00				
03	SB-2-MW-S DIS	DUP					1.00E+00	1.0000E+00	1.0000E+00				
04	SB-2-MW-S DIS	DO					1.00E+00	1.0000E+00	1.0000E+00				
05	SB-2-MW-S SUS	TRG					1.00E+00	1.0000E+00	1.0000E+00				
06	SB-3-MW-S DIS	TRG					1.00E+00	5.0000E-01	5.0000E-01				
07	SB-3-MW-S SUS	TRG					1.00E+00	1.0000E+00	1.0000E+00				
08	SB-3-MW-SD DIS	TRG					1.00E+00	5.0000E-01	5.0000E-01				
09	SB-3-MW-SD SUS	TRG					1.00E+00	1.0000E+00	1.0000E+00				

Comments
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# Gravimetric Worksheet

<b>Work Order</b>	<b>Run</b>	<b>Analysis Code</b>	<b>Gravimetric Carrier</b>	<b>Carrier Conc (mg/ml)</b>	<b>Technician</b>
<b>10-05066</b>	<b>1</b>	<b>Ra228</b>	<b>Yttrium</b>	<b>30.2000</b>	<b>TSMITH</b>

TRotec Fraction	Client ID	Sample Type	Carrier Added (ml)	Filter Data			Gravimetric % Recovery
				Filter Tare (g)	Filter Final (g)	Filter Net (g)	
01	LCS	LCS	2.0000	0.1024	0.1628	0.0604	100.00
02	BLANK	MBL	2.0000	0.1028	0.1626	0.0598	99.01
03	DUP	DUP	2.0000	0.1020	0.1620	0.0600	99.34
04	SB-2-MW-S DIS	DO	2.0000	0.1026	0.1621	0.0595	98.51
05	SB-2-MW-S SUS	TRG	2.0000	0.1026	0.1632	0.0606	100.33
06	SB-3-MW-S DIS	TRG	2.0000	0.1018	0.1588	0.0570	94.37
07	SB-3-MW-S SUS	TRG	2.0000	0.1024	0.1628	0.0604	100.00
08	SB-3-MW-SD DIS	TRG	2.0000	0.1027	0.1623	0.0596	98.68
09	SB-3-MW-SD SUS	TRG	2.0000	0.1014	0.1607	0.0593	98.18

Technician: Date: 5/27/10

KM  
05/27/10  
A

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
B1	1005066-01	16	1191	120		1400	5/27/10 12:43
B2	1005066-02	9	165	120		1400	5/27/10 12:43
B3	1005066-03	5	283	120		1400	5/27/10 12:43
B4	1005066-04	12	270	120		1400	5/27/10 12:43
C1	1005066-05	20	194	120		1400	5/27/10 12:43
C2	1005066-06	12	412	120		1400	5/27/10 12:43
C3	1005066-07	6	282	120		1400	5/27/10 12:43
C4	1005066-08	10	368	120		1400	5/27/10 12:43
D2	1005066-09	8	222	120		1400	5/27/10 12:43

100 5107110

GPC Detector Report  
(ALL Backgrounds)

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/27/2010	1.50E-01	P	-5.53E-02	7.05E-02	1.96E-01
LB4110A - A2	Alpha	11/18/2007	5/27/2010	1.67E-02	P	-5.70E-02	1.01E-01	2.59E-01
LB4110A - A3	Alpha	11/18/2007	5/27/2010	5.00E-02	P	-4.91E-02	5.07E-02	1.51E-01
LB4110A - A4	Alpha	11/18/2007	5/27/2010	5.00E-02	P	-6.19E-02	5.89E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	5/27/2010	8.33E-02	P	-1.35E-01	8.37E-02	3.02E-01
LB4110A - B2	Alpha	11/18/2007	5/27/2010	5.00E-02	P	-6.60E-02	7.78E-02	2.22E-01
LB4110A - B3	Alpha	11/18/2007	5/27/2010	3.33E-02	P	-5.46E-02	4.48E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	5/27/2010	8.33E-02	P	-4.61E-02	5.35E-02	1.53E-01
LB4110A - C1	Alpha	11/18/2007	5/27/2010	1.00E-01	P	-6.37E-02	8.21E-02	2.28E-01
LB4110A - C2	Alpha	11/18/2007	5/27/2010	1.67E-02	P	-2.03E-01	1.23E-01	4.49E-01
LB4110A - C3	Alpha	11/18/2007	5/27/2010	1.00E-01	P	-2.47E-01	1.22E-01	4.91E-01
LB4110A - C4	Alpha	11/18/2007	5/27/2010	1.33E-01	P	-7.12E-02	7.84E-02	2.28E-01
LB4110A - D1	Alpha	11/18/2007	5/27/2010	1.33E-01	P	-4.59E-02	8.41E-02	2.14E-01
LB4110A - D2	Alpha	11/18/2007	5/27/2010	0.00E+00	P	-6.87E-02	6.96E-02	2.08E-01
LB4110A - D3	Alpha	11/18/2007	5/27/2010	1.17E-01	P	-3.67E-02	6.26E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	5/27/2010	5.00E-02	P	-5.95E-02	7.80E-02	2.15E-01
LB4110R - A1	Alpha	11/24/2006	5/27/2010	6.67E-02	P	-1.11E-01	8.42E-02	2.79E-01
LB4110R - A2	Alpha	11/24/2006	5/27/2010	1.67E-02	P	-9.82E-02	9.68E-02	2.92E-01
LB4110R - A3	Alpha	11/24/2006	5/27/2010	1.50E-01	P	-8.98E-02	7.77E-02	2.45E-01
LB4110R - A4	Alpha	11/24/2006	5/27/2010	8.33E-02	P	-5.08E-02	8.32E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	5/27/2010	3.33E-02	P	-1.17E-01	6.89E-02	2.55E-01
LB4110R - B2	Alpha	11/24/2006	5/27/2010	0.00E+00	P	-7.81E-02	7.71E-02	2.32E-01
LB4110R - B3	Alpha	11/24/2006	5/27/2010	1.00E-01	P	-7.62E-02	7.19E-02	2.20E-01
LB4110R - B4	Alpha	11/24/2006	5/27/2010	3.33E-02	P	-6.55E-02	8.51E-02	2.36E-01
LB4110R - C1	Alpha	11/24/2006	5/27/2010	1.17E-01	P	-8.43E-02	8.88E-02	2.62E-01
LB4110R - C2	Alpha	11/24/2006	5/27/2010	5.00E-02	P	-8.36E-02	8.64E-02	2.56E-01
LB4110R - C3	Alpha	11/24/2006	5/27/2010	1.50E-01	P	-1.04E-01	9.66E-02	2.97E-01
LB4110R - C4	Alpha	11/24/2006	5/27/2010	5.00E-02	P	-7.22E-02	9.28E-02	2.58E-01
LB4110R - D1	Alpha	11/24/2006	5/27/2010	5.00E-02	P	-9.11E-02	8.72E-02	2.65E-01
LB4110R - D2	Alpha	11/24/2006	5/27/2010	1.00E-01	P	-6.17E-02	8.97E-02	2.41E-01
LB4110R - D3	Alpha	11/24/2006	5/27/2010	8.33E-02	P	-5.98E-02	7.81E-02	2.16E-01
LB4110R - D4	Alpha	11/24/2006	5/27/2010	1.17E-01	P	-5.29E-02	9.40E-02	2.41E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

5127110

GPC Detector Report  
(ALL Backgrounds)

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/27/2010	1.58E+00	P	-7.73E+00	2.73E+00	1.32E+01
LB4110A - A2	Beta	11/18/2007	5/27/2010	1.18E+00	P	-6.04E-02	1.58E+00	3.23E+00
LB4110A - A3	Beta	11/18/2007	5/27/2010	1.27E+00	P	3.84E-01	1.29E+00	2.20E+00
LB4110A - A4	Beta	11/18/2007	5/27/2010	1.35E+00	P	4.68E-01	1.71E+00	2.95E+00
LB4110A - B1	Beta	11/18/2007	5/27/2010	1.13E+00	P	-8.55E+00	3.97E+00	1.65E+01
LB4110A - B2	Beta	11/18/2007	5/27/2010	1.15E+00	P	6.11E-02	1.49E+00	2.92E+00
LB4110A - B3	Beta	11/18/2007	5/27/2010	1.17E+00	P	1.17E-01	1.49E+00	2.86E+00
LB4110A - B4	Beta	11/18/2007	5/27/2010	1.05E+00	P	-5.89E-02	1.42E+00	2.91E+00
LB4110A - C1	Beta	11/18/2007	5/27/2010	1.53E+00	P	-7.59E+00	3.11E+00	1.38E+01
LB4110A - C2	Beta	11/18/2007	5/27/2010	1.13E+00	P	3.29E-01	1.43E+00	2.53E+00
LB4110A - C3	Beta	11/18/2007	5/27/2010	1.60E+00	P	4.44E-01	1.48E+00	2.52E+00
LB4110A - C4	Beta	11/18/2007	5/27/2010	1.57E+00	P	-1.29E+00	2.13E+00	5.56E+00
LB4110A - D1	Beta	11/18/2007	5/27/2010	2.08E+00	P	-3.95E+00	3.05E+00	1.01E+01
LB4110A - D2	Beta	11/18/2007	5/27/2010	1.15E+00	P	-1.34E+00	1.77E+00	4.87E+00
LB4110A - D3	Beta	11/18/2007	5/27/2010	4.88E+00	P	-3.00E-01	4.09E+00	8.48E+00
LB4110A - D4	Beta	11/18/2007	5/27/2010	1.35E+00	P	-9.20E-01	1.57E+00	4.06E+00
LB4110R - A1	Beta	11/24/2006	5/27/2010	1.28E+00	P	-6.18E+01	2.79E+00	6.73E+01
LB4110R - A2	Beta	11/24/2006	5/27/2010	8.33E-01	P	-6.21E+01	2.52E+00	6.71E+01
LB4110R - A3	Beta	11/24/2006	5/27/2010	1.08E+00	P	-6.14E+01	4.16E+00	6.98E+01
LB4110R - A4	Beta	11/24/2006	5/27/2010	1.28E+00	P	-6.19E+01	2.66E+00	6.72E+01
LB4110R - B1	Beta	11/24/2006	5/27/2010	1.25E+00	P	-6.51E+01	2.76E+00	7.06E+01
LB4110R - B2	Beta	11/24/2006	5/27/2010	1.23E+00	P	-6.50E+01	2.83E+00	7.07E+01
LB4110R - B3	Beta	11/24/2006	5/27/2010	1.03E+00	P	-6.43E+01	3.92E+00	7.22E+01
LB4110R - B4	Beta	11/24/2006	5/27/2010	1.13E+00	P	-6.52E+01	2.61E+00	7.04E+01
LB4110R - C1	Beta	11/24/2006	5/27/2010	1.40E+00	P	-6.42E+01	4.61E+00	7.34E+01
LB4110R - C2	Beta	11/24/2006	5/27/2010	1.62E+00	P	-6.50E+01	3.58E+00	7.22E+01
LB4110R - C3	Beta	11/24/2006	5/27/2010	1.37E+00	P	-6.54E+01	3.59E+00	7.25E+01
LB4110R - C4	Beta	11/24/2006	5/27/2010	1.35E+00	P	-7.37E+01	4.21E+00	8.21E+01
LB4110R - D1	Beta	11/24/2006	5/27/2010	7.95E+00	P	-6.22E+01	6.56E+00	7.53E+01
LB4110R - D2	Beta	11/24/2006	5/27/2010	1.12E+00	P	-6.61E+01	2.69E+00	7.14E+01
LB4110R - D3	Beta	11/24/2006	5/27/2010	3.77E+00	P	-6.99E+01	7.59E+00	8.51E+01
LB4110R - D4	Beta	11/24/2006	5/27/2010	1.45E+00	P	-6.57E+01	3.10E+00	7.19E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

GPC Detector Report  
(ALL Efficiencies)

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/27/2010	0.2414	P	0.2375	0.2505	0.2634
LB4110A - A2	Alpha	11/18/2007	5/27/2010	0.2171	P	0.1958	0.2208	0.2458
LB4110A - A3	Alpha	11/18/2007	5/27/2010	0.2153	P	0.2049	0.2179	0.2308
LB4110A - A4	Alpha	11/18/2007	5/27/2010	0.2284	P	0.2156	0.2289	0.2422
LB4110A - B1	Alpha	11/18/2007	5/27/2010	0.2259	P	0.2178	0.2317	0.2456
LB4110A - B2	Alpha	11/18/2007	5/27/2010	0.2228	P	0.2139	0.2277	0.2415
LB4110A - B3	Alpha	11/18/2007	5/27/2010	0.2400	P	0.2267	0.2424	0.2580
LB4110A - B4	Alpha	11/18/2007	5/27/2010	0.2351	P	0.2285	0.2410	0.2535
LB4110A - C1	Alpha	11/18/2007	5/27/2010	0.2210	P	0.2116	0.2226	0.2336
LB4110A - C2	Alpha	11/18/2007	5/27/2010	0.2285	P	0.2022	0.2270	0.2518
LB4110A - C3	Alpha	11/18/2007	5/27/2010	0.2408	P	0.2360	0.2494	0.2629
LB4110A - C4	Alpha	11/18/2007	5/27/2010	0.2213	W	0.2181	0.2321	0.2461
LB4110A - D1	Alpha	11/18/2007	5/27/2010	0.2357	P	0.2253	0.2398	0.2544
LB4110A - D2	Alpha	11/18/2007	5/27/2010	0.2636	P	0.2481	0.2633	0.2784
LB4110A - D3	Alpha	11/18/2007	5/27/2010	0.2672	P	0.2514	0.2689	0.2864
LB4110A - D4	Alpha	11/18/2007	5/27/2010	0.1994	P	0.1927	0.2105	0.2284
LB4110R - A1	Alpha	11/24/2006	5/27/2010	0.2337	P	0.2065	0.2425	0.2785
LB4110R - A2	Alpha	11/24/2006	5/27/2010	0.2226	P	0.1929	0.2244	0.2559
LB4110R - A3	Alpha	11/24/2006	5/27/2010	0.2259	P	0.1985	0.2284	0.2582
LB4110R - A4	Alpha	11/24/2006	5/27/2010	0.2407	P	0.2141	0.2470	0.2799
LB4110R - B1	Alpha	11/24/2006	5/27/2010	0.2236	P	0.1938	0.2306	0.2673
LB4110R - B2	Alpha	11/24/2006	5/27/2010	0.2124	P	0.1859	0.2214	0.2568
LB4110R - B3	Alpha	11/24/2006	5/27/2010	0.2466	P	0.2093	0.2478	0.2862
LB4110R - B4	Alpha	11/24/2006	5/27/2010	0.2295	P	0.2006	0.2377	0.2749
LB4110R - C1	Alpha	11/24/2006	5/27/2010	0.2172	P	0.1835	0.2173	0.2511
LB4110R - C2	Alpha	11/24/2006	5/27/2010	0.2281	P	0.1946	0.2266	0.2586
LB4110R - C3	Alpha	11/24/2006	5/27/2010	0.2342	P	0.2040	0.2426	0.2811
LB4110R - C4	Alpha	11/24/2006	5/27/2010	0.2155	P	0.1992	0.2315	0.2638
LB4110R - D1	Alpha	11/24/2006	5/27/2010	0.2332	P	0.1943	0.2296	0.2650
LB4110R - D2	Alpha	11/24/2006	5/27/2010	0.2586	P	0.2245	0.2592	0.2939
LB4110R - D3	Alpha	11/24/2006	5/27/2010	0.2523	P	0.2222	0.2549	0.2875
LB4110R - D4	Alpha	11/24/2006	5/27/2010	0.2010	P	0.1815	0.2117	0.2420
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578

GPC Detector Report  
(ALL Efficiencies)

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/27/2010	0.5768	P	0.5581	0.5899	0.6216
LB4110A - A2	Beta	11/18/2007	5/27/2010	0.5075	P	0.4656	0.5230	0.5803
LB4110A - A3	Beta	11/18/2007	5/27/2010	0.5204	P	0.4934	0.5268	0.5602
LB4110A - A4	Beta	11/18/2007	5/27/2010	0.5388	P	0.5201	0.5490	0.5779
LB4110A - B1	Beta	11/18/2007	5/27/2010	0.5222	P	0.5122	0.5425	0.5728
LB4110A - B2	Beta	11/18/2007	5/27/2010	0.5173	P	0.5102	0.5397	0.5691
LB4110A - B3	Beta	11/18/2007	5/27/2010	0.5464	P	0.5021	0.5529	0.6037
LB4110A - B4	Beta	11/18/2007	5/27/2010	0.5532	P	0.5354	0.5604	0.5853
LB4110A - C1	Beta	11/18/2007	5/27/2010	0.5022	P	0.4838	0.5062	0.5285
LB4110A - C2	Beta	11/18/2007	5/27/2010	0.4945	P	0.4359	0.5092	0.5825
LB4110A - C3	Beta	11/18/2007	5/27/2010	0.5838	P	0.5621	0.5874	0.6127
LB4110A - C4	Beta	11/18/2007	5/27/2010	0.5093	W	0.5064	0.5404	0.5744
LB4110A - D1	Beta	11/18/2007	5/27/2010	0.5632	P	0.5351	0.5728	0.6105
LB4110A - D2	Beta	11/18/2007	5/27/2010	0.6213	P	0.5535	0.6166	0.6798
LB4110A - D3	Beta	11/18/2007	5/27/2010	0.6127	P	0.5819	0.6265	0.6711
LB4110A - D4	Beta	11/18/2007	5/27/2010	0.4715	W	0.4647	0.5022	0.5397
LB4110R - A1	Beta	11/24/2006	5/27/2010	0.5641	P	0.4781	0.5762	0.6744
LB4110R - A2	Beta	11/24/2006	5/27/2010	0.4893	P	0.4099	0.5133	0.6167
LB4110R - A3	Beta	11/24/2006	5/27/2010	0.5426	P	0.4557	0.5488	0.6418
LB4110R - A4	Beta	11/24/2006	5/27/2010	0.5788	P	0.4946	0.5911	0.6876
LB4110R - B1	Beta	11/24/2006	5/27/2010	0.5413	P	0.4507	0.5521	0.6535
LB4110R - B2	Beta	11/24/2006	5/27/2010	0.5207	P	0.4297	0.5292	0.6287
LB4110R - B3	Beta	11/24/2006	5/27/2010	0.5812	P	0.4923	0.5964	0.7004
LB4110R - B4	Beta	11/24/2006	5/27/2010	0.5483	P	0.4633	0.5609	0.6586
LB4110R - C1	Beta	11/24/2006	5/27/2010	0.5014	P	0.4125	0.5066	0.6007
LB4110R - C2	Beta	11/24/2006	5/27/2010	0.5295	P	0.4366	0.5316	0.6266
LB4110R - C3	Beta	11/24/2006	5/27/2010	0.5672	P	0.4631	0.5742	0.6852
LB4110R - C4	Beta	11/24/2006	5/27/2010	0.5253	P	0.4467	0.5442	0.6417
LB4110R - D1	Beta	11/24/2006	5/27/2010	0.5478	P	0.4494	0.5464	0.6433
LB4110R - D2	Beta	11/24/2006	5/27/2010	0.6133	P	0.5054	0.6091	0.7128
LB4110R - D3	Beta	11/24/2006	5/27/2010	0.5864	P	0.4920	0.5908	0.6896
LB4110R - D4	Beta	11/24/2006	5/27/2010	0.4786	P	0.4079	0.5019	0.5960
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906



**SECTION X**

**BARIUM-133 ANALYTICAL TRACER DATA**

KM  
0525-10

VAX/VMS Peak Search Report Generated 25-MAY-2010 07:34:22.30

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506601\_GE4\_BAFIL\_149331.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SPIKE  
Deposition Date :  
Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 07:19:04  
Sample ID : 1005066-01 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.37 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	31.02	1757	91	2.02	31.02	25	17	1.95E+00	2.6	4.15E+00
2	1	35.19	455	57	2.00	35.18	25	17	5.05E-01	7.4	
3	0	53.36	62	65	1.90	53.35	50	7	6.86E-02	25.1	
4	0	61.45	92	111	1.85	61.44	58	7	1.03E-01	21.5	
5	0	81.29	659	164	2.09	81.27	76	11	7.32E-01	5.5	
6	0	111.11	80	101	2.30	111.08	108	9	8.86E-02	25.0	
7	0	160.91	28	83	3.18	160.86	156	11	3.08E-02	66.3	
8	0	198.26	19	34	1.20	198.20	196	6	2.15E-02	52.3	
9	0	277.31	47	26	2.06	277.21	272	11	5.22E-02	26.0	
10	0	303.13	140	30	1.90	303.02	298	11	1.55E-01	11.4	
11	0	333.44	40	12	2.21	333.32	329	8	4.47E-02	21.6	
12	0	356.05	320	13	2.14	355.92	350	10	3.56E-01	6.0	
13	0	386.36	147	17	5.22	386.22	380	16	1.63E-01	10.6	
14	0	437.20	30	0	2.62	437.03	433	8	3.33E-02	18.3	
15	0	511.21	13	5	3.78	511.01	504	10	1.40E-02	44.0	
16	0	562.02	9	2	2.26	561.80	558	7	1.04E-02	40.2	
17	0	913.94	4	5	2.20	913.58	908	7	4.81E-03	98.4	

Total number of lines in spectrum 17  
 Number of unidentified lines 13  
 Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.642E+02	4.642E+02	0.909E+02	19.59	
Total Activity :			4.642E+02	4.642E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	4.916E+02	4.916E+02	2.154E+02	43.83	
AM-241	432.20Y	1.00	5.043E+01	5.043E+01	2.208E+01	43.79	
Total Activity :			5.420E+02	5.420E+02			

Grand Total Activity : 1.006E+03 1.006E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.642E+02	4.642E+02	19.59	OK
	302.84	17.80	4.148E+00	5.675E+02	5.675E+02	30.75	OK
	356.01	60.00	3.452E+00	4.641E+02	4.641E+02	18.78	OK

Final Mean for 3 Valid Peaks = 4.642E+02 +/- 9.093E+01 ( 19.59%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	4.916E+02	4.916E+02	43.83	OK

Final Mean for 1 Valid Peaks = 4.916E+02 +/- 2.154E+02 ( 43.83%)

AM-241	59.54	35.90*	1.534E+01	5.043E+01	5.043E+01	43.79	OK
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Final Mean for 1 Valid Peaks = 5.043E+01 +/- 2.208E+01 ( 43.79%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.642E+02	9.093E+01	3.227E+01	5.090E+00	14.383
TH-234	4.916E+02	2.154E+02	2.871E+02	2.100E+01	1.712
AM-241	5.043E+01	2.208E+01	2.053E+01	1.455E+00	2.457

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-5.502E+00	7.927E+00	1.248E+01	1.311E+00	-0.441
CD-109	-9.530E+01	1.692E+02	2.530E+02	2.222E+01	-0.377
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	4.638E+00	8.029E+00	1.324E+01	6.824E-01	0.350
NP-237	-4.087E+00	4.902E+01	7.752E+01	6.747E+00	-0.053

83  
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KM  
S-25-10

VAX/VMS Peak Search Report Generated 25-MAY-2010 07:52:43.07

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506602\_GE4\_BAFIL\_149333.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : BLANK  
Deposition Date :  
Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 07:37:30  
Sample ID : 1005066-02 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.33 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.03	1722	89	2.10	31.03	25	19	1.91E+00	2.6	4.76E+00
2	2	35.37	397	65	2.23	35.37	25	19	4.41E-01	8.4	
3	0	52.45	19	108	1.05	52.44	50	8	2.07E-02	98.7	
4	3	62.17	76	121	2.51	62.15	57	20	8.42E-02	27.3	1.27E+00
5	3	66.39	22	110	2.52	66.37	57	20	2.48E-02	89.5	
6	0	81.16	616	111	1.91	81.14	77	10	6.84E-01	5.2	
7	0	111.74	102	51	2.28	111.71	109	7	1.14E-01	15.0	
8	0	160.59	21	37	2.81	160.54	157	8	2.38E-02	53.3	
9	0	224.54	22	27	1.02	224.46	221	8	2.41E-02	47.2	
10	0	277.33	42	30	2.06	277.23	271	10	4.70E-02	28.7	
11	0	303.30	93	53	1.78	303.19	298	11	1.04E-01	18.2	
12	0	337.55	54	26	5.70	337.43	329	18	6.02E-02	26.2	
13	0	356.29	312	28	1.77	356.16	352	8	3.47E-01	6.4	
14	5	385.35	85	12	3.42	385.21	379	17	9.40E-02	14.6	2.65E+00
15	5	390.22	24	3	3.43	390.07	379	17	2.70E-02	45.9	
16	0	437.50	38	3	2.23	437.33	432	11	4.27E-02	18.1	
17	0	468.27	6	3	1.05	468.09	464	6	6.54E-03	62.4	
18	1	509.08	7	0	2.41	508.88	506	14	7.33E-03	44.3	6.05E-01
19	1	512.42	13	2	2.41	512.22	506	14	1.45E-02	36.8	
20	1	515.98	6	3	2.41	515.78	506	14	6.47E-03	76.9	
21	0	559.56	6	2	2.91	559.34	555	7	6.87E-03	53.8	
22	0	661.32	5	4	2.48	661.07	655	8	5.68E-03	80.7	

Total number of lines in spectrum 22  
Number of unidentified lines 18  
Number of lines tentatively identified by NID 4 18.18%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.338E+02	4.339E+02	0.836E+02	19.26	
Total Activity :			4.338E+02	4.339E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	4.026E+02	4.026E+02	2.225E+02	55.25	
Total Activity :			4.026E+02	4.026E+02			

Grand Total Activity : 8.365E+02 8.365E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.338E+02	4.339E+02	19.26	OK
	302.84	17.80	4.148E+00	3.799E+02	3.800E+02	41.87	OK
	356.01	60.00	3.452E+00	4.527E+02	4.527E+02	19.31	OK

Final Mean for 3 Valid Peaks = 4.339E+02 +/- 8.358E+01 ( 19.26%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	4.026E+02	4.026E+02	55.25	OK

Final Mean for 1 Valid Peaks = 4.026E+02 +/- 2.225E+02 ( 55.25%)

Flag: "\*" = Keyline



---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.339E+02	8.358E+01	2.670E+01	4.211E+00	16.249
TH-234	4.026E+02	2.225E+02	2.639E+02	1.930E+01	1.526

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-5.500E+00	6.844E+00	1.127E+01	1.183E+00	-0.488
CD-109	-1.613E+02	1.681E+02	2.383E+02	2.092E+01	-0.677
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	9.484E+00	7.355E+00	1.279E+01	6.594E-01	0.742
NP-237	-6.985E+00	4.717E+01	7.422E+01	6.461E+00	-0.094
AM-241	1.468E+01	2.227E+01	3.022E+01	2.142E+00	0.486

KM  
05-25-10

VAX/VMS Peak Search Report Generated 25-MAY-2010 08:13:21.91

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100506603\_GE4\_BAFIL\_149335.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-2-MW-S DIS  
Deposition Date :  
Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 07:57:47  
Sample ID : 1005066-03 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.28 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	31.02	1280	76	2.02	31.02	26	16	1.42E+00	3.0	3.29E+00
2	1	35.19	299	52	2.01	35.18	26	16	3.32E-01	9.6	
3	0	53.90	40	61	2.37	53.90	49	9	4.46E-02	38.4	
4	3	62.64	41	72	2.51	62.62	59	12	4.57E-02	40.8	1.54E+00
5	3	66.13	20	72	2.27	66.11	59	12	2.17E-02	77.1	
6	0	81.30	479	97	1.85	81.28	76	10	5.32E-01	6.0	
7	0	94.59	13	46	1.41	94.56	90	8	1.40E-02	97.6	
8	0	112.63	75	44	2.01	112.60	109	10	8.36E-02	20.2	
9	0	186.44	21	69	2.75	186.38	179	14	2.31E-02	87.9	
10	0	283.65	5	21	1.27	283.55	280	8	5.90E-03	153.1	
11	0	303.16	77	23	1.89	303.05	298	9	8.61E-02	15.8	
12	0	334.66	26	15	1.84	334.54	329	12	2.93E-02	35.2	
13	0	356.23	228	19	1.94	356.10	351	11	2.53E-01	7.6	
14	3	384.16	47	9	2.83	384.02	380	10	5.23E-02	20.9	1.40E+00
15	3	387.24	26	10	2.04	387.09	380	10	2.84E-02	34.6	
16	0	437.55	17	4	1.63	437.38	433	9	1.90E-02	32.6	
17	0	444.92	8	0	3.24	444.75	442	6	8.89E-03	35.4	
18	0	496.19	6	0	2.88	496.00	493	6	6.67E-03	40.8	
19	0	512.24	9	5	1.06	512.04	508	6	1.04E-02	48.5	

Total number of lines in spectrum 19  
 Number of unidentified lines 14  
 Number of lines tentatively identified by NID 5 26.32%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.373E+02	3.373E+02	0.681E+02	20.19	
Total Activity :			3.373E+02	3.373E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	2.436E+03	2.436E+03	0.888E+03	36.43	
TH-234	4.47E+09Y	1.00	2.185E+02	2.185E+02	1.791E+02	81.99	
Total Activity :			2.655E+03	2.655E+03			

Grand Total Activity : 2.992E+03 2.992E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	3.373E+02	3.373E+02	20.19	OK
	302.84	17.80	4.148E+00	3.150E+02	3.150E+02	37.81	OK
	356.01	60.00	3.452E+00	3.306E+02	3.306E+02	21.01	OK

Final Mean for 3 Valid Peaks = 3.373E+02 +/- 6.812E+01 ( 20.19%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
PA-231	9.28	42.00*	2.058E+01	-----	Line Out Of Range	----	Absent
	10.11	20.20	2.088E+01	-----	Line Out Of Range	----	Absent
	283.67	1.60	4.456E+00	2.236E+02	2.236E+02	306.62	OK
	302.67	2.30	4.151E+00	2.436E+03	2.436E+03	36.43	OK

Final Mean for 2 Valid Peaks = 2.436E+03 +/- 8.876E+02 ( 36.43%)

TH-234	63.29	3.80*	1.487E+01	2.185E+02	2.185E+02	81.99	OK
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Final Mean for 1 Valid Peaks = 2.185E+02 +/- 1.791E+02 ( 81.99%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.373E+02	6.812E+01	2.830E+01	4.463E+00	11.919
PA-231	2.436E+03	8.876E+02	9.391E-01	4.963E-02	2594.328
TH-234	2.185E+02	1.791E+02	2.094E+02	1.532E+01	1.043

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-7.422E-01	5.393E+00	8.747E+00	9.185E-01	-0.085
CD-109	-6.095E+01	1.771E+02	2.108E+02	1.851E+01	-0.289
PA-234	4.056E+00	7.001E+00	1.168E+01	6.023E-01	0.347
NP-237	2.481E+01	4.834E+01	6.859E+01	5.970E+00	0.362
AM-241	1.550E+01	1.467E+01	2.237E+01	1.586E+00	0.693

KM  
082510

VAX/VMS Peak Search Report Generated 25-MAY-2010 08:39:05.36

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100506604\_GE4\_BAFIL\_149339.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-2-MW-S DIS  
Deposition Date :  
Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 08:23:44  
Sample ID : 1005066-04 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.32 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.05	1636	73	2.19	31.05	25	16	1.82E+00	2.7	5.13E+00
2	2	35.34	396	54	2.23	35.34	25	16	4.40E-01	8.2	
3	0	52.76	25	72	1.75	52.75	49	7	2.79E-02	59.4	
4	3	61.64	77	97	2.51	61.62	57	13	8.54E-02	25.6	1.18E+00
5	3	65.87	31	109	2.52	65.86	57	13	3.49E-02	61.9	
6	0	81.21	638	117	2.29	81.19	75	12	7.09E-01	5.2	
7	1	111.84	84	33	2.14	111.81	106	14	9.37E-02	15.8	1.45E+00
8	1	116.20	26	29	2.14	116.16	106	14	2.89E-02	43.2	
9	0	129.13	58	58	13.54	129.09	121	17	6.49E-02	32.9	
10	0	194.64	31	60	2.52	194.57	190	9	3.39E-02	49.5	
11	0	277.15	45	36	1.93	277.05	273	8	5.05E-02	27.2	
12	0	287.56	15	15	2.31	287.45	284	9	1.61E-02	57.8	
13	0	303.15	112	25	2.52	303.04	297	10	1.24E-01	12.6	
14	2	333.56	16	29	2.54	333.44	329	13	1.72E-02	60.8	1.73E+00
15	2	338.57	15	12	2.54	338.44	329	13	1.71E-02	45.9	
16	3	351.83	12	3	2.81	351.70	350	11	1.32E-02	25.9	2.53E+00
17	3	356.24	333	9	2.07	356.11	350	11	3.69E-01	5.6	
18	2	384.03	67	3	2.34	383.88	379	15	7.49E-02	13.9	3.39E+00
19	2	386.86	50	2	2.57	386.72	379	15	5.58E-02	22.6	
20	0	437.39	22	7	1.50	437.22	432	9	2.47E-02	29.9	
21	0	512.67	9	2	2.75	512.47	507	8	9.70E-03	44.4	

Total number of lines in spectrum 21  
Number of unidentified lines 17  
Number of lines tentatively identified by NID 4 19.05%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.498E+02	4.498E+02	0.869E+02	19.32	
Total Activity :			4.498E+02	4.498E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	4.084E+02	4.084E+02	2.119E+02	51.87	
Total Activity :			4.084E+02	4.084E+02			

Grand Total Activity : 8.582E+02 8.583E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.498E+02	4.498E+02	19.32	OK
	302.84	17.80	4.148E+00	4.555E+02	4.556E+02	32.58	OK
	356.01	60.00	3.452E+00	4.821E+02	4.822E+02	18.39	OK

Final Mean for 3 Valid Peaks = 4.498E+02 +/- 8.690E+01 ( 19.32%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	4.084E+02	4.084E+02	51.87	OK

Final Mean for 1 Valid Peaks = 4.084E+02 +/- 2.119E+02 ( 51.87%)

Flag: "\*" = Keyline



---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.498E+02	8.690E+01	2.771E+01	4.370E+00	16.231
TH-234	4.084E+02	2.119E+02	2.264E+02	1.656E+01	1.804

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	3.856E+00	7.337E+00	1.079E+01	1.133E+00	0.357
CD-109	-1.096E+02	1.510E+02	2.206E+02	1.937E+01	-0.497
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	3.819E+00	7.459E+00	1.232E+01	6.351E-01	0.310
NP-237	-2.931E+01	4.306E+01	6.331E+01	5.510E+00	-0.463
AM-241	2.637E+01	1.651E+01	2.945E+01	2.088E+00	0.895

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*KM*  
*OS-25-10*

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506605\_GE4\_BAFIL\_149341.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : SB-2-MW-S SUS  
 Deposition Date :  
 Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 08:40:55  
 Sample ID : 1005066-05 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE4 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.39 0.0%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.03	1471	75	2.10	31.03	25	15	1.63E+00	2.8	3.55E+00
2	2	35.31	354	49	2.08	35.31	25	15	3.93E-01	8.7	
3	0	53.46	60	67	1.92	53.46	50	8	6.67E-02	26.8	
4	0	62.56	96	119	2.76	62.55	58	10	1.07E-01	23.4	
5	0	81.33	595	120	1.95	81.31	75	12	6.61E-01	5.5	
6	0	112.70	72	79	2.23	112.67	108	9	7.95E-02	25.3	
7	0	161.60	36	60	2.01	161.54	156	12	4.01E-02	46.8	
8	4	213.82	14	10	2.96	213.75	211	26	1.59E-02	42.6	1.36E+00
9	4	225.02	16	21	2.97	224.94	211	26	1.77E-02	59.3	
10	0	255.73	14	25	3.51	255.63	250	8	1.51E-02	70.3	
11	0	276.54	45	24	1.52	276.44	272	8	5.00E-02	24.0	
12	0	303.53	78	26	2.22	303.42	297	10	8.63E-02	16.6	
13	0	321.99	13	7	2.50	321.88	319	6	1.41E-02	44.1	
14	0	336.45	13	30	1.14	336.33	331	11	1.49E-02	88.7	
15	0	356.24	321	17	2.05	356.11	350	10	3.57E-01	6.0	
16	7	384.39	48	7	2.90	384.24	379	16	5.31E-02	21.8	1.45E+00
17	7	387.22	25	5	2.22	387.07	379	16	2.79E-02	37.8	
18	7	391.38	19	4	3.37	391.24	379	16	2.15E-02	41.0	
19	0	415.69	8	11	1.98	415.53	411	7	8.33E-03	80.4	
20	0	436.62	30	7	1.52	436.45	431	10	3.29E-02	25.2	
21	0	511.57	13	6	1.64	511.38	508	8	1.42E-02	43.6	
22	0	527.04	6	0	1.98	526.83	523	7	6.67E-03	40.8	

Total number of lines in spectrum 22  
 Number of unidentified lines 18  
 Number of lines tentatively identified by NID 4 18.18%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.193E+02	4.193E+02	0.824E+02	19.65	
Total Activity :			4.193E+02	4.193E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	5.116E+02	5.116E+02	2.435E+02	47.60	
Total Activity :			5.116E+02	5.116E+02			

Grand Total Activity : 9.309E+02 9.309E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.193E+02	4.193E+02	19.65	OK
	302.84	17.80	4.148E+00	3.159E+02	3.159E+02	39.10	OK
	356.01	60.00	3.452E+00	4.656E+02	4.656E+02	18.87	OK

Final Mean for 3 Valid Peaks = 4.193E+02 +/- 8.239E+01 ( 19.65%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	5.116E+02	5.116E+02	47.60	OK

Final Mean for 1 Valid Peaks = 5.116E+02 +/- 2.435E+02 ( 47.60%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.193E+02	8.239E+01	2.751E+01	4.339E+00	15.239
TH-234	5.116E+02	2.435E+02	2.440E+02	1.785E+01	2.096

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-6.426E+00	7.236E+00	1.108E+01	1.163E+00	-0.580
CD-109	-1.083E+02	1.571E+02	2.308E+02	2.027E+01	-0.469
PA-231	-3.106E-01	6.215E-01	9.391E-01	4.963E-02	-0.331
PA-234	1.447E+01	7.002E+00	1.283E+01	6.613E-01	1.128
NP-237	-1.339E+01	4.438E+01	6.875E+01	5.984E+00	-0.195
AM-241	2.626E+01	1.749E+01	2.706E+01	1.918E+00	0.971

KM  
5-25-10

VAX/VMS Peak Search Report Generated 25-MAY-2010 09:12:40.17

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506606\_GE4\_BAFIL\_149343.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-3-MW-S DIS  
Deposition Date :  
Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 08:57:15  
Sample ID : 1005066-06 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.32 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	31.02	1333	68	2.02	31.02	25	16	1.48E+00	3.0	6.04E+00
2	1	35.19	353	43	2.03	35.18	25	16	3.93E-01	8.5	
3	1	62.20	72	61	2.08	62.19	58	12	8.03E-02	21.1	6.96E-01
4	1	65.82	18	70	2.08	65.81	58	12	2.01E-02	79.4	
5	0	81.41	459	133	2.21	81.39	76	12	5.10E-01	6.9	
6	1	112.17	58	31	2.14	112.14	106	13	6.46E-02	21.4	2.37E+00
7	1	115.84	32	16	2.14	115.81	106	13	3.58E-02	32.5	
8	0	120.82	11	19	1.21	120.78	119	5	1.26E-02	61.4	
9	0	276.71	41	23	1.95	276.61	273	10	4.54E-02	26.8	
10	1	303.01	94	22	2.29	302.90	297	19	1.04E-01	12.9	1.31E+00
11	1	312.27	12	18	2.30	312.15	297	19	1.33E-02	64.7	
12	0	333.43	33	13	1.83	333.31	329	10	3.67E-02	26.6	
13	0	356.18	299	15	2.05	356.05	350	12	3.32E-01	6.3	
14	1	383.93	38	20	2.34	383.79	380	13	4.25E-02	26.0	1.21E+00
15	1	386.93	34	19	2.34	386.79	380	13	3.80E-02	31.7	
16	0	437.12	21	8	1.71	436.95	432	8	2.32E-02	32.2	
17	0	510.37	16	7	2.46	510.18	505	9	1.81E-02	38.0	

Total number of lines in spectrum 17  
 Number of unidentified lines 12  
 Number of lines tentatively identified by NID 5 29.41%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
CO-57	270.90D	1.00	4.110E+00	4.114E+00	5.071E+00	123.25	
BA-133	10.50Y	1.00	3.233E+02	3.234E+02	0.690E+02	21.35	
Total Activity :			3.275E+02	3.275E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	3.841E+02	3.841E+02	1.653E+02	43.04	
Total Activity :			3.841E+02	3.841E+02			

Grand Total Activity : 7.115E+02 7.115E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
CO-57	122.06	85.51*	9.721E+00	4.110E+00	4.114E+00	123.25	OK
	136.48	10.60	8.901E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 4.114E+00 +/- 5.071E+00 (123.25%)

BA-133	81.00	33.00*	1.292E+01	3.233E+02	3.234E+02	21.35	OK
	302.84	17.80	4.148E+00	3.824E+02	3.825E+02	33.00	OK
	356.01	60.00	3.452E+00	4.336E+02	4.336E+02	19.27	OK

Final Mean for 3 Valid Peaks = 3.234E+02 +/- 6.903E+01 ( 21.35%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	3.841E+02	3.841E+02	43.04	OK

Final Mean for 1 Valid Peaks = 3.841E+02 +/- 1.653E+02 ( 43.04%)

Flag: "\*" = Keyline



---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	4.114E+00	5.071E+00	1.094E+01	1.149E+00	0.376
BA-133	3.234E+02	6.903E+01	3.107E+01	4.900E+00	10.408
TH-234	3.841E+02	1.653E+02	2.034E+02	1.488E+01	1.888

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CD-109	-8.535E+01	1.550E+02	2.321E+02	2.038E+01	-0.368
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	1.400E+01	7.057E+00	1.285E+01	6.626E-01	1.090
NP-237	-8.434E+00	4.181E+01	6.578E+01	5.726E+00	-0.128
AM-241	2.192E+01	1.473E+01	2.658E+01	1.884E+00	0.824

KM  
05-25-10

VAX/VMS Peak Search Report Generated 25-MAY-2010 09:31:41.40

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506607\_GE4\_BAFIL\_149347.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-3-MW-S SUS  
Deposition Date :  
Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 09:16:21  
Sample ID : 1005066-07 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.32 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	28.38	108	110	2.22	28.39	25	17	1.20E-01	34.0	2.88E+00
2	2	31.10	1464	75	2.00	31.10	25	17	1.63E+00	2.8	
3	2	35.17	366	48	2.23	35.17	25	17	4.06E-01	8.8	
4	0	52.99	51	65	3.35	52.98	49	8	5.69E-02	30.5	
5	1	62.20	96	67	2.08	62.19	57	15	1.07E-01	17.3	1.04E+00
6	1	65.82	26	77	2.08	65.81	57	15	2.87E-02	60.9	
7	0	81.13	577	123	2.13	81.11	75	12	6.41E-01	5.7	
8	0	112.46	91	68	2.33	112.43	108	11	1.01E-01	20.3	
9	0	277.41	39	26	2.01	277.31	273	10	4.28E-02	30.7	
10	0	303.28	100	35	1.77	303.17	298	10	1.11E-01	14.9	
11	0	334.08	22	20	1.65	333.95	329	10	2.44E-02	43.6	
12	3	351.47	8	3	2.81	351.34	350	12	8.48E-03	34.7	8.67E-01
13	3	356.32	304	6	2.15	356.19	350	12	3.38E-01	5.9	
14	4	384.68	49	8	3.11	384.53	379	15	5.44E-02	21.4	7.34E-01
15	4	387.46	36	5	2.39	387.31	379	15	4.03E-02	27.5	
16	4	390.99	27	3	2.60	390.85	379	15	3.02E-02	26.2	
17	0	417.51	9	18	6.97	417.35	409	14	1.05E-02	99.1	
18	0	436.36	26	8	2.23	436.20	431	11	2.89E-02	28.9	
19	0	513.48	9	5	1.14	513.28	508	8	9.48E-03	59.7	
20	0	697.37	5	4	1.24	697.09	690	9	5.31E-03	91.5	

Total number of lines in spectrum 20  
 Number of unidentified lines 16  
 Number of lines tentatively identified by NID 4 20.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.066E+02	4.066E+02	0.806E+02	19.83	
Total Activity :			4.066E+02	4.066E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	5.115E+02	5.115E+02	1.819E+02	35.56	
Total Activity :			5.115E+02	5.115E+02			

Grand Total Activity : 9.181E+02 9.181E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.066E+02	4.066E+02	19.83	OK
	302.84	17.80	4.148E+00	4.074E+02	4.074E+02	36.22	OK
	356.01	60.00	3.452E+00	4.413E+02	4.413E+02	18.66	OK

Final Mean for 3 Valid Peaks = 4.066E+02 +/- 8.062E+01 ( 19.83%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	5.115E+02	5.115E+02	35.56	OK

Final Mean for 1 Valid Peaks = 5.115E+02 +/- 1.819E+02 ( 35.56%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.066E+02	8.062E+01	2.731E+01	4.307E+00	14.887
TH-234	5.115E+02	1.819E+02	2.094E+02	1.532E+01	2.442

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.071E+00	7.699E+00	1.195E+01	1.255E+00	-0.173
CD-109	-1.584E+02	1.702E+02	2.423E+02	2.128E+01	-0.654
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	1.058E+01	7.299E+00	1.283E+01	6.613E-01	0.825
NP-237	-3.712E+00	4.520E+01	7.184E+01	6.253E+00	-0.052
AM-241	3.236E+01	1.599E+01	2.942E+01	2.085E+00	1.100

87  
42

11  
52  
00

00  
62

VAX/VMS Peak Search Report Generated 25-MAY-2010 09:55:21.51

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506608\_GE4\_BAFIL\_149349.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : SB-3-MW-SD DIS  
 Deposition Date :  
 Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 09:39:55  
 Sample ID : 1005066-08 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE4 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.31 0.0%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.05	1502	64	2.10	31.05	25	14	1.67E+00	2.7	3.81E+00
2	2	35.38	365	39	2.08	35.38	25	14	4.05E-01	8.4	
3	0	53.02	44	62	2.02	53.01	50	7	4.85E-02	33.7	
4	5	62.21	114	68	3.04	62.20	57	16	1.27E-01	17.0	1.73E+00
5	5	66.39	54	53	2.52	66.37	57	16	6.02E-02	31.7	
6	2	77.42	17	38	2.31	77.40	76	11	1.84E-02	50.7	5.34E+00
7	2	81.41	540	58	1.93	81.39	76	11	6.00E-01	4.8	
8	0	111.73	59	64	1.52	111.70	107	8	6.59E-02	26.7	
9	1	130.18	26	26	2.15	130.14	126	14	2.90E-02	34.6	2.39E+00
10	1	137.14	16	25	2.16	137.10	126	14	1.82E-02	54.1	
11	0	147.00	12	60	0.94	146.95	143	8	1.31E-02	116.1	
12	0	161.66	27	55	1.00	161.60	157	9	3.04E-02	52.1	
13	7	271.48	10	3	2.87	271.38	270	13	1.11E-02	36.6	1.98E+00
14	7	275.99	37	12	2.69	275.89	270	13	4.13E-02	24.5	
15	1	303.26	92	19	2.29	303.14	298	14	1.02E-01	12.9	3.55E+00
16	1	307.11	14	21	2.08	307.00	298	14	1.56E-02	60.7	
17	0	356.30	298	17	1.89	356.16	350	11	3.31E-01	6.4	
18	1	384.36	74	19	2.34	384.21	379	15	8.25E-02	15.7	7.33E+00
19	1	387.36	58	14	2.34	387.21	379	15	6.45E-02	20.0	
20	0	438.10	15	8	1.26	437.93	434	9	1.70E-02	45.5	
21	0	511.83	22	0	4.37	511.64	507	9	2.44E-02	21.3	

Total number of lines in spectrum 21  
 Number of unidentified lines 15  
 Number of lines tentatively identified by NID 6 28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.803E+02	3.803E+02	0.719E+02	18.91	
Total Activity :			3.803E+02	3.803E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	6.063E+02	6.063E+02	2.119E+02	34.95	
Total Activity :			6.063E+02	6.063E+02			

Grand Total Activity : 9.865E+02 9.866E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	3.803E+02	3.803E+02	18.91	OK
	302.84	17.80	4.148E+00	3.732E+02	3.732E+02	33.07	OK
	356.01	60.00	3.452E+00	4.320E+02	4.321E+02	19.31	OK

Final Mean for 3 Valid Peaks = 3.803E+02 +/- 7.193E+01 ( 18.91%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	6.063E+02	6.063E+02	34.95	OK

Final Mean for 1 Valid Peaks = 6.063E+02 +/- 2.119E+02 ( 34.95%)

Flag: "\*" = Keyline



---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.803E+02	7.193E+01	2.607E+01	4.112E+00	14.586
TH-234	6.063E+02	2.119E+02	1.980E+02	1.448E+01	3.062

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-7.381E+00	8.089E+00	1.136E+01	1.193E+00	-0.650
CD-109	-8.406E+01	1.491E+02	2.229E+02	1.958E+01	-0.377
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	1.264E+01	7.050E+00	1.270E+01	6.550E-01	0.995
NP-237	-2.759E+00	4.232E+01	6.770E+01	5.893E+00	-0.041
AM-241	3.252E+01	1.536E+01	2.863E+01	2.029E+00	1.136

VAX/VMS Peak Search Report Generated 25-MAY-2010 10:11:49.25

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100506609\_GE4\_BAFIL\_149351.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : SB-3-MW-DS SUS  
 Deposition Date :  
 Sample Date : 25-MAY-2010 00:00:00 Acquisition date : 25-MAY-2010 09:56:30  
 Sample ID : 1005066-09 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE4 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.31 0.0%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.04	1559	76	2.12	31.04	25	15	1.73E+00	2.7	5.07E+00
2	2	35.39	401	45	2.12	35.39	25	15	4.46E-01	7.9	
3	0	53.70	68	85	1.87	53.69	48	11	7.54E-02	29.0	
4	1	62.14	75	88	2.08	62.13	58	13	8.38E-02	22.8	3.19E+00
5	1	66.82	20	101	2.08	66.81	58	13	2.18E-02	83.1	
6	0	81.28	558	123	2.15	81.26	75	12	6.20E-01	5.8	
7	0	92.82	35	25	1.39	92.79	89	8	3.87E-02	30.4	
8	3	112.39	79	47	2.52	112.36	107	13	8.76E-02	20.1	4.09E+00
9	3	116.39	22	45	2.59	116.36	107	13	2.41E-02	68.1	
10	6	184.40	21	13	3.06	184.34	182	11	2.36E-02	38.0	3.60E+00
11	6	187.06	16	28	2.01	187.00	182	11	1.77E-02	59.9	
12	0	252.74	17	13	1.65	252.65	250	6	1.93E-02	40.0	
13	2	258.52	11	14	2.49	258.43	256	13	1.22E-02	59.2	1.36E+00
14	2	265.66	12	18	2.49	265.57	256	13	1.30E-02	64.9	
15	0	277.08	58	17	2.05	276.98	273	9	6.46E-02	18.9	
16	1	303.05	74	9	2.29	302.94	296	22	8.18E-02	13.7	1.23E+00
17	1	314.27	10	10	2.30	314.15	296	22	1.10E-02	59.9	
18	0	334.39	21	17	1.41	334.27	331	8	2.39E-02	39.0	
19	0	356.42	278	27	2.02	356.28	350	12	3.09E-01	7.1	
20	4	384.10	54	10	2.60	383.95	378	20	5.95E-02	20.6	1.57E+00
21	4	387.20	44	13	2.64	387.05	378	20	4.93E-02	26.4	
22	4	392.63	13	17	3.12	392.48	378	20	1.46E-02	65.9	
23	0	415.18	16	5	1.47	415.02	410	10	1.82E-02	35.3	
24	0	437.46	19	4	1.18	437.29	434	8	2.11E-02	29.3	
25	0	468.33	11	2	3.72	468.15	463	9	1.19E-02	39.6	
26	0	510.81	11	7	1.85	510.61	507	9	1.20E-02	53.5	

Total number of lines in spectrum 26  
 Number of unidentified lines 22  
 Number of lines tentatively identified by NID 4 15.38%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
BA-133	10.50Y	1.00	3.935E+02	3.935E+02	0.786E+02	19.98	
Total Activity :			3.935E+02	3.935E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
TH-234	4.47E+09Y	1.00	4.011E+02	4.011E+02	1.861E+02	46.39	
Total Activity :			4.011E+02	4.011E+02			

Grand Total Activity : 7.946E+02 7.946E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	3.935E+02	3.935E+02	19.98	OK
	302.84	17.80	4.148E+00	2.994E+02	2.995E+02	34.35	OK
	356.01	60.00	3.452E+00	4.029E+02	4.029E+02	20.26	OK

Final Mean for 3 Valid Peaks = 3.935E+02 +/- 7.864E+01 ( 19.98%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	4.011E+02	4.011E+02	46.39	OK

Final Mean for 1 Valid Peaks = 4.011E+02 +/- 1.861E+02 ( 46.39%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.935E+02	7.864E+01	2.929E+01	4.620E+00	13.433
TH-234	4.011E+02	1.861E+02	2.515E+02	1.839E+01	1.595

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	7.118E-01	6.521E+00	1.081E+01	1.135E+00	0.066
CD-109	-1.487E+01	1.575E+02	1.995E+02	1.752E+01	-0.075
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	1.256E+01	7.044E+00	1.269E+01	6.542E-01	0.990
NP-237	1.432E+01	4.746E+01	6.505E+01	5.662E+00	0.220
AM-241	2.758E+01	1.998E+01	2.971E+01	2.106E+00	0.928

**SECTION XI**  
**ANALYTICAL DATA (GROSS ALPHA/BETA)**

<b>Work Order</b>	<b>10-05066</b>
<b>Analysis Code</b>	<b>GaGbT_ThSr</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>5/14/2010</b>
<b>Lab Deadline</b>	<b>5/28/2010</b>
<b>Client</b>	<b>Michael Pisani &amp; Assoc., Inc.</b>
<b>Project</b>	<b>ENV</b>
<b>Report Level</b>	<b>4</b>
<b>Activity Units</b>	<b>pCi</b>
<b>Aliquot Units</b>	<b>I</b>
<b>Matrix</b>	<b>WA</b>
<b>Method</b>	<b>EPA 900.0 Modified</b>
<b>Instrument Type</b>	<b>Alpha/Beta GPC</b>
<b>Radiometric Tracer</b>	
<b>Radiometric Sol#</b>	
<b>Tracer Act (dpm/g)</b>	
<b>Carrier</b>	
<b>Carrier Conc (mg/ml)</b>	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/14/10 00:00	1.0000E+00
02	MBL	BLANK		05/14/10 00:00	1.0000E+00
03	DUP	SB-2-MW-S DIS	19	05/11/10 10:35	4.0000E-02
04	DO	SB-2-MW-S DIS	19	05/11/10 10:35	4.0000E-02
05	TRG	SB-2-MW-S SUS	19	05/11/10 10:35	2.0000E-01
06	TRG	SB-3-MW-S DIS	42	05/12/10 10:20	1.0000E-02
07	TRG	SB-3-MW-S SUS	42	05/12/10 10:20	1.0000E-01
08	TRG	SB-3-MW-SD DIS	35	05/12/10 10:20	1.0000E-02
09	TRG	SB-3-MW-SD SUS	35	05/12/10 10:20	1.0000E-01

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

10-05066  
GaGbt\_ThSr  
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00		7.5982	7.5983	0.0001			1.00	1.00
02	MBL				0.00		7.6346	7.6347	0.0001			1.00	1.00
03	DUP				0.00		7.6486	7.7338	0.0852			1.00	1.00
04	DO				0.00		7.5671	7.6367	0.0696			1.00	1.00
05	TRG				0.00		0.0695	0.0820	0.0125			1.00	1.00
06	TRG				0.00		7.6651	7.7575	0.0924			1.00	1.00
07	TRG				0.00		0.0694	0.0795	0.0101			1.00	1.00
08	TRG				0.00		7.5901	7.6669	0.0768			1.00	1.00
09	TRG				0.00		0.0692	0.0772	0.0080			1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/20/10 12:57	BLESTER				
02	MBL			05/20/10 12:57	BLESTER				
03	DUP			05/20/10 12:57	BLESTER				
04	DO			05/20/10 12:57	BLESTER				
05	TRG			05/20/10 12:57	BLESTER				
06	TRG			05/20/10 12:57	BLESTER				
07	TRG			05/20/10 12:57	BLESTER				
08	TRG			05/20/10 12:57	BLESTER				
09	TRG			05/20/10 12:57	BLESTER				

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



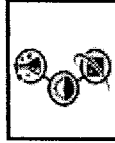
Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05066-GaGt-1**

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS ALPHA	LCS	LCS	pCi/l	2.76E+02	7.41E+00	4.11E-01	3.17E+02	86.95	OK		OK	
02	GROSS ALPHA	MBL	BLANK	pCi/l	0.00E+00	1.04E-01	2.55E-01					OK	OK
03	GROSS ALPHA	DUP	SB-2-MW-S DIS	pCi/l	-9.65E-01	7.32E+00	1.84E+01				INV	INV	
04	GROSS ALPHA	DO	SB-2-MW-S DIS	pCi/l	6.33E+00	5.37E+00	8.75E+00					INV	
05	GROSS ALPHA	TRG	SB-2-MW-S SUS	pCi/l	1.38E+00	8.66E-01	1.50E+00					OK	
06	GROSS ALPHA	TRG	SB-3-MW-S DIS	pCi/l	6.10E+01	3.47E+01	4.49E+01					INV	
07	GROSS ALPHA	TRG	SB-3-MW-S SUS	pCi/l	5.07E+00	2.02E+00	2.96E+00					OK	
08	GROSS ALPHA	TRG	SB-3-MW-SD DIS	pCi/l	-2.90E+01	3.48E+01	9.35E+01					INV	
09	GROSS ALPHA	TRG	SB-3-MW-SD SUS	pCi/l	4.14E+00	1.75E+00	2.34E+00					OK	

Michael Pisani & Assoc., Inc.	Eberline Services Work Order		
	10-05066		GaGt
	Analysis Code		
Client	Run		



**Work Order: 10-05066-GaGbt-1**



Run

Analysis Code

Eberline Services Work Order

Client

1

GaGbt

10-05066

Michael Pisani & Assoc., Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS ALPHA	LCS	05/14/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS ALPHA	MBL	05/14/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS ALPHA	DUP	05/11/10 10:35	4.00E-02	0.00	0.00	0.00	2.86		
04	GROSS ALPHA	DO	05/11/10 10:35	4.00E-02	0.00	0.00	0.00	2.46		
05	GROSS ALPHA	TRG	05/11/10 10:35	2.00E-01	0.00	0.00	0.00	1.02		
06	GROSS ALPHA	TRG	05/12/10 10:20	1.00E-02	0.00	0.00	0.00	3.04		
07	GROSS ALPHA	TRG	05/12/10 10:20	1.00E-01	0.00	0.00	0.00	1.00		
08	GROSS ALPHA	TRG	05/12/10 10:20	1.00E-02	0.00	0.00	0.00	2.64		
09	GROSS ALPHA	TRG	05/12/10 10:20	1.00E-01	0.00	0.00	0.00	1.00		

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	GROSS ALPHA	LCS	05/20/10 14:07		LB4110R	D2	30	5326	0.05	0.2899
02	GROSS ALPHA	MBL	05/20/10 14:06		LB4110R	B1	120	8	0.066666667	0.2819
03	GROSS ALPHA	DUP	05/20/10 14:06		LB4110R	B2	120	7	0.066666667	0.2778
04	GROSS ALPHA	DO	05/20/10 14:06		LB4110R	B3	120	10	0.016666667	0.2919
05	GROSS ALPHA	TRG	05/20/10 14:06		LB4110R	B4	120	33	0.1	0.2895
06	GROSS ALPHA	TRG	05/20/10 14:06		LB4110R	C1	120	17	0.016666667	0.2806
07	GROSS ALPHA	TRG	05/20/10 14:06		LB4110R	C2	120	51	0.1	0.2886
08	GROSS ALPHA	TRG	05/20/10 14:06		LB4110R	C3	120	8	0.133333333	0.2736
09	GROSS ALPHA	TRG	05/20/10 14:06		LB4110R	C4	120	36	0.05	0.2722

Client	Michael Pisani & Assoc., Inc.
Eberline Services Work Order	10-05066
Analysis Code	GaGbT
Run	1



Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS BETA	LCS	LCS	pCi/l	2.44E+02	5.76E+00	7.48E-01	2.39E+02	102.04	OK		OK	
02	GROSS BETA	MBL	BLANK	pCi/l	-1.84E-01	2.43E-01	5.45E-01					OK	OK
03	GROSS BETA	DUP	SB-2-MW-S DIS	pCi/l	9.04E+00	8.52E+00	1.72E+01				INV	INV	
04	GROSS BETA	DO	SB-2-MW-S DIS	pCi/l	1.10E+00	7.84E+00	1.67E+01					INV	
05	GROSS BETA	TRG	SB-2-MW-S SUS	pCi/l	2.26E+00	1.45E+00	2.84E+00					OK	
06	GROSS BETA	TRG	SB-3-MW-S DIS	pCi/l	2.87E+00	3.17E+01	6.77E+01					INV	
07	GROSS BETA	TRG	SB-3-MW-S SUS	pCi/l	1.25E+01	3.81E+00	6.86E+00					INV	
08	GROSS BETA	TRG	SB-3-MW-SD DIS	pCi/l	-2.35E+01	3.35E+01	7.43E+01					INV	
09	GROSS BETA	TRG	SB-3-MW-SD SUS	pCi/l	1.23E+01	3.40E+00	6.00E+00					INV	

	Run	1
Analysis Code	GaGt	10-05066
Eberline Services Work Order	10-05066	
Client	Michael Pisani & Assoc., Inc.	

	
Run	<b>1</b>
Analysis Code	<b>GaGt</b>
Eberline Services Work Order	<b>10-05066</b>
Client	<b>Michael Pisani &amp; Assoc, Inc.</b>

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS BETA	LCS	05/14/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS BETA	MBL	05/14/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS BETA	DUP	05/11/10 10:35	4.00E-02	0.00	0.00	0.00	1.20		
04	GROSS BETA	DO	05/11/10 10:35	4.00E-02	0.00	0.00	0.00	1.16		
05	GROSS BETA	TRG	05/11/10 10:35	2.00E-01	0.00	0.00	0.00	1.01		
06	GROSS BETA	TRG	05/12/10 10:20	1.00E-02	0.00	0.00	0.00	1.22		
07	GROSS BETA	TRG	05/12/10 10:20	1.00E-01	0.00	0.00	0.00	1.00		
08	GROSS BETA	TRG	05/12/10 10:20	1.00E-02	0.00	0.00	0.00	1.18		
09	GROSS BETA	TRG	05/12/10 10:20	1.00E-01	0.00	0.00	0.00	1.00		

# Preliminary Data Report & Analytical Calculations Work Order: 10-05066-GaGbT-1

	<b>1</b> Run	<b>GaGbT</b> Analysis Code	<b>10-05066</b> Eberline Services Work Order	<b>Michael Pisani &amp; Assoc, Inc.</b> Client
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Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff	A to B, Cor
01	GROSS BETA	LCS	05/20/10 14:07		LB4110R	D2	30	9516	0.983333333	0.4993	271.60944
02	GROSS BETA	MBL	05/20/10 14:06		LB4110R	B1	120	118	1.183333333	0.4886	0.983333333
03	GROSS BETA	DUP	05/20/10 14:06		LB4110R	B2	120	195	1.3	0.486	1.625
04	GROSS BETA	DO	05/20/10 14:06		LB4110R	B3	120	169	1.366666667	0.4965	1.408333333
05	GROSS BETA	TRG	05/20/10 14:06		LB4110R	B4	120	208	1.25	0.4858	1.733333333
06	GROSS BETA	TRG	05/20/10 14:06		LB4110R	C1	120	145	1.183333333	0.4795	1.208333333
07	GROSS BETA	TRG	05/20/10 14:06		LB4110R	C2	120	387	1.8	0.4758	3.1163275
08	GROSS BETA	TRG	05/20/10 14:06		LB4110R	C3	120	153	1.483333333	0.4705	1.275
09	GROSS BETA	TRG	05/20/10 14:06		LB4110R	C4	120	323	1.383333333	0.4781	2.691666667

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/14/10 00:00	1.0000				0.00	1.00	1.00
02	MBL	BLANK	05/14/10 00:00	1.0000				0.00	1.00	1.00
03	DUP	SB-2-MW-S DIS	05/11/10 10:35	0.0400				0.00	1.00	1.00
04	DO	SB-2-MW-S DIS	05/11/10 10:35	0.0400				0.00	1.00	1.00
05	TRG	SB-2-MW-S SUS	05/11/10 10:35	0.2000				0.00	1.00	1.00
06	TRG	SB-3-MW-S DIS	05/12/10 10:20	0.0100				0.00	1.00	1.00
07	TRG	SB-3-MW-S SUS	05/12/10 10:20	0.1000				0.00	1.00	1.00
08	TRG	SB-3-MW-SD DIS	05/12/10 10:20	0.0100				0.00	1.00	1.00
09	TRG	SB-3-MW-SD SUS	05/12/10 10:20	0.1000				0.00	1.00	1.00



# Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials	
<b>10-05066</b>		<b>1</b>	<b>GaGbT_ThSr</b>		<b>5/20/2010 12:56</b>		<b>BLESTER</b>		<b>BL</b>			
LCS & Matrix Spikes												
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	MSD Error Estimate	MSD Error Estimate
<b>Am-241</b>	A/B-07	695.040	5/20/2010	0.680	1.0130		317.15	13.637	0.00	0.000	0.00	0.000
<b>SrY-90</b>	A/B-07	524.338	5/20/2010	1.050	1.0130		239.26	7.178	0.00	0.000	0.00	0.000

Tracers				Balance Printer Tapes			
fraction	isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	
							Tracer
							LCS
							Matrix Spike

# Aliquot Worksheet

<b>Work Order</b>	<b>Run</b>	<b>Analysis Code</b>	<b>Rpt Units</b>	<b>Lab Deadline</b>	<b>Technician</b>
<b>10-05066</b>	<b>1</b>	<b>GaGbT_ThSr</b>	<b>liters</b>	<b>5/28/2010</b>	<b>BLESTER</b>

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.0000E+00	1.0000E+00				
03	SB-2-MW-S DIS	DUP						4.0000E-02	4.0000E-02				
04	SB-2-MW-S DIS	DO						4.0000E-02	4.0000E-02				
05	SB-2-MW-S SUS	TRG						2.0000E-01	2.0000E-01				
06	SB-3-MW-S DIS	TRG						1.0000E-02	1.0000E-02				
07	SB-3-MW-S SUS	TRG						1.0000E-01	1.0000E-01				
08	SB-3-MW-SD DIS	TRG						1.0000E-02	1.0000E-02				
09	SB-3-MW-SD SUS	TRG						1.0000E-01	1.0000E-01				

<b>Comments</b>	
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Technician: *BL*

Date: 5/20/2010

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05066</b>	<b>1</b>	<b>GaGbT_ThSr</b>			<b>BLESTER</b>

TRetek Fraction	Michael Pisani & Assoc., Inc.		Carrier Data Carrier Added (ml)	Filter Data			Gravimetric % Recovery
	Client ID	Sample Type		Filter Tare (g)	Filter Final (g)	Filter Net (g)	
01	LCS	LCS		7.5982	7.5983	0.0001	
02	BLANK	MBL		7.6346	7.6347	0.0001	
03	DUP	DUP		7.6486	7.7338	0.0852	
04	SB-2-MW-S DIS	DO		7.5671	7.6367	0.0696	
05	SB-2-MW-S SUS	TRG		0.0695	0.0820	0.0125	
06	SB-3-MW-S DIS	TRG		7.6651	7.7575	0.0924	
07	SB-3-MW-S SUS	TRG		0.0694	0.0795	0.0101	
08	SB-3-MW-SD DIS	TRG		7.5901	7.6669	0.0768	
09	SB-3-MW-SD SUS	TRG		0.0692	0.0772	0.0080	

Technician: BL Date: 5/20/2010

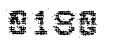
# TDS / TSS Worksheet

Work Order	Run	Analysis Code	Technician
<b>10-05066</b>	<b>1</b>	GaGbt_ThSr	<b>BLESTER</b>

TRetec Fraction	Client ID	Aliquot ml	Filter Data			TDS/TSS (mg/L)	Maximum Aliq (mL)
			Filter Tare (g)	Filter Final (g)	Filter Net (g)		
04	SB-2-MW-S DIS	5.0000	7.5849	7.5973	0.0124	2480.0000	40.32
05	SB-2-MW-S SUS						
06	SB-3-MW-S DIS	5.0000	7.5591	7.6061	0.0470	9400.0000	10.64
07	SB-3-MW-S SUS						
08	SB-3-MW-SD DIS	5.0000	7.6223	7.6694	0.0471	9420.0000	10.62
09	SB-3-MW-SD SUS						

*BL*

Technician: \_\_\_\_\_ Date: 5 / 20 / 2010



(R)  
S 120/W  
KPB

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
D2	1005066-01	5326	9516	30	1400	5/20/10 14:37

②  
5/20/10  
10B

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
C1	1005066-06	17	145	120		1400	5/20/10 16:06
C2	1005066-07	51	387	120		1400	5/20/10 16:06
C3	1005066-08	8	153	120		1400	5/20/10 16:06
B1	1005066-02	8	118	120		1400	5/20/10 16:06
C4	1005066-09	36	323	120		1400	5/20/10 16:06
B2	1005066-03	7	195	120		1400	5/20/10 16:06
B3	1005066-04	10	169	120		1400	5/20/10 16:06
B4	1005066-05	33	208	120		1400	5/20/10 16:06

GPC Detector Report  
(ALL Efficiencies)

KM  
05-20-10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/20/2010	0.2515	P	0.2375	0.2505	0.2634
LB4110A - A2	Alpha	11/18/2007	5/20/2010	0.2160	P	0.1958	0.2208	0.2459
LB4110A - A3	Alpha	11/18/2007	5/20/2010	0.2161	P	0.2049	0.2179	0.2308
LB4110A - A4	Alpha	11/18/2007	5/20/2010	0.2285	P	0.2156	0.2289	0.2422
LB4110A - B1	Alpha	11/18/2007	5/20/2010	0.2266	P	0.2179	0.2318	0.2456
LB4110A - B2	Alpha	11/18/2007	5/20/2010	0.2209	P	0.2140	0.2278	0.2416
LB4110A - B3	Alpha	11/18/2007	5/20/2010	0.2389	P	0.2267	0.2424	0.2581
LB4110A - B4	Alpha	11/18/2007	5/20/2010	0.2351	P	0.2285	0.2411	0.2536
LB4110A - C1	Alpha	11/18/2007	5/20/2010	0.2222	P	0.2116	0.2226	0.2336
LB4110A - C2	Alpha	11/18/2007	5/20/2010	0.2260	P	0.2021	0.2270	0.2519
LB4110A - C3	Alpha	11/18/2007	5/20/2010	0.2437	P	0.2360	0.2494	0.2629
LB4110A - C4	Alpha	11/18/2007	5/20/2010	0.2223	P	0.2185	0.2322	0.2459
LB4110A - D1	Alpha	11/18/2007	5/20/2010	0.2372	P	0.2253	0.2399	0.2544
LB4110A - D2	Alpha	11/18/2007	5/20/2010	0.2641	P	0.2481	0.2633	0.2785
LB4110A - D3	Alpha	11/18/2007	5/20/2010	0.2659	P	0.2514	0.2689	0.2865
LB4110A - D4	Alpha	11/18/2007	5/20/2010	0.1980	P	0.1929	0.2106	0.2283
LB4110R - A1	Alpha	11/24/2006	5/20/2010	0.2343	P	0.2066	0.2426	0.2786
LB4110R - A2	Alpha	11/24/2006	5/20/2010	0.2197	P	0.1929	0.2244	0.2560
LB4110R - A3	Alpha	11/24/2006	5/20/2010	0.2243	P	0.1985	0.2284	0.2583
LB4110R - A4	Alpha	11/24/2006	5/20/2010	0.2448	P	0.2140	0.2470	0.2800
LB4110R - B1	Alpha	11/24/2006	5/20/2010	0.2224	P	0.1938	0.2306	0.2674
LB4110R - B2	Alpha	11/24/2006	5/20/2010	0.2190	P	0.1859	0.2214	0.2569
LB4110R - B3	Alpha	11/24/2006	5/20/2010	0.2437	P	0.2093	0.2478	0.2863
LB4110R - B4	Alpha	11/24/2006	5/20/2010	0.2271	P	0.2006	0.2378	0.2750
LB4110R - C1	Alpha	11/24/2006	5/20/2010	0.2178	P	0.1834	0.2173	0.2512
LB4110R - C2	Alpha	11/24/2006	5/20/2010	0.2236	P	0.1945	0.2266	0.2587
LB4110R - C3	Alpha	11/24/2006	5/20/2010	0.2399	P	0.2039	0.2426	0.2813
LB4110R - C4	Alpha	11/24/2006	5/20/2010	0.2170	P	0.1993	0.2316	0.2639
LB4110R - D1	Alpha	11/24/2006	5/20/2010	0.2254	P	0.1942	0.2296	0.2651
LB4110R - D2	Alpha	11/24/2006	5/20/2010	0.2595	P	0.2244	0.2592	0.2940
LB4110R - D3	Alpha	11/24/2006	5/20/2010	0.2576	P	0.2222	0.2549	0.2876
LB4110R - D4	Alpha	11/24/2006	5/20/2010	0.1976	P	0.1816	0.2118	0.2420
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578

GPC Detector Report  
(ALL Efficiencies)

KM  
05-20-10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/20/2010	0.5833	P	0.5580	0.5899	0.6217
LB4110A - A2	Beta	11/18/2007	5/20/2010	0.5261	P	0.4655	0.5230	0.5805
LB4110A - A3	Beta	11/18/2007	5/20/2010	0.5213	P	0.4933	0.5268	0.5603
LB4110A - A4	Beta	11/18/2007	5/20/2010	0.5459	P	0.5200	0.5490	0.5780
LB4110A - B1	Beta	11/18/2007	5/20/2010	0.5298	P	0.5126	0.5427	0.5727
LB4110A - B2	Beta	11/18/2007	5/20/2010	0.5326	P	0.5103	0.5397	0.5692
LB4110A - B3	Beta	11/18/2007	5/20/2010	0.5511	P	0.5020	0.5530	0.6040
LB4110A - B4	Beta	11/18/2007	5/20/2010	0.5619	P	0.5355	0.5605	0.5854
LB4110A - C1	Beta	11/18/2007	5/20/2010	0.5101	P	0.4839	0.5062	0.5286
LB4110A - C2	Beta	11/18/2007	5/20/2010	0.4920	P	0.4359	0.5094	0.5828
LB4110A - C3	Beta	11/18/2007	5/20/2010	0.5813	P	0.5621	0.5874	0.6127
LB4110A - C4	Beta	11/18/2007	5/20/2010	0.5196	P	0.5073	0.5407	0.5741
LB4110A - D1	Beta	11/18/2007	5/20/2010	0.5629	P	0.5350	0.5728	0.6106
LB4110A - D2	Beta	11/18/2007	5/20/2010	0.6259	P	0.5531	0.6166	0.6800
LB4110A - D3	Beta	11/18/2007	5/20/2010	0.6221	P	0.5819	0.6266	0.6713
LB4110A - D4	Beta	11/18/2007	5/20/2010	0.4726	W	0.4652	0.5024	0.5396
LB4110R - A1	Beta	11/24/2006	5/20/2010	0.5628	P	0.4780	0.5763	0.6747
LB4110R - A2	Beta	11/24/2006	5/20/2010	0.4916	P	0.4099	0.5135	0.6170
LB4110R - A3	Beta	11/24/2006	5/20/2010	0.5312	P	0.4556	0.5488	0.6421
LB4110R - A4	Beta	11/24/2006	5/20/2010	0.5796	P	0.4944	0.5912	0.6879
LB4110R - B1	Beta	11/24/2006	5/20/2010	0.5385	P	0.4505	0.5521	0.6538
LB4110R - B2	Beta	11/24/2006	5/20/2010	0.5146	P	0.4295	0.5293	0.6290
LB4110R - B3	Beta	11/24/2006	5/20/2010	0.5859	P	0.4922	0.5965	0.7008
LB4110R - B4	Beta	11/24/2006	5/20/2010	0.5453	P	0.4632	0.5610	0.6589
LB4110R - C1	Beta	11/24/2006	5/20/2010	0.5060	P	0.4122	0.5066	0.6010
LB4110R - C2	Beta	11/24/2006	5/20/2010	0.5312	P	0.4364	0.5316	0.6268
LB4110R - C3	Beta	11/24/2006	5/20/2010	0.5823	P	0.4629	0.5742	0.6855
LB4110R - C4	Beta	11/24/2006	5/20/2010	0.5252	P	0.4466	0.5443	0.6420
LB4110R - D1	Beta	11/24/2006	5/20/2010	0.5536	P	0.4491	0.5464	0.6436
LB4110R - D2	Beta	11/24/2006	5/20/2010	0.6152	P	0.5051	0.6091	0.7130
LB4110R - D3	Beta	11/24/2006	5/20/2010	0.5870	P	0.4918	0.5908	0.6899
LB4110R - D4	Beta	11/24/2006	5/20/2010	0.4775	P	0.4079	0.5021	0.5963
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906



GPC Detector Report  
(ALL Backgrounds)

KM  
05-20-10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/20/2010	1.00E-01	P	-5.53E-02	7.00E-02	1.95E-01
LB4110A - A2	Alpha	11/18/2007	5/20/2010	8.33E-02	P	-5.66E-02	1.01E-01	2.59E-01
LB4110A - A3	Alpha	11/18/2007	5/20/2010	1.33E-01	W	-4.89E-02	5.05E-02	1.50E-01
LB4110A - A4	Alpha	11/18/2007	5/20/2010	5.00E-02	P	-6.21E-02	5.87E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	5/20/2010	0.00E+00	P	-1.35E-01	8.40E-02	3.03E-01
LB4110A - B2	Alpha	11/18/2007	5/20/2010	5.00E-02	P	-6.61E-02	7.81E-02	2.22E-01
LB4110A - B3	Alpha	11/18/2007	5/20/2010	3.33E-02	P	-5.47E-02	4.46E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	5/20/2010	6.67E-02	P	-4.64E-02	5.32E-02	1.53E-01
LB4110A - C1	Alpha	11/18/2007	5/20/2010	3.33E-02	P	-6.36E-02	8.24E-02	2.28E-01
LB4110A - C2	Alpha	11/18/2007	5/20/2010	6.67E-02	P	-2.03E-01	1.24E-01	4.51E-01
LB4110A - C3	Alpha	11/18/2007	5/20/2010	6.67E-02	P	-2.48E-01	1.23E-01	4.93E-01
LB4110A - C4	Alpha	11/18/2007	5/20/2010	6.67E-02	P	-7.19E-02	7.83E-02	2.28E-01
LB4110A - D1	Alpha	11/18/2007	5/20/2010	3.33E-02	P	-4.48E-02	8.38E-02	2.13E-01
LB4110A - D2	Alpha	11/18/2007	5/20/2010	5.00E-02	P	-6.85E-02	6.99E-02	2.08E-01
LB4110A - D3	Alpha	11/18/2007	5/20/2010	5.00E-02	P	-3.69E-02	6.25E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	5/20/2010	1.00E-01	P	-5.99E-02	7.78E-02	2.15E-01
LB4110R - A1	Alpha	11/24/2006	5/20/2010	6.67E-02	P	-1.11E-01	8.43E-02	2.80E-01
LB4110R - A2	Alpha	11/24/2006	5/20/2010	0.00E+00	P	-9.84E-02	9.70E-02	2.92E-01
LB4110R - A3	Alpha	11/24/2006	5/20/2010	5.00E-02	P	-8.98E-02	7.78E-02	2.45E-01
LB4110R - A4	Alpha	11/24/2006	5/20/2010	1.50E-01	P	-5.07E-02	8.30E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	5/20/2010	6.67E-02	P	-1.17E-01	6.91E-02	2.55E-01
LB4110R - B2	Alpha	11/24/2006	5/20/2010	6.67E-02	P	-7.79E-02	7.74E-02	2.33E-01
LB4110R - B3	Alpha	11/24/2006	5/20/2010	1.67E-02	P	-7.63E-02	7.21E-02	2.20E-01
LB4110R - B4	Alpha	11/24/2006	5/20/2010	1.00E-01	P	-6.56E-02	8.52E-02	2.36E-01
LB4110R - C1	Alpha	11/24/2006	5/20/2010	1.67E-02	P	-8.44E-02	8.89E-02	2.62E-01
LB4110R - C2	Alpha	11/24/2006	5/20/2010	1.00E-01	P	-8.35E-02	8.67E-02	2.57E-01
LB4110R - C3	Alpha	11/24/2006	5/20/2010	1.33E-01	P	-1.04E-01	9.68E-02	2.98E-01
LB4110R - C4	Alpha	11/24/2006	5/20/2010	5.00E-02	P	-7.25E-02	9.29E-02	2.58E-01
LB4110R - D1	Alpha	11/24/2006	5/20/2010	5.00E-02	P	-9.12E-02	8.74E-02	2.66E-01
LB4110R - D2	Alpha	11/24/2006	5/20/2010	5.00E-02	P	-6.16E-02	8.99E-02	2.41E-01
LB4110R - D3	Alpha	11/24/2006	5/20/2010	6.67E-02	P	-5.99E-02	7.80E-02	2.16E-01
LB4110R - D4	Alpha	11/24/2006	5/20/2010	1.17E-01	P	-5.32E-02	9.40E-02	2.41E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/20/2010	1.53E+00	P	-7.76E+00	2.74E+00	1.32E+01
LB4110A - A2	Beta	11/18/2007	5/20/2010	1.08E+00	P	-6.21E-02	1.59E+00	3.23E+00
LB4110A - A3	Beta	11/18/2007	5/20/2010	1.37E+00	P	3.81E-01	1.29E+00	2.20E+00
LB4110A - A4	Beta	11/18/2007	5/20/2010	1.33E+00	P	4.65E-01	1.71E+00	2.96E+00
LB4110A - B1	Beta	11/18/2007	5/20/2010	1.27E+00	P	-8.57E+00	3.99E+00	1.65E+01
LB4110A - B2	Beta	11/18/2007	5/20/2010	1.12E+00	P	5.87E-02	1.49E+00	2.92E+00
LB4110A - B3	Beta	11/18/2007	5/20/2010	1.40E+00	P	1.12E-01	1.49E+00	2.86E+00
LB4110A - B4	Beta	11/18/2007	5/20/2010	1.63E+00	P	-6.28E-02	1.43E+00	2.91E+00
LB4110A - C1	Beta	11/18/2007	5/20/2010	1.27E+00	P	-7.61E+00	3.13E+00	1.39E+01
LB4110A - C2	Beta	11/18/2007	5/20/2010	1.13E+00	P	3.29E-01	1.43E+00	2.53E+00
LB4110A - C3	Beta	11/18/2007	5/20/2010	1.85E+00	P	4.40E-01	1.48E+00	2.53E+00
LB4110A - C4	Beta	11/18/2007	5/20/2010	1.75E+00	P	-1.30E+00	2.14E+00	5.57E+00
LB4110A - D1	Beta	11/18/2007	5/20/2010	2.02E+00	P	-3.97E+00	3.06E+00	1.01E+01
LB4110A - D2	Beta	11/18/2007	5/20/2010	1.23E+00	P	-1.34E+00	1.77E+00	4.89E+00
LB4110A - D3	Beta	11/18/2007	5/20/2010	4.68E+00	P	-3.22E-01	4.08E+00	8.49E+00
LB4110A - D4	Beta	11/18/2007	5/20/2010	1.20E+00	P	-9.29E-01	1.57E+00	4.07E+00
LB4110R - A1	Beta	11/24/2006	5/20/2010	1.42E+00	P	-6.19E+01	2.79E+00	6.75E+01
LB4110R - A2	Beta	11/24/2006	5/20/2010	1.12E+00	P	-6.22E+01	2.53E+00	6.73E+01
LB4110R - A3	Beta	11/24/2006	5/20/2010	1.52E+00	P	-6.16E+01	4.18E+00	6.99E+01
LB4110R - A4	Beta	11/24/2006	5/20/2010	1.30E+00	P	-6.21E+01	2.67E+00	6.74E+01
LB4110R - B1	Beta	11/24/2006	5/20/2010	1.18E+00	P	-6.52E+01	2.77E+00	7.08E+01
LB4110R - B2	Beta	11/24/2006	5/20/2010	1.30E+00	P	-6.52E+01	2.84E+00	7.08E+01
LB4110R - B3	Beta	11/24/2006	5/20/2010	1.37E+00	P	-6.45E+01	3.94E+00	7.24E+01
LB4110R - B4	Beta	11/24/2006	5/20/2010	1.25E+00	P	-6.54E+01	2.61E+00	7.06E+01
LB4110R - C1	Beta	11/24/2006	5/20/2010	1.18E+00	P	-6.43E+01	4.63E+00	7.36E+01
LB4110R - C2	Beta	11/24/2006	5/20/2010	1.80E+00	P	-6.52E+01	3.59E+00	7.24E+01
LB4110R - C3	Beta	11/24/2006	5/20/2010	1.48E+00	P	-6.55E+01	3.61E+00	7.27E+01
LB4110R - C4	Beta	11/24/2006	5/20/2010	1.38E+00	P	-7.39E+01	4.23E+00	8.23E+01
LB4110R - D1	Beta	11/24/2006	5/20/2010	7.70E+00	P	-6.24E+01	6.55E+00	7.55E+01
LB4110R - D2	Beta	11/24/2006	5/20/2010	9.83E-01	P	-6.62E+01	2.70E+00	7.16E+01
LB4110R - D3	Beta	11/24/2006	5/20/2010	3.33E+00	P	-7.01E+01	7.61E+00	8.53E+01
LB4110R - D4	Beta	11/24/2006	5/20/2010	1.22E+00	P	-6.58E+01	3.11E+00	7.21E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

KM  
05-20-10

**MICHAEL PISANI & ASSOCIATES**

**07-47 East White Lake**

**STANDARD LEVEL IV  
REPORT OF ANALYSIS**

**WORK ORDER #10-05062-OR**

**June 10, 2010**

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY  
OAK RIDGE, TN**

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# STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 10  
Effective: 4/27/09  
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## Eberline Services – Oak Ridge Laboratory LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

**10 050 62**

Eberline Services Work Order # \_\_\_\_\_

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		5/3/10	KF	Sample Log-In
		5-27-10	Kew	Data Compilation
		5-27-10	mt	First Technical Data Review
		5/27/10	MT	Second Technical Data Review
		6/7/10	Q	Data Entry/Electronic Deliverable
		6/7/10	Q	Case Narrative
		06/09/10	eyt	Electronic Deliverable Proof
		6/9/10	Q.H.	Samples Analyzed within Holding Time Yes? <input type="checkbox"/> No? <input type="checkbox"/> <b>YES</b>
		6/9/10	Q.H.	QA/QC Review
		06/07/10	eyt	Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:

Laboratory Manager

6/10/10  
Date

Copy No. \_\_\_\_\_

Radiochemistry Services

**SECTION I**  
**CHAIN OF CUSTODY & pH CHECK SHEET**



Richmond Laboratory

# Chain of Custody

10 050 62

CLIENT: Michael Pisoni & Assoc.  
 ADDRESS: 1100 Baydross St 1430 Energy Cir.  
New Orleans, LA 70163  
 PROJECT: Q7-47 - E. White Lake

SAMPLERS SIGNATURE:

SAMPLE NO.	DATE	TIME	LOCATION
SB-1-MW-S	5/7/10	10:00	4 DIS 5 SWS
SB-1-MW-D	5/6/10	17:10	6 DIS 7 SWS

PURCHASE ORDER NO. \_\_\_\_\_

PARAMETERS

SAMPLE TYPE OR MATRIX	PARAMETERS
W	+
W	Gross alpha/beta
	Ra 226/228

# CONTAINERS

DATE 5/11/10 PAGE 1 OF 1

TAT (IN DAYS) \_\_\_\_\_

OBSERVATIONS, COMMENTS, VOLUMES, SPECIAL OR ADDITIONAL TEST

1) RELINQUISHED BY / DATE:	2) RECEIVED BY / DATE:	3) RELINQUISHED BY / DATE:	4) RECEIVED BY / DATE:	TOTAL NO. OF CONTAINERS:
<u>John Dwyer</u> 5/10/10 COMPANY: <u>Michael Pisoni &amp; Assoc.</u>	<u>Kevin Fox</u> 5/10/10 Airbill #: 843187876006 COMPANY: <u>FedEx</u>		<u>Kevin Fox</u> 5-12-10 1030 COMPANY: <u>Exelone</u>	<u>2</u>
5) RELINQUISHED BY / DATE:	6) RECEIVED BY / DATE:	7) RELINQUISHED BY / DATE:	8) RECEIVED BY / DATE:	METHOD OF SHIPMENT:
				<u>FedEx</u>
COMPANY:	COMPANY:	COMPANY:	COMPANY:	SPECIAL SHIPMENT-HANDLING, STORAGE REQUIREMENTS, OR POSSIBLE HAZARDS

RECEIVED

MAY 12 2010

BY: KF

2030 Wright Avenue P.O. Box 4040 Richmond, CA 94804-0040 (510) 235-2633 FAX No. (510) 235-0438



# Internal Chain of Custody

Work Order #	<b>10-05062</b>
Lab Deadline	<b>5/26/2010</b>
Analysis	<b>Ra226 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 04 &amp; 06 are DISSOLVED.</b>	04	32	M1.0
	05	32	M1.0
	06	41	M1.0
	07	41	M1.0

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	5/13/10 1200
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	5/14/10 1800
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	5/14/10 1600
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	5/17/10 1545
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	5/17/10 1455
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>[Signature]</i>	5/21/10 1540
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		







# Internal Chain of Custody

Work Order #	<b>10-05062</b>
Lab Deadline	<b>5/26/2010</b>
Analysis	<b>Ra226 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05 &amp; 07 are SUSPENDED.</b>	<b>04</b>	32	M1.0
	<b>05</b>	32	M1.0
	<b>06</b>	41	M1.0
	<b>07</b>	41	M1.0

	Location (circle one)						Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>			
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			



# Internal Chain of Custody

Work Order #	<b>10-05062</b>
Lab Deadline	<b>5/26/2010</b>
Analysis	<b>Ra228 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 04 &amp; 06 are DISSOLVED.</b>	04	32	M1.0
	05	32	M1.0
	06	41	M1.0
	07	41	M1.0

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/13/10 1000
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/14/10 1000
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/14/10 1000
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/17/10 1453
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/17/10 1400
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/21/10 1540
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/24/10 0600
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/26/10 1200
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/26/10 1201
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/26/10 1404
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



**EBERLINE**  
SERVICES  
Oak Ridge Laboratory

# Internal Chain of Custody

Work Order #

**10-05062**

Lab Deadline

**5/26/2010**

Analysis

**Ra228 - Level 4**

Sample Matrix

**Water**

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05 &amp; 07 are SUSPENDED.</b>	04	32	M1.0
	05	32	M1.0
	06	41	M1.0
	07	41	M1.0

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/10/10 1200
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/11/10 1000
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/11/10 1000
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/11/10 1453
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/17/10 1458
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/21/10 1540
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/24/10 0600
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/26/10 1200
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/26/10 1201
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	5/26/10 1404
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



# Internal Chain of Custody

Work Order #

**10-05062**

Lab Deadline

**5/26/2010**

Analysis

**GaGdT\_ThSr - Level 4**

Sample Matrix

**Water**

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 05 &amp; 07 are SUSPENDED.</b>	<b>04</b>	32	M1.0
	<b>05</b>	32	M1.0
	<b>06</b>	41	M1.0
	<b>07</b>	41	M1.0

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	BL	5.14.2010
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	BL	5.17.2010 1426
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5/17/10 1427
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	5/17/10 1636
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		




# Internal Chain of Custody

Work Order #	<b>10-05062</b>
Lab Deadline	<b>5/26/2010</b>
Analysis	<b>GaGbt_ThSr - Level 4</b>
Sample Matrix	<b>Water</b>


Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
<b>Fractions 04 &amp; 06 are DISSOLVED.</b>	<b>04</b>	32	M1.0
	<b>05</b>	32	M1.0
	<b>06</b>	41	M1.0
	<b>07</b>	41	M1.0

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>BL</i>	5/14/2010
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>BL</i>	5/17/2010 <i>BL</i>
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>ICB</i>	5/17/10 1427
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>ICB</i>	5/17/10 1430
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

	<b>Sample Receiving Report</b> (Volumes, pH, & CPM)	Internal Work Order
		<b>10-05062</b>
		Received By <b>KFOX</b>

FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max	
01	LCS	0		WA	M1.0			
02	BLANK	0		WA	M1.0			
03	DUP	0		WA	M1.0			
04	SB-1-MW-S DIS ✓	1		WA	M1.0	4.00	32	
				Container Number	pH Orig	pH Final	Volume (L)	CPM
				1	7	7	4.0000	32
05	SB-1-MW-S SUS ✓	1		WA	M1.0	0.00	32	
				Container Number	pH Orig	pH Final	Volume (L)	CPM
				1	7	7	32	32
06	SB-1-MW-D DIS ✓	1		WA	M1.0	4.00	41	
				Container Number	pH Orig	pH Final	Volume (L)	CPM
				1	7	7	4.0000	41
07	SB-1-MW-D SUS ✓	1		WA	M1.0	0.00	41	
				Container Number	pH Orig	pH Final	Volume (L)	CPM
				1	7	7	41	41

*raj*  
*05/13/10*

Received by:  Date: 5-13-10

MP-001, Rev 5  
Effective: 11/22/02

**SECTION II**  
**SAMPLE ACKNOWLEDGEMENT**







**Eberline Services – Oak Ridge Laboratory**

**SAMPLE RECEIPT CHECKLIST**  
MP-001-2

WORK ORDER # 10 050 62

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS       NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:


Received in good condition?	<input checked="" type="radio"/> Y	<input type="radio"/> N	
If aqueous, properly preserved	<input checked="" type="radio"/> Y	<input type="radio"/> N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/> Y	<input type="radio"/> N
Unbroken on outside of package?	<input checked="" type="radio"/> Y	<input type="radio"/> N
Present on samples?	<input checked="" type="radio"/> Y	<input type="radio"/> N
Unbroken on samples?	<input checked="" type="radio"/> Y	<input type="radio"/> N
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/> Y	<input type="radio"/> N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: 2 cubes unpreserved  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SIGNATURE:       DATE: 5-13-10

**SECTION III**  
**CASE NARRATIVE**



EBERLINE ANALYTICAL CORPORATION  
601 SCARBORO ROAD  
OAK RIDGE, TENNESSEE 37830  
PHONE (865) 481-0683  
FAX (865) 483-4621

EBS-OR-30453

June 10, 2010

Patrick Ritchie  
Michael Pisani & Associates  
1100 Poydras Street, 1430 Energy Center  
New Orleans, LA 70163

CASE NARRATIVE  
Work Order # 10-05062-OR

SAMPLE RECEIPT

This work order contains two water samples received 05/12/2010. Both samples were analyzed as dissolved and suspended for Radium-226/228 and Gross Alpha/Beta.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
SB-1-MW-S DIS	10-05062-04	SB-1-MW-D DIS	10-05062-06
SB-1-MW-S SUS	10-05062-05	SB-1-MW-D SUS	10-05062-07

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0 Modified. Gross Alpha/Beta was performed using EPA Method 900.0 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

RADIUM-226

Samples were prepared by removing aliquots followed by filtering to disassociate the dissolved and suspended fractions. Suspended sample fractions were prepared by dissolving in nitric acids followed by mixed acid digestions as appropriate. This was followed by selective sulfate precipitations of the Radium from all samples. Samples were then mounted by semi-micro-precipitations onto micro-porous filters. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. Chemical recovery was calculated by the use of a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

Samples demonstrated acceptable results for Radium-226 activity. Chemical recovery was acceptable for all samples. Results for the Radium-226 method blank demonstrated acceptable activity. Results for the Radium-226 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

## ANALYTICAL RESULTS CONTINUED

### RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were then counted on a gas proportional counter. Chemical recovery was determined by the use of a Barium-133 tracer determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for Radium-228 activity. Chemical recovery was acceptable for all samples. Results for the Radium-228 method blank demonstrated acceptable activity. Results for the Radium-228 replicate demonstrated a high relative percent difference and normalized difference. Radium-228 replicate results are statistically equivalent with consideration of  $\pm 3$ -sigma counting uncertainties. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery.

### GROSS ALPHA/BETA

Samples were filtered to disassociate the dissolved and suspended fractions. Volumetric aliquots from dissolved fractions were acidified with  $\text{HNO}_3$ . Reduced samples were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Volumetric equivalent aliquots from suspended fractions were digested in mixed acids, nitrated with  $\text{HNO}_3$ , and were then transferred to steel planchets for final evaporation to dryness and flaming if appropriate. Samples were then counted on a gas proportional counter. Results were corrected as required for inherent self-absorption based on residual mass present.

Samples demonstrated acceptable results for Gross Alpha and Beta activity. Due to the high total dissolved solids, most results demonstrated slightly high detection limits. Results for the Gross Alpha and Beta method blank demonstrated acceptable activity. Results for the Gross Alpha replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Gross Beta replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Gross Alpha and Beta laboratory control sample demonstrated an acceptable percent recovery.

### CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall  
Laboratory Manager

Date: 6/10/2010

**SECTION IV**  
**ANALYTICAL RESULTS SUMMARY**

# Eberline Analytical

## Final Report of Analysis

**Patrick Ritchie**  
**Michael Pisani & Associates**  
 1100 Poydras St. #1430  
 New Orleans, LA 70163

**SDG: 10-05062**  
**Project:** 07-47 East White Lake  
**Analysis Category:** ENVIRONMENTAL  
**Sample Matrix:** WA

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
10-05062-01	LCS	KNOWN	05/13/10 00:00	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	3.15E+02	1.36E+01			pCi/l
10-05062-01	LCS	SPIKE	05/13/10 00:00	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	2.99E+02	7.81E+00	7.94E+00	4.22E-01	pCi/l
10-05062-02	MBL	BLANK	05/13/10 00:00	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	1.32E-02	7.76E-02	7.76E-02	1.90E-01	pCi/l
10-05062-03	DUP	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	2.86E+00	2.31E+01	2.31E+01	5.47E+01	pCi/l
10-05062-04	DO	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	2.84E+01	2.37E+01	2.37E+01	4.22E+01	pCi/l
10-05062-05	TRG	SB-1-MW-S SUS	05/07/10 10:00	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	5.23E+00	2.02E+00	2.02E+00	2.70E+00	pCi/l
10-05062-06	TRG	SB-1-MW-D DIS	05/06/10 17:10	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	3.25E+00	1.02E+01	1.02E+01	2.28E+01	pCi/l
10-05062-07	TRG	SB-1-MW-D SUS	05/06/10 17:10	5/12/2010	5/17/2010	10-05062	Gross Alpha	EPA 900.0 Modified	1.72E+01	6.73E+00	6.73E+00	2.06E+00	pCi/l
10-05062-01	LCS	KNOWN	05/13/10 00:00	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	2.38E+02	7.14E+00			pCi/l
10-05062-01	LCS	SPIKE	05/13/10 00:00	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	2.62E+02	6.07E+00	6.10E+00	9.31E-01	pCi/l
10-05062-02	MBL	BLANK	05/13/10 00:00	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	3.30E-01	2.75E-01	2.75E-01	5.50E-01	pCi/l
10-05062-03	DUP	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	3.39E+01	3.10E+01	3.10E+01	6.23E+01	pCi/l
10-05062-04	DO	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	3.58E+01	3.36E+01	3.36E+01	6.80E+01	pCi/l
10-05062-05	TRG	SB-1-MW-S SUS	05/07/10 10:00	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	8.97E+00	3.39E+00	3.39E+00	6.23E+00	pCi/l
10-05062-06	TRG	SB-1-MW-D DIS	05/06/10 17:10	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	7.19E+00	1.43E+01	1.43E+01	2.98E+01	pCi/l
10-05062-07	TRG	SB-1-MW-D SUS	05/06/10 17:10	5/12/2010	5/17/2010	10-05062	Gross Beta	EPA 900.0 Modified	3.65E+01	1.45E+01	1.45E+01	2.69E+01	pCi/l
10-05062-01	LCS	KNOWN	05/13/10 00:00	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	1.01E+01	4.66E-01			pCi/l
10-05062-01	LCS	SPIKE	05/13/10 00:00	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	8.93E+00	1.19E+00	1.19E+00	1.85E-01	pCi/l
10-05062-02	MBL	BLANK	05/13/10 00:00	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	1.06E-01	1.16E-01	1.16E-01	1.87E-01	pCi/l
10-05062-03	DUP	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	5.89E+00	1.61E+00	1.61E+00	7.08E-01	pCi/l
10-05062-04	DO	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	4.67E+00	1.33E+00	1.33E+00	8.14E-01	pCi/l
10-05062-05	TRG	SB-1-MW-S SUS	05/07/10 10:00	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	8.02E-01	3.26E-01	3.26E-01	2.43E-01	pCi/l
10-05062-06	TRG	SB-1-MW-D DIS	05/06/10 17:10	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	2.59E+00	6.85E-01	6.85E-01	2.92E-01	pCi/l
10-05062-07	TRG	SB-1-MW-D SUS	05/06/10 17:10	5/12/2010	5/21/2010	10-05062	Radium-226	EPA 903.0 Modified	1.32E+00	4.02E-01	4.02E-01	2.01E-01	pCi/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE**  
 SERVICES

EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical Final Report of Analysis		Report To:										Work Order Details:				
Patrick Ritchie Michael Pisani & Associates 1100 Poydras St. #1430 New Orleans, LA 70163		SDG: 10-05062 Project: 07-47 East White Lake Analysis Category: ENVIRONMENTAL Sample Matrix: WA														
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units			
10-05062-01	LCS	KNOWN	05/13/10 00:00	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	1.69E+01	8.62E-01			pCi/l			
10-05062-01	LCS	SPIKE	05/13/10 00:00	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	1.32E+01	9.35E-01	1.02E+00	9.12E-01	pCi/l			
10-05062-02	MBL	BLANK	05/13/10 00:00	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	5.42E-01	5.04E-01	5.05E-01	1.02E+00	pCi/l			
10-05062-03	DUP	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	5.84E+00	1.43E+00	1.44E+00	2.39E+00	pCi/l			
10-05062-04	DO	SB-1-MW-S DIS	05/07/10 10:00	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	2.77E+00	1.22E+00	1.22E+00	2.30E+00	pCi/l			
10-05062-05	TRG	SB-1-MW-S SUS	05/07/10 10:00	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	4.98E-01	5.46E-01	5.46E-01	1.11E+00	pCi/l			
10-05062-06	TRG	SB-1-MW-D DIS	05/06/10 17:10	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	1.96E+00	5.41E-01	5.44E-01	9.44E-01	pCi/l			
10-05062-07	TRG	SB-1-MW-D SUS	05/06/10 17:10	5/12/2010	5/26/2010	10-05062	Radium-228	EPA 904.0 Modified	8.12E-01	6.31E-01	6.31E-01	1.26E+00	pCi/l			

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE**  
SERVICES

EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

**SECTION V**  
**ANALYTICAL STANDARD**





# National Institute of Standards & Technology

## Certificate

Ba-6  
(#6a)

### Standard Reference Material 4251C Barium-133 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive barium-133 chloride, non-radioactive barium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of ionization chambers and solid-state gamma-ray spectrometry systems.

#### Radiological Hazard

The SRM ampoule contains barium-133 with a total activity of approximately 2.5 MBq. Barium-133 decays by electron capture and during the decay process X-rays and gamma rays with energies from 4 to 400 keV are emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
October 1994

Thomas E. Gills, Chief  
Standard Reference Materials Program



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev. 8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE SOLUTIONS**  
**PRIMARY DILUTION RECERTIFICATION**  
**QCP 009-1**

SOLUTION REFERENCE # NIST SRM4251C      CURRENT DATE 10/28/2009 0:00  
SOLUTION # Ba-6

Principal Radionuclide <sup>133</sup>Barium      Half Life, Years 1.048E+01      Half Life, Days 3.828E+03

Radionuclide <sup>133</sup>Barium      Reference Date 9/1/1993 0:00  
Certified Activity                       $\mu\text{Ci}$   
Certified Concentration 1.318E+01  $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.3081</u>	Weight, Grams
Empty Ampoule	<u>4.2582</u>	Weight, Grams
Solution Net	<u>5.0499</u>	Weight, Grams
Total Activity in Ampoule	<u>66.5577</u>	$\mu\text{Ci}$

**Chemical Composition of Standard Solution**

<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions:      Dilution Solvent Used 1M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 66.5577  $\mu\text{Ci}$       Which Equals 1.478E+08 dpm at the date listed above

And after dilution the activity of this solution is 1.478E+05 dpm/ml      This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 28, 2010

Recertified By *[Signature]*      Date: 10/28/09

Verified & Approved By *[Signature]*      Date: 11/4/09

QC Approval *[Signature]*      Date: 11/4/09



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # **QCP-009-1-A**  
**NIST SRM4251C**

Date **10/28/09**  
Solution # **Ba-6a**

Principal Radionuclide	Half Life, Years	Half Life, Days
<sup>133</sup> Ba	1.048E+01	3.828E+03

Radionuclide of Interest **<sup>133</sup>Ba** Reference Date **9/1/1993 0:00**  
Parent Solution Conc. **1.48E+05** dpm/ml

Chemical Composition of Standard Solution  
**<sup>133</sup>BaCl<sub>2</sub> in 1M HCl**

Dilution Instructions: Dilution Solvent Used **1M HCl**

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution:	<b>25.0000</b> ml	Final Activity Concentration:	<b>3.6950E+03</b> dpm/ml
Total Activity:	<b>3.6950E+06</b> dpm		
Final Volume:	<b>1000.00</b> ml		

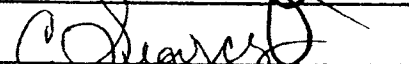
**NOTES:**

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: **October 28, 2010**

Recertified By 

Date: 10/28/09

Verified & Approved By 

Date: 11/4/09

QC Approval 

Date: 11/4/09

# CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Ra-5  
QA/QC REVIEWED  
Date 2/8/94 Initials *W*

Radionuclide: Ra-226 Customer: TMA EBERLINE  
Half Life: 1600 ± 7 years P.O.No.: VH1888  
Catalog No.: 7226 Reference Date: February 1 1994 12:00 PST.  
Source No.: 453-26 Contained Radioactivity: (Ra-226) 1.001 µCi.  
Contained Radioactivity: (Ra-226) 37.0 kBq.

### Description of Solution

- a. Mass of solution: 5.1864 g (in a 5 ml Flame Sealed Ampoule)
- b. Chemical form: Ra(NO<sub>3</sub>)<sub>2</sub> in 1 N HNO<sub>3</sub>
- c. Carrier content: None added
- d. Density: 1.0318 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters)

### Radioactive Daughters

Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

### Radionuclide Concentration

(Ra-226) 0.1929 µCi/g.

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:  
Energy peak(s) integrated under: 186 keV.  
Branching ratio(s) used: 0.0351 gamma rays per decay.

### Uncertainty of Measurement

- a. Systematic uncertainty in instrument calibration: ±3.4%
- b. Random uncertainty in assay: ±3.1%
- c. Random uncertainty in weighing(s): ±0.2%
- d. Total uncertainty at the 99% confidence level: ±4.6%

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

*Anna H. Krum*  
QUALITY CONTROL

*Feb. 3, 1994*  
Date Signed



**QUALITY CONTROL PROGRAM**  
MP 009

Rev.8; 11/01/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE SOLUTIONS**  
**PRIMARY DILUTION RECERTIFICATION**  
MP 009

SOLUTION REFERENCE # IPL 453-26

CURRENT DATE 12/17/2009 0:00  
SOLUTION # Ra-5

Principal Radionuclide

Half Life, Years

Half Life, Days

<sup>226</sup>Radium

1.600E+03

5.844E+05

Radionuclide <sup>226</sup>Radium

Reference Date 2/1/1994 0:00

Certified Activity 1.001E+00  $\mu\text{Ci}$

Certified Concentration                       $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>                    </u>	Weight, Grams
Empty Ampoule	<u>                    </u>	Weight, Grams
Solution Net	<u>                    </u>	Weight, Grams
Total Activity in Ampoule	<u>1.0010</u>	$\mu\text{Ci}$

Chemical Composition of Standard Solution

<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions:

Dilution Solvent Used

1M HNO<sub>3</sub>

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0010  $\mu\text{Ci}$

Which Equals 2.222E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.222E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Diluted By 

Date: 12/17/2009

Verified & Approved By 

Date: 11/5/10

QC Approval 

Date: 11/5/10



QUALITY CONTROL PROGRAM  
MP 009

Rev.8; 11/01/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP 009  
IPL-453-26 Date 12/17/2009 0:00  
Solution # Ra-5b

Principal Radionuclide <sup>226</sup>Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide of Interest <sup>226</sup>Radium Reference Date 2/1/1994 0:00  
Parent Solution Conc. 2.22E+03 dpm/ml

Chemical Composition of Standard Solution  
<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions: Dilution Solvent Used 1M HNO<sub>3</sub>

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml  
Total Activity: 4.4440E+04 dpm Final Activity Concentration: 4.4440E+01 dpm/ml  
Final Volume: 1000.00 ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: December 17, 2010

Recertified By [Signature] Date: 12/17/2009 0:00

Verified & Approved By [Signature] Date: 1/15/10

QC Approval [Signature] Date: 1/15/10

# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

61680-416

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	3.586 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	June 4, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.1%
SYSTEMATIC:	3.6%
RANDOM:	1.5%

RECEIVED  
 DATE 6/11/01 INITIALS SA

\*99% Confidence Level

Impurities:  $\gamma$ -impurities (other than decay products) <0.1%5.00872 grams 0.1M HCl solution with 50  $\mu$ g/g Ba carrier.

P O NUMBER 00008864, Item 1

SOURCE PREPARED BY:

M. D. Currie  
M. D. Currie, Radiochemist

Q A APPROVED:

ACM 6/8/01



QUALITY CONTROL PROGRAM  
MP-009

Rev.8; 1/10/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE SOLUTIONS  
PRIMARY DILUTION RECERTIFICATION  
MP 009

SOLUTION REFERENCE # Analytics 61680-416 CURRENT DATE 12/17/2009 0:00  
SOLUTION # Ra-10

Principal Radionuclide <sup>228</sup>Ra Half Life, Years 5.750E+00 Half Life, Days 2.100E+03

Radionuclide <sup>228</sup>Ra Reference Date 6/4/2001 0:00  
Certified Activity 9.692E-02  $\mu\text{Ci}$   
Certified Concentration                       $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.4982</u>	Weight, Grams
Empty Ampoule	<u>4.4895</u>	Weight, Grams
Solution Net	<u>5.0087</u>	Weight, Grams
Total Activity in Ampoule	<u>0.0969</u>	$\mu\text{Ci}$

Chemical Composition of Standard Solution  
<sup>228</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 0.5 M HCl

Dilution Instructions: Dilution Solvent Used 0.5 M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.0969  $\mu\text{Ci}$  Which Equals 2.152E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.152E+02 dpm/ml This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: December 17, 2010

Recertified By [Signature] Date: 12/17/2009 0:00

Verified & Approved By [Signature] Date: 1/4/10

QC Approval [Signature] Date: 1/5/10



ANALYTICS

QA/QC REVIEWED

Date 4/30/96 Initials WT

Am-4

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677  
Fax (404) 352-2837

# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

52094-416

Am-241 10 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Am-241
ACTIVITY (dps):	1.975 E+05
HALF-LIFE:	432.2 years
CALIBRATION DATE:	March 19, 1996 12:00 EST
TOTAL ERROR:	3.0%
SYSTEMATIC ERROR:	2.37%
RANDOM ERROR:	0.63%

10.01177 grams of solution 1M HCl.

P O NUMBER OR3830, Item 1

SOURCE PREPARED BY: Kare O'Brien Beverly  
K. O. Beverly, Radiochemist

Q A APPROVED: DM. Maly 4-26-96



**QUALITY CONTROL PROGRAM**  
MP-008

Rev. 8; 1/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference #		Analytics 52094-416	Date	11/9/2009 0:00
Principal Radionuclide		<sup>241</sup> Americium	Solution #	A/B-7 (alpha)
Half Life, Years		4.322E+02	Half Life, Days	1.579E+05
Radionuclide of Interest	<sup>241</sup> Am	Parent Solution Conc.	1.19E+04 dpm/ml	Reference Date
				3/19/1996 0:00
Chemical Composition of Standard Solution				
<sup>241</sup> AmCl <sub>3</sub> in 1M HCL				

Dilution Instructions: Dilution Solvent Used 1 M HNO<sub>3</sub>

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution: 60.0000 ml  
 Total Activity: 7.1100E+05 dpm  
 Final Volume: 1000.00 ml  
 Final Activity Concentration: 7.1100E+02 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: November 9, 2010

Recertified By: [Signature]

Date: 11/9/09

Verified & Approved By: [Signature]

Date: 12/11/09

QC Approval: [Signature]

Date: 12/11/09



5-75  
13-00

# National Institute of Standards & Technology

## Certificate

### Standard Reference Material 4234A Strontium-90 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive strontium-90 chloride, non-radioactive strontium chloride, non-radioactive yttrium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

#### Radiological Hazard

The SRM ampoule contains strontium-90 with a total activity of approximately 13 MBq. Strontium-90 decays by beta-particle emission to yttrium-90, which also decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. The beta particles emitted from strontium-90 and yttrium-90 produce bremsstrahlung photons with energies up to 2 MeV. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least March 2005.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
May 1995 (Text only revised November 1997)

Thomas E. Gills, Chief  
Standard Reference Materials Program



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.7: 9/29/99

Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE STANDARD SOLUTIONS**  
SECONDARY DILUTION (RE-CERTIFICATION)

Solution Reference # QCP-009-1-A      Date 11/9/2009 0:00  
NIST 4234A      Solution # A/B-7 (beta)

Principal Radionuclide <sup>90</sup>Sr      Half Life, Years 2.878E+01      Half Life, Days 1.051E+04

Radionuclide of Interest <sup>90</sup>Sr      Reference Date 3/13/1995 0:00  
Parent Solution Conc. 1.52E+06 dpm/ml

The beta activity of solution reflects the original <sup>90</sup>Sr concentration and an equal concentration of <sup>90</sup>Yttrium.

Chemical Composition of Standard Solution  
<sup>90</sup>SrCl<sub>2</sub> in 1 M HCl

Dilution Instructions:      Dilution Solvent Used 1 M HNO<sub>3</sub>

**SECONDARY VOLUMETRIC DILUTION**

Vol. Parent Solution: 0.5000 ml  
Total Activity: 7.5764E+05 dpm      Final Activity Concentration: 7.5764E+02 dpm/ml  
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: November 9, 2010

Recertified By: [Signature]      Date: 11/09/09

Verified & Approved By: [Signature]      Date: 12/11/09

QC Approval: [Signature]      Date: 12/11/09

**SECTION VI**  
**QUALITY CONTROL SAMPLE RESULTS SUMMARY**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05062</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	1.92	88.14%	13.29%	100.00%	4.60%	1.01E+01	4.66E-01	8.93E+00	1.19E+00	Ra-5b	4.41E+01	4.60E+00	5.10E-01

**Matrix Spike**

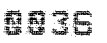
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

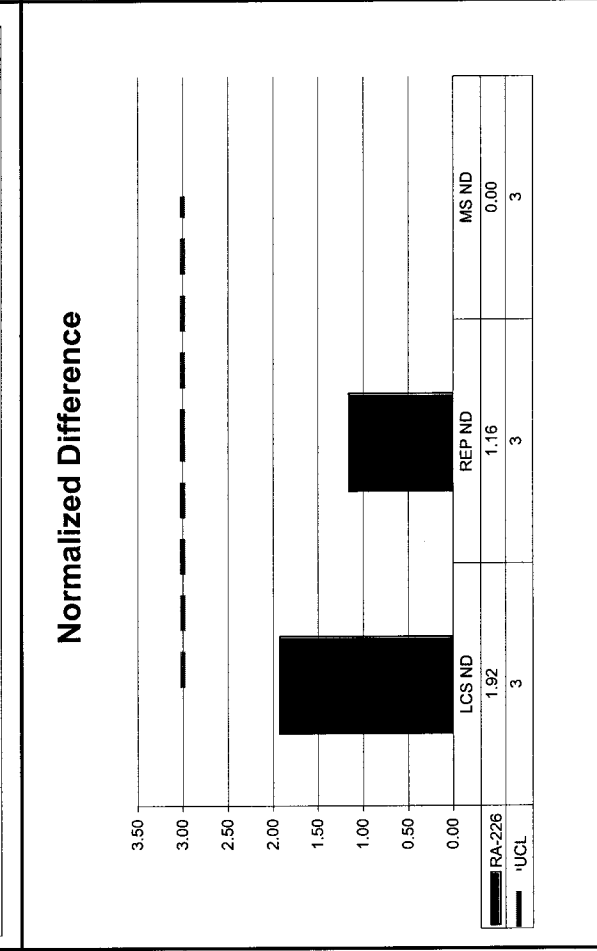
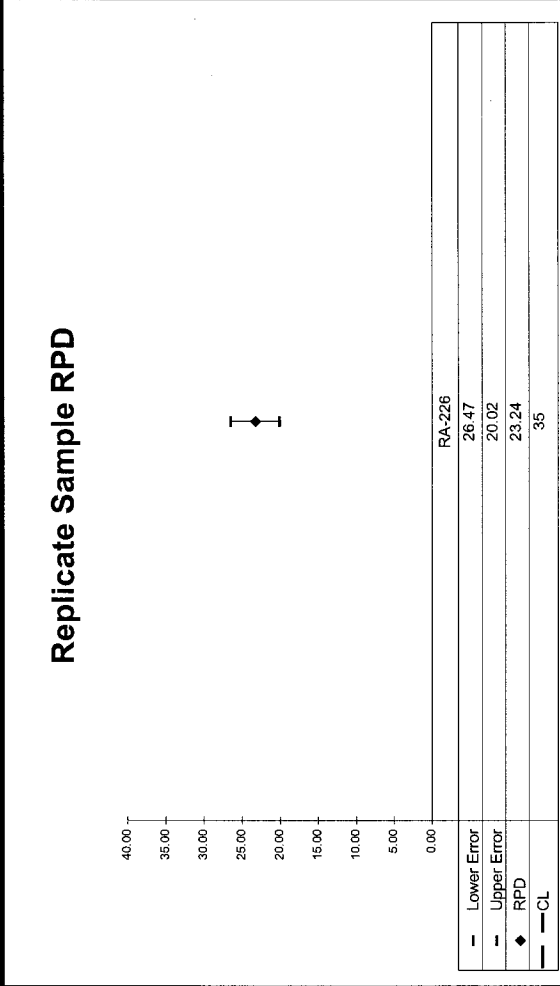
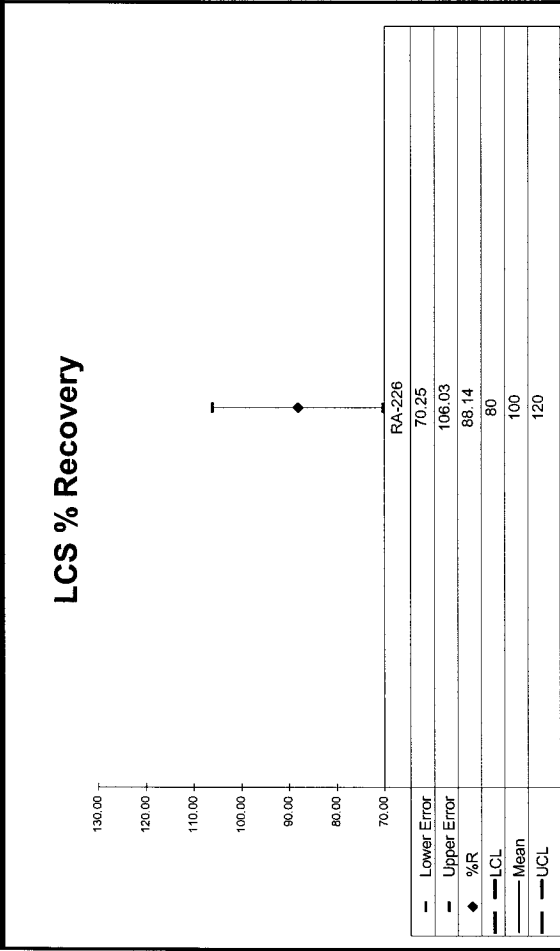
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	1.16	23.24	4.67E+00	1.33E+00	5.89E+00	1.61E+00	0.88	OK	OK	OK	OK	OK	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	1.16	23.24	4.67E+00	1.33E+00	5.89E+00	1.61E+00	0.88	OK	OK	OK	OK	OK	OK



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05062</b>	<b>Ra226</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05062</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	6.29	77.86%	7.76%	100.00%	5.10%	1.69E+01	8.62E-01	1.32E+01	1.02E+00	Ra-10	7.33E+01	5.10E+00	5.12E-01

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	3.18	71.29	2.77E+00	1.22E+00	5.84E+00	1.44E+00	0.78	OK	INV	INV	INV	INV	INV

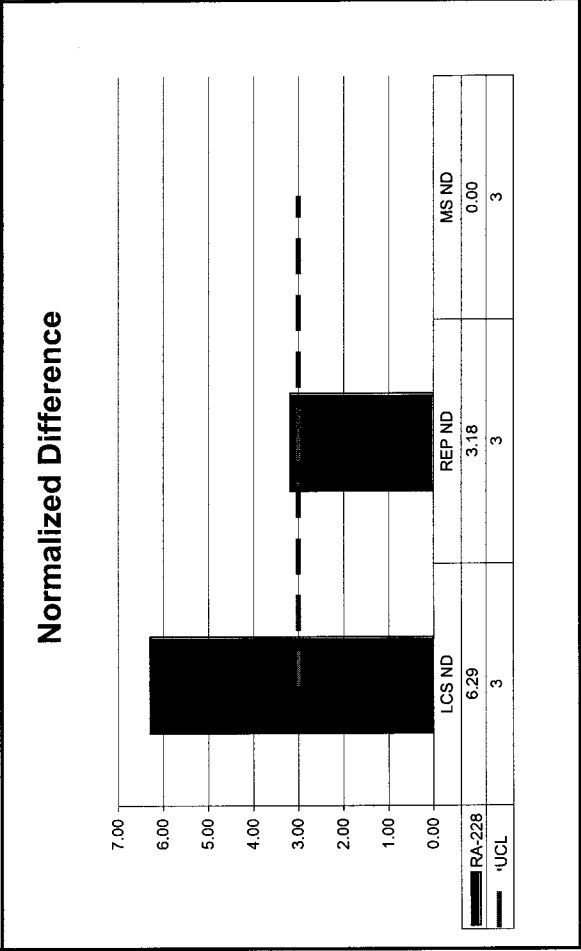
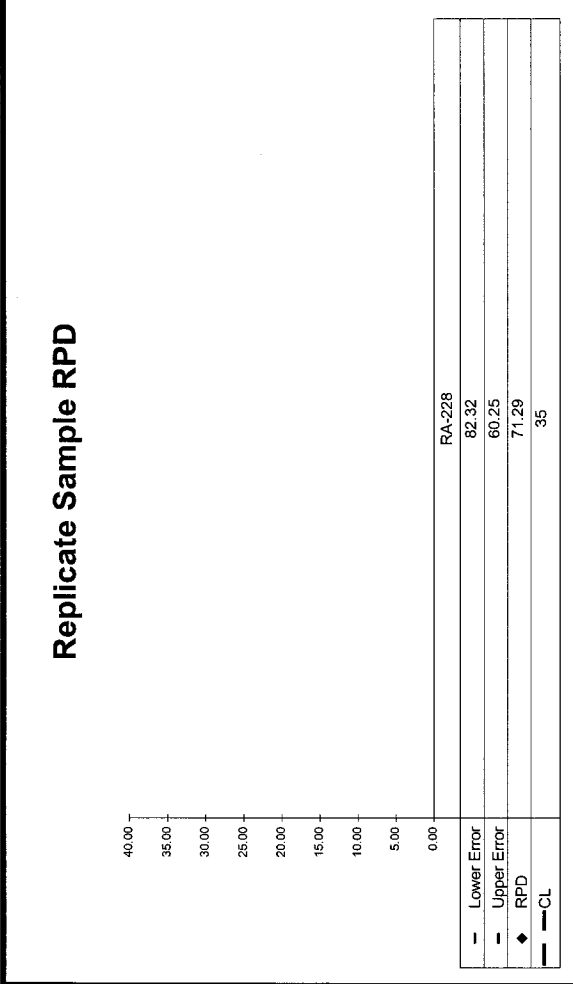
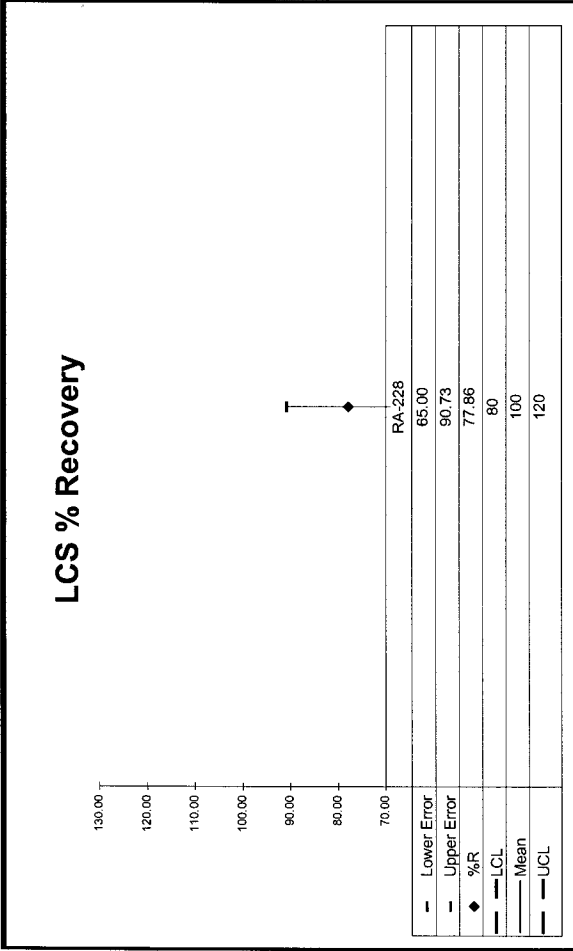
**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	3.18	71.29	2.77E+00	1.22E+00	5.84E+00	1.44E+00	0.78	OK	INV	INV	INV	INV	INV





WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05062</b>	<b>Ra228</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>



**No Matrix Spike**

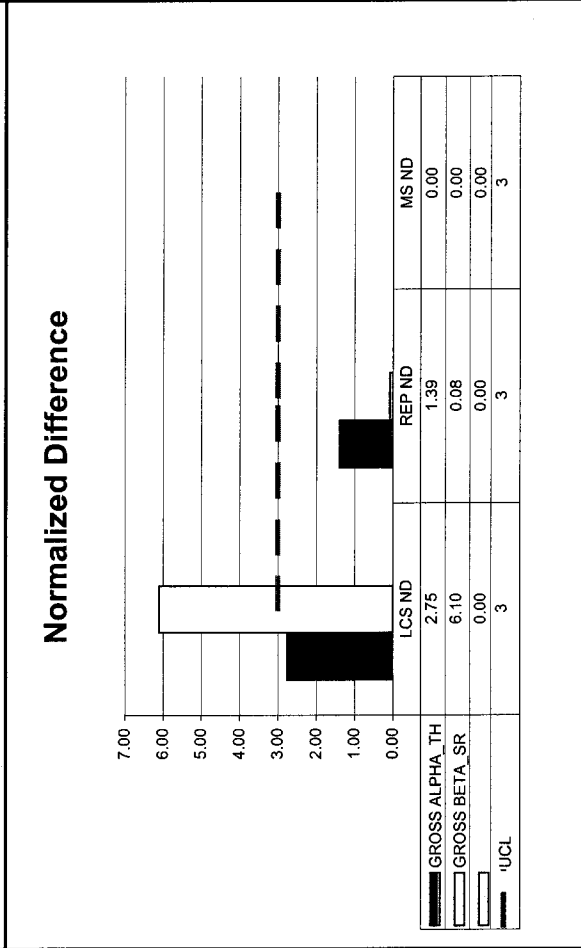
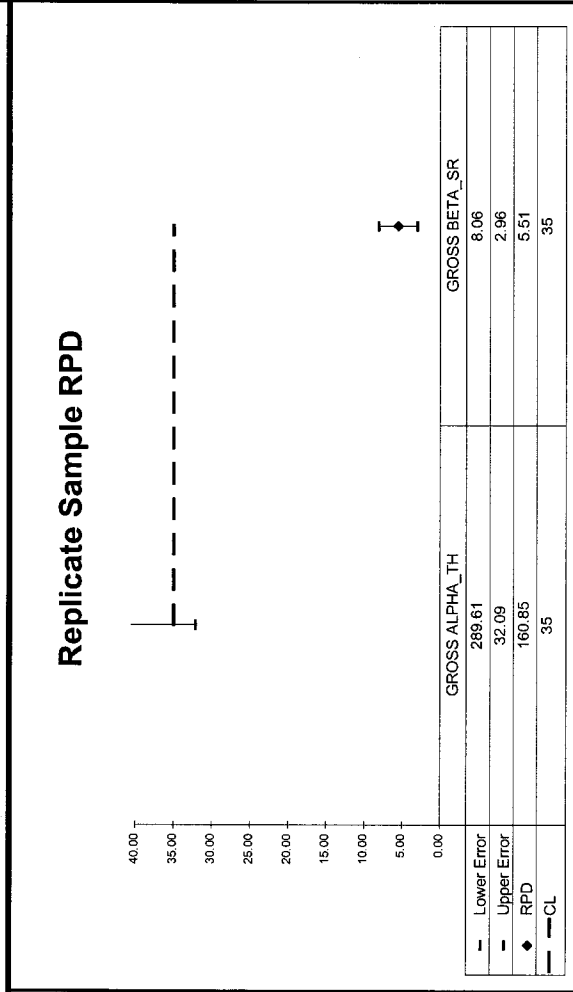
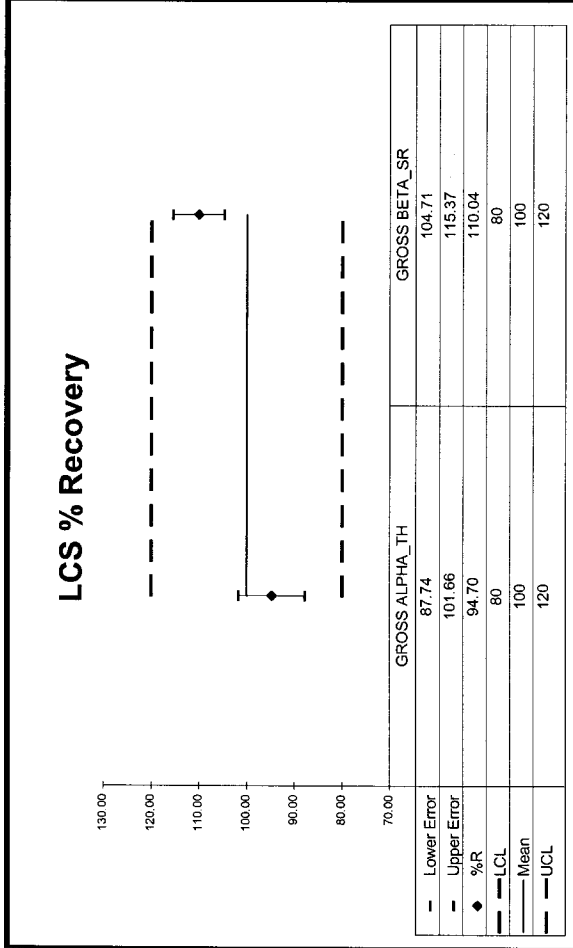
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05062</b>	<b>GaGbT_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>I</b>	<b>Michael Pisani &amp; Associates</b>

Laboratory Control Sample													
Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
GROSS ALPHA_TH	2.75	94.70%	2.66%	100.00%	4.30%	3.15E+02	1.36E+01	2.99E+02	7.94E+00	A/B-07	6.95E+02	4.30E+00	1.01E+00
GROSS BETA_SR	6.10	110.04%	2.33%	100.00%	3.00%	2.38E+02	7.14E+00	2.62E+02	6.10E+00	A/B-07	5.24E+02	3.00E+00	1.01E+00

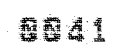
Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample										QC Summary			
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
GROSS ALPHA_TH	1.39	160.85	2.64E+01	2.37E+01	2.86E+00	2.31E+01	0.95	OK	OK			INV	OK
GROSS BETA_SR	0.08	5.51	3.58E+01	3.36E+01	3.39E+01	3.10E+01	1.10	OK	INV			OK	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
<b>10-05062</b>	<b>GaGbT_ThSr</b>	<b>1</b>	<b>pCi</b>	<b>1</b>	<b>Michael Pisani &amp; Associates</b>




**No Matrix Spike**




**SECTION VII**  
**LABORATORY TECHNICIAN'S NOTES**

**RA-226 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05062
		Analysis Code	Ra226
		Run Number	1


#	Date	Dept	User	Notes
1	05/13/10 13:13	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JB*  
5/13/10

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05062
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	05/13/10 13:13	PREP	JBARNARD	ALIQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/14/10 11:56	CHEM	TSMITH	Dissolved samples from prep in EDTA.
3	05/17/10 11:52	CHEM	TSMITH	Followed steps 12.2 to 12.8 in AP-006 rev. 9 . ( Sringe filtered samples. Precipitated and filtered samples, obtained final weights, and took to count room )

*S-17-10  
JW*

 <b>EBERLINE</b> SERVICES  Reagents Used in an Analysis		Internal Work Order		
		10-05062		
		Analysis Code		Run
		Ra226		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	5/13/2010
009343D04	Ammonium Sulfate	200 mg/ml	JBARNARD	5/13/2010
008327D07	Barium Carrier	1 mg/ml	JBARNARD	5/13/2010
008973D12	Lead Carrier	166 mg/ml	JBARNARD	5/13/2010
009536P	Nitric Acid	Reagent Grade	JBARNARD	5/13/2010
009472P	Perchloric Acid	Reagent Grade	JBARNARD	5/13/2010
006799P	Sulfuric Acid	Reagent Grade	JBARNARD	5/13/2010
009662S	EDTA	0.25M	TSMITH	5/14/2010
008735P	Acetic Acid	Reagent Grade	TSMITH	5/17/2010
009323D03	Ammonium Sulfate	200 mg/ml	TSMITH	5/17/2010




## Alpha #1

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Date	Sample #	Client	Load Time	CT Time	Analysis	Tech
5/17/10	1005031A(1-6)	KAizen	1322	2hrs 50min	Th	KB
5/17/10	1005026A(1-4)	BJC	1324	2hrs 50min	Raw	KB
5/18/10	Daily Pulsers	Lab	0528	10 min	NA	KM
5/18/10	1005064A(1-5)	Energy Solns	0932	2hrs 50min	UU	KM
5/18/10	1005035A(1-4)	BJC	0933	2hrs 50min	Am	KM
5/18/10	1005035A(1)	BJC	0934	2hrs 50min	Am 243	KM
5/18/10	1005012A(4)	BJC	1247	2hrs 50min	UU	KB
5/19/10	1005012A(4)	BJC	1248	2hrs 50min	UU NT	KB
5/18/10	1005064A(1-5)	Energy Solutions	1250	2hrs 50min	Th	KB
5/18/10	1005009A(1-3)	Dept. of Health	1252	2hrs 50min	UU	KB
5/19/10	Daily Pulsers	Lab	0516	10 min	NA	KM
5/19/10	1005012A(1-4)	BJC	1001	2hrs 50min	Th	KM
5/19/10	1005012A(4)	BJC	1002	2hrs 50min	Th NT	KM
5/19/10	1005048A(1-4)	BJC	1004	2hrs 50min	Am	KM
5/19/10	1005048A(1)	BJC	1004	2hrs 50min	Am 243	KM
5/19/10	1005018A(2-9)	OHIO EPA	1308	2hrs 50min	PU	KM
5/19/10	1005044A(1-7)	MPIA	1311	2hrs 50min	Raw	KM
5/19/10	1005018A(1-9)	Ohio EPA	1635	2hrs 50min	Th	KB
5/20/10	Daily Pulsers	Lab	0526	10 min	NA	KM
5/20/10	1005077A(1-8)	Energy Solns.	0954	2hrs 50min	UU	KM
5/20/10	1005035A(1-2)	BJC	0955	2hrs 50min	UU	KM
5/20/10	1005036A(3-7)	Great Lakes	1305	2hrs 50min	UU	KM
5/20/10	1005046A(1-5)	MPIA	1307	2hrs 50min	Raw	KM
5/20/10	1005035A(1-4)	BJC	1641	2hrs 50min	Th	KB
5/20/10	1005048A(1-4,9)	BJC	1643	2hrs 50min	PU	KB
5/20/10	1005048A(4)	BJC	1644	2hrs 50min	PU NT	KB
5/21/10	Daily Pulsers	Lab	0528	10 min	NA	KM
5/21/10	Secondary Check	Lab	0638	2hrs 30min	NA	KM
5/21/10	1005074A(1-4)	BJC	0934	2hrs 50min	UU	KM
5/21/10	1005074A(1-4)	BJC	0935	2hrs 50min	Am	KM
5/21/10	1005074A(1-2)	BJC	0936	2hrs 50min	Am 243	KM
5/21/10	1005035A(3-4)	BJC	1238	2hrs 50min	Raw	KM
5/21/10	1005062A(1-7)	MPIA	1240	2hrs 50min	Raw	KM
5/21/10	1005071A(1)	Weston	1241	2hrs 50min	UU	KM

**RA-228 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05062
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	05/13/10 13:13	PREP	JBARNARD	ALIUQUOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JB*  
*5/13/10*

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05062
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	05/13/10 13:13	PREP	JBARNARD	ALIQOTED AND FILTERED SAMPLES- ADDED SPIKES AND TRACERS- DISSOLVED SUSPENDED FRACTIONS WITH HNO3 AND DIGESTED WITH MIXED ACIDS- PH'D ALL SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/24/10 06:46	CHEM	TSMITH	Placed filters from count room into labeled centrifuge tubes. Added EDTA and swirled.
3	05/26/10 10:40	CHEM	TSMITH	Followed steps 12.2 to 12.18 in AP-007 rev. 14 . ( Chemical cleanup for Ra 228. Precipitated samples, centrifuged, and discarded supernate. Dissolved precip, precipitated samples, hot bathed, centrifuged, and discarded supernate. Dissolved precip, precipitated and filtered samples, obtained final weights, covered with aluminum foil, and took to count room )

*5-26-10  
TSM*



Reagents Used in an Analysis

Internal Work Order

10-05062

Analysis Code

Run


Ra228

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
008823P	Ammonium Hydroxide	Reagent Grade	JBARNARD	5/13/2010
009343D04	Ammonium Sulfate	200 mg/ml	JBARNARD	5/13/2010
008327D07	Barium Carrier	1 mg/ml	JBARNARD	5/13/2010
008973D12	Lead Carrier	166 mg/ml	JBARNARD	5/13/2010
009536P	Nitric Acid	Reagent Grade	JBARNARD	5/13/2010
009472P	Perchloric Acid	Reagent Grade	JBARNARD	5/13/2010
006799P	Sulfuric Acid	Reagent Grade	JBARNARD	5/13/2010
009662S	EDTA	0.25M	TSMITH	5/24/2010
008974D03	Ammonium Oxalate	5%	TSMITH	5/26/2010
009040D11	Ammonium Sulfide	2%	TSMITH	5/26/2010
007701D11	Lead Carrier	1.5 mg/ml	TSMITH	5/26/2010
009327D04	Nitric Acid	1N	TSMITH	5/26/2010
009424D02	Nitric Acid	6N	TSMITH	5/26/2010
009621P	Nitric Acid	Reagent Grade	TSMITH	5/26/2010
008736D16	Sodium Hydroxide	10M	TSMITH	5/26/2010
008736D18	Sodium Hydroxide	18M	TSMITH	5/26/2010
009625S	Yttrium Carrier	9 mg/ml	TSMITH	5/26/2010




**ALPHA/BETA NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	10-05062
		Analysis Code	GaGbT_ThSr
		Run Number	1

#	Date	Dept	User	Notes
1	05/17/10 14:19	PREP	BLESTER	Determined total dissolved solids concentration for maximum aliquot volume. Each fraction was suction filtered through a pre-weighed .45 mm filter to separate the suspended from dissolved solids. The filter was dried, reweighed, and glued to planchets. The dissolved solids fractions were placed in beakers on a hot plate. Once dry, the dissolved solids were transferred to a pre-weighed planchet under a heat lamp. Spike and blank fractions were prepared. The samples were flamed, reweighed, and submitted to the count room.

*Brian P. Lester*  
 5.17.2010



 <p><b>Reagents Used in an Analysis</b></p>		Internal Work Order		
		10-05062		
		Analysis Code		Run
		GaGbT_ThSr		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
009424D05	Nitric Acid	3N	BLESTER	5/17/2010

LB4110 Agua

Date	Sample #	Client	Load Time	CR-TIME	Analysis	Tech
6/14/10	1004115 Pb(16-19)	B3C	1314	4hrs	Pb210	ICB
6/14/10	1004115 Pb(1-11)	B3C	1315	30mins	Pb210	ICB
6/14/10	1005028 AB(2-4)	ND	1322	2hrs	αβ	ICB
6/14/10	1005014 AB(2-4)	Unitech	1323	2hrs	αβ	ICB
5/15/10	WEEKLY BKG	LAD	1204	8hr	αβ	AG
5/17/10	DAILY Bkgd /oc	Lab	0545/0504	1hr/30min	αβ	RM
5/17/10	1005056 AB(1)	MURK	1036	30min	αβ	RM
5/17/10	1005062 AB(2-7)	mp & A	1431	2hrs	αβ	ICB
5/17/10	1005062 AB(1)	mp & A	1432	30min	αβ	ICB

**SECTION VIII**  
**ANALYTICAL DATA (RADIUM-226)**

<b>Work Order</b>	<b>10-05062</b>
<b>Analysis Code</b>	<b>Ra226</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>5/12/2010</b>
<b>Lab Deadline</b>	<b>5/26/2010</b>
<b>Client</b>	Michael Pisani & Associates
<b>Project</b>	ENV
<b>Report Level</b>	4
<b>Activity Units</b>	pCi
<b>Aliquot Units</b>	I
<b>Matrix</b>	WA
<b>Method</b>	EPA 903.0 Modified
<b>Instrument Type</b>	Alpha Spectroscopy
<b>Radiometric Tracer</b>	Ba-133
<b>Radiometric Sol#</b>	Ba-6a
<b>Tracer Act (dpm/g)</b>	1226.547
<b>Carrier</b>	
<b>Carrier Conc (mg/ml)</b>	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/13/10 00:00	1.0000E+00
02	MBL	BLANK		05/13/10 00:00	1.0000E+00
03	DUP	SB-1-MW-S DIS	32	05/07/10 10:00	5.0000E-01
04	DO	SB-1-MW-S DIS	32	05/07/10 10:00	5.0000E-01
05	TRG	SB-1-MW-S SUS	32	05/07/10 10:00	1.0000E+00
06	TRG	SB-1-MW-D DIS	41	05/06/10 17:10	1.0000E+00
07	TRG	SB-1-MW-D SUS	41	05/06/10 17:10	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8179	1003.2	424.2	93.87		0.0227	0.0283	0.0056		93.87	2.00	1.00
02	MBL	0.8174	1002.6	471.9	104.49		0.0225	0.0284	0.0059		104.49	2.12	1.00
03	DUP	0.8103	993.9	340.8	76.12		0.0227	0.0318	0.0091		76.12	3.04	1.00
04	DO	0.8090	992.3	370.8	82.96		0.0224	0.0308	0.0084		82.96	2.87	1.00
05	TRG	0.8123	996.3	414.9	92.45		0.0227	0.0291	0.0064		92.45	2.31	1.00
06	TRG	0.8098	993.3	478.6	106.97		0.0230	0.0328	0.0098		106.97	3.22	1.00
07	TRG	0.8124	996.4	428.9	95.56		0.0226	0.0285	0.0059		95.56	2.12	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		
02	MBL			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		
03	DUP			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		
04	DO			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		
05	TRG			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		
06	TRG			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		
07	TRG			05/13/10 13:06	JBARNARD	05/17/10 10:49	TSMITH		

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.


	Client	Michael Pisani & Associates
Run	Analysts Code	Eberline Services Work Order
1	Ra226	10-05062

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	8.93E+00	1.19E+00	1.85E-01	1.01E+01	88.14	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	1.06E-01	1.16E-01	1.87E-01					OK	INV
03	RA-226	DUP	SB-1-MW-S DIS	pCi/l	5.89E+00	1.61E+00	7.08E-01				OK	OK	
04	RA-226	DO	SB-1-MW-S DIS	pCi/l	4.67E+00	1.33E+00	8.14E-01					OK	
05	RA-226	TRG	SB-1-MW-S SUS	pCi/l	8.02E-01	3.26E-01	2.43E-01					OK	
06	RA-226	TRG	SB-1-MW-D DIS	pCi/l	2.59E+00	6.85E-01	2.92E-01					OK	
07	RA-226	TRG	SB-1-MW-D SUS	pCi/l	1.32E+00	4.02E-01	2.01E-01					OK	

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	05/13/10 00:00	1.00E+00	93.87		93.87		5/17/2010 10:49	
02	RA-226	MBL	05/13/10 00:00	1.00E+00	100.00		104.49		5/17/2010 10:49	
03	RA-226	DUP	05/07/10 10:00	5.00E-01	76.12		76.12		5/17/2010 10:49	
04	RA-226	DO	05/07/10 10:00	5.00E-01	82.96		82.96		5/17/2010 10:49	
05	RA-226	TRG	05/07/10 10:00	1.00E+00	92.45		92.45		5/17/2010 10:49	
06	RA-226	TRG	05/06/10 17:10	1.00E+00	100.00		106.97		5/17/2010 10:49	
07	RA-226	TRG	05/06/10 17:10	1.00E+00	95.56		95.56		5/17/2010 10:49	

	Run	1
Eberline Services Work Order	Analysis Code	Ra226
Client	Michael Pisani & Associates	



	<b>1</b>
Run	
Analysis Code	<b>Ra226</b>
Eberline Services Work Order	<b>10-05062</b>
Client	<b>Michael Pisani &amp; Associates</b>

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	05/21/10 12:38		A_Spec	5	170.03	6.25 E+02	4.00 E-03	19.8
02	RA-226	MBL	05/21/10 12:39		A_Spec	6	170.08	7.80 E+00	4.00 E-03	19.4
03	RA-226	DUP	05/21/10 12:39		A_Spec	10	170.07	1.76 E+02	5.00 E-03	20.7
04	RA-226	DO	05/21/10 12:39		A_Spec	11	170.08	1.53 E+02	1.20 E-02	20.9
05	RA-226	TRG	05/21/10 12:39		A_Spec	12	170.05	5.89 E+01	7.00 E-03	21
06	RA-226	TRG	05/21/10 12:40		A_Spec	13	170	1.99 E+02	5.00 E-03	20.3
07	RA-226	TRG	05/21/10 12:40		A_Spec	14	170.07	9.67 E+01	5.00 E-03	20.3

Count Room Report  
 Client: Michael Pisani Associat

10-05062-Ra226-1 (pCi/l) in WA  
 Tracer ID: Ba-6a

Printed: 5/21/2010 10:08 AM  
 Page 1 of 1

Q.5

6/14

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
<del>01</del>	LCS	LCS	05/13/10 00:00	1.0000	0.8179	1003.1928	424.2000	93.87	2.00	1.00
<del>02</del>	MBL	BLANK	05/13/10 00:00	1.0000	0.8174	1002.5795	471.9000	104.49	2.12	1.00
<del>03</del>	DUP	SB-1-MW-S DIS	05/07/10 10:00	0.5000	0.8103	993.8710	340.8000	76.12	3.04	1.00
<del>04</del>	DO	SB-1-MW-S DIS	05/07/10 10:00	0.5000	0.8090	992.2765	370.8000	82.96	2.87	1.00
<del>05</del>	TRG	SB-1-MW-S SUS	05/07/10 10:00	1.0000	0.8123	996.3241	414.9000	92.45	2.31	1.00
<del>06</del>	TRG	SB-1-MW-D DIS	05/06/10 17:10	1.0000	0.8098	993.2578	478.6000	106.97	3.22	1.00
<del>07</del>	TRG	SB-1-MW-D SUS	05/06/10 17:10	1.0000	0.8124	996.4468	428.9000	95.56	2.12	1.00

0004



# Aliquot Worksheet

<b>Work Order</b>	<b>Run</b>	<b>Analysis Code</b>	<b>Rpt Units</b>	<b>Lab Deadline</b>	<b>Technician</b>
<b>10-05062</b>	<b>1</b>	<b>Ra226</b>	<b>liters</b>	<b>5/26/2010</b>	<b>TSMITH</b>

Lab Fraction	Michael Pisani & Associates		Muffle Data			Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only	
	Client ID	Sample Type	Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq			
01	LCS	LCS				1.00E+00	1.0000E+00	1.0000E+00							
02	BLANK	MBL				1.00E+00	1.0000E+00	1.0000E+00							
03	SB-1-MW-S DIS	DUP				1.00E+00	5.0000E-01	5.0000E-01							
04	SB-1-MW-S DIS	DO				1.00E+00	5.0000E-01	5.0000E-01							
05	SB-1-MW-S SUS	TRG				1.00E+00	1.0000E+00	1.0000E+00							
06	SB-1-MW-D DIS	TRG				1.00E+00	1.0000E+00	1.0000E+00							
07	SB-1-MW-D SUS	TRG				1.00E+00	1.0000E+00	1.0000E+00							

<b>Comments</b>	
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Technician: *Jedh Mb* Date: 5/17/10

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05062</b>	<b>1</b>	<b>Ra226</b>			<b>TSMITH</b>

TRetec Fraction	Michael Pisani & Associates Client ID	Sample Type	Carrier Data	Filter Data			Gravimetric	
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)	% Recovery	
01	LCS	LCS		0.0227	0.0283	0.0056		
02	BLANK	MBL		0.0225	0.0284	0.0059		
03	DUP	DUP		0.0227	0.0318	0.0091		
04	SB-1-MW-S DIS	DO		0.0224	0.0308	0.0084		
05	SB-1-MW-S SUS	TRG		0.0227	0.0291	0.0064		
06	SB-1-MW-D DIS	TRG		0.0230	0.0328	0.0098		
07	SB-1-MW-D SUS	TRG		0.0226	0.0285	0.0059		

Technician: *[Signature]* Date: 5, 17, 10  
09 03 07

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
24-MAY-2010 09:00:35

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_C:C\_1005062A-RA\$01\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005062A-RA \* SAMPLE ID: 01  
SAMPLE DATE: 21-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SPIKE \* DETECTOR NUMBER: 005  
ACQ DATE: 21-MAY-2010 12:38 \* AVERAGE EFFICIENCY: 19.75%  
ELAPSED LIVE TIME: 10202. \* RECOVERY: 93.87%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: MANUAL  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 14-MAY-2010 06:12 \* EFF CAL DATE: 7-NOV-2009 11:51  
BKG FILENAME: B\_005\_14MAY10 \* BKG ELAPSED TIME: 60008.  
\* SAF: 2.00  
\*

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	1863.75	4.25	100.0	2.663E+01	2.548E+00	3.497E-01
RN-222	5490.0	2080.47	1.53	99.9	2.975E+01	2.774E+00	2.403E-01
RA-226	4785.0	625.32	0.68	100.0	8.933E+00	1.187E+00	1.853E-01

\*\*\*\*\*

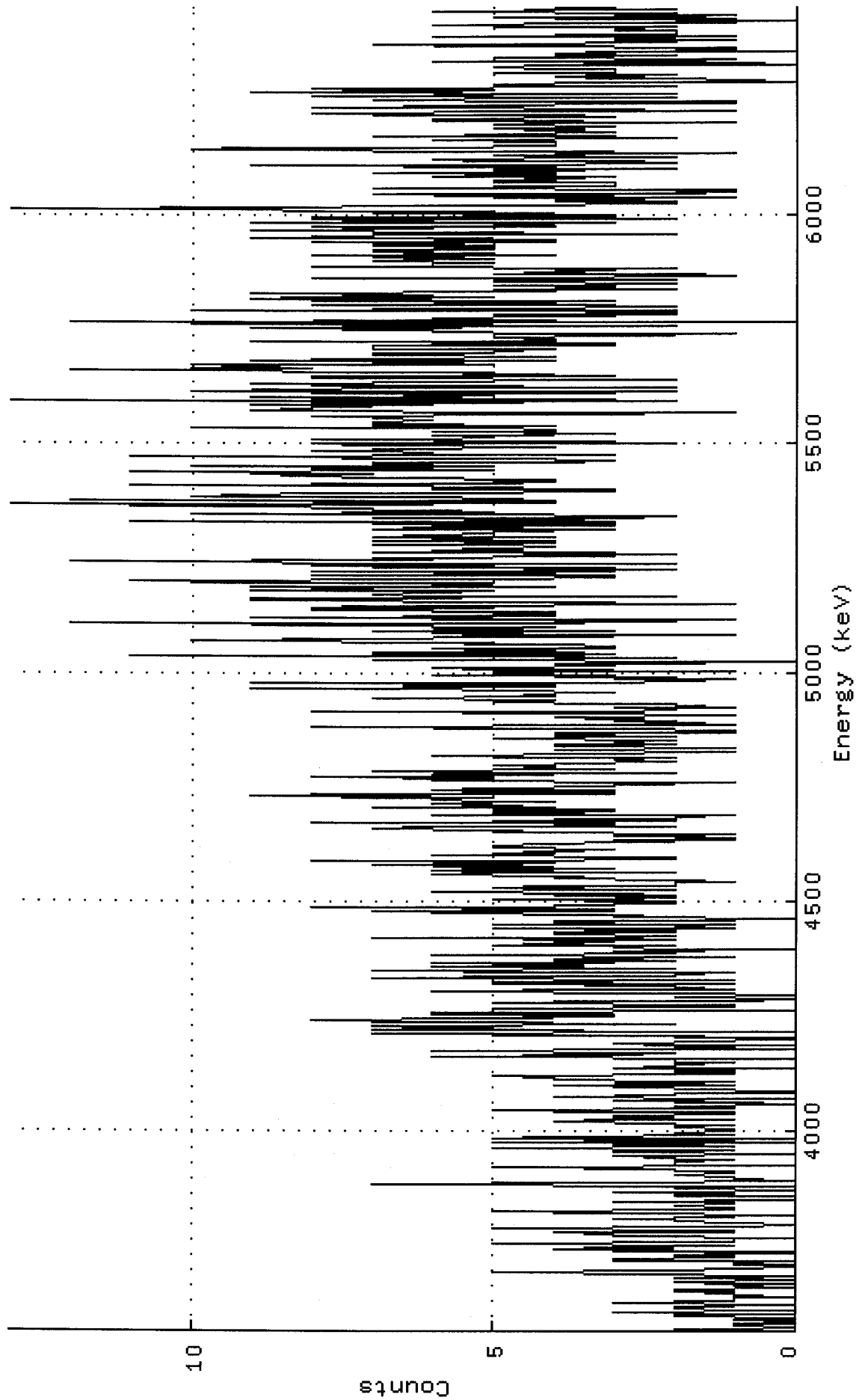
Alan Mezgaly  
Analyst

5/24/10  
Date

Alan Mezgaly  
Reviewer

5/24/10  
Date

Spectrum : DKA100: [ALPHA,ALUSR,ARCHIVE,C]C-1005062A-RA\$01-RA.CNF;2  
Title : 005  
Sample Title: SPIKE  
Start Time: 21-MAY-2010 12:38 Sample Time: 21-MAY-2010 00:00 Energy Offset: 3.55040E+03  
Real Time : 0 02:50:02.00 Sample ID : 01 Energy Slope : 2.96408E+00  
Live Time : 0 02:50:02.00 Sample Type: RA Energy Quad : -1.32374E-04



Channel Contents for ND\_AMS\_ARCHIVE\_C:C\_1005062A-RA\$01\_RA

Channel

1:	10202	10202	0	2	1	0	1	0	1	0	1	0	2
15:	0	1	3	0	1	2	1	2	0	3	1	1	1
29:	0	1	1	2	1	2	0	0	1	0	1	2	1
43:	2	0	3	2	5	2	1	1	0	1	1	0	3
57:	3	1	2	2	0	3	0	4	3	1	1	5	1
71:	1	1	0	3	3	4	1	1	5	5	1	0	1
85:	2	2	3	1	1	0	3	5	1	2	2	2	1
99:	1	3	0	0	0	2	1	3	2	0	1	0	7
113:	3	3	0	1	1	1	2	1	1	1	3	2	0
127:	2	2	2	1	2	2	3	3	0	3	2	1	1
141:	1	3	0	5	2	0	5	4	1	2	2	1	1
155:	2	1	2	2	4	3	1	3	3	3	1	3	5
169:	1	2	2	0	1	1	3	0	1	4	2	2	0
183:	2	1	3	1	4	2	1	2	4	4	5	5	2
197:	1	2	0	3	2	2	1	2	2	2	0	6	3
211:	2	6	2	0	2	0	2	3	1	2	0	2	3
225:	7	1	0	7	6	5	7	2	2	6	8	5	3
239:	6	3	6	0	1	5	1	3	1	5	3	1	2
253:	2	0	2	2	6	3	1	2	2	5	1	5	1
267:	7	4	2	2	1	4	7	2	5	6	4	3	2
281:	3	4	1	6	5	2	3	0	2	3	2	5	3
295:	4	2	7	3	2	4	2	4	2	5	1	2	5
309:	3	4	2	0	3	2	3	6	3	7	3	8	4
323:	2	3	2	5	3	2	4	2	3	6	3	2	4
337:	2	2	2	1	2	4	3	4	6	5	2	6	3
351:	5	7	5	4	8	5	2	2	2	6	4	5	3
365:	5	4	5	4	4	3	1	3	1	3	2	1	4
379:	5	7	6	4	4	3	4	2	4	2	2	1	4
393:	3	5	3	7	4	5	6	4	5	6	5	6	3
407:	8	3	3	6	5	3	3	3	1	2	6	5	5
421:	6	2	5	7	3	4	4	5	4	4	2	2	2
435:	4	6	3	4	1	4	1	1	4	4	2	3	2
449:	5	3	2	4	4	1	1	3	4	8	2	1	3
463:	2	3	4	1	2	3	8	3	2	3	1	2	3
477:	5	5	4	7	4	5	4	4	3	5	6	9	4
491:	9	3	2	1	3	2	6	3	5	5	1	5	5
505:	3	4	3	0	7	6	2	5	11	3	4	7	6
519:	3	3	4	7	5	10	7	7	5	1	5	6	7
533:	5	4	6	6	12	5	2	6	1	9	4	4	6
547:	4	8	5	8	7	1	2	4	9	8	9	2	6
561:	6	5	9	7	9	4	6	5	9	11	5	5	7
575:	8	4	8	4	2	7	3	8	2	5	12	6	7
589:	3	5	2	7	3	6	5	5	4	5	7	4	4
603:	6	4	7	6	5	5	5	3	7	6	3	7	3
617:	3	4	7	3	2	6	10	5	6	7	6	6	11
631:	4	12	4	5	6	10	9	8	6	3	6	3	8
645:	11	5	4	5	4	7	7	8	9	7	11	5	6
659:	10	5	7	7	4	3	5	4	11	3	6	6	6
673:	6	5	4	7	8	2	4	8	6	5	6	5	8
687:	4	4	5	10	4	7	7	7	6	6	7	7	4
701:	1	4	9	8	8	8	6	9	7	2	13	3	6
715:	5	8	4	2	10	8	7	2	7	9	7	7	2
729:	8	8	3	5	6	5	12	8	8	9	10	5	4
743:	9	7	4	4	7	7	5	5	4	7	7	7	3
757:	9	4	4	5	5	3	1	4	6	6	6	9	5
771:	10	0	12	4	6	6	4	2	5	2	2	9	3
785:	2	4	8	4	8	3	9	8	5	7	8	10	5
799:	2	4	3	5	2	5	5	2	8	5	1	2	4
813:	3	4	2	8	6	6	6	5	7	6	5	7	8
827:	5	6	7	5	7	5	5	7	7	4	4	4	9
841:	7	7	2	7	7	9	6	8	4	5	3	9	8
855:	2	4	8	3	5	7	5	12	13	8	7	5	4
869:	2	3	5	1	5	7	2	1	3	1	7	3	3
883:	3	5	4	5	4	3	6	4	7	4	5	2	4
897:	9	5	2	3	5	6	3	2	5	3	1	5	4
911:	9	6	4	4	4	4	6	6	2	4	7	4	3
925:	4	5	4	3	3	5	4	1	6	5	6	3	6
939:	8	4	1	4	4	5	5	3	1	1	4	3	2
953:	8	4	2	9	5	7	8	2	3	5	3	0	2
967:	3	4	3	2	5	3	3	3	4	5	4	0	6
981:	2	1	5	4	4	2	4	3	0	2	1	1	7
995:	5	2	3	1	3	1	6	2	2	2	2	3	2
1009:	4	6	3	2	0	4	1	2	5	1	4	3	3
1023:	0	0	3	2	0	4	2	2	5	1	4	2	3



Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 24-MAY-2010 09:00:27.13

Detector ID: 5                                      Acquisition Start: 21-MAY-2010 12:38:51.01  
Live Time: 0 02:50:02.00                      Real Time: 0 02:50:02.00  
Batch Id: 1005062A-RA                      Sample Id: 01  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4722.73	313	0	212.52	402.76	364	79	3.07E-02	5.7	
2	0	5281.48	1041	0	509.28	600.10	507	182	1.02E-01	3.1	
3	0	5810.03	934	0	0.00	790.23	709	167	9.16E-02	3.3	

Background Counts Within Peak Regions      Generated: 24-MAY-2010 09:00:32.35

Live Time: 0 16:40:08.00                      Acquisition Start: 14-MAY-2010 15:31:55.01  
Real Time: 0 16:40:08.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4723.07	4	0	74.25	403.00	364	79	6.67E-05	50.0	
2	0	5273.34	9	0	403.92	597.50	507	182	1.50E-04	33.3	
3	0	5812.96	25	0	163.35	792.00	709	167	4.17E-04	20.0	

Net Sample Counts Within Peak Regions      Generated: 24-MAY-2010 09:00:32.95

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4722.73*	625	0	212.52	402.76	364	79	6.13E-02	5.7	
2	0	5281.48*	2080	0	509.28	600.10	507	182	2.04E-01	3.1	
3	0	5810.03*	1864	0	0.00	790.23	709	167	1.83E-01	3.3	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 24-MAY-2010 09:00:34

Configuration : MCA0:[AMSCOUNT]00002900\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SPIKE  
 Sample date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 12:38:51  
 Sample ID : 01 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 005 Detector geometry:  
 Elapsed live time: 0 02:50:02.00 Elapsed real time: 0 02:50:02.00 0.0%  
 Energy tolerance : 150.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4722.73*	625212.52	402.76	364	79	11.3			RA-226	8.39
0	5281.48*	2080509.28	600.10	507	182	6.2			RN-222	27.9
0	5810.03*	1864	0.00	790.23	709	167	6.6		PO-218	25.0

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
21-MAY-2010 15:38:21

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_R:R\_1005062A-RA\$02\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005062A-RA	*	SAMPLE ID:	02
SAMPLE DATE:	21-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	BLANK	*	DETECTOR NUMBER:	006
ACQ DATE:	21-MAY-2010 12:39	*	AVERAGE EFFICIENCY:	19.44%
ELAPSED LIVE TIME:	10205.	*	RECOVERY:	100.00%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	14-MAY-2010 06:12	*	EFF CAL DATE:	6-MAR-2009 05:22
BKG FILENAME:	B_006_14MAY10	*	BKG ELAPSED TIME:	60005.
		*	SAF:	2.12
		*		

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	7.71	2.89	100.0	1.051E-01	1.308E-01	3.050E-01
RN-222	5490.0	18.14	3.06	99.9	2.474E-01	1.847E-01	3.118E-01
RA-226	4785.0	7.80	0.68	100.0	1.063E-01	1.161E-01	1.873E-01

\*\*\*\*\*  
ICBannister  
Analyst

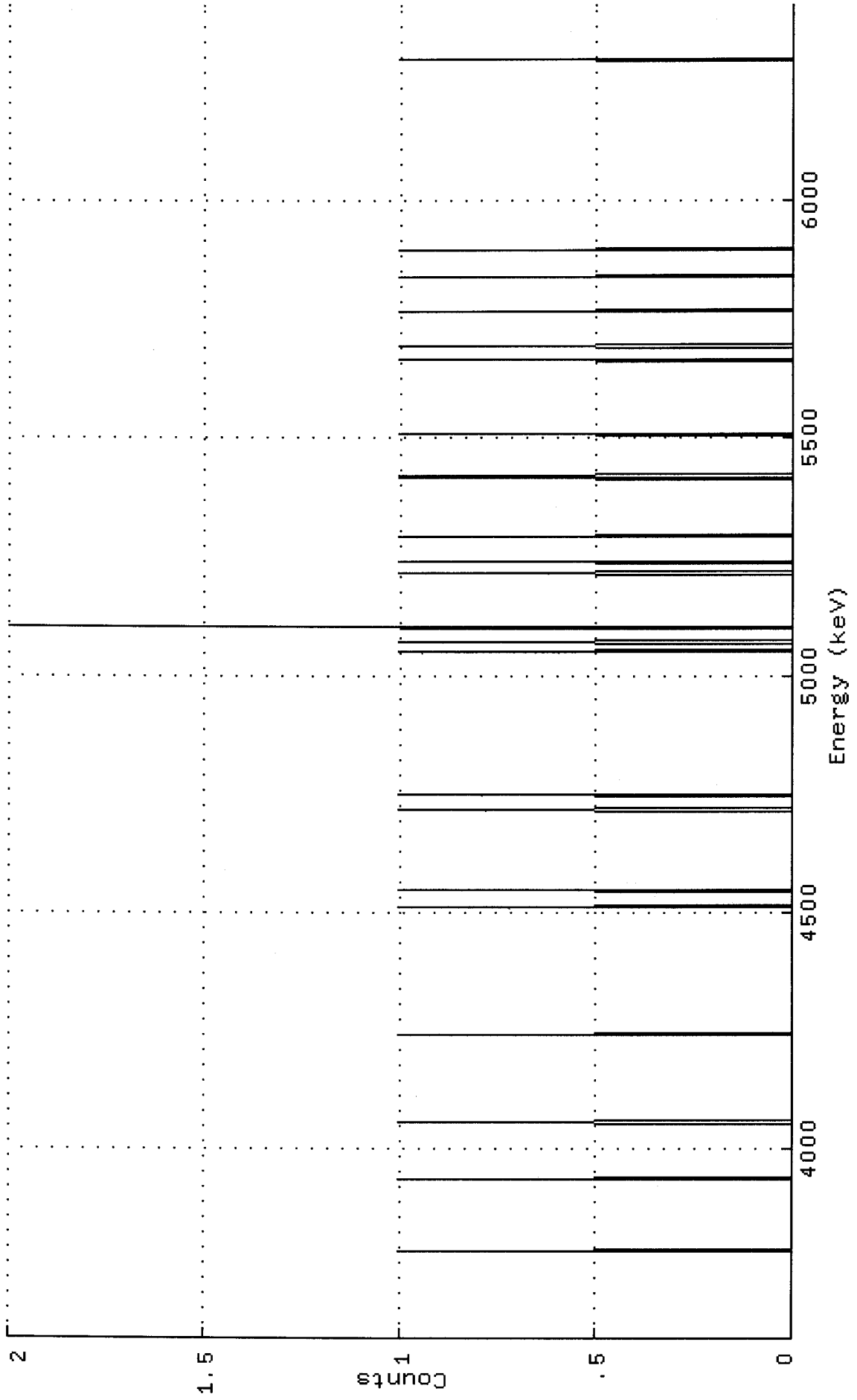
5/21/10  
Date

Alan Orszag  
Reviewer

5/24/10  
Date

Spectrum : DKA100Y [ALPHA.ALUSR.ARCHIVE.R]R\_1005062A-RA\$02\_RA.CNF;1  
Title : 006  
Sample Title: BLANK

Start Time: 21-MAY-2010 12:39    Sample Time: 21-MAY-2010 00:00    Energy Offset: 3.58987E+03  
Real Time : 0 02:50:05.00    Sample ID : 02    Energy Slope : 2.86606E+00  
Live Time : 0 02:50:05.00    Sample Type: RA    Energy Quad : -1.12081E-04



Channel Contents for ND\_AMS\_ARCHIVE\_R:R\_1005062A-RA\$02\_RA

Channel	10205	10205	0	0	0	0	0	0	0	0	0	0	0	0
1:	10205	10205	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
295:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
323:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
407:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
421:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
519:	0	1	0	0	0	0	0	0	1	0	0	0	0	0
533:	0	0	0	0	0	2	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575:	0	0	0	0	0	1	0	0	0	0	0	0	0	1
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
631:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	1	0	1	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
687:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
743:	0	0	1	0	0	0	0	0	0	0	0	0	0	1
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
785:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
827:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
855:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 21-MAY-2010 15:38:13.73

Detector ID: 6                                    Acquisition Start: 21-MAY-2010 12:39:04.01  
Live Time: 0 02:50:05.00                    Real Time: 0 02:50:05.00  
Batch Id: 1005062A-RA                      Sample Id: 02  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4630.09	4	0243.62	368.25	277	166	3.92E-04	50.0		
2	0	5240.19	10	0 2.87	589.40	509	187	9.80E-04	31.6		
3	0	5770.66	5	0249.35	785.00	716	172	4.90E-04	44.7		

Background Counts Within Peak Regions      Generated: 21-MAY-2010 15:38:18.69

Live Time: 0 16:40:05.00                    Acquisition Start: 14-MAY-2010 15:31:58.01  
Real Time: 0 16:40:05.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.78	4	0142.69	359.50	277	166	6.67E-05	50.0		
2	0	5275.51	18	0 2.91	602.00	509	187	3.00E-04	23.6		
3	0	5810.31	17	0 0.00	801.50	716	172	2.83E-04	24.3		

Net Sample Counts Within Peak Regions      Generated: 21-MAY-2010 15:38:19.02

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4630.09*	8	0243.62	368.25	277	166	7.64E-04	54.5		
2	0	5240.19*	18	0 2.87	589.40	509	187	1.78E-03	37.2		
3	0	5770.66*	8	0249.35	785.00	716	172	7.55E-04	62.2		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 21-MAY-2010 15:38:20

Configuration : MCA0: [AMSCOUNT] 00001D8E\$1  
 Analyses by : ROIPEAK V1.2, PEAKEFF V2.2, ENBACK V1.6, NID V3.3  
 Sample title : BLANK  
 Sample date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 12:39:04  
 Sample ID : 02 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 006 Detector geometry:  
 Elapsed live time: 0 02:50:05.00 Elapsed real time: 0 02:50:05.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw %Err	Fit	Nuclides	Activity pCi/liter
0	4630.09*	8243.62	368.25	277	166109.1			RA-226	0.106
0	5240.19*	18	2.87	589.40	509	187 74.3		RN-222	0.247
0	5770.66*	8249.35	785.00	716	172124.3			PO-218	0.105

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
21-MAY-2010 15:38:40

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$03\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005062A-RA	*	SAMPLE ID:	03
SAMPLE DATE:	7-MAY-2010 00:00	*	ALIQUOT:	5.000E-01 liter
SAMPLE TITLE:	SB-1-MW-S DIS	*	DETECTOR NUMBER:	010
ACQ DATE:	21-MAY-2010 12:39	*	AVERAGE EFFICIENCY:	20.72%
ELAPSED LIVE TIME:	10204.	*	RECOVERY:	76.12%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	14-MAY-2010 06:12	*	EFF CAL DATE:	6-MAR-2009 05:22
BKG FILENAME:	B_010_14MAY10	*	BKG ELAPSED TIME:	60001.
		*	SAF:	3.04
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	92.52	4.76	100.0	3.108E+00	1.176E+00	1.307E+00
RN-222	5490.0	192.52	2.04	99.9	6.470E+00	1.693E+00	9.494E-01
RA-226	4785.0	175.47	0.85	100.0	5.893E+00	1.606E+00	7.083E-01

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IC Bannister  
Analyst

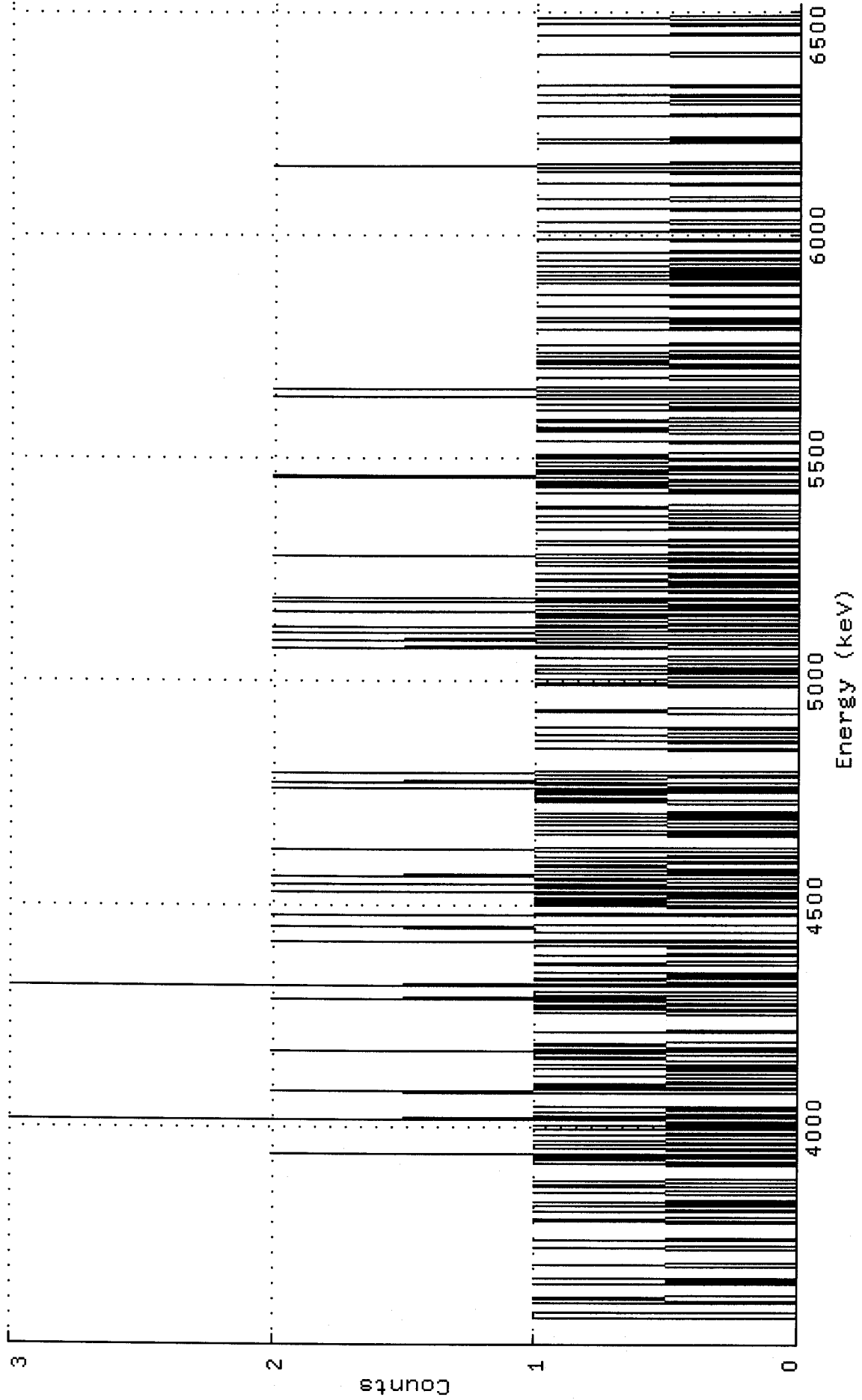
5/21/10  
Date

Alan Gregory  
Reviewer

5/24/10  
Date



Spectrum : DKA100: [ALPHA,ALUSR,ARCHIVE,SJS\_1005062A-RA#03\_RA.CNF;1  
Title : 010  
Sample Title: SB-1-Mu-S DIS  
Start Time: 21-MAY-2010 12:39 Sample Time: 7-MAY-2010 00:00: Energy Offset: 3.49864E+03  
Real Time : 0 02:50:04.00 Sample ID : 03 Energy Slope : 3.10902E+00  
Live Time : 0 02:50:04.00 Sample Type: RA Energy Quad : -1.61362E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$03\_RA

Channel	10204	10204	0	0	0	0	0	0	0	0	0	0	0	0
1:	10204	10204	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	0	0	0	0	0	0	1	1	1	1	0	0
29:	0	0	0	0	0	1	0	1	1	1	0	0	0	0
43:	0	0	0	0	0	1	0	0	1	0	0	0	0	0
57:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
71:	0	0	0	1	0	0	0	0	0	1	0	0	0	0
85:	0	0	0	0	0	0	0	0	1	0	1	0	0	0
99:	0	0	1	0	0	0	0	1	0	1	0	0	0	0
113:	0	1	1	0	0	0	1	1	0	0	1	0	0	0
127:	0	0	0	0	0	0	0	0	1	0	0	1	1	0
141:	0	2	0	0	0	1	0	0	0	1	0	1	0	0
155:	0	0	1	0	0	0	1	0	0	1	0	0	1	3
169:	0	1	0	0	1	0	0	0	1	0	0	0	0	0
183:	0	0	0	0	0	1	2	0	0	1	1	0	1	0
197:	0	0	0	1	0	0	0	0	1	0	0	1	0	0
211:	0	0	1	1	0	0	1	0	2	0	0	1	1	1
225:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
239:	0	0	0	0	0	0	0	0	1	0	0	1	1	0
253:	1	0	1	0	2	1	0	1	1	1	0	0	0	0
267:	3	0	0	0	1	0	1	0	0	1	0	0	0	0
281:	0	0	1	1	0	0	0	0	0	1	0	0	0	0
295:	0	1	0	0	0	2	0	0	0	0	0	0	1	1
309:	1	1	2	0	0	0	0	0	0	0	0	2	0	0
323:	0	0	0	1	0	1	1	0	1	0	1	0	0	2
337:	0	0	0	1	0	2	1	0	1	0	0	2	1	0
351:	0	1	0	0	1	1	1	0	1	0	0	0	1	0
365:	0	0	0	2	0	0	0	0	0	0	0	0	0	0
379:	1	0	0	1	0	0	0	0	1	0	0	1	0	0
393:	1	0	0	1	0	0	0	0	0	0	0	1	1	0
407:	1	1	1	1	0	1	0	2	0	0	1	0	2	1
421:	1	1	0	0	0	2	0	0	0	0	0	0	0	0
435:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
449:	0	1	0	0	0	0	1	0	0	0	0	1	0	0
463:	0	0	0	0	0	0	0	0	0	1	1	1	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	1	0	1	0	0	1	0	0	0	0	1	0	0
505:	1	0	1	0	0	0	0	0	1	0	0	0	0	0
519:	0	0	2	1	0	0	0	2	1	0	0	0	0	2
533:	0	0	0	1	2	0	0	0	1	0	0	1	0	1
547:	0	2	0	0	0	1	0	0	1	2	0	2	0	0
561:	0	0	0	1	0	0	0	1	0	0	1	2	1	0
575:	0	0	1	0	0	0	0	0	1	0	0	0	1	0
589:	0	0	2	0	1	0	0	0	0	0	1	0	0	0
603:	1	0	0	0	0	0	0	0	0	1	0	0	0	0
617:	1	0	0	0	0	1	0	0	0	0	1	0	1	0
631:	0	0	0	0	0	0	0	0	0	1	0	0	0	1
645:	1	0	1	0	1	0	1	2	2	0	1	1	0	1
659:	0	0	1	1	1	1	0	1	0	1	1	0	0	0
673:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
687:	1	1	0	1	0	0	0	0	1	1	0	0	0	0
701:	0	0	0	1	0	0	0	1	0	0	0	0	0	2
715:	0	0	0	0	0	2	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	0	0	1	0	1	0	1	1
743:	1	0	1	0	0	1	1	0	0	0	0	0	1	0
757:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
771:	0	1	0	0	1	0	0	0	0	0	0	0	0	1
785:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
799:	0	0	0	1	0	0	0	1	0	0	1	0	0	1
813:	0	0	0	1	0	0	0	0	1	0	0	0	0	0
827:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	1	0	0	0	0	0	0	1	0	0	0
855:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
869:	1	0	0	0	0	0	0	0	0	0	0	0	1	0
883:	0	0	0	0	0	0	0	1	0	0	0	0	2	0
897:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	0	1	0	0	1	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
939:	0	0	0	0	0	0	0	1	0	0	0	0	1	0
953:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1009:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 21-MAY-2010 15:38:27.03

Detector ID: 10 Acquisition Start: 21-MAY-2010 12:39:20.01  
 Live Time: 0 02:50:04.00 Real Time: 0 02:50:04.00  
 Batch Id: 1005062A-RA Sample Id: 03  
 Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4604.00	58	0	0394.85	362.34	286	155	5.68E-03	13.1	
2	0	5276.29	64	0	0413.43	589.83	502	175	6.27E-03	12.5	
3	0	5786.19	32	0	21.76	766.25	696	161	3.14E-03	17.7	

Background Counts Within Peak Regions Generated: 21-MAY-2010 15:38:37.86

Acquisition Start: 14-MAY-2010 15:32:01.01  
 Live Time: 0 16:40:01.00 Real Time: 0 16:40:01.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.58	5	0	0.00	363.00	286	155	8.33E-05	44.7	
2	0	5275.10	12	0	4.57	589.00	502	175	2.00E-04	28.9	
3	0	5814.48	28	0	13.23	776.00	696	161	4.67E-04	18.9	

Net Sample Counts Within Peak Regions Generated: 21-MAY-2010 15:38:38.26

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4604.00*	175	0	0394.85	362.34	286	155	1.72E-02	13.2	
2	0	5276.29*	193	0	0413.43	589.83	502	175	1.89E-02	12.6	
3	0	5786.19*	93	0	21.76	766.25	696	161	9.07E-03	18.6	

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 21-MAY-2010 15:38:39

Configuration : MCA0:[AMSCOUNT]00001D8E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-1-MW-S DIS  
 Sample date : 7-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 12:39:20  
 Sample ID : 03 Sample quantity : 0.50000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 010 Detector geometry:  
 Elapsed live time: 0 02:50:04.00 Elapsed real time: 0 02:50:04.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4604.00*	175394.85	362.34	286	155	26.4			RA-226	4.49
0	5276.29*	193413.43	589.83	502	175	25.3			RN-222	4.93
0	5786.19*	93	21.76	766.25	696	161	37.2		PO-218	2.37

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
21-MAY-2010 15:39:13

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Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$04\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005062A-RA	*	SAMPLE ID:	04
SAMPLE DATE:	7-MAY-2010 00:00	*	ALIQUOT:	5.000E-01 liter
SAMPLE TITLE:	SB-1-MW-S DIS	*	DETECTOR NUMBER:	011
ACQ DATE:	21-MAY-2010 12:39	*	AVERAGE EFFICIENCY:	20.93%
ELAPSED LIVE TIME:	10205.	*	RECOVERY:	82.96%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	14-MAY-2010 06:12	*	EFF CAL DATE:	6-MAR-2009 05:22
BKG FILENAME:	B_011_14MAY10	*	BKG ELAPSED TIME:	60006.
		*	SAF:	2.87
		*		

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	83.04	3.06	100.0	2.534E+00	9.755E-01	9.445E-01
RN-222	5490.0	138.25	2.38	99.9	4.221E+00	1.260E+00	8.609E-01
RA-226	4785.0	152.94	2.04	100.0	4.666E+00	1.325E+00	8.136E-01

\*\*\*\*\*

IC Bannister  
Analyst

5/21/10  
Date

Alan Grealy  
Reviewer

5/24/10  
Date

Spectrum : DKA100:[ALPHA,ALUSR,ARCHIVE.S]S\_1005062A-RA\$04\_RA.CNF;1  
Title : 011

Sample Title: SB-1-MU-S DIS

Start Time: 21-MAY-2010 12:39

Real Time : 0 02:50:05.00

Live Time : 0 02:50:05.00

Sample Time: 7-MAY-2010 00:00:

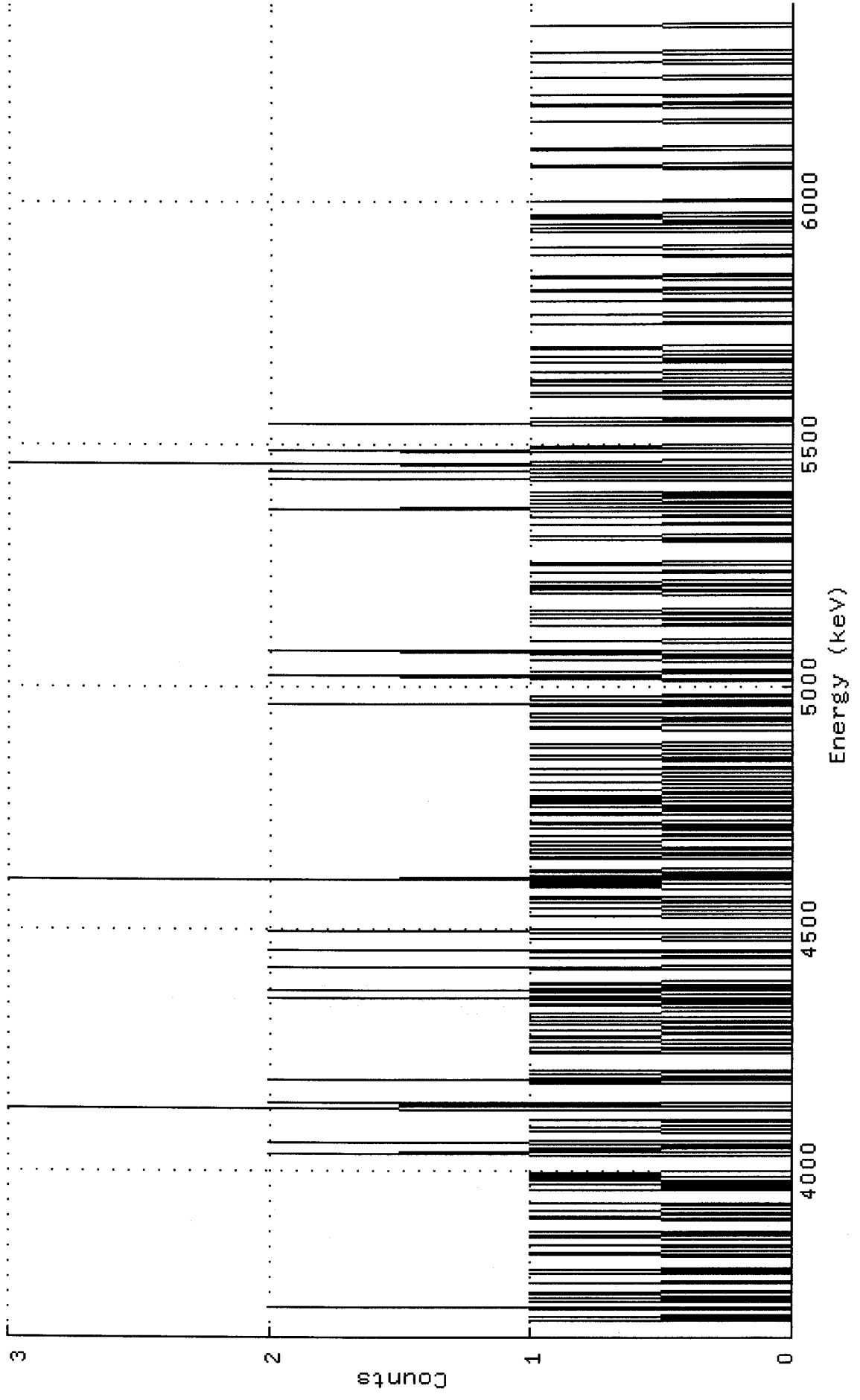
Sample ID : 04

Sample Type: RA

Energy Offset: 3.64448E+03

Energy Slope : 2.81857E+00

Energy Quad : -1.21703E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005062A-RAS04\_RA

Channel

1:	10205	10205	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	1	0	0	1	0	0	0	0	0	2	0	0	0	0
29:	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0
43:	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0
57:	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
71:	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0
85:	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0
99:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
113:	1	0	0	1	0	0	1	0	1	1	0	1	1	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
141:	0	1	0	1	0	0	0	2	0	0	0	0	0	0	0
155:	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0
169:	0	0	0	0	3	0	0	1	2	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0
197:	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0
225:	0	1	1	0	0	0	1	1	0	0	0	1	0	0	1
239:	0	0	0	1	1	1	0	0	0	0	0	1	0	0	1
253:	0	0	2	0	1	0	0	1	0	2	0	0	1	1	0
267:	1	0	0	0	0	0	0	0	0	0	0	2	2	1	0
281:	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0
295:	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0
309:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
323:	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0
337:	0	0	1	1	0	1	1	0	3	0	0	1	0	0	1
351:	0	1	0	0	0	0	0	0	0	0	1	1	0	0	1
365:	0	0	0	1	0	1	1	1	1	1	0	0	0	0	1
379:	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0
393:	0	1	1	0	0	0	1	0	0	1	1	0	0	1	1
407:	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0
421:	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
435:	1	0	0	1	1	0	0	0	0	1	0	0	0	1	0
449:	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
463:	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0
477:	2	0	0	1	0	0	0	1	0	0	0	0	0	0	0
491:	0	0	0	0	0	1	0	1	2	1	0	0	0	1	0
505:	0	0	0	0	0	0	1	0	0	0	1	0	0	1	2
519:	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
533:	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
547:	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	1	1	0	1	0	1	0	1	0	1	0	0	0	0
575:	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0
589:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603:	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1
617:	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0
631:	0	1	0	1	1	0	1	0	0	1	0	0	0	0	0
645:	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0
659:	0	0	0	3	1	1	0	0	0	0	0	0	0	0	1
673:	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
687:	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0
701:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
715:	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1
729:	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1
743:	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0
757:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
785:	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
799:	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
827:	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
841:	0	0	0	1	1	1	0	0	0	1	0	0	0	0	1
855:	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
897:	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
939:	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
953:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
967:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
981:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 21-MAY-2010 15:38:45.06

Detector ID: 11 Acquisition Start: 21-MAY-2010 12:39:38.01  
Live Time: 0 02:50:05.00 Real Time: 0 02:50:05.00  
Batch Id: 1005062A-RA Sample Id: 04  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4616.43	54	0	0.00	350.13	262	170	5.29E-03	13.6	
2	0	5279.10	49	0	0.00	595.24	499	191	4.80E-03	14.3	
3	0	5793.19	30	0436.88		789.23	710	176	2.94E-03	18.3	

Background Counts Within Peak Regions Generated: 21-MAY-2010 15:39:10.71

Acquisition Start: 14-MAY-2010 15:32:04.01  
Live Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.36	12	0447.15		346.50	262	170	2.00E-04	28.9	
2	0	5277.03	14	0	2.85	594.00	499	191	2.33E-04	26.7	
3	0	5813.76	18	0	11.39	797.50	710	176	3.00E-04	23.6	

Net Sample Counts Within Peak Regions Generated: 21-MAY-2010 15:39:11.07

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4616.43*	153	0	0.00	350.13	262	170	1.50E-02	13.8	
2	0	5279.10*	138	0	0.00	595.24	499	191	1.35E-02	14.5	
3	0	5793.19*	83	0436.88		789.23	710	176	8.14E-03	19.0	

Flag: "\*" = Peak area was modified by background subtraction



VMS Nuclide Identification Report V3.0 Generated 21-MAY-2010 15:39:12

Configuration : MCA0:[AMSCOUNT]00001D8E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-1-MW-S DIS  
 Sample date : 7-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 12:39:38  
 Sample ID : 04 Sample quantity : 0.50000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 011 Detector geometry:  
 Elapsed live time: 0 02:50:05.00 Elapsed real time: 0 02:50:05.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4616.43*	153	0.00	350.13	262	170	27.6		RA-226	3.87
0	5279.10*	138	0.00	595.24	499	191	29.1		RN-222	3.50
0	5793.19*	83436.88	789.23	789.23	710	176	37.9		PO-218	2.10

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Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
21-MAY-2010 15:39:27

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$05\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005062A-RA \* SAMPLE ID: 05  
SAMPLE DATE: 7-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SB-1-MW-S SUS \* DETECTOR NUMBER: 012  
ACQ DATE: 21-MAY-2010 12:39 \* AVERAGE EFFICIENCY: 21.03%  
ELAPSED LIVE TIME: 10203. \* RECOVERY: 92.45%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 14-MAY-2010 06:12 \* EFF CAL DATE: 6-MAR-2009 05:22  
BKG FILENAME: B\_012\_14MAY10 \* BKG ELAPSED TIME: 60004.  
\* SAF: 2.31  
\*

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	49.90	3.23	100.0	6.800E-01	3.061E-01	3.465E-01
RN-222	5490.0	49.73	3.40	99.9	6.780E-01	3.063E-01	3.535E-01
RA-226	4785.0	58.87	1.19	100.0	8.020E-01	3.257E-01	2.431E-01

\*\*\*\*\*

K Bannister  
Analyst

5/21/10  
Date

Alan Mealy  
Reviewer

5/24/10  
Date

Spectrum : DKA100: [ALPHA.ALUSR.ARCHIVE.S]S\_1005062A-RA\$05\_RA.CNF;1

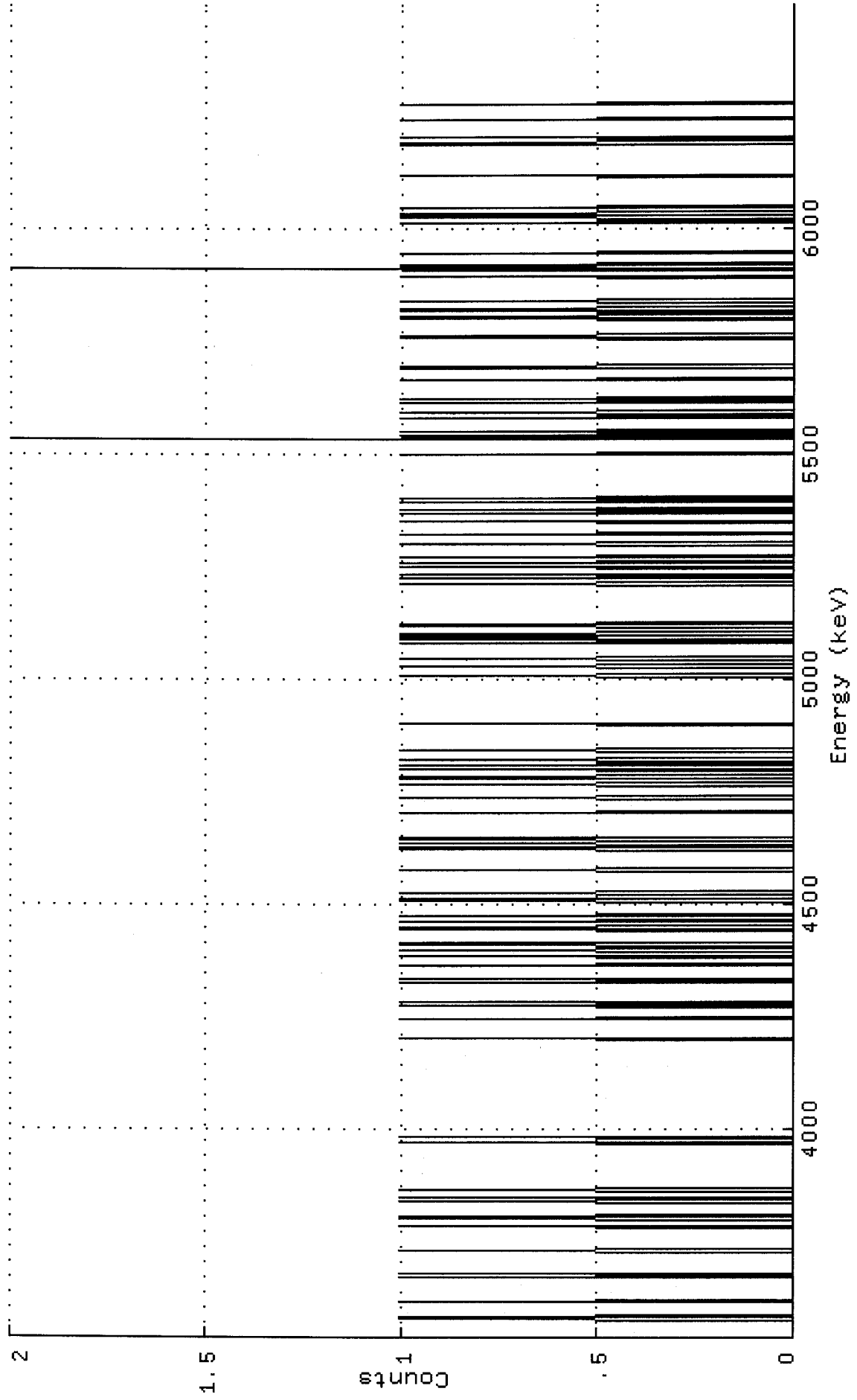
Title : 012

Sample Title: SB-1-MW-S SUS

Start Time: 21-MAY-2010 12:39 Sample Time: 7-MAY-2010 00:00: Energy Offset: 3.52209E+03

Real Time : 0 02:50:03.00 Sample ID : 05 Energy Slope : 3.04451E+00

Live Time : 0 02:50:03.00 Sample Type: RA Energy Quad : -1.38640E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$05\_RA

Channel	10203	10203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:	10203	10203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
29:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
71:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
99:	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141:	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
253:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267:	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
281:	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
295:	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
309:	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
323:	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365:	0	0	1	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0
379:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
393:	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
407:	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
421:	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
435:	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
463:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
477:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
505:	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
519:	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1	0	0
533:	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
547:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
575:	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
589:	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
603:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
617:	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
631:	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
645:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
673:	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	1	0	0
687:	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
701:	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
729:	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757:	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
771:	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	0
785:	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
799:	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
813:	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
827:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
855:	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
869:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
911:	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
925:	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
939:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 21-MAY-2010 15:39:18.09

Detector ID: 12 Acquisition Start: 21-MAY-2010 12:39:58.01  
Live Time: 0 02:50:03.00 Real Time: 0 02:50:03.00  
Batch Id: 1005062A-RA Sample Id: 05  
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4597.32	26	0456.68	359.04	284	157	2.55E-03	19.6		
2	0	5226.72	23	0502.34	574.96	504	177	2.25E-03	20.9		
3	0	5828.69	23	0 3.04	785.74	700	163	2.25E-03	20.9		

Background Counts Within Peak Regions Generated: 21-MAY-2010 15:39:25.03

Acquisition Start: 14-MAY-2010 15:32:07.01  
Live Time: 0 16:40:04.00 Real Time: 0 16:40:04.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4606.70	7	0 3.04	362.00	284	157	1.17E-04	37.8		
2	0	5276.96	20	0 42.55	592.00	504	177	3.33E-04	22.4		
3	0	5817.36	19	0 31.91	781.00	700	163	3.17E-04	22.9		

Net Sample Counts Within Peak Regions Generated: 21-MAY-2010 15:39:25.33

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4597.32*	59	0456.68	359.04	284	157	5.77E-03	20.0		
2	0	5226.72*	50	0502.34	574.96	504	177	4.87E-03	22.3		
3	0	5828.69*	50	0 3.04	785.74	700	163	4.89E-03	22.3		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 21-MAY-2010 15:39:26

Configuration : MCA0: [AMSCOUNT] 00001D8E\$1  
 Analyses by : ROIPEAK V1.2, PEAKEFF V2.2, ENBACK V1.6, NID V3.3  
 Sample title : SB-1-MW-S SUS  
 Sample date : 7-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 12:39:58  
 Sample ID : 05 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 012 Detector geometry:  
 Elapsed live time: 0 02:50:03.00 Elapsed real time: 0 02:50:03.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4597.32*	59456.68	359.04	284	157	40.0			RA-226	0.741
0	5226.72*	50502.34	574.96	504	177	44.7			RN-222	0.627
0	5828.69*	50	3.04	785.74	700	163	44.5		PO-218	0.629

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
21-MAY-2010 15:39:44

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$06\_RA.CNF  
\*\*\*\*\*

BATCH ID:	1005062A-RA	*	SAMPLE ID:	06
SAMPLE DATE:	6-MAY-2010 00:00	*	ALIQUOT:	1.000E+00 liter
SAMPLE TITLE:	SB-1-MW-D DIS	*	DETECTOR NUMBER:	013
ACQ DATE:	21-MAY-2010 12:40	*	AVERAGE EFFICIENCY:	20.31%
ELAPSED LIVE TIME:	10200.	*	RECOVERY:	100.00%
TRACER ID:	NONE	*	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	*	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	*	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	WATER	*	LLD CONSTANT:	2.65
ENERGY CAL DATE:	14-MAY-2010 06:12	*	EFF CAL DATE:	6-MAR-2009 05:22
BKG FILENAME:	B_013_14MAY10	*	BKG ELAPSED TIME:	60001.
		*	SAF:	3.22
		*		

\*\*\*\*\*

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	102.69	3.57	100.0	1.340E+00	4.917E-01	4.806E-01
RN-222	5490.0	183.02	3.74	99.9	2.390E+00	6.610E-01	4.896E-01
RA-226	4785.0	198.79	0.85	100.0	2.594E+00	6.847E-01	2.915E-01

\*\*\*\*\*

K Bannister  
Analyst

5/21/10  
Date

Alan Greig  
Reviewer

5/24/10  
Date

Spectrum : DKA100: [ALPHA,ALUSR.ARCHIVE.SJS\_1005062A-RA#06\_RA.CNF;1

Title : 013

Sample Title: SB-1-MU-D DIS

Start Time: 21-MAY-2010 12:40

Sample Time: 6-MAY-2010 00:00:

Energy Offset: 3.54305E+03

Real Time : 0 02:50:00.00

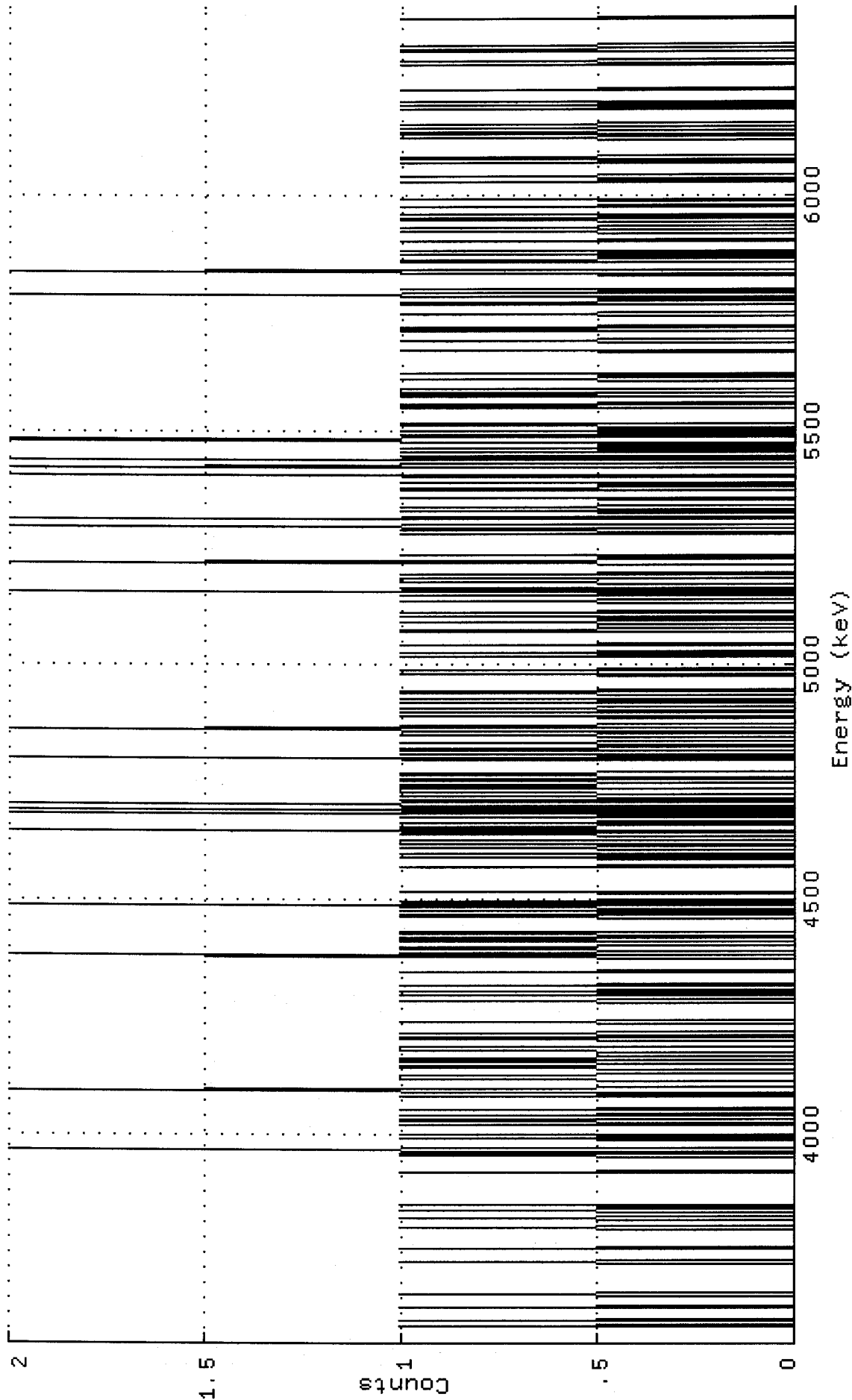
Sample ID : 06

Energy Slope : 2.94067E+00

Live Time : 0 02:50:00.00

Sample Type: RA

Energy Quad : -1.51936E-04





Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$06\_RA

Channel

1:	10200	10200	0	0	0	0	0	0	0	0	0	0	0	0
15:	0	1	0	0	0	1	0	0	0	0	0	0	0	0
29:	0	1	0	0	0	0	0	0	0	0	1	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	1	0	0	0	0	0	0	0
71:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	1	0	0	0	0	0	0	1	0	0	0
99:	0	1	1	0	0	1	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
141:	1	0	1	0	2	0	0	0	0	0	0	0	1	0
155:	0	1	0	0	0	0	0	0	0	1	0	1	1	0
169:	0	0	1	0	0	0	1	0	0	0	0	0	0	0
183:	0	0	1	0	0	0	2	1	0	0	0	0	0	0
197:	1	1	1	1	0	0	0	0	0	1	1	0	0	1
211:	0	1	1	0	0	0	0	1	1	1	1	0	0	0
225:	0	0	1	1	0	0	1	0	0	0	0	0	0	0
239:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
253:	0	0	1	1	0	0	0	1	0	0	1	0	0	0
267:	1	0	0	0	0	0	0	0	0	0	1	0	0	0
281:	0	0	0	0	0	0	0	1	2	0	1	0	0	1
295:	1	0	0	0	0	1	1	0	1	0	1	1	0	0
309:	0	0	0	0	0	0	0	0	0	1	1	0	0	1
323:	0	0	1	0	2	0	0	1	0	0	0	0	0	1
337:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351:	0	0	0	0	0	1	0	0	0	0	0	1	0	0
365:	1	0	0	0	1	1	0	0	1	1	1	0	0	0
379:	0	1	0	2	0	1	1	1	0	0	1	0	0	0
393:	1	0	0	2	0	0	2	0	1	0	2	0	1	0
407:	0	1	1	0	1	1	1	1	0	1	1	0	0	1
421:	1	0	0	1	1	1	0	0	0	0	0	0	0	0
435:	0	0	2	0	0	1	0	0	0	1	1	0	0	0
449:	1	0	0	0	0	0	1	0	0	0	2	1	0	1
463:	0	0	0	0	0	0	1	0	0	0	1	0	1	0
477:	0	0	0	1	0	1	0	0	0	0	1	0	1	0
491:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
505:	1	0	0	0	0	0	0	0	0	0	1	0	0	1
519:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
533:	0	1	1	0	0	0	0	0	1	0	0	0	1	0
547:	0	0	1	0	0	0	0	0	0	0	1	0	0	0
561:	0	1	0	0	2	0	1	0	0	0	0	1	1	1
575:	0	0	0	1	0	0	0	0	0	0	0	1	2	1
589:	0	0	0	1	0	0	0	0	0	0	0	0	0	0
603:	0	0	0	0	0	0	1	0	0	1	0	2	2	0
617:	0	0	0	0	2	0	0	0	0	1	0	0	1	1
631:	0	0	0	0	0	1	0	0	0	0	0	0	1	1
645:	0	0	0	1	0	0	0	0	0	2	0	0	0	0
659:	0	0	2	1	1	0	0	0	2	0	0	0	0	0
673:	1	0	0	1	0	0	1	0	2	1	2	0	0	1
687:	0	0	1	0	0	0	1	1	0	0	0	0	0	0
701:	0	0	0	0	0	0	1	1	0	1	0	0	0	0
715:	0	1	1	0	1	1	1	0	0	0	0	0	0	0
729:	1	0	0	0	1	0	0	0	0	0	0	0	0	0
743:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
757:	0	0	1	0	0	0	0	0	0	0	1	1	0	1
771:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
785:	0	0	0	1	1	0	0	0	1	0	2	0	0	0
799:	1	0	0	0	0	0	0	0	0	0	0	0	1	0
813:	2	1	0	0	0	0	0	0	1	1	0	0	0	1
827:	0	0	1	0	0	0	0	0	0	0	0	1	0	0
841:	0	0	0	0	1	0	0	1	0	0	0	0	0	1
855:	0	1	0	1	0	0	0	0	0	0	1	0	0	0
869:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
883:	0	0	1	0	0	0	0	1	0	0	0	0	0	0
897:	0	0	0	1	0	0	1	1	0	0	0	0	0	0
911:	0	0	0	0	0	0	0	0	1	1	0	0	1	1
925:	0	0	1	0	0	1	0	0	0	0	0	0	0	0
939:	0	0	0	0	1	0	0	1	0	1	0	0	0	0
953:	0	0	0	0	0	1	0	0	0	0	0	0	0	0
967:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
981:	1	0	0	0	0	0	0	0	1	1	0	0	1	0
995:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated:    21-MAY-2010 15:39:32.26

Detector ID: 13	Acquisition Start: 21-MAY-2010 12:40:28.01
Live Time: 0 02:50:00.00	Real Time: 0 02:50:00.00
Batch Id: 1005062A-RA	Sample Id: 06
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4620.33	62	0439.54	373.55	287	164	6.08E-03	12.7		
2	0	5307.15	58	0349.94	619.74	516	185	5.69E-03	13.1		
3	0	5822.37	33	0 57.34	808.91	721	171	3.24E-03	17.4		

Background Counts Within Peak Regions      Generated:    21-MAY-2010 15:39:42.25

Live Time: 0 16:40:01.00	Acquisition Start: 14-MAY-2010 15:32:09.01
	Real Time: 0 16:40:01.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4605.92	5	0339.85	368.50	287	164	8.33E-05	44.7		
2	0	5274.89	22	0142.00	608.00	516	185	3.67E-04	21.3		
3	0	5815.83	21	0 19.75	806.00	721	171	3.50E-04	21.8		

Net Sample Counts Within Peak Regions      Generated:    21-MAY-2010 15:39:42.52

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4620.33*	199	0439.54	373.55	287	164	1.95E-02	12.8		
2	0	5307.15*	183	0349.94	619.74	516	185	1.79E-02	13.4		
3	0	5822.37*	103	0 57.34	808.91	721	171	1.01E-02	18.0		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 21-MAY-2010 15:39:43

```

Configuration      : MCA0:[AMSCOUNT]00001D8E$1
Analyses by       : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : SB-1-MW-D DIS
Sample date       : 6-MAY-2010 00:00:00   Acquisition date : 21-MAY-2010 12:40:28
Sample ID        : 06                      Sample quantity  : 1.0000 liter
Sample type      : RA                      Sample geometry  :
Detector name    : 013                   Detector geometry:
Elapsed live time: 0 02:50:00.00         Elapsed real time: 0 02:50:00.00   0.0%
Energy tolerance : 100.00 keV           Half life ratio  : 8.00
Errors propagated: Yes                   Systematic Error : 3.00 %
Efficiency type  : Average value         Efficiencies at  : Peak Energy
Abundance limit  : 75.00
    
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4620.33*	199439.54	373.55	287	164	25.5			RA-226	2.59
0	5307.15*	183349.94	619.74	516	185	26.8			RN-222	2.39
0	5822.37*	103 57.34	808.91	721	171	36.1			PO-218	1.34

Eberline Services  
Oak Ridge Laboratory

ALPHA SPECTROMETRY REPORT  
21-MAY-2010 15:40:03

\*\*\*\*\*  
Spectral File: ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$07\_RA.CNF  
\*\*\*\*\*

BATCH ID: 1005062A-RA \* SAMPLE ID: 07  
SAMPLE DATE: 6-MAY-2010 00:00 \* ALIQUOT: 1.000E+00 liter  
SAMPLE TITLE: SB-1-MW-D SUS \* DETECTOR NUMBER: 014  
ACQ DATE: 21-MAY-2010 12:40 \* AVERAGE EFFICIENCY: 20.33%  
ELAPSED LIVE TIME: 10204. \* RECOVERY: 95.56%  
TRACER ID: NONE \* TRACER FWHM (kev): 0.00  
LAMBDA VALUE: 0. \* ROI TYPE: STANDARD  
TRACER DPM AT SAMPLE DATE: 0.000 \* CONFIDENCE FACTOR: 4.65  
SAMPLE MATRIX: WATER \* LLD CONSTANT: 2.65  
ENERGY CAL DATE: 14-MAY-2010 06:12 \* EFF CAL DATE: 6-MAR-2009 05:22  
BKG FILENAME: B\_014\_14MAY10 \* BKG ELAPSED TIME: 60004.  
\* SAF: 2.12  
\*

\*\*\*\*\*  
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ liter	TPU/ERROR 2-SIGMA	MDC pCi/ liter
PO-218	6003.0	71.99	2.21	100.0	9.819E-01	3.489E-01	2.765E-01
RN-222	5490.0	62.83	2.89	99.9	8.574E-01	3.279E-01	3.054E-01
RA-226	4785.0	96.67	0.85	100.0	1.318E+00	4.023E-01	2.006E-01

\*\*\*\*\*

K Bannister  
Analyst

5/24/10  
Date

Alan Gregory  
Reviewer

5/24/10  
Date

Spectrum : DKA100: [ALPHA,ALUSR.ARCHIVE.S]S\_1005062A-RA#07\_RA.CNF;1

Title : 014

Sample Title: SB-1-MW-D SUS

Start Time: 21-MAY-2010 12:40

Real Time : 0 02:50:04.00

Live Time : 0 02:50:04.00

Sample Time: 6-MAY-2010 00:00:

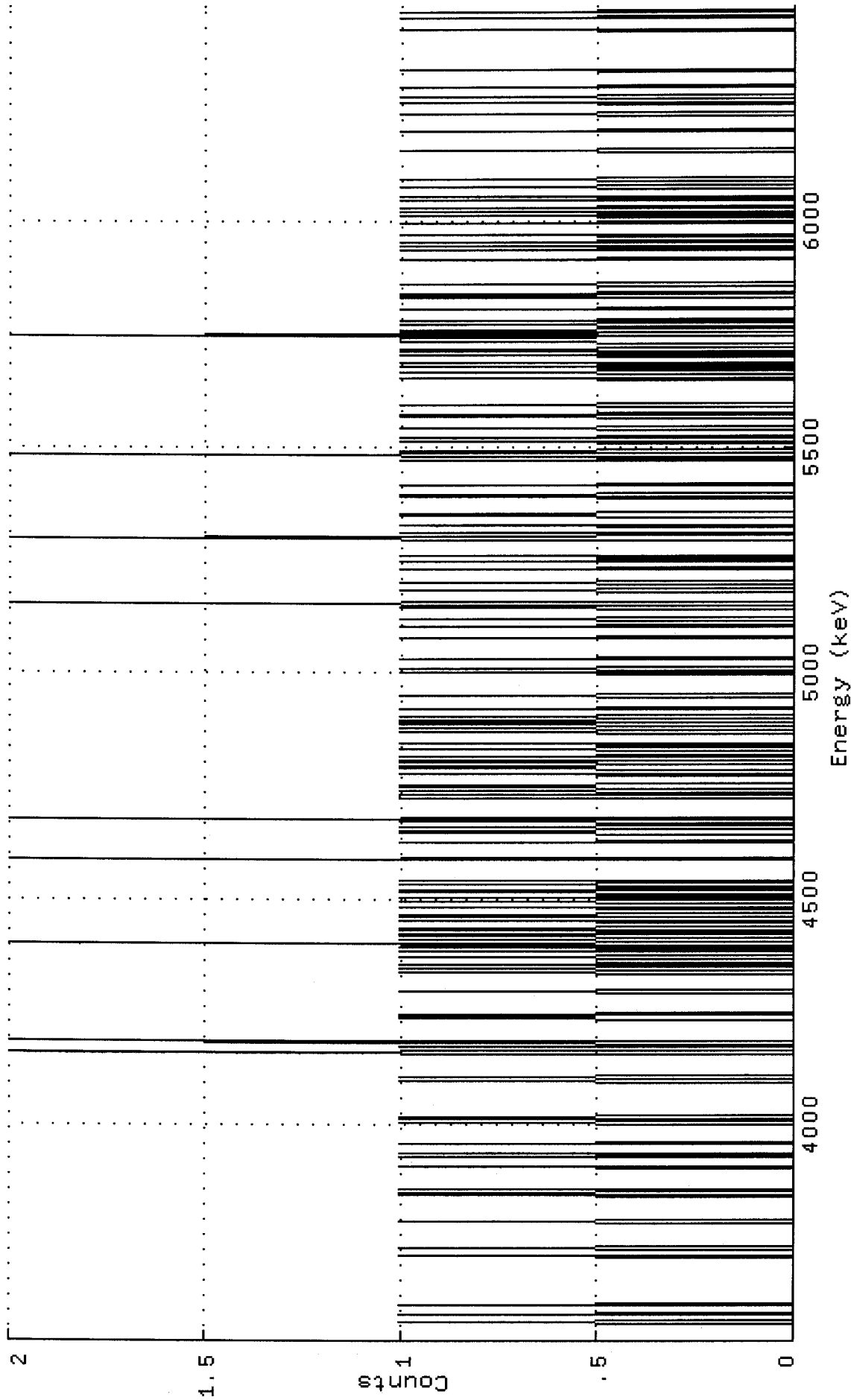
Sample ID : 07

Sample Type: RA

Energy Offset: 3.51031E+03

Energy Slope : 3.03960E+00

Energy Quad : -1.48310E-04



Channel Contents for ND\_AMS\_ARCHIVE\_S:S\_1005062A-RA\$07\_RA

Channel

	1:	10204	10204	0	0	0	0	0	0	0	0	0	0	0
15:	0	0	1	0	0	0	0	0	0	1	0	0	0	0
29:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
43:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
71:	1	0	0	0	0	0	0	0	0	0	0	0	0	0
85:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
99:	0	0	0	0	0	0	0	0	0	0	0	1	0	1
113:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
127:	0	0	0	0	1	0	0	0	0	0	0	0	1	0
141:	1	0	0	0	0	0	0	0	0	1	0	0	0	0
155:	0	0	0	0	0	0	0	0	0	0	1	0	1	1
169:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
197:	0	1	0	0	0	0	0	0	0	0	0	0	0	0
211:	0	0	0	0	0	2	0	0	0	0	0	1	1	2
225:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239:	0	0	0	1	1	0	1	0	0	0	0	0	0	0
253:	0	0	0	0	0	0	0	0	0	1	1	0	0	0
267:	0	0	0	0	0	0	0	0	0	0	1	0	1	0
281:	0	1	0	0	0	0	1	1	0	0	0	1	0	1
295:	0	0	2	1	0	1	0	0	1	0	1	0	0	1
309:	1	0	0	0	0	1	0	0	0	1	1	0	0	0
323:	0	1	0	0	0	1	1	0	0	1	0	0	0	1
337:	0	1	0	0	1	1	0	1	0	0	0	0	0	0
351:	0	0	0	0	0	0	0	0	0	0	0	2	0	0
365:	0	0	0	0	0	0	0	0	0	1	0	0	0	0
379:	0	1	1	1	0	0	1	0	0	0	1	0	2	0
393:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407:	1	1	1	0	0	1	0	0	1	1	1	0	0	0
421:	0	0	0	0	1	0	0	0	1	1	1	0	0	1
435:	1	0	0	0	1	0	0	0	0	1	0	0	0	1
449:	0	0	0	0	0	0	0	0	1	0	0	1	0	0
463:	1	1	0	1	0	0	1	0	0	0	0	0	1	0
477:	0	0	0	0	0	0	0	0	1	0	0	0	0	0
491:	0	0	0	0	0	0	0	0	0	0	0	1	0	0
505:	1	0	0	0	0	0	0	0	1	0	0	0	0	0
519:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
533:	0	0	0	0	0	1	0	0	0	0	1	0	0	0
547:	0	0	0	0	0	1	0	0	2	0	0	0	0	0
561:	0	0	0	0	1	0	0	0	0	0	1	0	0	0
575:	0	0	0	0	0	0	0	1	0	0	0	0	0	1
589:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
603:	0	0	2	1	1	0	1	0	0	0	0	0	1	0
617:	0	0	0	0	0	1	1	1	0	0	0	0	0	0
631:	0	0	0	0	0	0	1	0	1	0	0	0	0	0
645:	0	0	1	0	0	0	0	0	0	0	0	0	0	0
659:	0	0	0	0	0	0	0	1	0	0	0	2	0	1
673:	1	0	0	0	0	0	0	1	0	0	0	1	0	0
687:	0	0	0	0	1	0	0	0	0	0	0	0	0	1
701:	0	1	0	0	0	0	0	0	1	0	0	0	0	0
715:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	1	0	0	0	1	0	0	1	0
743:	0	0	0	0	1	0	0	1	0	1	0	0	0	0
757:	0	1	1	1	1	0	2	1	0	1	1	0	0	0
771:	1	1	0	0	1	0	0	0	0	0	0	0	0	1
785:	0	0	0	0	0	0	0	0	1	1	0	1	0	0
799:	0	0	0	0	1	0	0	0	0	0	0	0	0	0
813:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
827:	0	0	0	0	1	0	1	0	0	0	1	0	0	0
841:	0	1	0	0	0	0	0	0	0	0	0	1	0	0
855:	0	0	1	0	0	1	0	0	0	1	0	0	0	0
869:	0	1	0	1	0	0	0	0	0	0	0	1	0	0
883:	0	0	0	1	1	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0	0	0	0	1	0
911:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
925:	1	0	0	0	0	0	0	0	0	0	0	0	0	1
939:	0	0	0	0	0	0	0	0	1	0	0	0	0	1
953:	0	0	0	0	0	0	0	1	0	0	0	0	0	0
967:	0	0	0	0	0	0	1	0	0	0	0	0	0	0
981:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
995:	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1009:	0	0	0	0	0	0	1	0	0	0	0	1	0	0
1023:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Eberline Services  
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions      Generated: 21-MAY-2010 15:39:49.44

Detector ID: 14	Acquisition Start: 21-MAY-2010 12:40:44.01
Live Time: 0 02:50:04.00	Real Time: 0 02:50:04.00
Batch Id: 1005062A-RA	Sample Id: 07
Sample Type: RA	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4599.75	46	0288.70	364.91	289	158	4.51E-03	14.7		
2	0	5302.46	31	0352.59	607.61	509	179	3.04E-03	18.0		
3	0	5808.45	35	0 4.46	786.23	707	164	3.43E-03	16.9		

Background Counts Within Peak Regions      Generated: 21-MAY-2010 15:40:01.10

Live Time: 0 16:40:04.00	Acquisition Start: 14-MAY-2010 15:32:12.01
Real Time: 0 16:40:04.00	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4608.81	5	0 0.00	367.50	289	158	8.33E-05	44.7		
2	0	5275.41	17	0 4.49	598.00	509	179	2.83E-04	24.3		
3	0	5812.44	13	0 4.49	788.50	707	164	2.17E-04	27.7		

Net Sample Counts Within Peak Regions      Generated: 21-MAY-2010 15:40:01.38

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4599.75*	97	0288.70	364.91	289	158	9.47E-03	14.9		
2	0	5302.46*	63	0352.59	607.61	509	179	6.16E-03	18.8		
3	0	5808.45*	72	0 4.46	786.23	707	164	7.06E-03	17.4		

Flag: "\*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 21-MAY-2010 15:40:02

Configuration : MCA0:[AMSCOUNT]00001D8E\$1  
 Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.6,NID V3.3  
 Sample title : SB-1-MW-D SUS  
 Sample date : 6-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 12:40:44  
 Sample ID : 07 Sample quantity : 1.0000 liter  
 Sample type : RA Sample geometry :  
 Detector name : 014 Detector geometry:  
 Elapsed live time: 0 02:50:04.00 Elapsed real time: 0 02:50:04.00 0.0%  
 Energy tolerance : 100.00 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 3.00 %  
 Efficiency type : Average value Efficiencies at : Peak Energy  
 Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/liter
0	4599.75*	97288.70	364.91	289	158	29.8			RA-226	1.26
0	5302.46*	63352.59	607.61	509	179	37.6			RN-222	0.819
0	5808.45*	72	4.46	786.23	707	164	34.9		PO-218	0.938



Detector	Parameter	Flag	Filename
1	OFFLINE		
2	OFFLINE		
3	ALL	Passed	D_003_NONE
4	ALL	Passed	D_004_NONE
5	ALL	Passed	D_005_NONE
6	ALL	Passed	D_006_NONE
7	OFFLINE		
8	OFFLINE		
9	OFFLINE		
10	ALL	Passed	D_010_NONE
11	ALL	Passed	D_011_NONE
12	ALL	Passed	D_012_NONE
13	ALL	Passed	D_013_NONE
14	ALL	Passed	D_014_NONE
15	ALL	Passed	D_015_NONE
16	OFFLINE		
17	OFFLINE		
18	ALL	Passed	D_018_NONE
19	ALL	Passed	D_019_NONE
20	OFFLINE		
21	OFFLINE		
22	OFFLINE		
23	ALL	Passed	D_023_NONE
24	ALL	Passed	D_024_NONE
25	OFFLINE		
26	OFFLINE		
27	ALL	Passed	D_027_NONE
28	OFFLINE		
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	OFFLINE		
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	OFFLINE		
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	OFFLINE		
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 05/21/10

APPROVAL TIME: \_\_\_\_\_

APPROVED BY: KM

PROCEDURE # \_\_\_\_\_

**SECTION IX**  
**ANALYTICAL DATA (RADIUM-228)**

<b>Work Order</b>	<b>10-05062</b>
<b>Analysis Code</b>	<b>Ra228</b>
<b>Run</b>	<b>1</b>
<b>Date Received</b>	<b>5/12/2010</b>
<b>Lab Deadline</b>	<b>5/26/2010</b>
<b>Client</b>	<b>Michael Pisani &amp; Associates</b>
<b>Project</b>	<b>ENV</b>
<b>Report Level</b>	<b>4</b>
<b>Activity Units</b>	<b>pCi</b>
<b>Aliquot Units</b>	<b>1</b>
<b>Matrix</b>	<b>WA</b>
<b>Method</b>	<b>EPA 904.0 Modified</b>
<b>Instrument Type</b>	<b>Alpha/Beta GPC</b>
<b>Radiometric Tracer</b>	<b>Ba-133</b>
<b>Radiometric Sol#</b>	<b>Ba-6a</b>
<b>Tracer Act (dpm/g)</b>	1226.547
<b>Carrier</b>	Yttrium
<b>Carrier Conc (mg/ml)</b>	30.2

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/13/10 00:00	1.0000E+00
02	MBL	BLANK		05/13/10 00:00	1.0000E+00
03	DUP	SB-1-MW-S DIS	32	05/07/10 10:00	5.0000E-01
04	DO	SB-1-MW-S DIS	32	05/07/10 10:00	5.0000E-01
05	TRG	SB-1-MW-S SUS	32	05/07/10 10:00	1.0000E+00
06	TRG	SB-1-MW-D DIS	41	05/06/10 17:10	1.0000E+00
07	TRG	SB-1-MW-D SUS	41	05/06/10 17:10	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.8179	1003.2	424.2	93.87	2.000	0.1024	0.1708	0.0684	113.25	103.26	1.00	1.00
02	MBL	0.8174	1002.6	471.9	104.49	2.000	0.1017	0.1600	0.0583	96.52	100.86	1.00	1.00
03	DUP	0.8103	993.9	340.8	76.12	2.000	0.1015	0.1621	0.0606	100.33	76.38	1.00	1.00
04	DO	0.8090	992.3	370.8	82.96	2.000	0.1016	0.1627	0.0611	101.16	83.92	1.00	1.00
05	TRG	0.8123	996.3	414.9	92.45	2.000	0.1010	0.1611	0.0601	99.50	91.99	1.00	1.00
06	TRG	0.8098	993.3	478.6	106.97	2.000	0.1012	0.1620	0.0608	100.66	107.68	1.00	1.00
07	TRG	0.8124	996.4	428.9	95.56	2.000	0.1018	0.1600	0.0582	96.36	92.07	1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH
02	MBL			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH
03	DUP			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH
04	DO			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH
05	TRG			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH
06	TRG			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH
07	TRG			05/13/10 13:09	JBARNARD	05/17/10 10:50	TSMITH	05/26/10 08:04	TSMITH

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05062-Ra228-1**

	Client	Michael Pisani & Associates
	Eberline Services Work Order	10-05062
Run	Analysis Code	Ra228
		1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	1.32E+01	9.35E-01	9.12E-01	1.69E+01	77.86	OK		OK	
02	RA-228	MBL	BLANK	pCi/l	5.42E-01	5.04E-01	1.02E+00					OK	OK
03	RA-228	DUP	SB-1-MW-S DIS	pCi/l	5.84E+00	1.43E+00	2.39E+00				INV	OK	
04	RA-228	DO	SB-1-MW-S DIS	pCi/l	2.77E+00	1.22E+00	2.30E+00					OK	
05	RA-228	TRG	SB-1-MW-S SUS	pCi/l	4.98E-01	5.46E-01	1.11E+00					OK	
06	RA-228	TRG	SB-1-MW-D DIS	pCi/l	1.96E+00	5.41E-01	9.44E-01					OK	
07	RA-228	TRG	SB-1-MW-D SUS	pCi/l	8.12E-01	6.31E-01	1.26E+00					OK	

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05062-Ra228-1**

 <b>1</b> Run	<b>Ra228</b> Analysis Code	<b>10-05062</b> Eberline Services Work Order	<b>Michael Pisani &amp; Associates</b> Client
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Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	05/13/10 00:00	1.00E+00	93.87	113.25	103.26	1.00	5/17/2010 10:50	5/26/2010 8:04
02	RA-228	MBL	05/13/10 00:00	1.00E+00	104.49	96.52	100.86	1.00	5/17/2010 10:50	5/26/2010 8:04
03	RA-228	DUP	05/07/10 10:00	5.00E-01	76.12	100.33	76.38	1.00	5/17/2010 10:50	5/26/2010 8:04
04	RA-228	DO	05/07/10 10:00	5.00E-01	82.96	101.16	83.92	1.00	5/17/2010 10:50	5/26/2010 8:04
05	RA-228	TRG	05/07/10 10:00	1.00E+00	92.45	99.50	91.99	1.00	5/17/2010 10:50	5/26/2010 8:04
06	RA-228	TRG	05/06/10 17:10	1.00E+00	106.97	100.66	107.68	1.00	5/17/2010 10:50	5/26/2010 8:04
07	RA-228	TRG	05/06/10 17:10	1.00E+00	95.56	96.36	92.07	1.00	5/17/2010 10:50	5/26/2010 8:04

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05062-Ra228-1**

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-228	LCS	05/26/10 11:56		LB4110R	B1	120	1082	1.033333333	0.4754
02	RA-228	MBL	05/26/10 11:56		LB4110R	B2	120	191	1.266666667	0.4658
03	RA-228	DUP	05/26/10 11:56		LB4110R	B3	120	283	1.016666667	0.4713
04	RA-228	DO	05/26/10 11:56		LB4110R	B4	120	225	1.166666667	0.4773
05	RA-228	TRG	05/26/10 11:56		LB4110R	C1	120	187	1.283333333	0.4705
06	RA-228	TRG	05/26/10 11:56		LB4110R	C3	120	295	1.216666667	0.4614
07	RA-228	TRG	05/26/10 11:56		LB4110R	C4	120	256	1.683333333	0.4714


	Run	1
	Analysis Code	Ra228
	Eberline Services Work Order	10-05062
Client	Michael Pisani & Associates	



Count Room Report  
 Client: Michael Pisani Associat  
 10-05062-Ra228-1 (pCi/l) in WA  
 Tracer ID: Ba-6a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/13/10 00:00	1.0000	0.8179	1003.1928	424.2000	93.87	1.00	1.00
02	MBL	BLANK	05/13/10 00:00	1.0000	0.8174	1002.5795	471.9000	104.49	1.00	1.00
03	DUP	SB-1-MW-S DIS	05/07/10 10:00	0.5000	0.8103	993.8710	340.8000	76.12	1.00	1.00
04	DO	SB-1-MW-S DIS	05/07/10 10:00	0.5000	0.8090	992.2765	370.8000	82.96	1.00	1.00
05	TRG	SB-1-MW-S SUS	05/07/10 10:00	1.0000	0.8123	996.3241	414.9000	92.45	1.00	1.00
06	TRG	SB-1-MW-D DIS	05/06/10 17:10	1.0000	0.8098	993.2578	478.6000	106.97	1.00	1.00
07	TRG	SB-1-MW-D SUS	05/06/10 17:10	1.0000	0.8124	996.4468	428.9000	95.56	1.00	1.00

### Spike and Tracer Worksheet

Internal Work Order	Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials																																																																																																																																																																															
<b>10-05062</b>	<b>1</b>	<b>Ra228</b>		<b>5/13/2010 13:08</b>		<b>JBARNARD</b>																																																																																																																																																																																			
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05	Ba-133	Ba-6a	1226.547	5/13/2010	0.8123	0.8300																																																																																																																																																																																			
06	Ba-133	Ba-6a	1226.547	5/13/2010	0.8098	0.8300																																																																																																																																																																																			
07	Ba-133	Ba-6a	1226.547	5/13/2010	0.8124	0.8300																																																																																																																																																																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="12" style="text-align: center;"><b>Tracer</b></td> </tr> <tr> <td colspan="12"></td> <td style="text-align: center;"><b>LCS</b></td> </tr> <tr> <td colspan="12"></td> <td style="text-align: center;"><b>Matrix Spike</b></td> </tr> </table>												<b>Tracer</b>																								<b>LCS</b>													<b>Matrix Spike</b>																																																																																																																																								
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# Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
<b>10-05062</b>		<b>1</b>		<b>Ra228</b>		<b>liters</b>		<b>5/26/2010</b>		<b>TSMITH</b>	

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only		
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq			
01	LCS	LCS					1.00E+00	1.0000E+00	1.0000E+00						
02	BLANK	MBL					1.00E+00	1.0000E+00	1.0000E+00						
03	SB-1-MW-S DIS	DUP					1.00E+00	5.0000E-01	5.0000E-01						
04	SB-1-MW-S DIS	DO					1.00E+00	5.0000E-01	5.0000E-01						
05	SB-1-MW-S SUS	TRG					1.00E+00	1.0000E+00	1.0000E+00						
06	SB-1-MW-D DIS	TRG					1.00E+00	1.0000E+00	1.0000E+00						
07	SB-1-MW-D SUS	TRG					1.00E+00	1.0000E+00	1.0000E+00						

Comments
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Technician: SM Date: 5/17/10

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05062</b>	<b>1</b>	<b>Ra228</b>	<b>Yttrium</b>	<b>30.2000</b>	<b>TSMITH</b>

TRetek Fraction	Michael Pisani & Associates Client ID	Sample Type	Carrier Data		Filter Data			Gravimetric	
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)	% Recovery		
01	LCS	LCS	2.0000	0.1024	0.1708	0.0684	113.25		
02	BLANK	MBL	2.0000	0.1017	0.1600	0.0583	96.52		
03	DUP	DUP	2.0000	0.1015	0.1621	0.0606	100.33		
04	SB-1-MW-S DIS	DO	2.0000	0.1016	0.1627	0.0611	101.16		
05	SB-1-MW-S SUS	TRG	2.0000	0.1010	0.1611	0.0601	99.50		
06	SB-1-MW-D DIS	TRG	2.0000	0.1012	0.1620	0.0608	100.66		
07	SB-1-MW-D SUS	TRG	2.0000	0.1018	0.1600	0.0582	96.36		

Technician: *TSMITH* Date: *5/26/10*

(R) 5/26/10  
10B

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
C1	1005062-05	7	187	120		1400	5/26/10 13:56
C3	1005062-06	13	295	120		1400	5/26/10 13:56
C4	1005062-07	8	256	120		1400	5/26/10 13:56
B1	1005062-01	14	1082	120		1400	5/26/10 13:56
B2	1005062-02	7	191	120		1400	5/26/10 13:56
B3	1005062-03	7	283	120		1400	5/26/10 13:56
B4	1005062-04	14	225	120		1400	5/26/10 13:56

GPC Detector Report  
(ALL Efficiencies)

KM  
05/26/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/26/2010	0.2482	P	0.2375	0.2505	0.2634
LB4110A - A2	Alpha	11/18/2007	5/26/2010	0.2192	P	0.1958	0.2208	0.2458
LB4110A - A3	Alpha	11/18/2007	5/26/2010	0.2082	P	0.2049	0.2179	0.2308
LB4110A - A4	Alpha	11/18/2007	5/26/2010	0.2288	P	0.2156	0.2289	0.2422
LB4110A - B1	Alpha	11/18/2007	5/26/2010	0.2218	P	0.2179	0.2317	0.2456
LB4110A - B2	Alpha	11/18/2007	5/26/2010	0.2248	P	0.2139	0.2277	0.2415
LB4110A - B3	Alpha	11/18/2007	5/26/2010	0.2360	P	0.2267	0.2424	0.2580
LB4110A - B4	Alpha	11/18/2007	5/26/2010	0.2373	P	0.2286	0.2411	0.2535
LB4110A - C1	Alpha	11/18/2007	5/26/2010	0.2191	P	0.2116	0.2226	0.2336
LB4110A - C2	Alpha	11/18/2007	5/26/2010	0.2229	P	0.2021	0.2270	0.2519
LB4110A - C3	Alpha	11/18/2007	5/26/2010	0.2486	P	0.2360	0.2494	0.2629
LB4110A - C4	Alpha	11/18/2007	5/26/2010	0.2189	W	0.2182	0.2321	0.2461
LB4110A - D1	Alpha	11/18/2007	5/26/2010	0.2314	P	0.2253	0.2399	0.2544
LB4110A - D2	Alpha	11/18/2007	5/26/2010	0.2641	P	0.2481	0.2633	0.2784
LB4110A - D3	Alpha	11/18/2007	5/26/2010	0.2676	P	0.2514	0.2689	0.2864
LB4110A - D4	Alpha	11/18/2007	5/26/2010	0.1996	P	0.1928	0.2106	0.2283
LB4110R - A1	Alpha	11/24/2006	5/26/2010	0.2310	P	0.2065	0.2425	0.2785
LB4110R - A2	Alpha	11/24/2006	5/26/2010	0.2121	P	0.1928	0.2244	0.2560
LB4110R - A3	Alpha	11/24/2006	5/26/2010	0.2244	P	0.1985	0.2284	0.2582
LB4110R - A4	Alpha	11/24/2006	5/26/2010	0.2363	P	0.2141	0.2470	0.2800
LB4110R - B1	Alpha	11/24/2006	5/26/2010	0.2280	P	0.1938	0.2306	0.2673
LB4110R - B2	Alpha	11/24/2006	5/26/2010	0.2171	P	0.1859	0.2214	0.2569
LB4110R - B3	Alpha	11/24/2006	5/26/2010	0.2376	P	0.2093	0.2478	0.2862
LB4110R - B4	Alpha	11/24/2006	5/26/2010	0.2257	P	0.2006	0.2377	0.2749
LB4110R - C1	Alpha	11/24/2006	5/26/2010	0.2118	P	0.1834	0.2173	0.2511
LB4110R - C2	Alpha	11/24/2006	5/26/2010	0.2221	P	0.1946	0.2266	0.2586
LB4110R - C3	Alpha	11/24/2006	5/26/2010	0.2418	P	0.2040	0.2426	0.2812
LB4110R - C4	Alpha	11/24/2006	5/26/2010	0.2158	P	0.1992	0.2315	0.2638
LB4110R - D1	Alpha	11/24/2006	5/26/2010	0.2306	P	0.1943	0.2296	0.2650
LB4110R - D2	Alpha	11/24/2006	5/26/2010	0.2564	P	0.2245	0.2592	0.2939
LB4110R - D3	Alpha	11/24/2006	5/26/2010	0.2472	P	0.2222	0.2549	0.2875
LB4110R - D4	Alpha	11/24/2006	5/26/2010	0.1957	P	0.1815	0.2117	0.2420
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578

GPC Detector Report  
(ALL Efficiencies)

KM  
05/26/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/26/2010	0.5829	P	0.5581	0.5899	0.6217
LB4110A - A2	Beta	11/18/2007	5/26/2010	0.5167	P	0.4656	0.5230	0.5804
LB4110A - A3	Beta	11/18/2007	5/26/2010	0.5197	P	0.4934	0.5268	0.5602
LB4110A - A4	Beta	11/18/2007	5/26/2010	0.5443	P	0.5201	0.5490	0.5779
LB4110A - B1	Beta	11/18/2007	5/26/2010	0.5157	W	0.5124	0.5426	0.5728
LB4110A - B2	Beta	11/18/2007	5/26/2010	0.5389	P	0.5103	0.5397	0.5691
LB4110A - B3	Beta	11/18/2007	5/26/2010	0.5432	P	0.5021	0.5530	0.6038
LB4110A - B4	Beta	11/18/2007	5/26/2010	0.5486	P	0.5354	0.5604	0.5854
LB4110A - C1	Beta	11/18/2007	5/26/2010	0.4970	P	0.4838	0.5062	0.5286
LB4110A - C2	Beta	11/18/2007	5/26/2010	0.4893	P	0.4359	0.5092	0.5826
LB4110A - C3	Beta	11/18/2007	5/26/2010	0.5839	P	0.5621	0.5874	0.6127
LB4110A - C4	Beta	11/18/2007	5/26/2010	0.5165	P	0.5067	0.5405	0.5744
LB4110A - D1	Beta	11/18/2007	5/26/2010	0.5646	P	0.5351	0.5728	0.6105
LB4110A - D2	Beta	11/18/2007	5/26/2010	0.6257	P	0.5534	0.6166	0.6798
LB4110A - D3	Beta	11/18/2007	5/26/2010	0.6122	P	0.5819	0.6265	0.6711
LB4110A - D4	Beta	11/18/2007	5/26/2010	0.4853	P	0.4649	0.5023	0.5397
LB4110R - A1	Beta	11/24/2006	5/26/2010	0.5575	P	0.4781	0.5762	0.6744
LB4110R - A2	Beta	11/24/2006	5/26/2010	0.4859	P	0.4099	0.5133	0.6168
LB4110R - A3	Beta	11/24/2006	5/26/2010	0.5301	P	0.4557	0.5488	0.6418
LB4110R - A4	Beta	11/24/2006	5/26/2010	0.5777	P	0.4946	0.5911	0.6877
LB4110R - B1	Beta	11/24/2006	5/26/2010	0.5439	P	0.4506	0.5521	0.6535
LB4110R - B2	Beta	11/24/2006	5/26/2010	0.5252	P	0.4297	0.5292	0.6288
LB4110R - B3	Beta	11/24/2006	5/26/2010	0.5825	P	0.4923	0.5964	0.7005
LB4110R - B4	Beta	11/24/2006	5/26/2010	0.5441	P	0.4632	0.5609	0.6586
LB4110R - C1	Beta	11/24/2006	5/26/2010	0.5048	P	0.4124	0.5066	0.6007
LB4110R - C2	Beta	11/24/2006	5/26/2010	0.5378	P	0.4366	0.5316	0.6267
LB4110R - C3	Beta	11/24/2006	5/26/2010	0.5682	P	0.4631	0.5742	0.6853
LB4110R - C4	Beta	11/24/2006	5/26/2010	0.5213	P	0.4466	0.5442	0.6418
LB4110R - D1	Beta	11/24/2006	5/26/2010	0.5476	P	0.4493	0.5464	0.6434
LB4110R - D2	Beta	11/24/2006	5/26/2010	0.6111	P	0.5054	0.6091	0.7128
LB4110R - D3	Beta	11/24/2006	5/26/2010	0.5890	P	0.4920	0.5908	0.6897
LB4110R - D4	Beta	11/24/2006	5/26/2010	0.4794	P	0.4079	0.5020	0.5960
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

GPC Detector Report  
(ALL Backgrounds)

KM  
05/26/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/26/2010	1.67E-01	W	-5.52E-02	7.02E-02	1.96E-01
LB4110A - A2	Alpha	11/18/2007	5/26/2010	6.67E-02	P	-5.68E-02	1.01E-01	2.59E-01
LB4110A - A3	Alpha	11/18/2007	5/26/2010	5.00E-02	P	-4.93E-02	5.07E-02	1.51E-01
LB4110A - A4	Alpha	11/18/2007	5/26/2010	1.00E-01	P	-6.20E-02	5.89E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	5/26/2010	3.33E-02	P	-1.35E-01	8.38E-02	3.02E-01
LB4110A - B2	Alpha	11/18/2007	5/26/2010	3.33E-02	P	-6.60E-02	7.79E-02	2.22E-01
LB4110A - B3	Alpha	11/18/2007	5/26/2010	8.33E-02	P	-5.47E-02	4.48E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	5/26/2010	1.00E-01	P	-4.62E-02	5.34E-02	1.53E-01
LB4110A - C1	Alpha	11/18/2007	5/26/2010	3.33E-02	P	-6.37E-02	8.21E-02	2.28E-01
LB4110A - C2	Alpha	11/18/2007	5/26/2010	3.33E-02	P	-2.03E-01	1.23E-01	4.50E-01
LB4110A - C3	Alpha	11/18/2007	5/26/2010	8.33E-02	P	-2.47E-01	1.22E-01	4.92E-01
LB4110A - C4	Alpha	11/18/2007	5/26/2010	1.00E-01	P	-7.14E-02	7.83E-02	2.28E-01
LB4110A - D1	Alpha	11/18/2007	5/26/2010	6.67E-02	P	-4.60E-02	8.41E-02	2.14E-01
LB4110A - D2	Alpha	11/18/2007	5/26/2010	1.67E-02	P	-6.85E-02	6.97E-02	2.08E-01
LB4110A - D3	Alpha	11/18/2007	5/26/2010	5.00E-02	P	-3.67E-02	6.26E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	5/26/2010	1.50E-01	P	-5.95E-02	7.79E-02	2.15E-01
LB4110R - A1	Alpha	11/24/2006	5/26/2010	8.33E-02	P	-1.11E-01	8.42E-02	2.80E-01
LB4110R - A2	Alpha	11/24/2006	5/26/2010	8.33E-02	P	-9.81E-02	9.69E-02	2.92E-01
LB4110R - A3	Alpha	11/24/2006	5/26/2010	1.67E-02	P	-8.99E-02	7.77E-02	2.45E-01
LB4110R - A4	Alpha	11/24/2006	5/26/2010	1.83E-01	P	-5.08E-02	8.32E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	5/26/2010	6.67E-02	P	-1.17E-01	6.90E-02	2.55E-01
LB4110R - B2	Alpha	11/24/2006	5/26/2010	1.67E-02	P	-7.80E-02	7.72E-02	2.32E-01
LB4110R - B3	Alpha	11/24/2006	5/26/2010	5.00E-02	P	-7.63E-02	7.19E-02	2.20E-01
LB4110R - B4	Alpha	11/24/2006	5/26/2010	6.67E-02	P	-6.55E-02	8.51E-02	2.36E-01
LB4110R - C1	Alpha	11/24/2006	5/26/2010	1.00E-01	P	-8.44E-02	8.88E-02	2.62E-01
LB4110R - C2	Alpha	11/24/2006	5/26/2010	1.67E-02	P	-8.36E-02	8.64E-02	2.57E-01
LB4110R - C3	Alpha	11/24/2006	5/26/2010	1.67E-02	P	-1.04E-01	9.65E-02	2.97E-01
LB4110R - C4	Alpha	11/24/2006	5/26/2010	1.17E-01	P	-7.22E-02	9.29E-02	2.58E-01
LB4110R - D1	Alpha	11/24/2006	5/26/2010	5.00E-02	P	-9.12E-02	8.72E-02	2.66E-01
LB4110R - D2	Alpha	11/24/2006	5/26/2010	1.00E-01	P	-6.18E-02	8.97E-02	2.41E-01
LB4110R - D3	Alpha	11/24/2006	5/26/2010	6.67E-02	P	-5.98E-02	7.80E-02	2.16E-01
LB4110R - D4	Alpha	11/24/2006	5/26/2010	1.17E-01	P	-5.30E-02	9.40E-02	2.41E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01



GPC Detector Report  
(ALL Backgrounds)

KM  
05/26/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/26/2010	1.33E+00	P	-7.74E+00	2.73E+00	1.32E+01
LB4110A - A2	Beta	11/18/2007	5/26/2010	1.22E+00	P	-6.08E-02	1.58E+00	3.23E+00
LB4110A - A3	Beta	11/18/2007	5/26/2010	1.47E+00	P	3.82E-01	1.29E+00	2.20E+00
LB4110A - A4	Beta	11/18/2007	5/26/2010	1.83E+00	P	4.67E-01	1.71E+00	2.95E+00
LB4110A - B1	Beta	11/18/2007	5/26/2010	1.42E+00	P	-8.55E+00	3.97E+00	1.65E+01
LB4110A - B2	Beta	11/18/2007	5/26/2010	1.40E+00	P	6.00E-02	1.49E+00	2.92E+00
LB4110A - B3	Beta	11/18/2007	5/26/2010	1.65E+00	P	1.16E-01	1.49E+00	2.86E+00
LB4110A - B4	Beta	11/18/2007	5/26/2010	1.18E+00	P	-5.95E-02	1.42E+00	2.91E+00
LB4110A - C1	Beta	11/18/2007	5/26/2010	1.15E+00	P	-7.60E+00	3.12E+00	1.38E+01
LB4110A - C2	Beta	11/18/2007	5/26/2010	1.15E+00	P	3.29E-01	1.43E+00	2.53E+00
LB4110A - C3	Beta	11/18/2007	5/26/2010	1.55E+00	P	4.43E-01	1.48E+00	2.52E+00
LB4110A - C4	Beta	11/18/2007	5/26/2010	1.43E+00	P	-1.29E+00	2.14E+00	5.56E+00
LB4110A - D1	Beta	11/18/2007	5/26/2010	2.12E+00	P	-3.96E+00	3.05E+00	1.01E+01
LB4110A - D2	Beta	11/18/2007	5/26/2010	1.33E+00	P	-1.34E+00	1.77E+00	4.88E+00
LB4110A - D3	Beta	11/18/2007	5/26/2010	4.62E+00	P	-3.07E-01	4.09E+00	8.48E+00
LB4110A - D4	Beta	11/18/2007	5/26/2010	1.53E+00	P	-9.23E-01	1.57E+00	4.06E+00
LB4110R - A1	Beta	11/24/2006	5/26/2010	1.35E+00	P	-6.18E+01	2.79E+00	6.74E+01
LB4110R - A2	Beta	11/24/2006	5/26/2010	1.10E+00	P	-6.21E+01	2.53E+00	6.72E+01
LB4110R - A3	Beta	11/24/2006	5/26/2010	1.30E+00	P	-6.15E+01	4.17E+00	6.98E+01
LB4110R - A4	Beta	11/24/2006	5/26/2010	1.28E+00	P	-6.19E+01	2.66E+00	6.73E+01
LB4110R - B1	Beta	11/24/2006	5/26/2010	1.03E+00	P	-6.51E+01	2.76E+00	7.06E+01
LB4110R - B2	Beta	11/24/2006	5/26/2010	1.27E+00	P	-6.50E+01	2.83E+00	7.07E+01
LB4110R - B3	Beta	11/24/2006	5/26/2010	1.02E+00	P	-6.44E+01	3.93E+00	7.22E+01
LB4110R - B4	Beta	11/24/2006	5/26/2010	1.17E+00	P	-6.53E+01	2.61E+00	7.05E+01
LB4110R - C1	Beta	11/24/2006	5/26/2010	1.28E+00	P	-6.42E+01	4.61E+00	7.34E+01
LB4110R - C2	Beta	11/24/2006	5/26/2010	2.05E+00	P	-6.51E+01	3.58E+00	7.22E+01
LB4110R - C3	Beta	11/24/2006	5/26/2010	1.22E+00	P	-6.54E+01	3.60E+00	7.26E+01
LB4110R - C4	Beta	11/24/2006	5/26/2010	1.68E+00	P	-7.37E+01	4.21E+00	8.21E+01
LB4110R - D1	Beta	11/24/2006	5/26/2010	7.87E+00	P	-6.22E+01	6.56E+00	7.54E+01
LB4110R - D2	Beta	11/24/2006	5/26/2010	1.00E+00	P	-6.61E+01	2.69E+00	7.15E+01
LB4110R - D3	Beta	11/24/2006	5/26/2010	3.52E+00	P	-6.99E+01	7.59E+00	8.51E+01
LB4110R - D4	Beta	11/24/2006	5/26/2010	1.08E+00	P	-6.57E+01	3.11E+00	7.19E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

**SECTION X**  
**BARIUM-133 ANALYTICAL TRACER DATA**

KM  
05-2-10

VAX/VMS Peak Search Report Generated 21-MAY-2010 08:06:10.55

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100506201\_GE4\_BAFIL\_149196.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SPIKE  
Deposition Date :  
Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 07:50:57  
Sample ID : 1005062-01 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.33 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	30.97	1583	78	2.23	30.97	25	15	1.76E+00	2.8	5.04E+00
2	2	35.37	419	49	2.19	35.37	25	15	4.66E-01	7.8	
3	0	52.91	38	85	1.81	52.90	48	8	4.24E-02	45.0	
4	4	61.89	84	88	2.76	61.87	58	13	9.29E-02	23.2	2.30E+00
5	4	65.40	32	87	2.26	65.38	58	13	3.54E-02	57.1	
6	0	81.19	602	120	2.16	81.17	76	11	6.69E-01	5.4	
7	0	111.95	92	104	2.41	111.91	106	13	1.02E-01	25.1	
8	0	161.57	20	45	2.49	161.52	157	8	2.21E-02	63.0	
9	0	210.46	14	28	1.16	210.39	207	6	1.53E-02	67.1	
10	0	240.52	17	31	2.95	240.43	236	7	1.93E-02	58.6	
11	0	304.16	98	43	2.45	304.05	297	14	1.08E-01	17.8	
12	3	331.82	19	8	2.79	331.69	329	13	2.12E-02	35.8	8.45E+00
13	3	335.12	25	10	2.10	335.00	329	13	2.73E-02	30.9	
14	0	356.15	308	15	2.06	356.01	350	12	3.42E-01	6.2	
15	2	387.70	41	5	2.58	387.55	380	16	4.54E-02	25.3	5.80E+00
16	2	391.60	14	4	2.58	391.45	380	16	1.58E-02	48.8	
17	7	416.28	19	6	4.17	416.13	411	19	2.10E-02	36.4	5.96E-01
18	7	426.15	8	4	4.18	425.99	411	19	9.14E-03	54.5	
19	0	438.30	16	17	1.92	438.14	433	9	1.72E-02	54.9	
20	0	514.19	4	15	2.77	513.99	508	11	4.91E-03	170.5	

Total number of lines in spectrum 20  
Number of unidentified lines 16  
Number of lines tentatively identified by NID 4 20.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.242E+02	4.242E+02	0.829E+02	19.54	
Total Activity :			4.242E+02	4.242E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	4.442E+02	4.442E+02	2.094E+02	47.14	
Total Activity :			4.442E+02	4.442E+02			

Grand Total Activity : 8.684E+02 8.685E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.242E+02	4.242E+02	19.54	OK
	302.84	17.80	4.148E+00	3.969E+02	3.969E+02	41.06	OK
	356.01	60.00	3.452E+00	4.466E+02	4.467E+02	19.12	OK

Final Mean for 3 Valid Peaks = 4.242E+02 +/- 8.290E+01 ( 19.54%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	4.442E+02	4.442E+02	47.14	OK

Final Mean for 1 Valid Peaks = 4.442E+02 +/- 2.094E+02 ( 47.14%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.242E+02	8.290E+01	3.018E+01	4.759E+00	14.058
TH-234	4.442E+02	2.094E+02	2.406E+02	1.760E+01	1.846

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	2.390E+00	6.983E+00	1.184E+01	1.243E+00	0.202
CD-109	-7.040E+01	1.638E+02	2.490E+02	2.187E+01	-0.283
PA-231	-3.106E-01	6.215E-01	9.391E-01	4.963E-02	-0.331
PA-234	8.960E+00	7.149E+00	1.245E+01	6.418E-01	0.720
NP-237	-8.471E+00	4.537E+01	7.121E+01	6.199E+00	-0.119
AM-241	3.033E+01	1.849E+01	2.865E+01	2.031E+00	1.059

Km  
05-21-10

VAX/VMS Peak Search Report Generated 21-MAY-2010 08:33:12.30

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506202\_GE4\_BAFIL\_149199.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : BLANK  
Deposition Date :  
Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 08:17:55  
Sample ID : 1005062-02 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.32 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	30.95	1642	82	2.38	30.95	25	20	1.82E+00	2.6	6.67E+00
2	4	35.36	352	36	1.98	35.36	25	20	3.91E-01	8.6	
3	0	53.84	33	68	2.16	53.83	50	7	3.66E-02	45.0	
4	7	62.78	118	108	3.68	62.77	57	17	1.31E-01	20.5	1.07E+00
5	7	66.23	55	91	2.86	66.22	57	17	6.10E-02	38.5	
6	7	70.87	14	73	2.48	70.86	57	17	1.50E-02	112.9	
7	0	81.26	670	93	1.95	81.24	75	12	7.44E-01	4.8	
8	0	111.87	63	69	2.18	111.84	106	9	6.96E-02	27.1	
9	0	277.79	41	56	2.38	277.69	271	14	4.50E-02	43.1	
10	0	302.97	99	36	2.14	302.86	299	10	1.10E-01	14.8	
11	2	334.17	17	8	2.54	334.05	330	17	1.92E-02	41.4	1.40E+00
12	2	338.57	14	13	2.54	338.44	330	17	1.54E-02	52.9	
13	0	356.17	312	16	2.11	356.04	351	11	3.47E-01	6.2	
14	1	384.36	71	14	2.34	384.21	377	19	7.94E-02	15.4	3.96E+00
15	1	387.36	35	9	2.34	387.21	377	19	3.89E-02	30.7	
16	1	391.36	23	5	2.34	391.21	377	19	2.56E-02	33.7	
17	0	414.82	10	5	1.54	414.66	411	6	1.06E-02	51.4	
18	0	420.33	7	3	1.74	420.17	418	5	7.33E-03	58.1	
19	0	436.87	29	4	2.20	436.71	432	8	3.22E-02	22.1	
20	0	512.11	17	5	4.03	511.91	507	9	1.83E-02	33.8	

Total number of lines in spectrum 20  
 Number of unidentified lines 16  
 Number of lines tentatively identified by NID 4 20.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter				
BA-133	10.50Y	1.00	4.719E+02	4.719E+02	0.892E+02	18.91		
Total Activity :			4.719E+02	4.719E+02				

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter				
TH-234	4.47E+09Y	1.00	6.282E+02	6.282E+02	2.623E+02	41.75		
Total Activity :			6.282E+02	6.282E+02				

Grand Total Activity : 1.100E+03 1.100E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.719E+02	4.719E+02	18.91	OK
	302.84	17.80	4.148E+00	4.030E+02	4.030E+02	36.14	OK
	356.01	60.00	3.452E+00	4.524E+02	4.524E+02	19.08	OK

Final Mean for 3 Valid Peaks = 4.719E+02 +/- 8.924E+01 ( 18.91%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	6.282E+02	6.282E+02	41.75	OK

Final Mean for 1 Valid Peaks = 6.282E+02 +/- 2.623E+02 ( 41.75%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.719E+02	8.924E+01	2.151E+01	3.392E+00	21.942
TH-234	6.282E+02	2.623E+02	1.807E+02	1.322E+01	3.476

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.175E+00		7.304E+00	1.270E+01	1.334E+00	-0.171
CD-109	-6.677E+01		1.356E+02	2.051E+02	1.801E+01	-0.326
PA-231	0.000E+00		0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	8.992E+00		7.151E+00	1.245E+01	6.422E-01	0.722
NP-237	3.460E+01		3.623E+01	6.633E+01	5.773E+00	0.522
AM-241	3.622E+01		1.712E+01	2.826E+01	2.003E+00	1.282

42  
 75  
 71  
 26  
 100  
 22  
 22  
 22

KM  
05-21-10

VAX/VMS Peak Search Report Generated 21-MAY-2010 08:49:59.93

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP\_100506203\_GE4\_BAFIL\_149202.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-1-MW-S DIS  
Deposition Date :  
Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 08:34:45  
Sample ID : 1005062-03 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.30 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.05	1221	55	2.10	31.05	26	17	1.36E+00	3.0	3.67E+00
2	2	35.31	315	33	2.12	35.31	26	17	3.50E-01	8.9	
3	0	54.22	32	94	3.74	54.21	49	9	3.53E-02	58.0	
4	3	62.41	54	71	2.32	62.39	58	13	6.03E-02	30.4	1.54E+00
5	3	65.77	42	83	2.52	65.75	58	13	4.67E-02	43.4	
6	0	81.24	484	110	1.92	81.22	76	11	5.37E-01	6.2	
7	0	93.28	21	38	1.48	93.26	91	7	2.33E-02	52.2	
8	0	112.71	30	78	1.83	112.68	107	9	3.36E-02	55.4	
9	0	161.99	24	48	2.92	161.94	156	9	2.67E-02	57.2	
10	0	202.36	22	30	1.62	202.29	198	9	2.48E-02	49.7	
11	0	238.10	19	7	3.05	238.01	235	8	2.14E-02	33.7	
12	1	276.89	41	18	2.27	276.79	272	13	4.54E-02	22.5	2.16E+00
13	1	282.26	9	8	2.28	282.16	272	13	1.05E-02	58.8	
14	0	303.46	90	35	1.43	303.34	298	10	1.00E-01	16.2	
15	0	333.30	30	18	2.68	333.17	327	12	3.32E-02	33.8	
16	0	356.25	244	17	2.05	356.12	350	11	2.71E-01	7.2	
17	1	384.36	36	33	2.34	384.21	380	11	4.04E-02	34.0	5.25E+00
18	1	386.93	40	41	2.34	386.79	380	11	4.50E-02	31.3	
19	0	436.80	20	4	1.43	436.63	432	8	2.20E-02	28.5	

Total number of lines in spectrum 19  
 Number of unidentified lines 14  
 Number of lines tentatively identified by NID 5 26.32%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	3.408E+02	3.408E+02	0.698E+02	20.48	
Total Activity :			3.408E+02	3.408E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
PA-231	3.28E+04Y	1.00	2.831E+03	2.831E+03	1.049E+03	37.04	
TH-234	4.47E+09Y	1.00	2.886E+02	2.886E+02	1.771E+02	61.37	
Total Activity :			3.120E+03	3.120E+03			

Grand Total Activity : 3.461E+03 3.461E+03

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	3.408E+02	3.408E+02	20.48	OK
	302.84	17.80	4.148E+00	3.660E+02	3.661E+02	38.40	OK
	356.01	60.00	3.452E+00	3.539E+02	3.539E+02	20.40	OK

Final Mean for 3 Valid Peaks = 3.408E+02 +/- 6.979E+01 ( 20.48%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
PA-231	9.28	42.00*	2.058E+01	-----	Line Out Of Range	----	Absent
	10.11	20.20	2.088E+01	-----	Line Out Of Range	----	Absent
	283.67	1.60	4.456E+00	3.964E+02	3.964E+02	118.91	OK
	302.67	2.30	4.151E+00	2.831E+03	2.831E+03	37.04	OK

Final Mean for 2 Valid Peaks = 2.831E+03 +/- 1.049E+03 ( 37.04%)

TH-234	63.29	3.80*	1.487E+01	2.886E+02	2.886E+02	61.37	OK
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Final Mean for 1 Valid Peaks = 2.886E+02 +/- 1.771E+02 ( 61.37%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.408E+02	6.979E+01	2.731E+01	4.307E+00	12.478
PA-231	2.831E+03	1.049E+03	9.391E-01	4.963E-02	3014.713
TH-234	2.886E+02	1.771E+02	2.116E+02	1.548E+01	1.364

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-4.632E+00	6.477E+00	1.078E+01	1.132E+00	-0.430
CD-109	1.298E+02	1.309E+02	2.112E+02	1.855E+01	0.614
PA-234	6.597E+00	6.626E+00	1.145E+01	5.906E-01	0.576
NP-237	5.778E+01	4.034E+01	6.853E+01	5.965E+00	0.843
AM-241	2.270E+01	1.760E+01	2.659E+01	1.884E+00	0.854

KM  
052110

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506204\_GE4\_BAFIL\_149204.CN  
 Analyses by : PEAK V16.9 PEAKEFF V2.2  
 Client ID : SB-1-MW-S DIS  
 Deposition Date :  
 Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 08:51:04  
 Sample ID : 1005062-04 Sample Quantity : 1.00000E+00 filter  
 Sample type : FILTER Sample Geometry : 0  
 Detector name : GE4 Detector Geometry: BAFIL  
 Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.31 0.0%  
 Start channel : 25 End channel : 4096  
 Sensitivity : 3.00000 Gaussian : 10.00000  
 Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	7	29.10	194	124	3.57	29.10	25	15	2.15E-01	22.0	2.00E+00
2	7	31.14	1226	66	1.82	31.14	25	15	1.36E+00	3.2	
3	7	35.31	348	53	2.39	35.31	25	15	3.87E-01	8.7	
4	0	53.98	21	66	1.94	53.97	51	7	2.33E-02	67.5	
5	0	62.98	111	142	2.71	62.97	58	12	1.23E-01	23.4	
6	0	81.31	526	123	2.06	81.29	75	12	5.85E-01	6.1	
7	0	94.42	38	60	3.63	94.39	90	11	4.26E-02	42.4	
8	0	111.85	86	60	1.57	111.81	107	10	9.53E-02	20.1	
9	0	163.20	19	37	2.60	163.15	157	8	2.10E-02	60.9	
10	0	177.46	20	50	3.34	177.40	172	10	2.22E-02	67.5	
11	0	227.43	3	47	1.21	227.35	223	8	3.40E-03	394.9	
12	0	277.33	38	21	2.32	277.23	273	8	4.17E-02	27.0	
13	0	303.40	86	19	2.38	303.29	299	11	9.59E-02	14.2	
14	0	334.34	25	16	1.76	334.21	330	9	2.75E-02	35.4	
15	5	352.40	8	8	3.39	352.26	350	12	8.80E-03	57.8	4.99E+00
16	5	356.28	266	13	2.17	356.15	350	12	2.96E-01	6.3	
17	4	384.13	79	6	3.11	383.99	380	15	8.83E-02	12.2	3.72E+00
18	4	386.73	38	6	3.12	386.59	380	15	4.24E-02	29.5	
19	4	390.73	14	5	3.12	390.58	380	15	1.56E-02	56.5	
20	0	437.35	29	7	1.71	437.19	433	9	3.24E-02	24.5	

Total number of lines in spectrum 20  
Number of unidentified lines 16  
Number of lines tentatively identified by NID 4 20.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma	Flags
			Uncorrected	Decay Corr				
			pCi/filter	pCi/filter				
BA-133	10.50Y	1.00	3.708E+02	3.708E+02	0.752E+02		20.29	
Total Activity :			3.708E+02	3.708E+02				

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma	Flags
			Uncorrected	Decay Corr				
			pCi/filter	pCi/filter				
TH-234	4.47E+09Y	1.00	5.901E+02	5.901E+02	2.807E+02		47.57	
Total Activity :			5.901E+02	5.901E+02				

Grand Total Activity : 9.609E+02 9.609E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	3.708E+02	3.708E+02	20.29	OK
	302.84	17.80	4.148E+00	3.509E+02	3.509E+02	35.12	OK
	356.01	60.00	3.452E+00	3.859E+02	3.859E+02	19.22	OK

Final Mean for 3 Valid Peaks = 3.708E+02 +/- 7.524E+01 ( 20.29%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	5.901E+02	5.901E+02	47.57	OK

Final Mean for 1 Valid Peaks = 5.901E+02 +/- 2.807E+02 ( 47.57%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	3.708E+02	7.524E+01	2.751E+01	4.339E+00	13.477
TH-234	5.901E+02	2.807E+02	2.364E+02	1.729E+01	2.496

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/filter)	K.L. Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	3.014E+00		6.247E+00	1.145E+01	1.202E+00	0.263
CD-109	-4.149E+01		1.729E+02	2.110E+02	1.853E+01	-0.197
PA-231	-3.106E-01		6.215E-01	9.391E-01	4.963E-02	-0.331
PA-234	5.942E+00		6.857E+00	1.170E+01	6.033E-01	0.508
NP-237	1.065E+01		5.212E+01	6.938E+01	6.039E+00	0.153
AM-241	2.937E+01		1.877E+01	2.878E+01	2.040E+00	1.020

KM  
05-21-10

VAX/VMS Peak Search Report Generated 21-MAY-2010 09:22:17.83

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506205\_GE4\_BAFIL\_149207.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-1-MW-S SUS  
Deposition Date :  
Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 09:07:04  
Sample ID : 1005062-05 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.31 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.06	1462	59	2.15	31.06	25	16	1.62E+00	2.8	6.23E+00
2	2	35.34	343	46	2.04	35.34	25	16	3.82E-01	8.8	
3	0	52.45	53	65	2.98	52.44	47	9	5.87E-02	30.8	
4	0	61.30	65	94	2.05	61.29	58	7	7.26E-02	27.4	
5	0	81.23	589	94	2.07	81.21	76	11	6.54E-01	5.2	
6	0	95.45	16	59	2.42	95.42	89	8	1.73E-02	89.8	
7	0	112.26	125	81	2.41	112.22	106	13	1.39E-01	17.3	
8	0	163.27	17	59	1.58	163.22	158	8	1.86E-02	83.5	
9	0	276.52	39	23	1.81	276.42	272	9	4.28E-02	27.4	
10	0	303.67	92	21	2.19	303.56	298	12	1.02E-01	14.5	
11	1	333.33	27	10	2.31	333.21	330	13	3.05E-02	27.4	2.31E+00
12	1	339.11	15	16	2.31	338.98	330	13	1.62E-02	45.2	
13	0	356.23	268	15	1.65	356.10	351	10	2.98E-01	6.7	
14	4	384.13	88	6	3.11	383.99	380	10	9.76E-02	11.4	4.34E+00
15	4	386.93	41	10	2.16	386.79	380	10	4.53E-02	25.5	
16	0	391.38	15	8	1.25	391.23	390	5	1.65E-02	39.2	
17	0	413.38	11	4	3.11	413.23	409	8	1.22E-02	43.6	
18	0	437.23	29	7	2.31	437.06	432	10	3.17E-02	25.9	
19	0	511.78	21	5	5.07	511.59	506	10	2.34E-02	29.5	

Total number of lines in spectrum 19  
 Number of unidentified lines 15  
 Number of lines tentatively identified by NID 4 21.05%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.148E+02	4.149E+02	0.802E+02	19.34	
Total Activity :			4.148E+02	4.149E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean		Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	3.475E+02	3.475E+02	1.927E+02	55.46	
AM-241	432.20Y	1.00	3.565E+01	3.565E+01	1.976E+01	55.43	
Total Activity :			3.832E+02	3.832E+02			

Grand Total Activity : 7.980E+02 7.980E+02

Flags: "K" = Keyline not found  
 "E" = Manually edited

"M" = Manually accepted  
 "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.148E+02	4.149E+02	19.34	OK
	302.84	17.80	4.148E+00	3.730E+02	3.730E+02	35.53	OK
	356.01	60.00	3.452E+00	3.886E+02	3.886E+02	19.72	OK

Final Mean for 3 Valid Peaks = 4.149E+02 +/- 8.023E+01 ( 19.34%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	3.475E+02	3.475E+02	55.46	OK

Final Mean for 1 Valid Peaks = 3.475E+02 +/- 1.927E+02 ( 55.46%)

AM-241	59.54	35.90*	1.534E+01	3.565E+01	3.565E+01	55.43	OK
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Final Mean for 1 Valid Peaks = 3.565E+01 +/- 1.976E+01 ( 55.43%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.149E+02	8.023E+01	2.815E+01	4.439E+00	14.739
TH-234	3.475E+02	1.927E+02	2.569E+02	1.879E+01	1.353
AM-241	3.565E+01	1.976E+01	1.904E+01	1.350E+00	1.872

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-2.512E-01	7.240E+00	1.165E+01	1.223E+00	-0.022
CD-109	-7.998E+01	1.811E+02	2.108E+02	1.851E+01	-0.379
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	7.130E+00	6.802E+00	1.176E+01	6.065E-01	0.606
NP-237	-1.654E+01	5.328E+01	6.392E+01	5.564E+00	-0.259

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05-240

VAX/VMS Peak Search Report Generated 21-MAY-2010 09:40:39.67

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE] SMP\_100506206\_GE4\_BAFIL\_149210.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-1-MW-D DIS  
Deposition Date :  
Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 09:25:20  
Sample ID : 1005062-06 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.34 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.08	1691	79	2.11	31.08	25	18	1.88E+00	2.6	4.61E+00
2	2	35.32	450	41	2.14	35.32	25	18	5.00E-01	7.4	
3	4	53.33	61	32	2.75	53.32	50	24	6.80E-02	21.7	1.87E+00
4	4	61.86	102	66	2.53	61.85	50	24	1.13E-01	18.5	
5	4	65.95	69	82	2.77	65.94	50	24	7.63E-02	27.6	
6	0	81.24	679	138	1.96	81.22	75	12	7.55E-01	5.2	
7	0	92.17	22	38	1.70	92.14	89	6	2.46E-02	48.8	
8	1	112.10	72	48	2.14	112.06	106	15	7.97E-02	20.1	1.66E+00
9	1	115.84	42	36	2.14	115.81	106	15	4.63E-02	31.2	
10	0	277.19	45	28	2.08	277.09	271	10	5.04E-02	26.2	
11	2	303.04	88	18	2.09	302.93	298	20	9.80E-02	13.1	6.87E+00
12	2	307.68	16	7	2.52	307.56	298	20	1.75E-02	64.7	
13	2	313.55	10	2	2.53	313.44	298	20	1.14E-02	75.2	
14	0	356.36	335	16	2.13	356.22	352	9	3.72E-01	5.9	
15	2	384.53	56	11	2.57	384.39	378	16	6.23E-02	20.6	7.75E-01
16	2	387.21	48	6	2.09	387.06	378	16	5.28E-02	22.3	
17	2	391.18	21	3	2.28	391.03	378	16	2.32E-02	27.1	
18	0	415.68	7	8	1.83	415.52	410	8	7.85E-03	78.8	
19	0	423.10	9	8	1.12	422.94	418	8	9.44E-03	66.6	
20	0	437.38	22	5	1.91	437.21	434	7	2.45E-02	27.3	
21	0	491.36	6	0	1.98	491.17	489	5	6.67E-03	40.8	
22	0	512.10	14	6	1.46	511.91	508	7	1.53E-02	41.2	

Total number of lines in spectrum 22  
Number of unidentified lines 18  
Number of lines tentatively identified by NID 4 18.18%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
BA-133	10.50Y	1.00	4.786E+02	4.786E+02	0.922E+02	19.27	
Total Activity :			4.786E+02	4.786E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/filter	Decay Corr pCi/filter			
TH-234	4.47E+09Y	1.00	5.404E+02	5.404E+02	2.047E+02	37.88	
Total Activity :			5.404E+02	5.404E+02			

Grand Total Activity : 1.019E+03 1.019E+03

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.786E+02	4.786E+02	19.27	OK
	302.84	17.80	4.148E+00	3.588E+02	3.588E+02	33.41	OK
	356.01	60.00	3.452E+00	4.852E+02	4.852E+02	18.72	OK

Final Mean for 3 Valid Peaks = 4.786E+02 +/- 9.224E+01 ( 19.27%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.487E+01	5.404E+02	5.404E+02	37.88	OK

Final Mean for 1 Valid Peaks = 5.404E+02 +/- 2.047E+02 ( 37.88%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.786E+02	9.224E+01	2.499E+01	3.941E+00	19.154
TH-234	5.404E+02	2.047E+02	2.160E+02	1.580E+01	2.502

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-1.740E+00	7.225E+00	1.129E+01	1.186E+00	-0.154
CD-109	7.719E+01	1.465E+02	2.128E+02	1.869E+01	0.363
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	1.347E+01	7.532E+00	1.343E+01	6.924E-01	1.003
NP-237	4.316E+01	4.467E+01	6.917E+01	6.021E+00	0.624
AM-241	3.971E+01	1.695E+01	3.139E+01	2.225E+00	1.265

KM  
05-21-10

VAX/VMS Peak Search Report Generated 21-MAY-2010 09:57:04.69

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP\_100506207\_GE4\_BAFIL\_149212.CN  
Analyses by : PEAK V16.9 PEAKEFF V2.2  
Client ID : SB-1-MW-D SUS  
Deposition Date :  
Sample Date : 21-MAY-2010 00:00:00 Acquisition date : 21-MAY-2010 09:41:48  
Sample ID : 1005062-07 Sample Quantity : 1.00000E+00 filter  
Sample type : FILTER Sample Geometry : 0  
Detector name : GE4 Detector Geometry: BAFIL  
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.34 0.0%  
Start channel : 25 End channel : 4096  
Sensitivity : 3.00000 Gaussian : 10.00000  
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	31.03	1596	69	2.17	31.03	25	24	1.77E+00	2.7	3.69E+00
2	2	35.39	382	40	2.15	35.39	25	24	4.24E-01	8.2	
3	0	53.23	74	68	2.69	53.22	49	9	8.22E-02	23.2	
4	3	59.63	38	42	2.51	59.62	58	13	4.18E-02	30.3	1.15E+01
5	3	65.39	37	101	2.52	65.37	58	13	4.15E-02	53.6	
6	0	81.28	609	95	2.08	81.26	77	9	6.76E-01	5.0	
7	0	93.72	12	56	2.04	93.69	90	7	1.37E-02	103.6	
8	0	111.62	77	55	1.87	111.58	108	7	8.59E-02	19.5	
9	0	159.64	27	80	1.11	159.58	155	11	2.99E-02	67.1	
10	0	174.31	24	51	2.17	174.25	169	9	2.69E-02	57.3	
11	0	276.44	43	20	2.14	276.34	271	10	4.81E-02	24.5	
12	1	303.26	89	17	2.29	303.14	298	17	9.92E-02	13.1	3.02E+00
13	1	307.22	22	6	2.29	307.10	298	17	2.48E-02	41.4	
14	1	311.32	15	2	2.29	311.21	298	17	1.70E-02	48.8	
15	0	333.57	18	16	1.53	333.45	329	8	1.99E-02	45.4	
16	0	356.27	320	22	2.00	356.14	351	10	3.55E-01	6.2	
17	1	383.93	41	28	2.34	383.79	380	10	4.54E-02	28.4	4.08E+00
18	1	387.21	38	34	1.92	387.06	380	10	4.23E-02	29.9	
19	0	415.39	7	6	1.17	415.23	412	6	8.25E-03	66.3	
20	0	437.12	41	5	2.77	436.95	433	7	4.52E-02	18.3	
21	0	510.81	13	0	2.69	510.62	507	7	1.44E-02	27.7	

Total number of lines in spectrum 21  
Number of unidentified lines 17  
Number of lines tentatively identified by NID 4 19.05%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr	2-Sigma Error	%Error	
BA-133	10.50Y	1.00	4.288E+02	4.289E+02	0.819E+02	19.10	
Total Activity :			4.288E+02	4.289E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr	2-Sigma Error	%Error	
AM-241	432.20Y	1.00	2.053E+01	2.053E+01	1.254E+01	61.09	
Total Activity :			2.053E+01	2.053E+01			

Grand Total Activity : 4.494E+02 4.494E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.292E+01	4.288E+02	4.289E+02	19.10	OK
	302.84	17.80	4.148E+00	3.630E+02	3.631E+02	33.33	OK
	356.01	60.00	3.452E+00	4.633E+02	4.634E+02	19.15	OK

Final Mean for 3 Valid Peaks = 4.289E+02+/- 8.191E+01 ( 19.10%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/filter	Decay Corr pCi/filter	2-Sigma %Error	Status
AM-241	59.54	35.90*	1.534E+01	2.053E+01	2.053E+01	61.09	OK

Final Mean for 1 Valid Peaks = 2.053E+01+/- 1.254E+01 ( 61.09%)

Flag: "\*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/filter)	Act error	MDA (pCi/filter)	MDA error	Act/MDA
BA-133	4.289E+02	8.191E+01	2.926E+01	4.614E+00	14.659
AM-241	2.053E+01	1.254E+01	2.053E+01	1.455E+00	1.000

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity K.L. (pCi/filter) Ided	Act error	MDA (pCi/filter)	MDA error	Act/MDA
CO-57	-7.087E+00	6.989E+00	1.120E+01	1.176E+00	-0.633
CD-109	4.542E+01	1.625E+02	2.218E+02	1.948E+01	0.205
PA-231	0.000E+00	0.000E+00	9.391E-01	4.963E-02	0.000
PA-234	7.676E+00	7.407E+00	1.267E+01	6.532E-01	0.606
TH-234	5.867E+02	1.901E+02	3.535E+02	2.585E+01	1.660
NP-237	2.492E+01	5.002E+01	7.041E+01	6.129E+00	0.354

MDA

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MDA

**SECTION XI**  
**ANALYTICAL DATA (GROSS ALPHA/BETA)**

Work Order	<b>10-05062</b>
Analysis Code	<b>GaGbT_ThSr</b>
Run	<b>1</b>
Date Received	<b>5/12/2010</b>
Lab Deadline	<b>5/26/2010</b>
Client	Michael Pisani & Associates
Project	ENV
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 900.0 Modified
Instrument Type	Alpha/Beta GPC
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		05/13/10 00:00	1.0000E+00
02	MBL	BLANK		05/13/10 00:00	1.0000E+00
03	DUP	SB-1-MW-S DIS	32	05/07/10 10:00	1.0000E-02
04	DO	SB-1-MW-S DIS	32	05/07/10 10:00	1.0000E-02
05	TRG	SB-1-MW-S SUS	32	05/07/10 10:00	1.0000E-01
06	TRG	SB-1-MW-D DIS	41	05/06/10 17:10	2.0000E-02
07	TRG	SB-1-MW-D SUS	41	05/06/10 17:10	2.0000E-02

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.





10-05062  
GaGbT\_ThSr  
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00		7.6692	7.6696	0.0004			1.00	1.00
02	MBL				0.00		7.5827	7.5829	0.0002			1.00	1.00
03	DUP				0.00		7.5306	7.5899	0.0593			1.00	1.00
04	DO				0.00		7.5116	7.5736	0.0620			1.00	1.00
05	TRG				0.00		0.0695	0.0763	0.0068			1.00	1.00
06	TRG				0.00		7.6447	7.6846	0.0399			1.00	1.00
07	TRG				0.00		0.0706	0.0868	0.0162			1.00	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			05/17/10 12:43	BLESTER				
02	MBL			05/17/10 12:43	BLESTER				
03	DUP			05/17/10 12:43	BLESTER				
04	DO			05/17/10 12:43	BLESTER				
05	TRG			05/17/10 12:43	BLESTER				
06	TRG			05/17/10 12:43	BLESTER				
07	TRG			05/17/10 12:43	BLESTER				

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

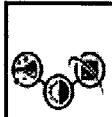
63 44 01 23

# Preliminary Data Report & Analytical Calculations

## Work Order: 10-05062-GaGbT-1

	<b>1</b> Run	<b>GaGbT</b> Analysis Code	<b>10-05062</b> Eberline Services Work Order	Michael Pisani & Associates Client
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS ALPHA	LCS	LCS	pCi/l	2.99E+02	7.81E+00	4.22E-01	3.15E+02	94.70	OK		OK	OK
02	GROSS ALPHA	MBL	BLANK	pCi/l	1.32E-02	7.76E-02	1.90E-01					OK	OK
03	GROSS ALPHA	DUP	SB-1-MW-S DIS	pCi/l	2.86E+00	2.31E+01	5.47E+01				INV	INV	INV
04	GROSS ALPHA	DO	SB-1-MW-S DIS	pCi/l	2.64E+01	2.37E+01	4.22E+01					INV	INV
05	GROSS ALPHA	TRG	SB-1-MW-S SUS	pCi/l	5.23E+00	2.02E+00	2.70E+00					OK	OK
06	GROSS ALPHA	TRG	SB-1-MW-D DIS	pCi/l	3.25E+00	1.02E+01	2.28E+01					INV	INV
07	GROSS ALPHA	TRG	SB-1-MW-D SUS	pCi/l	1.72E+01	6.73E+00	2.06E+00					OK	OK



Run

Analysis Code

Eberline Services Work Order

Client

1

GaGbt

10-05062

Michael Pisani & Associates

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS ALPHA	LCS	05/13/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS ALPHA	MBL	05/13/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS ALPHA	DUP	05/07/10 10:00	1.00E-02	0.00	0.00	0.00	2.18		
04	GROSS ALPHA	DO	05/07/10 10:00	1.00E-02	0.00	0.00	0.00	2.25		
05	GROSS ALPHA	TRG	05/07/10 10:00	1.00E-01	0.00	0.00	0.00	1.00		
06	GROSS ALPHA	TRG	05/06/10 17:10	2.00E-02	0.00	0.00	0.00	1.68		
07	GROSS ALPHA	TRG	05/06/10 17:10	2.00E-02	0.00	0.00	0.00	1.08		

Preliminary Data Report & Analytical Calculations  
**Work Order: 10-05062-GaGbT-1**

	Run	1
Eberline Services Work Order	Analysis Code	GaGbT
Client	Michael Pisani & Associates	
	10-05062	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	GROSS ALPHA	LCS	05/17/10 13:44		LB4110A	B1	30	5610	0.05	0.2821
02	GROSS ALPHA	MBL	05/17/10 13:44		LB4110A	C1	120	5 0.0333333333	0.2845	0.2845
03	GROSS ALPHA	DUP	05/17/10 13:44		LB4110A	C2	120	9 0.0666666667	0.2857	0.2857
04	GROSS ALPHA	DO	05/17/10 13:44		LB4110A	C3	120	13 0.0333333333	0.2878	0.2878
05	GROSS ALPHA	TRG	05/17/10 13:44		LB4110A	C4	120	45 0.0666666667	0.2657	0.2657
06	GROSS ALPHA	TRG	05/17/10 13:44		LB4110A	D2	120	13 0.0833333333	0.2912	0.2912
07	GROSS ALPHA	TRG	05/17/10 13:44		LB4110A	D4	120	25 0	0.2944	0.2944

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	GROSS BETA	LCS	LCS	pCi/l	2.62E+02	6.07E+00	9.31E-01	2.38E+02	110.04	OK		OK	
02	GROSS BETA	MBL	BLANK	pCi/l	3.30E-01	2.75E-01	5.50E-01					OK	OK
03	GROSS BETA	DUP	SB-1-MW-S DIS	pCi/l	3.39E+01	3.10E+01	6.23E+01				OK	INV	
04	GROSS BETA	DO	SB-1-MW-S DIS	pCi/l	3.58E+01	3.36E+01	6.80E+01					INV	
05	GROSS BETA	TRG	SB-1-MW-S SUS	pCi/l	8.97E+00	3.39E+00	6.23E+00					INV	
06	GROSS BETA	TRG	SB-1-MW-D DIS	pCi/l	7.19E+00	1.43E+01	2.98E+01					INV	
07	GROSS BETA	TRG	SB-1-MW-D SUS	pCi/l	3.65E+01	1.45E+01	2.69E+01					INV	

Client	Michael Pisani & Associates
Eberline Services Work Order	10-05062
Analysis Code	GaGbT
Run	1





Run

Analysis Code

Eberline Services Work Order

Client

1

GaGbt

10-05062

Michael Pisani & Associates

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Alliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	GROSS BETA	LCS	05/13/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
02	GROSS BETA	MBL	05/13/10 00:00	1.00E+00	0.00	0.00	0.00	1.00		
03	GROSS BETA	DUP	05/07/10 10:00	1.00E-02	0.00	0.00	0.00	1.11		
04	GROSS BETA	DO	05/07/10 10:00	1.00E-02	0.00	0.00	0.00	1.12		
05	GROSS BETA	TRG	05/07/10 10:00	1.00E-01	0.00	0.00	0.00	1.00		
06	GROSS BETA	TRG	05/06/10 17:10	2.00E-02	0.00	0.00	0.00	1.06		
07	GROSS BETA	TRG	05/06/10 17:10	2.00E-02	0.00	0.00	0.00	1.00		

	Run	1
	Analysis Code	GaGbt
Eberline Services Work Order	10-05062	
Client	Michael Pisani & Associates	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff	A to B, Cor
01	GROSS BETA	LCS	05/17/10 13:44		LB4110A	B1	30	9838	1.483333333	0.4817	281.3703333
02	GROSS BETA	MBL	05/17/10 13:44		LB4110A	C1	120	180	1.15	0.4775	1.5
03	GROSS BETA	DUP	05/17/10 13:44		LB4110A	C2	120	167	1.083333333	0.4555	1.391666667
04	GROSS BETA	DO	05/17/10 13:44		LB4110A	C3	120	213	1.433333333	0.4808	1.775
05	GROSS BETA	TRG	05/17/10 13:44		LB4110A	C4	120	298	1.45	0.4713	2.388308333
06	GROSS BETA	TRG	05/17/10 13:44		LB4110A	D2	120	176	1.316666667	0.4979	1.466666667
07	GROSS BETA	TRG	05/17/10 13:44		LB4110A	D4	120	233	1.15	0.4889	1.941666667



**10-05062-GaGbt\_ThSr-1 (pCi/l) in WA**  
**Tracer ID:**

**Count Room Report**  
**Client: Michael Pisani Associat**

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	05/13/10 00:00	1.0000				0.00	1.00	1.00
02	MBL	BLANK	05/13/10 00:00	1.0000				0.00	1.00	1.00
03	DUP	SB-1-MW-S DIS	05/07/10 10:00	0.0100				0.00	1.00	1.00
04	DO	SB-1-MW-S DIS	05/07/10 10:00	0.0100				0.00	1.00	1.00
05	TRG	SB-1-MW-S SUS	05/07/10 10:00	0.1000				0.00	1.00	1.00
06	TRG	SB-1-MW-D DIS	05/06/10 17:10	0.0200				0.00	1.00	1.00
07	TRG	SB-1-MW-D SUS	05/06/10 17:10	0.0200				0.00	1.00	1.00

Internal Work Order		Run	Analysis Code		Date		Technician			Technician Initials			Witness Initials			
<b>10-05062</b>		<b>1</b>	<b>GaGbT_ThSr</b>		<b>5/17/2010 12:43</b>		<b>BLESTER</b>			<b>BL</b>						
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS			MS			LCS			MSD		
					Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Known pCi	Known pCi	Known pCi	Error Estimate	Error Estimate
<b>Am-241</b>	A/B-07	695.049	5/17/2010	0.680	1.0068		315.21	13.554	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
<b>SrY-90</b>	A/B-07	524.442	5/17/2010	1.050	1.0068		237.84	7.135	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000

Tracers						Balance Printer Tapes						
fraction	isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer					
							Matrix Spike					
							LCS					

# Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
10-05062		1		CaGbT_ThSr		liters		5/26/2010		BLESTER	

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data			MS Aliquot Data		H-3 Solids Only		
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq			
01	LCS	LCS					1.00E+00	1.0000E+00	1.0000E+00						
02	BLANK	MBL					1.00E+00	1.0000E+00	1.0000E+00						
03	SB-1-MW-S DIS	DUP					1.00E+00	1.0000E-02	1.0000E-02						
04	SB-1-MW-S DIS	DO					1.00E+00	1.0000E-02	1.0000E-02						
05	SB-1-MW-S SUS	TRG					1.00E+00	1.0000E-01	1.0000E-01						
06	SB-1-MW-D DIS	TRG					1.00E+00	2.0000E-02	2.0000E-02						
07	SB-1-MW-D SUS	TRG					1.00E+00	2.0000E-02	2.0000E-02						

Comments



*BL*

Technician: \_\_\_\_\_ Date: 5/17/2010

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>10-05062</b>	<b>1</b>	<b>GaGbT_ThSr</b>			<b>BLESTER</b>

TRetek Fraction	Michael Pisani & Associates Client ID	Sample Type	Carrier Data		Filter Data			Gravimetric % Recovery
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)		
01	LCS	LCS		7.6692	7.6696		0.0004	
02	BLANK	MBL		7.5827	7.5829		0.0002	
03	DUP	DUP		7.5306	7.5899		0.0593	
04	SB-1-MW-S DIS	DO		7.5116	7.5736		0.0620	
05	SB-1-MW-S SUS	TRG		0.0695	0.0763		0.0068	
06	SB-1-MW-D DIS	TRG		7.6447	7.6846		0.0399	
07	SB-1-MW-D SUS	TRG		0.0706	0.0868		0.0162	

Technician: B2 Date: 5/17/2010

# TDS / TSS Worksheet

Work Order	Run	Analysis Code	Technician
<b>10-05062</b>	<b>1</b>	<b>GaGbT_ThSr</b>	<b>BLESTER</b>

TRetec Fraction	Michael Pisani & Associates Client ID	Aliquot ml	Filter Data		Filter Net (g)	TDS/TSS (mg/L)	Maximum Aliq (mL)
			Filter Tare (g)	Filter Final (g)			
04	SB-1-MW-S DIS	5.0000	7.5813	7.6113	0.0300	6000.0000	16.67
05	SB-1-MW-S SUS						
06	SB-1-MW-D DIS	5.0000	7.5312	7.5479	0.0167	3340.0000	29.94
07	SB-1-MW-D SUS						

Technician: *Bl* Date: 5/14/2010

(A)  
5/17/10  
16B

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
B1	1005062-01	5610	9838	30	1400	5/17/10 14:14

(A) 5/17/10  
KB

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
C1	1005062-02	5	180	120		1400	5/17/10 15:44
C2	1005062-03	9	167	120		1400	5/17/10 15:44
C3	1005062-04	13	213	120		1400	5/17/10 15:44
C4	1005062-05	45	298	120		1400	5/17/10 15:44
D2	1005062-06	13	176	120		1400	5/17/10 15:44
D4	1005062-07	25	233	120		1400	5/17/10 15:44

GPC Detector Report  
(ALL Efficiencies)

KM  
5/17/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/17/2010	0.2449	P	0.2375	0.2505	0.2635
LB4110A - A2	Alpha	11/18/2007	5/17/2010	0.2159	P	0.1958	0.2208	0.2459
LB4110A - A3	Alpha	11/18/2007	5/17/2010	0.2151	P	0.2050	0.2179	0.2308
LB4110A - A4	Alpha	11/18/2007	5/17/2010	0.2274	P	0.2156	0.2289	0.2423
LB4110A - B1	Alpha	11/18/2007	5/17/2010	0.2296	P	0.2180	0.2318	0.2456
LB4110A - B2	Alpha	11/18/2007	5/17/2010	0.2253	P	0.2140	0.2278	0.2416
LB4110A - B3	Alpha	11/18/2007	5/17/2010	0.2391	P	0.2267	0.2424	0.2581
LB4110A - B4	Alpha	11/18/2007	5/17/2010	0.2317	P	0.2286	0.2411	0.2536
LB4110A - C1	Alpha	11/18/2007	5/17/2010	0.2255	P	0.2116	0.2226	0.2336
LB4110A - C2	Alpha	11/18/2007	5/17/2010	0.2246	P	0.2021	0.2270	0.2520
LB4110A - C3	Alpha	11/18/2007	5/17/2010	0.2502	P	0.2360	0.2495	0.2629
LB4110A - C4	Alpha	11/18/2007	5/17/2010	0.2258	P	0.2186	0.2323	0.2459
LB4110A - D1	Alpha	11/18/2007	5/17/2010	0.2339	P	0.2254	0.2399	0.2545
LB4110A - D2	Alpha	11/18/2007	5/17/2010	0.2578	P	0.2481	0.2633	0.2785
LB4110A - D3	Alpha	11/18/2007	5/17/2010	0.2629	P	0.2514	0.2690	0.2865
LB4110A - D4	Alpha	11/18/2007	5/17/2010	0.1989	P	0.1930	0.2107	0.2283
LB4110R - A1	Alpha	11/24/2006	5/17/2010	0.2285	P	0.2066	0.2426	0.2786
LB4110R - A2	Alpha	11/24/2006	5/17/2010	0.2188	P	0.1928	0.2245	0.2561
LB4110R - A3	Alpha	11/24/2006	5/17/2010	0.2271	P	0.1985	0.2284	0.2583
LB4110R - A4	Alpha	11/24/2006	5/17/2010	0.2423	P	0.2140	0.2470	0.2801
LB4110R - B1	Alpha	11/24/2006	5/17/2010	0.2255	P	0.1937	0.2306	0.2675
LB4110R - B2	Alpha	11/24/2006	5/17/2010	0.2174	P	0.1859	0.2214	0.2570
LB4110R - B3	Alpha	11/24/2006	5/17/2010	0.2374	P	0.2093	0.2478	0.2864
LB4110R - B4	Alpha	11/24/2006	5/17/2010	0.2258	P	0.2006	0.2378	0.2750
LB4110R - C1	Alpha	11/24/2006	5/17/2010	0.2167	P	0.1834	0.2173	0.2513
LB4110R - C2	Alpha	11/24/2006	5/17/2010	0.2231	P	0.1945	0.2266	0.2588
LB4110R - C3	Alpha	11/24/2006	5/17/2010	0.2419	P	0.2039	0.2426	0.2813
LB4110R - C4	Alpha	11/24/2006	5/17/2010	0.2210	P	0.1993	0.2316	0.2639
LB4110R - D1	Alpha	11/24/2006	5/17/2010	0.2260	P	0.1942	0.2297	0.2652
LB4110R - D2	Alpha	11/24/2006	5/17/2010	0.2619	P	0.2244	0.2592	0.2940
LB4110R - D3	Alpha	11/24/2006	5/17/2010	0.2500	P	0.2222	0.2549	0.2876
LB4110R - D4	Alpha	11/24/2006	5/17/2010	0.2003	P	0.1817	0.2118	0.2420
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578



GPC Detector Report  
(ALL Efficiencies)

KM  
5/17/10

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/17/2010	0.5856	P	0.5579	0.5899	0.6218
LB4110A - A2	Beta	11/18/2007	5/17/2010	0.5233	P	0.4654	0.5230	0.5806
LB4110A - A3	Beta	11/18/2007	5/17/2010	0.5288	P	0.4933	0.5269	0.5604
LB4110A - A4	Beta	11/18/2007	5/17/2010	0.5452	P	0.5200	0.5490	0.5781
LB4110A - B1	Beta	11/18/2007	5/17/2010	0.5363	P	0.5128	0.5427	0.5727
LB4110A - B2	Beta	11/18/2007	5/17/2010	0.5208	P	0.5103	0.5398	0.5692
LB4110A - B3	Beta	11/18/2007	5/17/2010	0.5514	P	0.5019	0.5530	0.6041
LB4110A - B4	Beta	11/18/2007	5/17/2010	0.5395	W	0.5356	0.5605	0.5854
LB4110A - C1	Beta	11/18/2007	5/17/2010	0.5147	P	0.4839	0.5063	0.5286
LB4110A - C2	Beta	11/18/2007	5/17/2010	0.4842	P	0.4359	0.5094	0.5830
LB4110A - C3	Beta	11/18/2007	5/17/2010	0.5870	P	0.5621	0.5874	0.6128
LB4110A - C4	Beta	11/18/2007	5/17/2010	0.5245	P	0.5075	0.5408	0.5741
LB4110A - D1	Beta	11/18/2007	5/17/2010	0.5600	P	0.5350	0.5729	0.6107
LB4110A - D2	Beta	11/18/2007	5/17/2010	0.6149	P	0.5530	0.6165	0.6800
LB4110A - D3	Beta	11/18/2007	5/17/2010	0.6150	P	0.5818	0.6266	0.6714
LB4110A - D4	Beta	11/18/2007	5/17/2010	0.4833	P	0.4655	0.5025	0.5396
LB4110R - A1	Beta	11/24/2006	5/17/2010	0.5581	P	0.4779	0.5764	0.6749
LB4110R - A2	Beta	11/24/2006	5/17/2010	0.4872	P	0.4099	0.5135	0.6172
LB4110R - A3	Beta	11/24/2006	5/17/2010	0.5386	P	0.4555	0.5489	0.6422
LB4110R - A4	Beta	11/24/2006	5/17/2010	0.5782	P	0.4943	0.5912	0.6881
LB4110R - B1	Beta	11/24/2006	5/17/2010	0.5410	P	0.4504	0.5522	0.6540
LB4110R - B2	Beta	11/24/2006	5/17/2010	0.5245	P	0.4294	0.5293	0.6292
LB4110R - B3	Beta	11/24/2006	5/17/2010	0.5820	P	0.4921	0.5965	0.7010
LB4110R - B4	Beta	11/24/2006	5/17/2010	0.5427	P	0.4631	0.5611	0.6591
LB4110R - C1	Beta	11/24/2006	5/17/2010	0.5114	P	0.4121	0.5066	0.6011
LB4110R - C2	Beta	11/24/2006	5/17/2010	0.5372	P	0.4362	0.5316	0.6270
LB4110R - C3	Beta	11/24/2006	5/17/2010	0.5762	P	0.4627	0.5742	0.6857
LB4110R - C4	Beta	11/24/2006	5/17/2010	0.5196	P	0.4466	0.5444	0.6422
LB4110R - D1	Beta	11/24/2006	5/17/2010	0.5439	P	0.4490	0.5464	0.6438
LB4110R - D2	Beta	11/24/2006	5/17/2010	0.6079	P	0.5049	0.6090	0.7131
LB4110R - D3	Beta	11/24/2006	5/17/2010	0.5892	P	0.4916	0.5908	0.6901
LB4110R - D4	Beta	11/24/2006	5/17/2010	0.4745	P	0.4079	0.5022	0.5964
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

GPC Detector Report  
(ALL Backgrounds)

KM  
5/17/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/17/2010	5.00E-02	P	-5.54E-02	7.01E-02	1.96E-01
LB4110A - A2	Alpha	11/18/2007	5/17/2010	5.00E-02	P	-5.66E-02	1.01E-01	2.59E-01
LB4110A - A3	Alpha	11/18/2007	5/17/2010	0.00E+00	P	-4.87E-02	5.04E-02	1.50E-01
LB4110A - A4	Alpha	11/18/2007	5/17/2010	0.00E+00	P	-6.24E-02	5.87E-02	1.80E-01
LB4110A - B1	Alpha	11/18/2007	5/17/2010	5.00E-02	P	-1.35E-01	8.43E-02	3.04E-01
LB4110A - B2	Alpha	11/18/2007	5/17/2010	3.33E-02	P	-6.62E-02	7.82E-02	2.23E-01
LB4110A - B3	Alpha	11/18/2007	5/17/2010	1.67E-02	P	-5.48E-02	4.46E-02	1.44E-01
LB4110A - B4	Alpha	11/18/2007	5/17/2010	5.00E-02	P	-4.65E-02	5.31E-02	1.53E-01
LB4110A - C1	Alpha	11/18/2007	5/17/2010	3.33E-02	P	-6.37E-02	8.24E-02	2.28E-01
LB4110A - C2	Alpha	11/18/2007	5/17/2010	6.67E-02	P	-2.04E-01	1.24E-01	4.51E-01
LB4110A - C3	Alpha	11/18/2007	5/17/2010	3.33E-02	P	-2.48E-01	1.23E-01	4.94E-01
LB4110A - C4	Alpha	11/18/2007	5/17/2010	6.67E-02	P	-7.22E-02	7.82E-02	2.29E-01
LB4110A - D1	Alpha	11/18/2007	5/17/2010	3.33E-02	P	-4.48E-02	8.40E-02	2.13E-01
LB4110A - D2	Alpha	11/18/2007	5/17/2010	8.33E-02	P	-6.84E-02	7.01E-02	2.09E-01
LB4110A - D3	Alpha	11/18/2007	5/17/2010	5.00E-02	P	-3.71E-02	6.25E-02	1.62E-01
LB4110A - D4	Alpha	11/18/2007	5/17/2010	0.00E+00	P	-6.01E-02	7.78E-02	2.16E-01
LB4110R - A1	Alpha	11/24/2006	5/17/2010	6.67E-02	P	-1.12E-01	8.44E-02	2.80E-01
LB4110R - A2	Alpha	11/24/2006	5/17/2010	6.67E-02	P	-9.81E-02	9.73E-02	2.93E-01
LB4110R - A3	Alpha	11/24/2006	5/17/2010	8.33E-02	P	-9.00E-02	7.79E-02	2.46E-01
LB4110R - A4	Alpha	11/24/2006	5/17/2010	5.00E-02	P	-5.08E-02	8.29E-02	2.17E-01
LB4110R - B1	Alpha	11/24/2006	5/17/2010	0.00E+00	P	-1.17E-01	6.92E-02	2.56E-01
LB4110R - B2	Alpha	11/24/2006	5/17/2010	1.67E-02	P	-7.78E-02	7.75E-02	2.33E-01
LB4110R - B3	Alpha	11/24/2006	5/17/2010	0.00E+00	P	-7.64E-02	7.21E-02	2.21E-01
LB4110R - B4	Alpha	11/24/2006	5/17/2010	5.00E-02	P	-6.58E-02	8.52E-02	2.36E-01
LB4110R - C1	Alpha	11/24/2006	5/17/2010	3.33E-02	P	-8.43E-02	8.91E-02	2.62E-01
LB4110R - C2	Alpha	11/24/2006	5/17/2010	3.33E-02	P	-8.36E-02	8.68E-02	2.57E-01
LB4110R - C3	Alpha	11/24/2006	5/17/2010	1.67E-02	P	-1.04E-01	9.68E-02	2.98E-01
LB4110R - C4	Alpha	11/24/2006	5/17/2010	8.33E-02	P	-7.27E-02	9.29E-02	2.58E-01
LB4110R - D1	Alpha	11/24/2006	5/17/2010	6.67E-02	P	-9.10E-02	8.76E-02	2.66E-01
LB4110R - D2	Alpha	11/24/2006	5/17/2010	6.67E-02	P	-6.16E-02	9.01E-02	2.42E-01
LB4110R - D3	Alpha	11/24/2006	5/17/2010	1.67E-02	P	-6.01E-02	7.80E-02	2.16E-01
LB4110R - D4	Alpha	11/24/2006	5/17/2010	6.67E-02	P	-5.34E-02	9.39E-02	2.41E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

KM  
5/17/10

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/17/2010	1.30E+00	P	-7.77E+00	2.74E+00	1.33E+01
LB4110A - A2	Beta	11/18/2007	5/17/2010	1.30E+00	P	-6.25E-02	1.59E+00	3.24E+00
LB4110A - A3	Beta	11/18/2007	5/17/2010	1.27E+00	P	3.79E-01	1.29E+00	2.21E+00
LB4110A - A4	Beta	11/18/2007	5/17/2010	1.37E+00	P	4.64E-01	1.71E+00	2.96E+00
LB4110A - B1	Beta	11/18/2007	5/17/2010	1.48E+00	P	-8.57E+00	4.00E+00	1.66E+01
LB4110A - B2	Beta	11/18/2007	5/17/2010	1.42E+00	P	5.87E-02	1.49E+00	2.93E+00
LB4110A - B3	Beta	11/18/2007	5/17/2010	1.20E+00	P	1.10E-01	1.49E+00	2.87E+00
LB4110A - B4	Beta	11/18/2007	5/17/2010	1.48E+00	P	-6.51E-02	1.43E+00	2.92E+00
LB4110A - C1	Beta	11/18/2007	5/17/2010	1.15E+00	P	-7.62E+00	3.14E+00	1.39E+01
LB4110A - C2	Beta	11/18/2007	5/17/2010	1.08E+00	P	3.28E-01	1.43E+00	2.53E+00
LB4110A - C3	Beta	11/18/2007	5/17/2010	1.43E+00	P	4.37E-01	1.48E+00	2.53E+00
LB4110A - C4	Beta	11/18/2007	5/17/2010	1.45E+00	P	-1.30E+00	2.14E+00	5.58E+00
LB4110A - D1	Beta	11/18/2007	5/17/2010	2.18E+00	P	-3.98E+00	3.06E+00	1.01E+01
LB4110A - D2	Beta	11/18/2007	5/17/2010	1.32E+00	P	-1.35E+00	1.77E+00	4.89E+00
LB4110A - D3	Beta	11/18/2007	5/17/2010	4.72E+00	P	-3.33E-01	4.08E+00	8.50E+00
LB4110A - D4	Beta	11/18/2007	5/17/2010	1.15E+00	P	-9.31E-01	1.57E+00	4.08E+00
LB4110R - A1	Beta	11/24/2006	5/17/2010	1.18E+00	P	-6.20E+01	2.80E+00	6.76E+01
LB4110R - A2	Beta	11/24/2006	5/17/2010	8.83E-01	P	-6.23E+01	2.54E+00	6.74E+01
LB4110R - A3	Beta	11/24/2006	5/17/2010	1.05E+00	P	-6.17E+01	4.19E+00	7.01E+01
LB4110R - A4	Beta	11/24/2006	5/17/2010	1.20E+00	P	-6.22E+01	2.67E+00	6.75E+01
LB4110R - B1	Beta	11/24/2006	5/17/2010	1.02E+00	P	-6.54E+01	2.78E+00	7.09E+01
LB4110R - B2	Beta	11/24/2006	5/17/2010	1.15E+00	P	-6.53E+01	2.85E+00	7.10E+01
LB4110R - B3	Beta	11/24/2006	5/17/2010	9.00E-01	P	-6.46E+01	3.95E+00	7.25E+01
LB4110R - B4	Beta	11/24/2006	5/17/2010	1.13E+00	P	-6.55E+01	2.62E+00	7.08E+01
LB4110R - C1	Beta	11/24/2006	5/17/2010	1.25E+00	P	-6.44E+01	4.64E+00	7.37E+01
LB4110R - C2	Beta	11/24/2006	5/17/2010	1.47E+00	P	-6.53E+01	3.59E+00	7.25E+01
LB4110R - C3	Beta	11/24/2006	5/17/2010	9.83E-01	P	-6.56E+01	3.61E+00	7.29E+01
LB4110R - C4	Beta	11/24/2006	5/17/2010	1.48E+00	P	-7.40E+01	4.23E+00	8.24E+01
LB4110R - D1	Beta	11/24/2006	5/17/2010	8.10E+00	P	-6.25E+01	6.55E+00	7.56E+01
LB4110R - D2	Beta	11/24/2006	5/17/2010	1.13E+00	P	-6.63E+01	2.70E+00	7.18E+01
LB4110R - D3	Beta	11/24/2006	5/17/2010	3.22E+00	P	-7.02E+01	7.62E+00	8.54E+01
LB4110R - D4	Beta	11/24/2006	5/17/2010	1.13E+00	P	-6.59E+01	3.12E+00	7.22E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

# TRANSMITTAL



Ardaman & Associates, Inc.

**To:** Michael Pisani and Associates  
1100 Poydrast Ste 1430  
New Orleans, LA 70163

**Date:** June 9, 2010

**Job No.:** 10-3897

**Project:** East White Lake

**Fax:**

**Attention:** Randy Graves

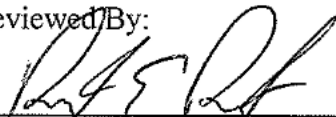
**From:** Robert Rousset, E.I.

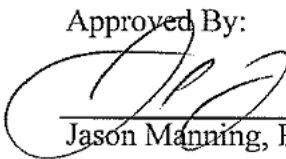
COPIES	DESCRIPTION
18	Particle Size Analysis
7	Chain of Custody

**THESE ARE TRANSMITTED:**

FOR YOUR USE     FOR REVIEW & COMMENT     AS REQUESTED

**REMARKS:** \_\_\_\_\_

Reviewed By:   
Robert Rousset, E.I.

Approved By:   
Jason Manning, P.E.  
Branch Manager

CHAIN OF CUSTODY RECORD

Job No. 07-47 Date: 5-12-10  
 Project Name East White Lake - VPSB  
 Project Location Vermilion Parish LA  
 Collectors Name Jonathan Miller (MP&A)  
 Type of Sample Geotech - Soil No. of Containers 1 per

SAMPLE ID	<sup>sample</sup> Date	SAMPLE LOCATION	PURPOSE
SB-3 (56-58')	5/11/10		hold
SB-3 (21-22')	5-10-10		hold
SB-3 (64-66')	5-11-10		hold
SB-3 (8-10')	5-10-10		hold
SB-3 (12-14')	5-10-10		hold
SB-3 (16-18')	5-10-10		grain size * , class
SB-3 (24-26')	5-10-10		hold
SB-3 (72-73')	5-11-10		hold
SB-3 (59-60')	5-11-10		hold
SB-3 (49-49.5')	5-10-10		grain size * , class

Sample Shipped by Randy G. MPA Date 14 May 10  
 Custodian Randy Graves Randy E. Dumas  
 Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
 Company Name \_\_\_\_\_

Remarks \* w/ hydrometry

10 83 3897

Done DJK 5/11/10

CHAIN OF CUSTODY RECORD

Job No. 07-47 Date: 5-12-10  
 Project Name East White Lake - VPSB  
 Project Location Vermilion Parish LA  
 Collectors Name Jonathan Miller (MP&A)  
 Type of Sample Geotech - Soil No. of Containers \_\_\_\_\_

SAMPLE ID	<sup>Sample</sup> Date	SAMPLE LOCATION	PURPOSE
SB-3 (68-68.5')	5-11-10		grain size * , class
SB-3 (77-78')	5-11-10		hold
SB-3 (40-48)	5-10-10		grain size * , class
SB-3 (37-38')	5-10-10		hold
SB-3 (28-30')	5-10-10		hold
SB-3 (33-34')	5-10-10		hold
SB-3 (48-48.5')	5-10-10		hold
SB-3 (81-82)	5-11-10		grain size * , class
SB-3 (53-54')	5-10-10		grain size * , class
SB-3 (44-46')	5-10-10		hold
SB-3 (0-6')	5-10-10		-

Sample Shipped by MP&A Date 14 May 10  
 Custodian Randy Graves Rofy E. Edwards  
 Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
 Company Name \_\_\_\_\_

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
10 83 3897  
 \_\_\_\_\_  
Dance Dec 5/14/10

2

CHAIN OF CUSTODY RECORD

Job No. 07-47 Date: 5-12-10  
 Project Name East White Lake - VPSB  
 Project Location Vermilion Parish LA  
 Collectors Name John Thae Miller (MP&A)  
 Type of Sample agrotech soil No. of Containers \_\_\_\_\_

SAMPLE ID	<u>sample date</u>	SAMPLE LOCATION	PURPOSE
SB-2 (58-60')	5-10-10		hold
SB-2 (54-56')	↓		hold
SB-2 (74-76')	↓		hold
SB-2 (66-68')	↓		grain size * , class
SB-2 (62-64')	↓		hold
SB-2 (70-71.5')	↓		grain size * , class
SB-2 (78-80')	↓		grain size * , class
SB-2 (41-43')	5-7-10		hold
SB-2 (33-35')	↓		grain size * , class
SB-2 (35-36')	↓		hold

Sample Shipped by MP&A Date 14 May 10  
 Custodian Randy Graves Aedyl D. ...  
 Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
 Company Name \_\_\_\_\_

Remarks \* w/ hydrometer

10 83 3897

Dave D. 5/14/10

### CHAIN OF CUSTODY RECORD

Job No. 07-47 Date: 5-12-10  
 Project Name East White Lake - UPSB  
 Project Location Vermilion Parish LA  
 Collectors Name Jonathan Miller / (MPRA)  
 Type of Sample Geotech - Soil No. of Containers \_\_\_\_\_

SAMPLE ID	sample Date	SAMPLE LOCATION	PURPOSE
SB-2 (21-23')	5-7-10		hold
SB-2 (29-31')	↓		grain size*, class
SB-2 (17-19')		hold	
SB-2 (25-27')		hold	
LB-2 (13-15')		hold	
SB-2 (9-11')		hold	

Sample Shipped by MPRA Date 14 May 10  
 Custodian Randy Graves  
 Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
 Company Name \_\_\_\_\_

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
10 83 3897  
 \_\_\_\_\_  
Done DJK 5/14/10



3

CHAIN OF CUSTODY RECORD

Job No. 07-47 Date: 5-12-10  
 Project Name East White Lake - VPSB  
 Project Location Vermilion Parish - LA  
 Collectors Name Jonathan Miller (MP&A)  
 Type of Sample brackish-soil No. of Containers \_\_\_\_\_

SAMPLE ID	Sample Date	SAMPLE LOCATION	PURPOSE
SB-1 (33-35')	5-5-10		grain size * class
SB-1 (17-19')	5-5-10		grain size * class
SB-1 (21-23')	5-5-10		hold
SB-1 (25-27')	5-5-10		hold
SB-1 (9-11')	5-5-10		grain size * class
SB-1 (37-39')	5-5-10		hold
SB-1 (45.5-46')	5-5-10		hold
SB-1 (29-31')	5-5-10		hold
SB-1 (0-7')	5-5-10		hold
<u>SB-3 (14-15')</u>	<u>5-11-10</u>		vert perm (tri), grain size class

↳ SAMPLE CAME SEPERATE → NEW JOB #

Sample Shipped by MP&A Date 14 May 10  
 Custodian Randy Graves R. Graves  
 Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
 Company Name \_\_\_\_\_

Remarks \* w/ hydrometer

10 83 3097

Date 5/14/10

CHAIN OF CUSTODY RECORD

Job No. 07-97 Date: 5-12-10  
 Project Name East White Lake - VPSB  
 Project Location Vermilion Parish LA  
 Collectors Name Jonathan Miller (MPA)  
 Type of Sample Geotech. Soil No. of Containers \_\_\_\_\_

SAMPLE ID	Sample Date	SAMPLE LOCATION	PURPOSE
SB-1 (74-76')	5-11-10		
SB-1 (78-80')	5-11-10		gmin size * class
SB-1 (62-64')	5-11-10		
SB-1 (66-68')	5-11-10		
SB-1 (70-72')	5-11-10		
SB-1 (42-43')	5-5-10		
SB-1 (13-15')	5-5-10		
SB-1 (58-60')	5-5-10		
SB-1 (62-64')	5-5-10		
SB-1 (46.6-47')	5-5-10		

Sample Shipped by MPA Date 14 May 10  
 Custodian Randy Graves R. J. Brown  
 Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
 Company Name \_\_\_\_\_

Remarks \_\_\_\_\_

10 83 3897

Dave Pru 5/14/10

3 MPA  
1100 Poydras, Suite 1430  
New Orleans, LA 70163  
J. Miller  
504.582.2468

CHAIN OF CUSTODY RECORD

Job No. 07-47 Date: 5-13-10  
Project Name East White Lake - VPSB  
Project Location Vermilion Parish LA  
Collectors Name R Charles Trahan  
Type of Sample Geotech Soil No. of Containers \_\_\_\_\_

SAMPLE ID	Sample date	SAMPLE LOCATION	PURPOSE
SB-1C 46-48'	5-13-10		grain size*, class
SB-1C 53.5-54'			grain size*, class
SB-1C 54-56'			hold
SB-1C 51-52'			hold
SB-1C 58-60'			grain size, class

Sample Shipped by MPA Date 14 May 10  
Custodian Randy Graves R. Graves  
Sample Received by \_\_\_\_\_ Date \_\_\_\_\_  
Company Name \_\_\_\_\_

Remarks \* w/ hydrometer

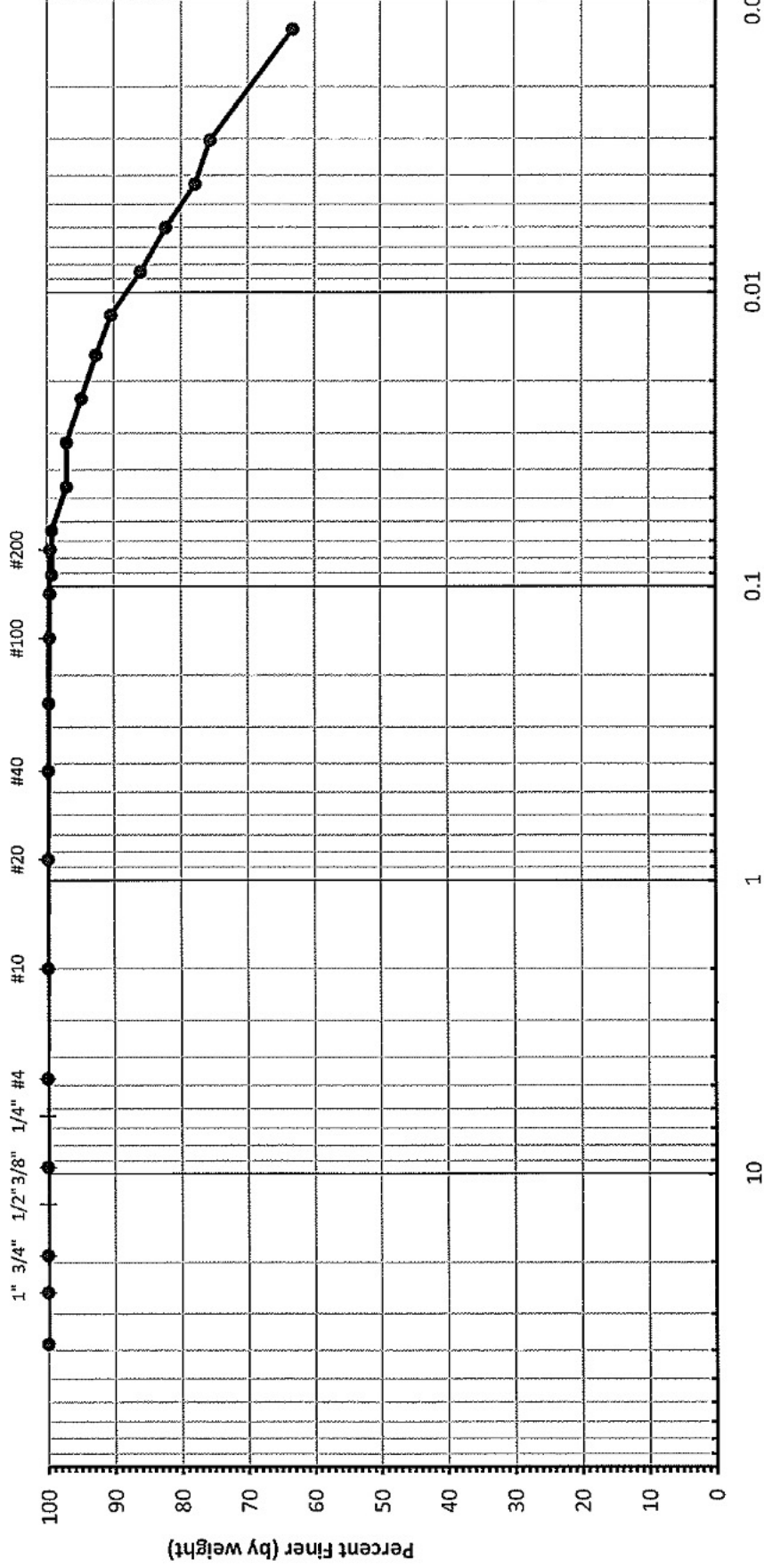
10 83 3897

Rec'd BY Dave Dick 5/14/10

Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SILT	% CLAY
BORING	SB-1	Gray clay with trace organics				0.0	19.8	79.7
	DEPTH (FT)							
	9-11							

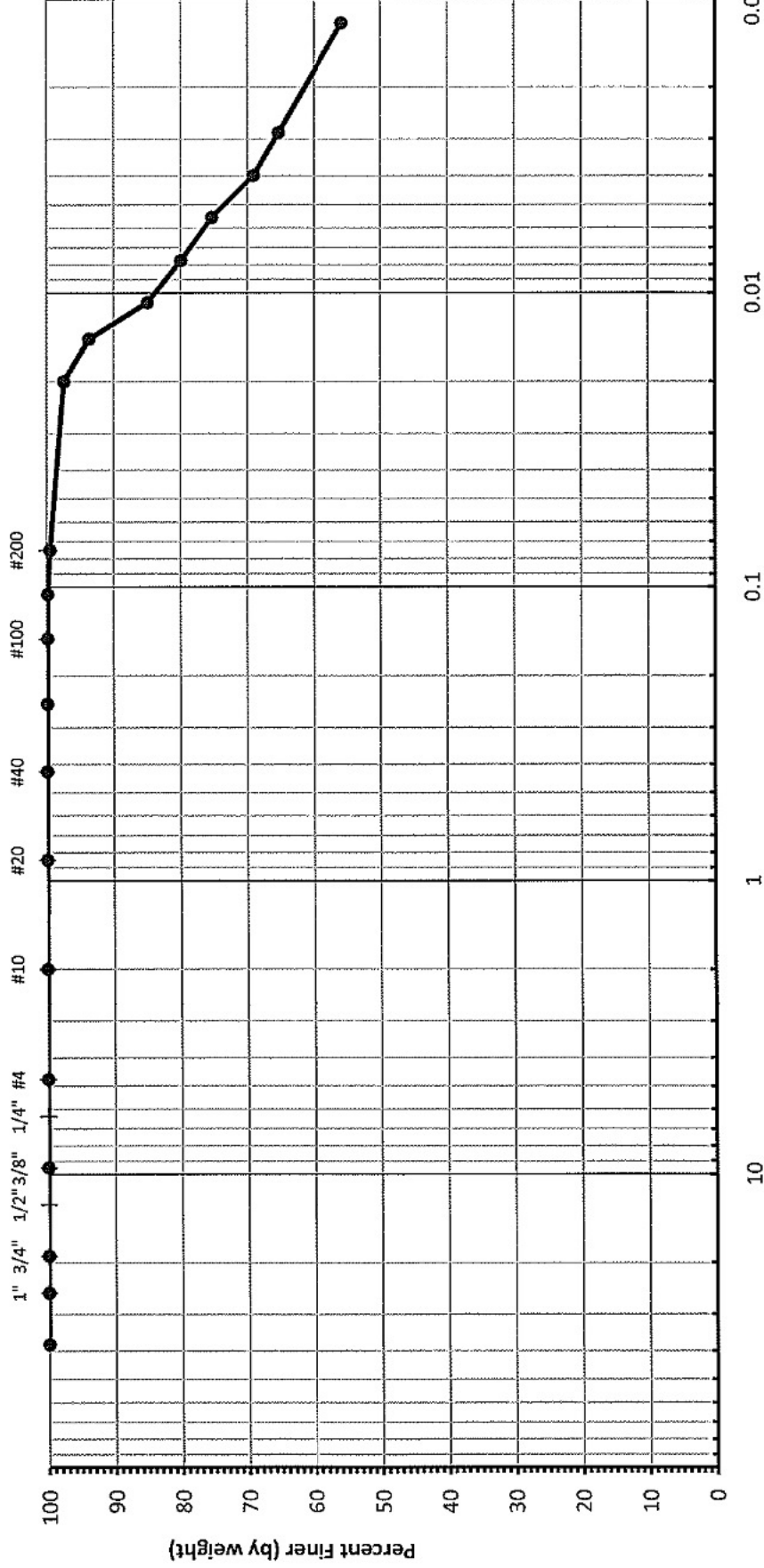
**Baton Rouge Geotechnical Laboratory**  
 AASHTO Accredited Laboratory  
 LELAP Certificate No. 02052  
 USACE Validated  
  
 316 Highlandia Drive  
 Baton Rouge, LA 70810  
 225-752-4790 (phone)  
 225-752-4878 (fax)



Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

## PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-1	Brown and light gray clay				0.0	0.5	26.4	73.1
	DEPTH (FT)	17-19							

**Baton Rouge Geotechnical Laboratory**  
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 LELAP Certificate No. 02052  
 USACE Validated

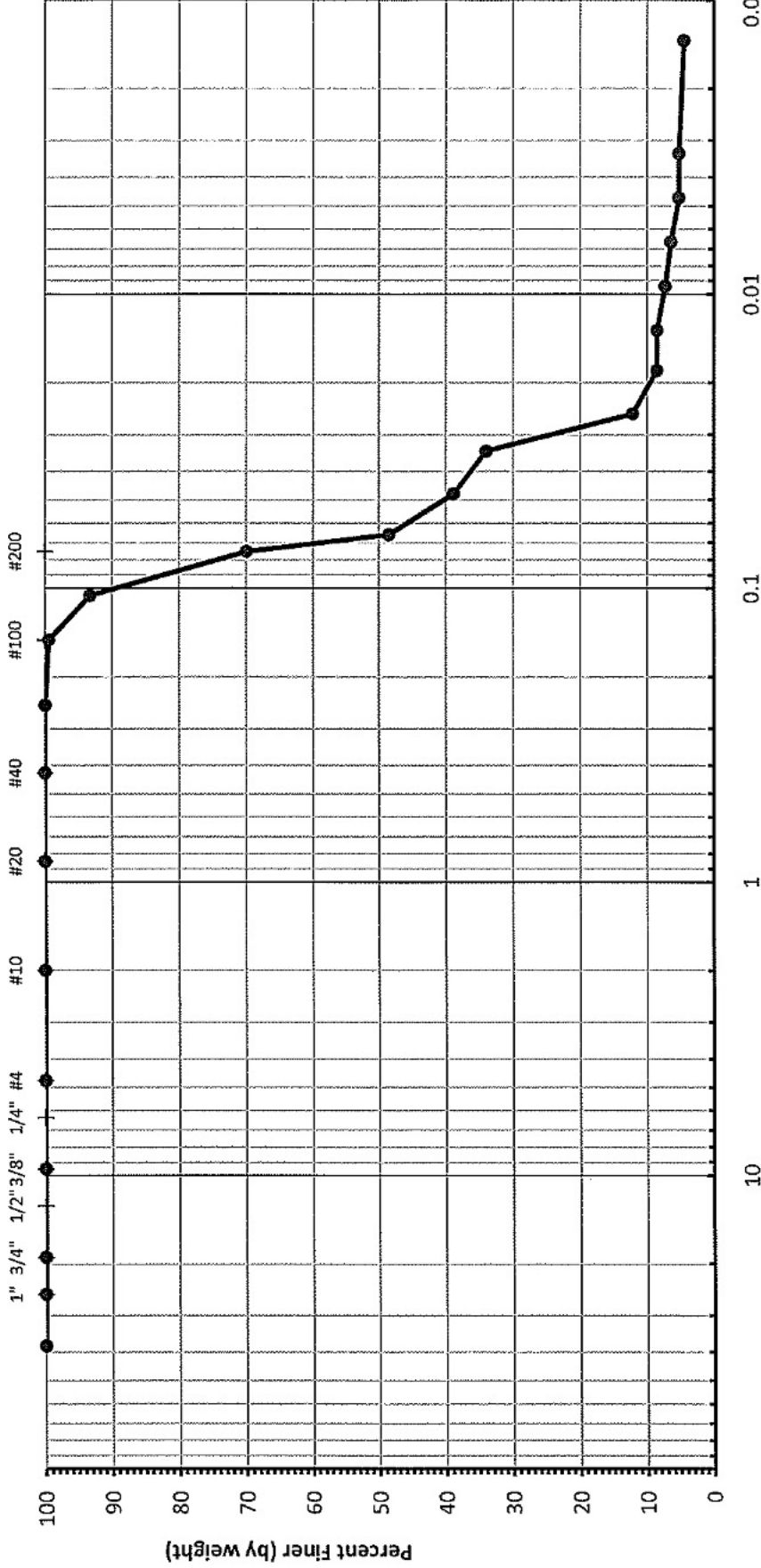
316 Highlandia Drive  
 Baton Rouge, LA 70810  
 225-752-4790 (phone)  
 225-752-4878 (fax)



Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

## PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE				



Effective Particle Size (mm)

SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-1	Brown and gray silt				0.0	30.1	64.5	5.4
		DEPTH (FT)							
		33-35							

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 LELAP Certificate No. 02052  
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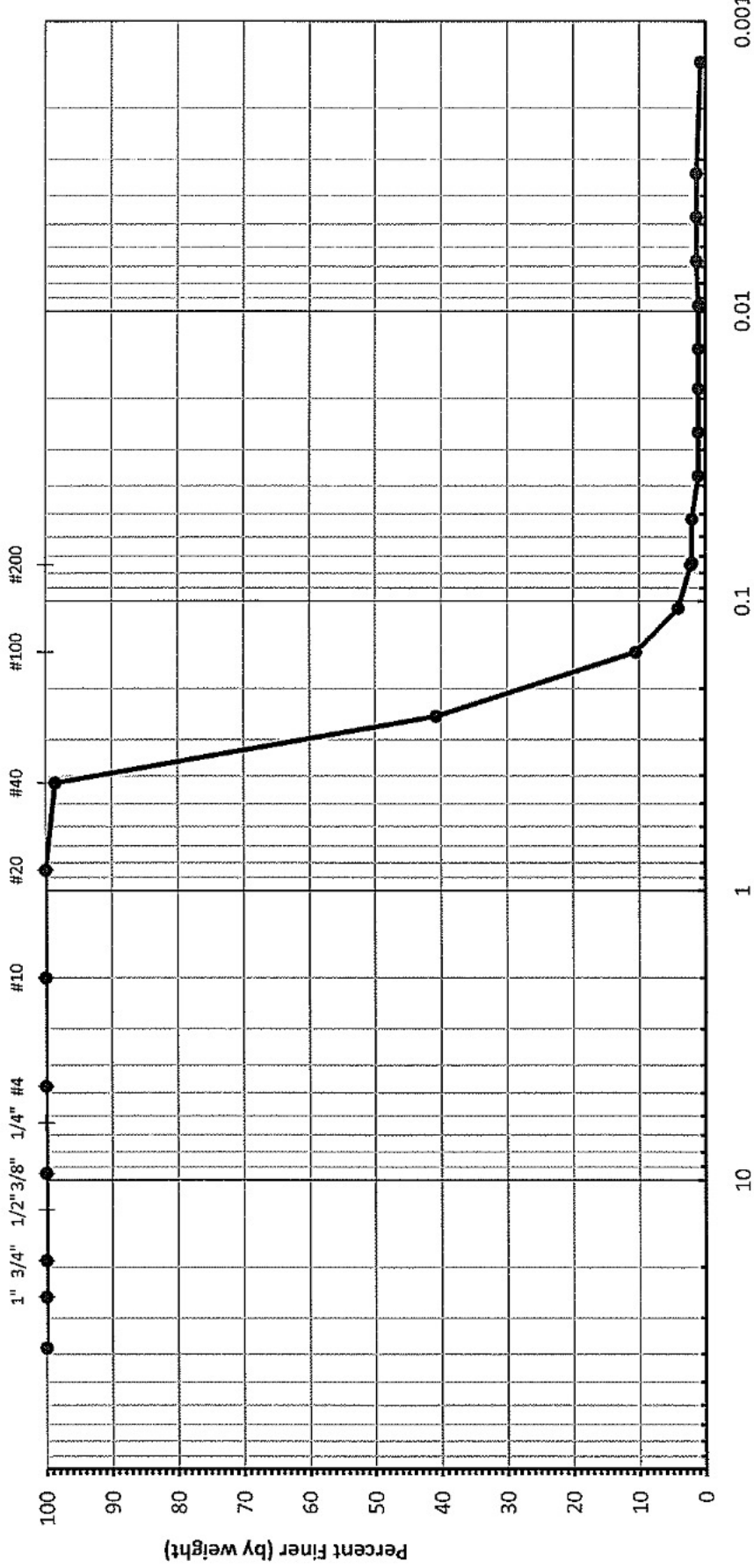
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 Baton Rouge, LA 70810  
 225-752-4790 (phone)  
 225-752-4878 (fax)



**PARTICLE SIZE ANALYSIS**  
(ASTM D422)

Client: Michael Pisani & Associates  
Project: East White Lake  
AAI Project No. 10-3897

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



Effective Particle Size (mm)

SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-1B	Light gray sand				0.0	97.8	0.9	1.3
DEPTH (FT)		78-80							

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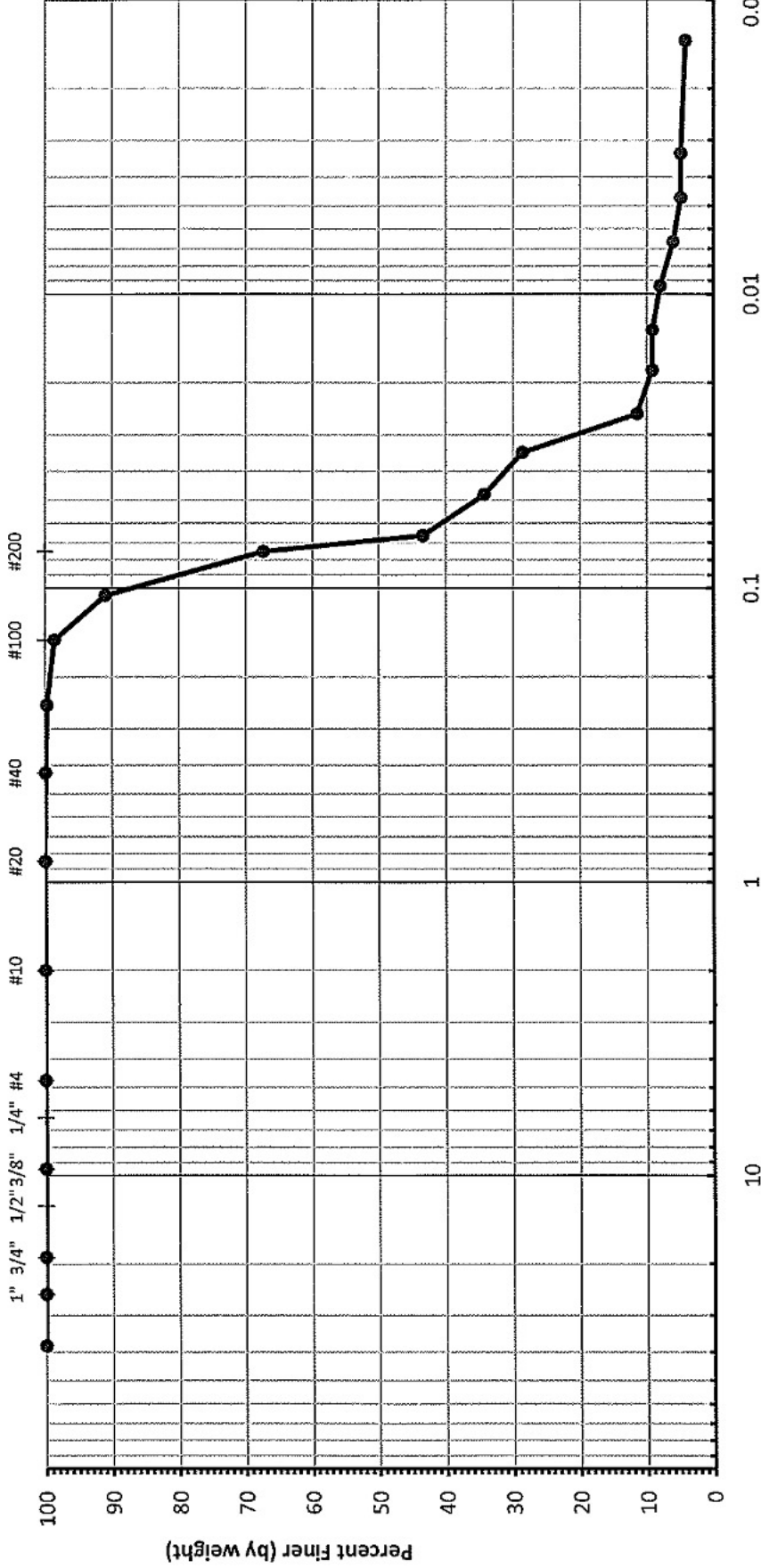
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Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

## PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY	
COARSE	FINE	COARSE	MEDIUM	FINE				



Effective Particle Size (mm)

SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-1C	DEPTH (FT)	46-48			0.0	32.7	62.2	5.1
		Light gray silt							

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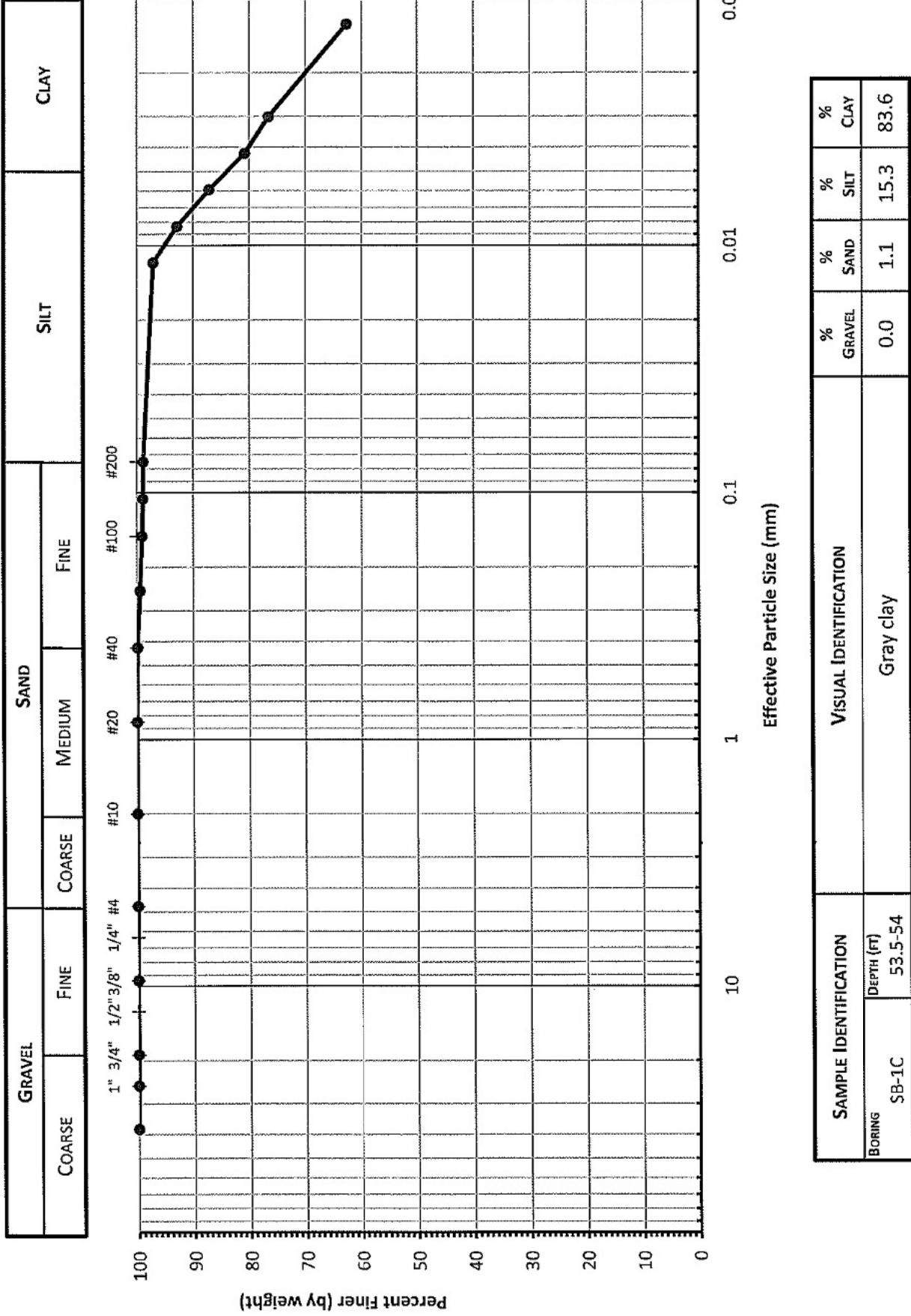
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Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)



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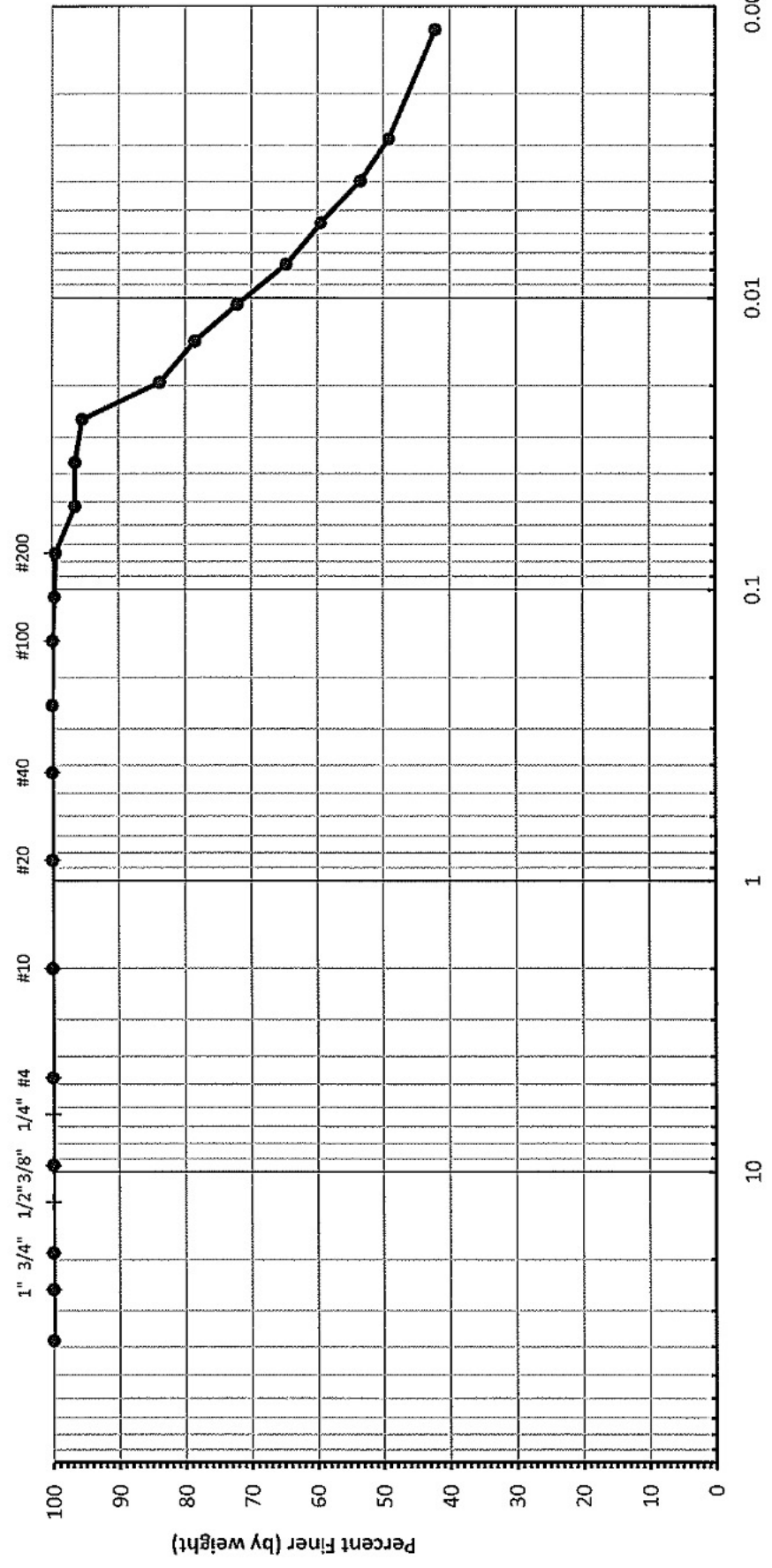
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### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			
1" 3/4"	1/2" 3/8"	1/4" #4	#10	#20	#40	#100	#200



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				%	
BORING	DEPTH (FT)	% GRAVEL	% SAND	% SILT	% CLAY	0.0	57.3
SB-2	29-31	0.5	42.1	57.3	0.0	0.5	42.1

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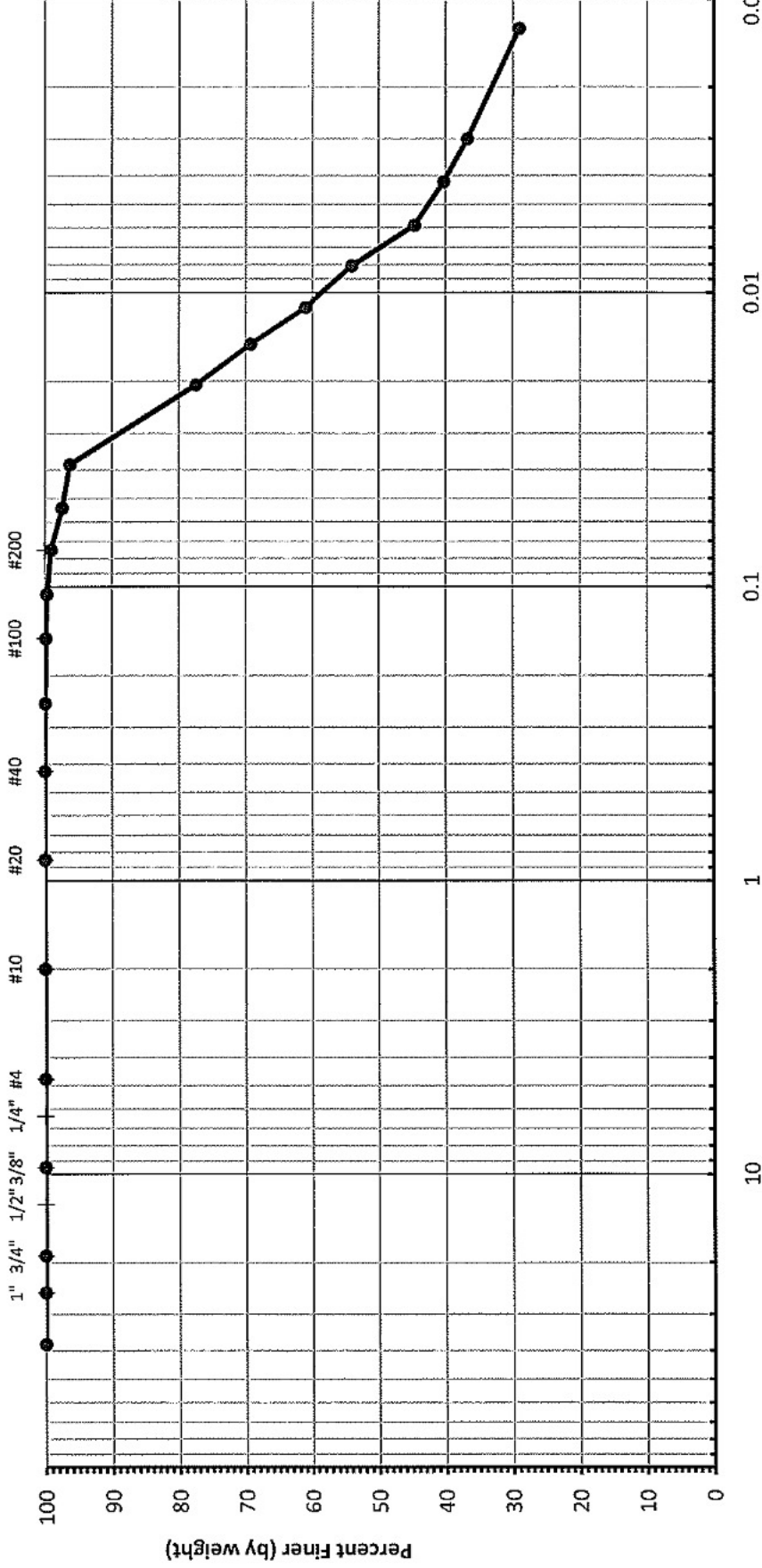
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Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION			
BORING	SB-2	DEPTH (FT)	35-36		
		GRAVEL	% SAND	% SILT	% CLAY
		0.0	0.9	56.8	42.3

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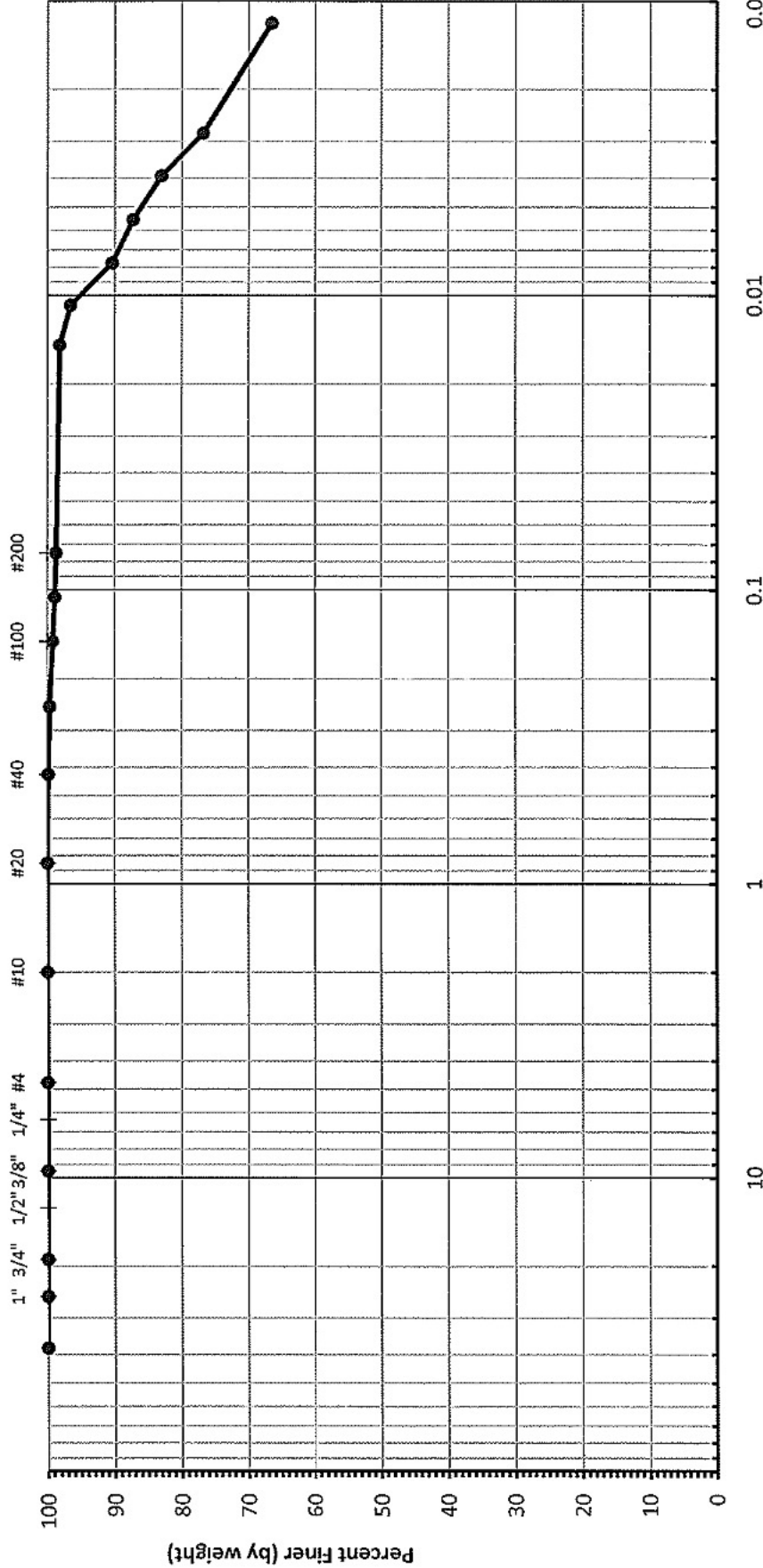
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Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-2	DEPTH (FT)	66-68			0.0	1.3	12.8	85.8

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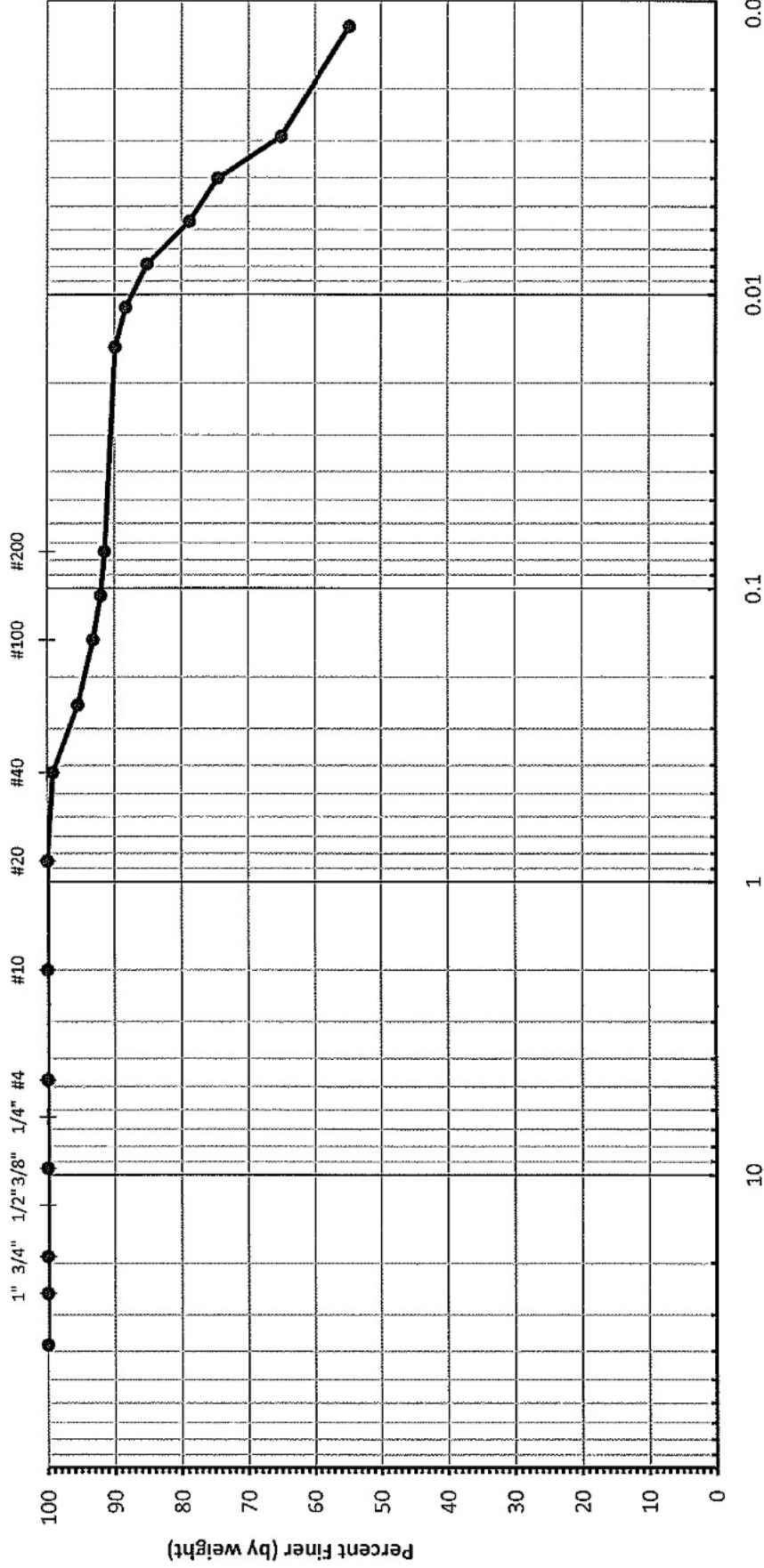
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 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-2	DEPTH (ft)	70-71.5			0.0	8.6	14.3	77.1

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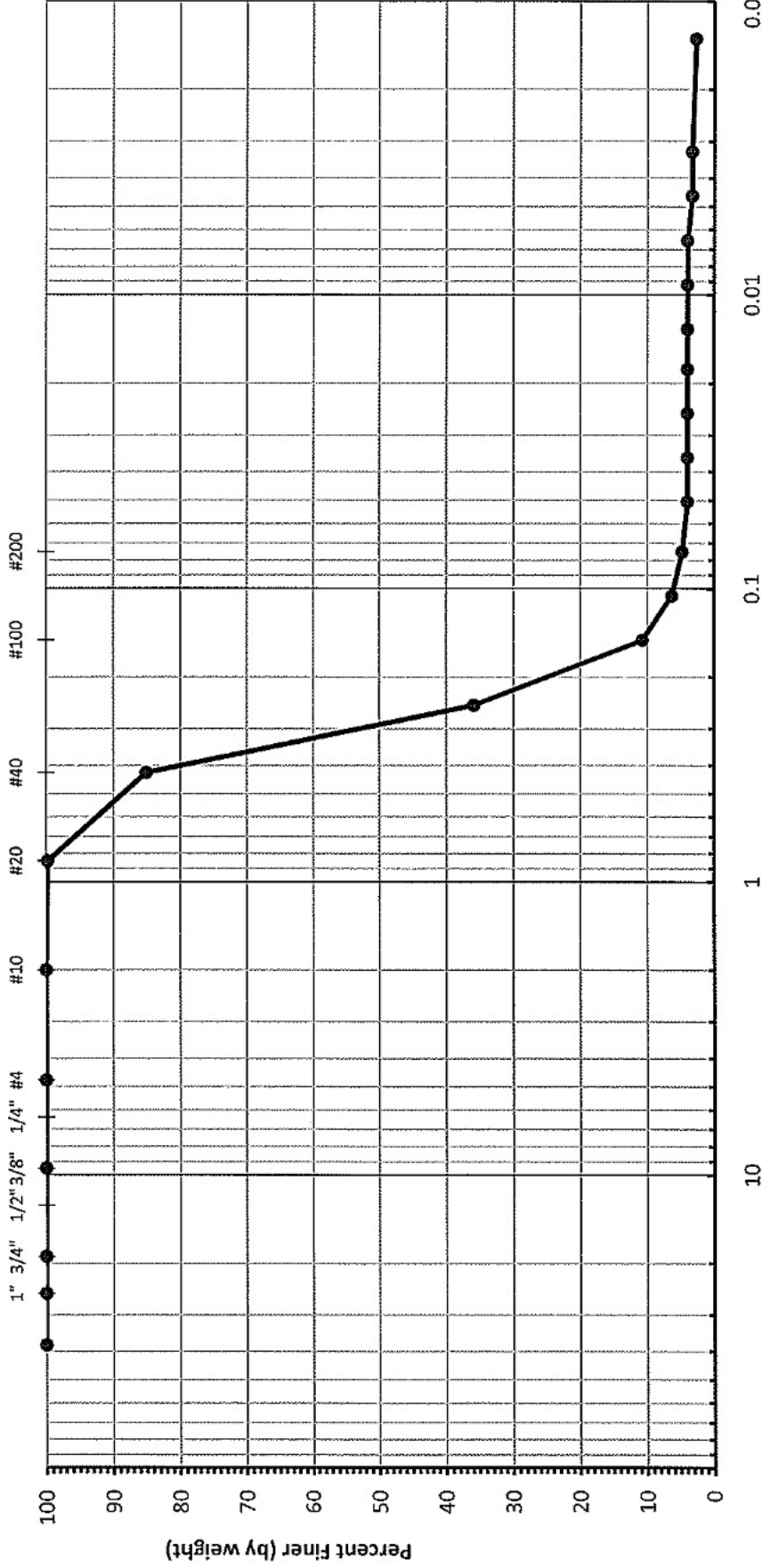


Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

# PARTICLE SIZE ANALYSIS

(ASTM D422)

GRAVEL		SAND			SILT	CLAY
COARSE	FINE	COARSE	MEDIUM	FINE		



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-2	Light gray sand				0.0	95.2	1.3	3.4
	DEPTH (FT)	78-80							

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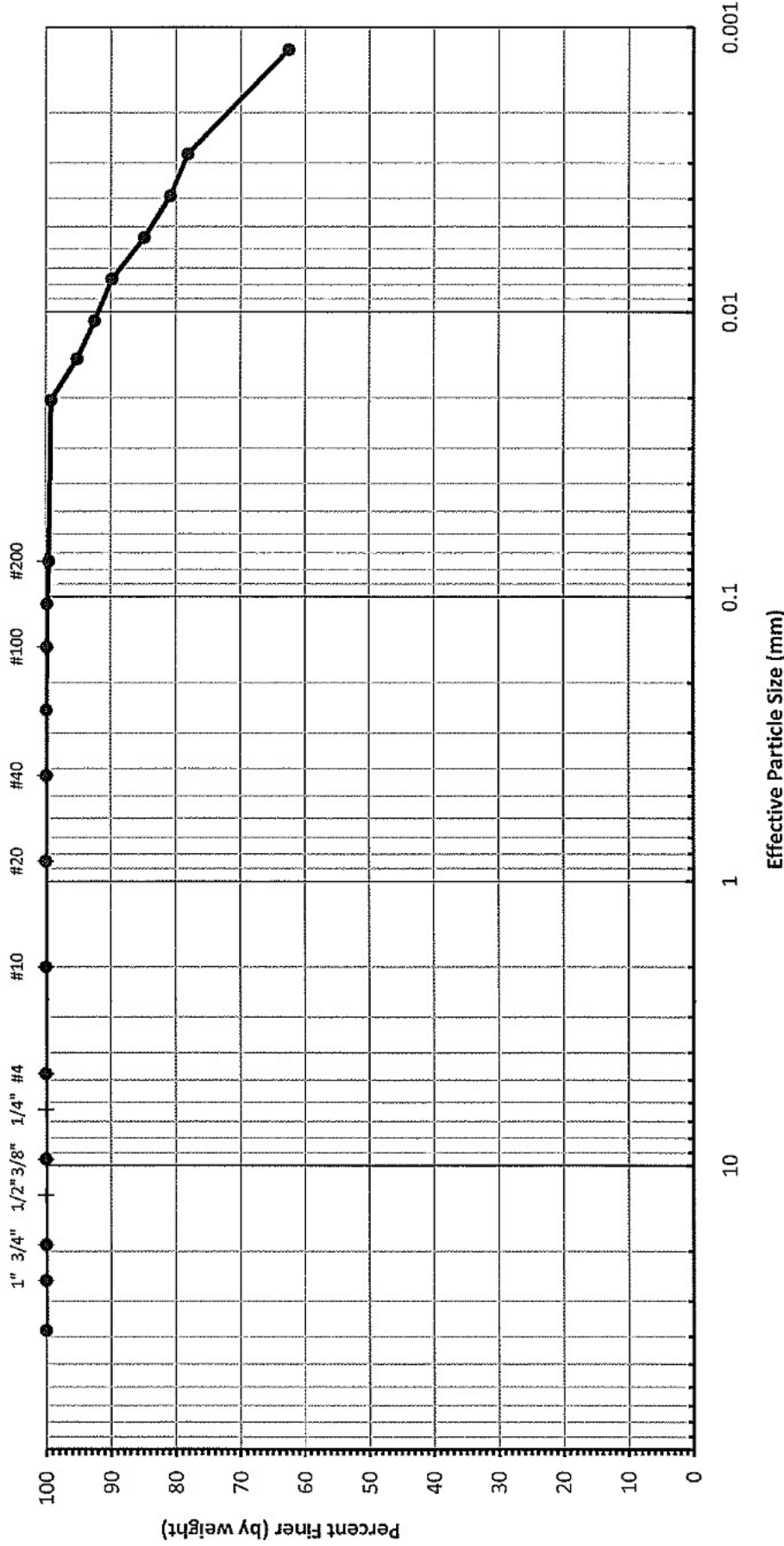




Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				%			
BORING	B-3	DEPTH (FT)	Gray and brown clay			GRAVEL	SAND	SILT	CLAY
		16-18				0.0	0.5	15.9	83.6

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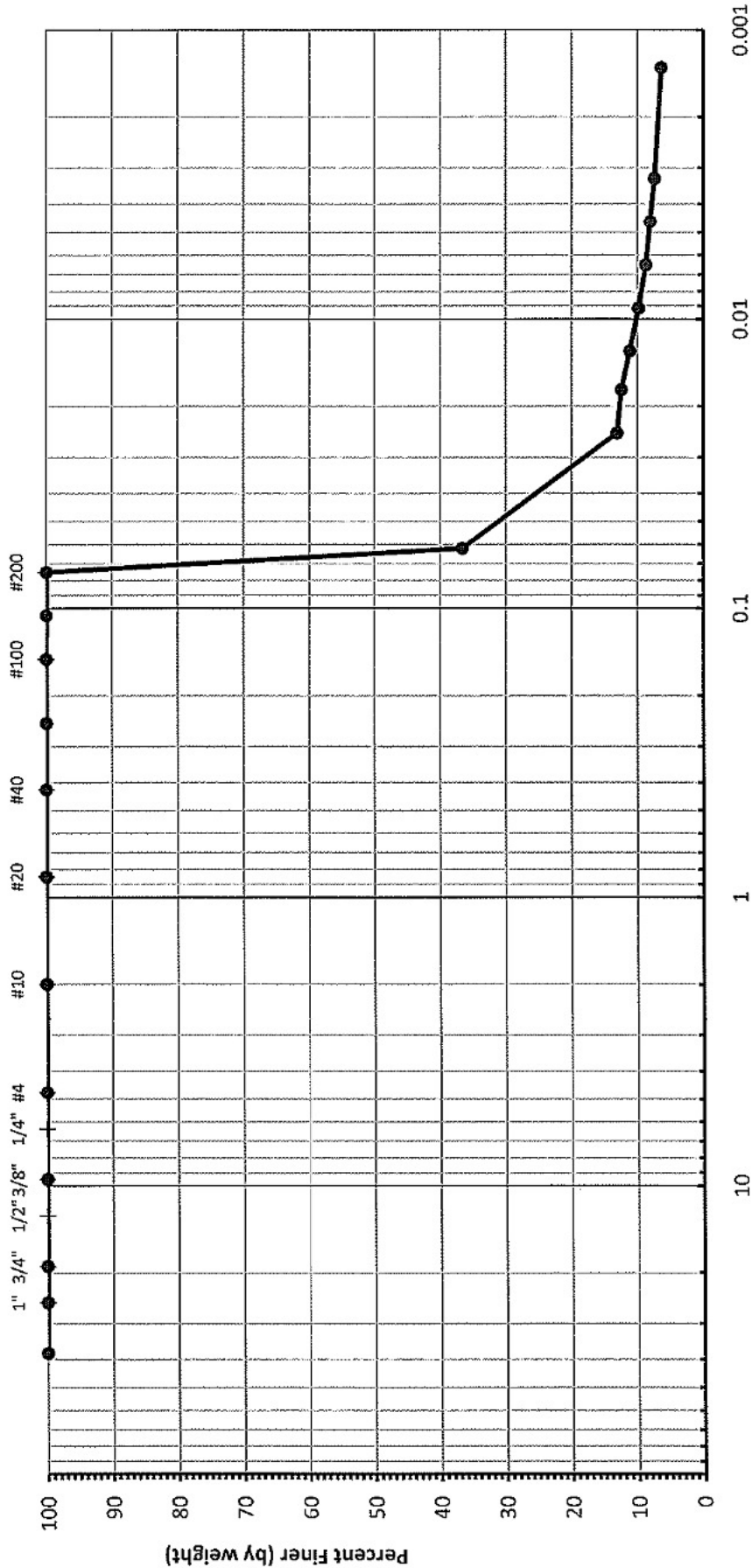




Client: Michael Pisani & Associates  
 Project: East White Lake  
 AAI Project No. 10-3897

# PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-3	Dark gray silt with trace clay				0.0	0.1	91.8	8.2
	DEPTH (FT)								
	40-42								

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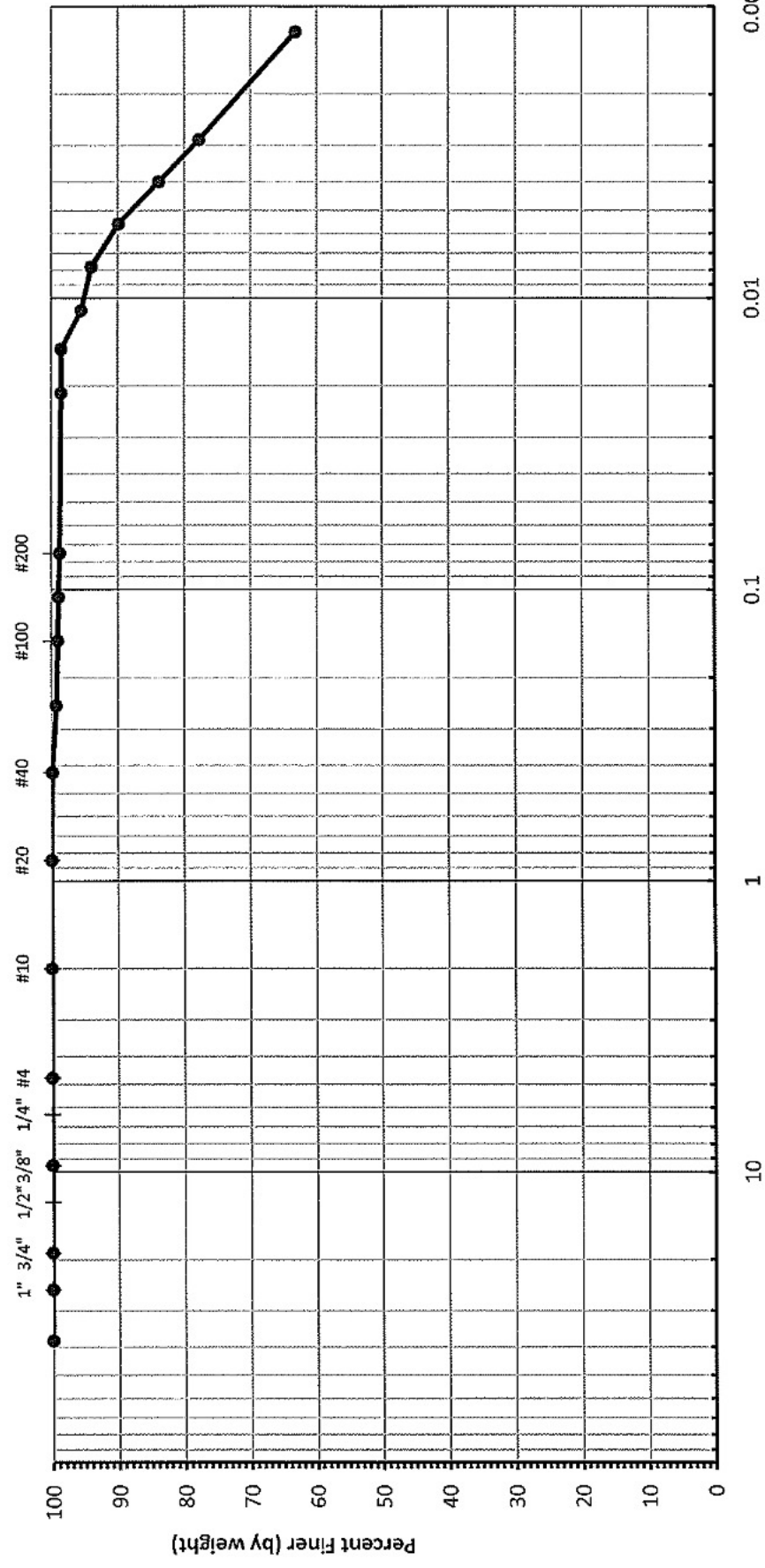
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Client: Michael Pisani & Associates  
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## PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% CLAY		
BORING	SB-3	Gray clay with trace sand				% GRAVEL	% SILT	% CLAY
DEPTH (FT)	49-49.5	% GRAVEL	% SAND	% SILT	% CLAY	0.0	11.0	87.7

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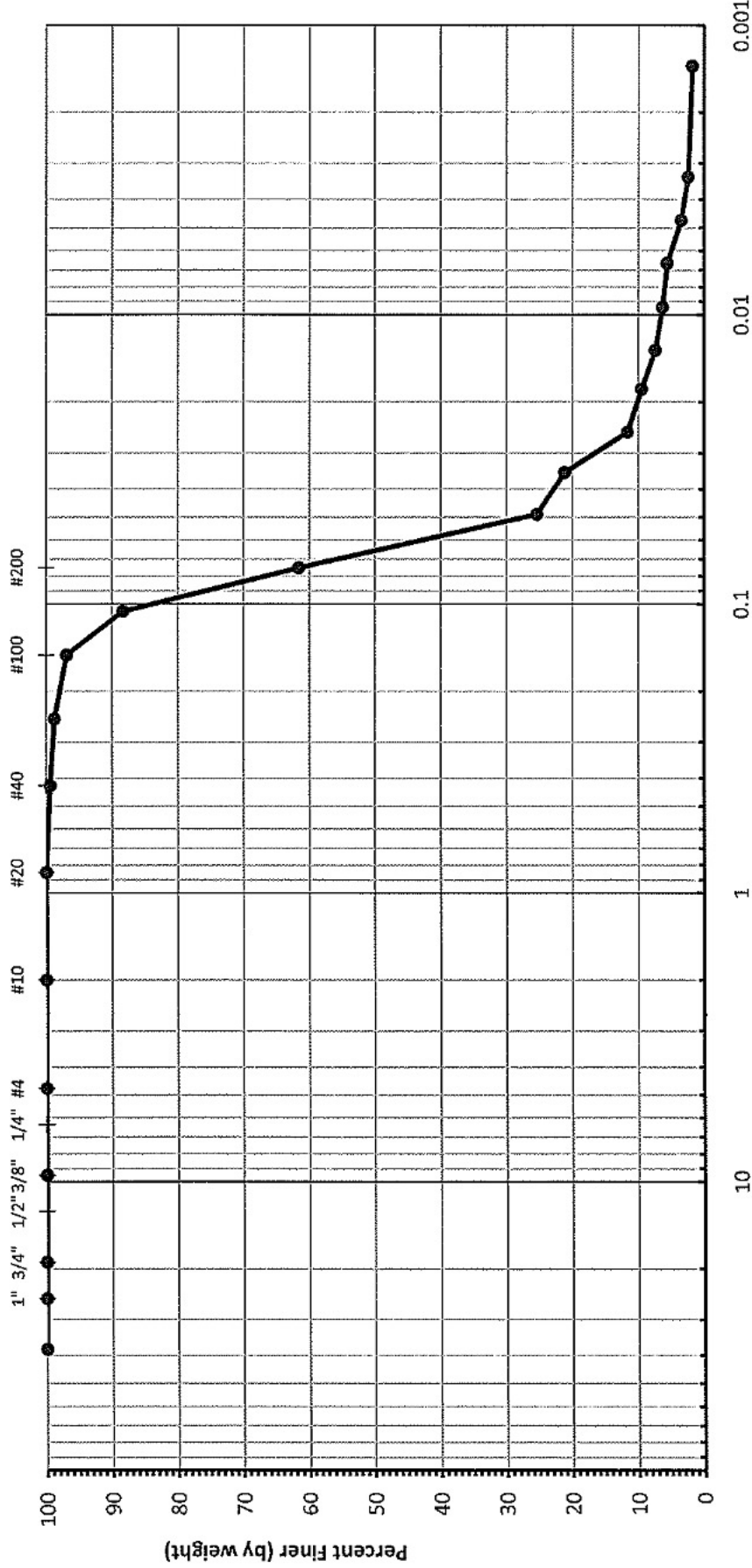
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Client: Michael Pisani & Associates  
 Project: East White Lake  
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### PARTICLE SIZE ANALYSIS (ASTM D422)

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



Effective Particle Size (mm)

SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				PERCENTAGE							
BORING	SB-3	Brown sandy silt with trace clay				% GRAVEL	0.0	% SAND	38.4	% SILT	57.8	% CLAY	3.8
		DEPTH (FT)											
		53-54											

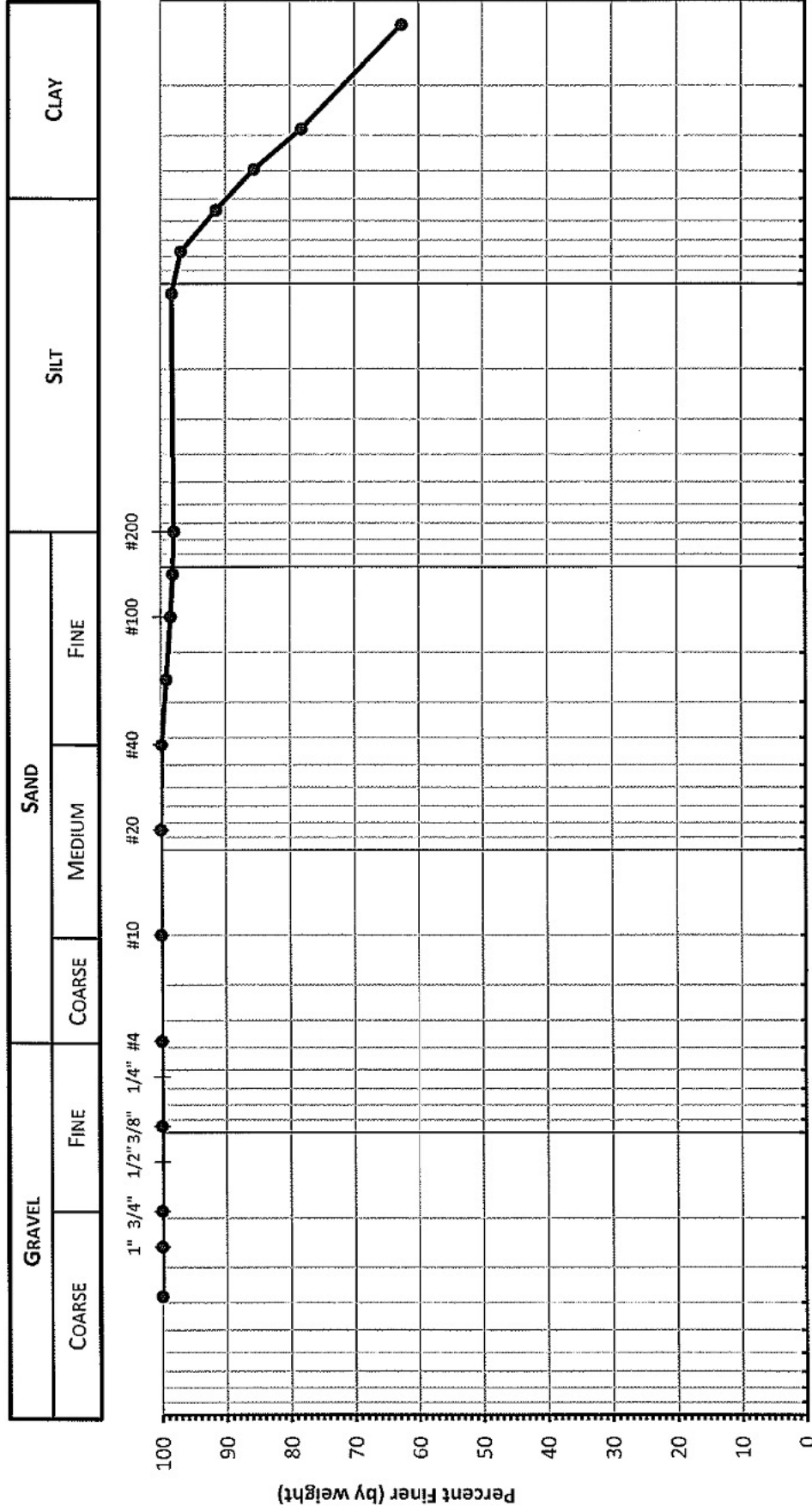
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 Project: East White Lake  
 AAI Project No. 10-3897

### PARTICLE SIZE ANALYSIS (ASTM D422)



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION				% GRAVEL	% SAND	% SILT	% CLAY
BORING	SB-3	Gray clay				0.0	2.1	8.4	89.5
DEPTH (FT)		68-68.5							

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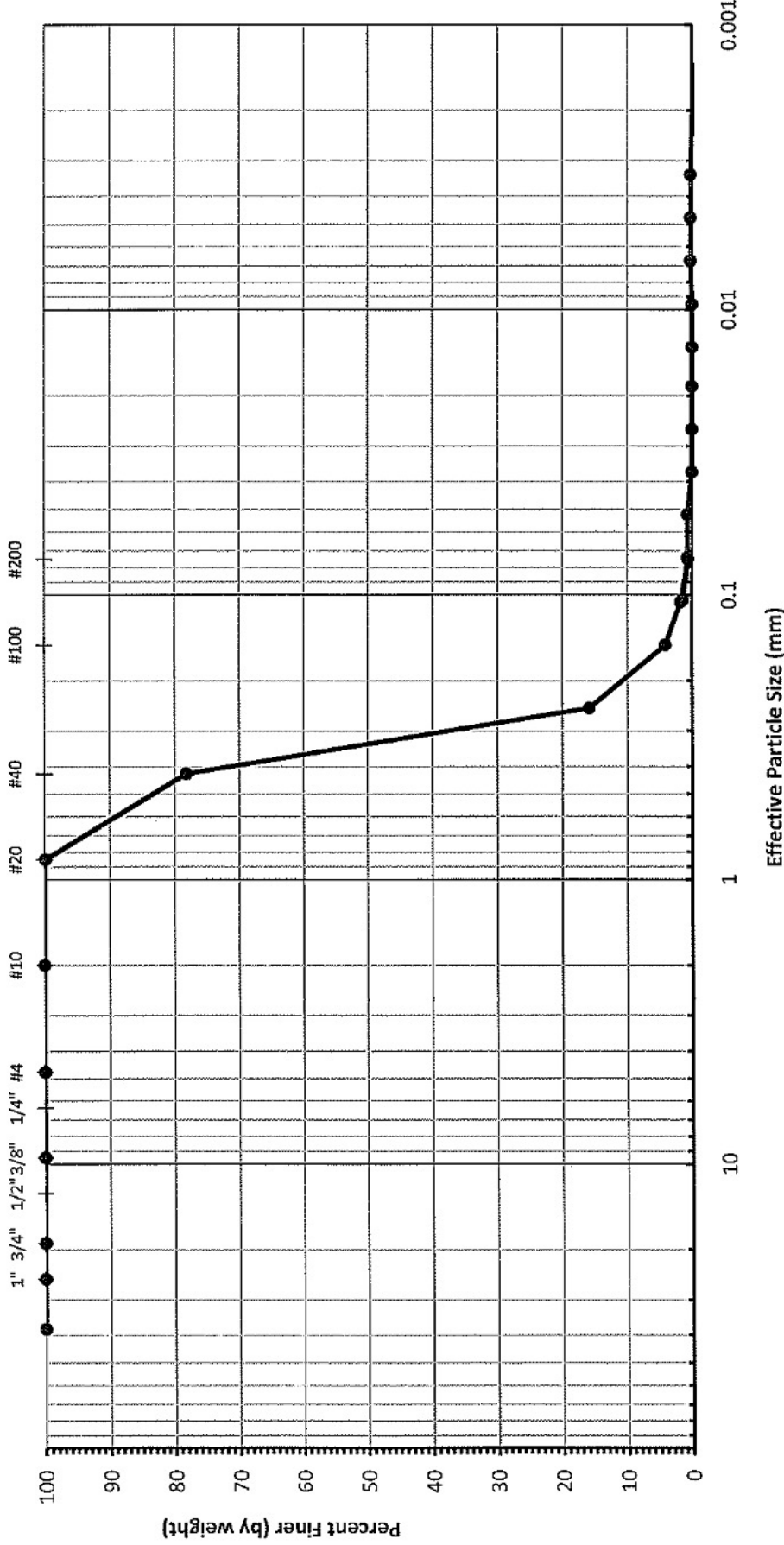
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**PARTICLE SIZE ANALYSIS**  
(ASTM D422)

Client: Michael Pisani & Associates  
Project: East White Lake  
AAI Project No. 10-3897

GRAVEL		SAND			SILT		CLAY
COARSE	FINE	COARSE	MEDIUM	FINE			



SAMPLE IDENTIFICATION		VISUAL IDENTIFICATION			
BORING	DEPTH (FT)	% GRAVEL	% SAND	% SILT	% CLAY
SB-3	80-82	0.0	99.4	0.4	0.2
		Gray sand			

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# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 06/07/2010

**GCAL Report** 210051426



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210051426

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

J Flag (Organics) - Indicates an estimated value. This flag is used when the data indicated the presence of an analyte meeting all the identification criteria for the method and the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RDL (reporting limit based on a low level calibration standard included in the initial calibration curve).

B flag (Inorganics) – This flag is used when the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RL (reporting limit based on a low level calibration standard included in the initial calibration curve or a low level check standard for ICP).

### **METALS**

In the SW-846 6010B analysis, the dissolved concentration for some metals may be slightly greater than the total concentration of the metal in some samples. This is attributed to separate aliquots of sample. It can be assumed that the metal is present in the dissolved state in these samples.

In the SW-846 6010B analysis for prep batch 431818, the MS recoveries are not applicable for Calcium, Iron, Magnesium, and Sodium because the sample concentration is greater than four times the spike concentration.

In the SW-846 6010B for prep batch 431819, the MS recoveries are not applicable for Calcium and Sodium because the sample concentration is greater than four times the spike concentration.

In the SW-846 7010 analysis for prep batch 431821, the Sample/Duplicate RPD for Arsenic is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

### **CONVENTIONALS**

In the Chloride analysis, samples 21005142601 (MW-4D), 21005142602 (MW-5D), 21005142603 (MW-6D), 21005142604 (MW-6S), 21005142605 (MW-1C (97-100)), 21005142607 (SB-1C (51-52)), and 21005142608 had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210051426**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.



# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142601	MW-4D	Water	05/12/2010 08:25	05/14/2010 14:30
21005142602	MW-5D	Water	05/12/2010 11:40	05/14/2010 14:30
21005142603	MW-6D	Water	05/12/2010 15:40	05/14/2010 14:30
21005142604	MW-6S	Water	05/12/2010 17:15	05/14/2010 14:30
21005142605	MW-1C (97-100)	Water	05/13/2010 11:40	05/14/2010 14:30
21005142606	SB-1C (46-48)	Solid	05/13/2010 08:20	05/14/2010 14:30
21005142607	SB-1C (51-52)	Solid	05/13/2010 08:53	05/14/2010 14:30
21005142608	SB-1C (53.5-54)	Solid	05/13/2010 09:10	05/14/2010 14:30
21005142609	SB-1C (54-56)	Solid	05/13/2010 09:14	05/14/2010 14:30
21005142610	SB-1C (58-60)	Solid	05/13/2010 09:37	05/14/2010 14:30

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142601	MW-4D	Water	05/12/2010 08:25	05/14/2010 14:30

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	447	10.0	1.6	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	328	1.0	0.17	mg/L CaCO3

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.62	0.010	0.00031	mg/L
7440-70-2	Calcium	112	0.10	0.028	mg/L
7439-89-6	Iron	5.84	0.10	0.0095	mg/L
7439-95-4	Magnesium	41.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.26	0.015	0.00057	mg/L
7440-09-7	Potassium	4.57	0.50	0.068	mg/L
7440-23-5	Sodium	199	1.00	0.059	mg/L

## SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0012B	0.010	0.00079	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0047B	0.010	0.00079	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1230	10.0	10.0	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.79	0.010	0.00031	mg/L
7440-70-2	Calcium	118	0.10	0.028	mg/L
7439-89-6	Iron	20.3	0.10	0.0095	mg/L
7439-95-4	Magnesium	44.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.45	0.015	0.00057	mg/L
7440-09-7	Potassium	6.18	0.50	0.068	mg/L
7440-23-5	Sodium	200	1.00	0.059	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142602	MW-5D	Water	05/12/2010 11:40	05/14/2010 14:30

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	944	20.0	3.2	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0099B	0.010	0.00079	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	364	1.0	0.17	mg/L CaCO3

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.09	0.010	0.00031	mg/L
7440-70-2	Calcium	140	0.10	0.028	mg/L
7439-89-6	Iron	5.16	0.10	0.0095	mg/L
7439-95-4	Magnesium	45.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.27	0.015	0.00057	mg/L
7440-09-7	Potassium	5.97	0.50	0.068	mg/L
7440-23-5	Sodium	454	1.00	0.059	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.32	0.010	0.00031	mg/L
7440-70-2	Calcium	143	0.10	0.028	mg/L
7439-89-6	Iron	33.0	0.10	0.0095	mg/L
7439-95-4	Magnesium	47.9	0.10	0.023	mg/L
7439-96-5	Manganese	0.73	0.015	0.00057	mg/L
7440-09-7	Potassium	8.23	0.50	0.068	mg/L
7440-23-5	Sodium	442	1.00	0.059	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2110	10.0	10.0	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142603	MW-6D	Water	05/12/2010 15:40	05/14/2010 14:30

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.31	0.010	0.00031	mg/L
7440-70-2	Calcium	89.4	0.10	0.028	mg/L
7439-89-6	Iron	20.3	0.10	0.0095	mg/L
7439-95-4	Magnesium	31.4	0.10	0.023	mg/L
7439-96-5	Manganese	0.33	0.015	0.00057	mg/L
7440-09-7	Potassium	7.01	0.50	0.068	mg/L
7440-23-5	Sodium	445	1.00	0.059	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1500	10.0	10.0	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0041B	0.010	0.00079	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	598	10.0	1.6	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.14	0.010	0.00031	mg/L
7440-70-2	Calcium	86.1	0.10	0.028	mg/L
7439-89-6	Iron	4.07	0.10	0.0095	mg/L
7439-95-4	Magnesium	28.9	0.10	0.023	mg/L
7439-96-5	Manganese	0.14	0.015	0.00057	mg/L
7440-09-7	Potassium	5.10	0.50	0.068	mg/L
7440-23-5	Sodium	435	1.00	0.059	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	588	1.0	0.17	mg/L CaCO3

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	37.8	5.0	1.4	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142604	MW-6S	Water	05/12/2010 17:15	05/14/2010 14:30

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	474	1.0	0.17	mg/L CaCO3

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1590	10.0	10.0	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.99	0.010	0.00031	mg/L
7440-70-2	Calcium	95.7	0.10	0.028	mg/L
7439-89-6	Iron	7.75	0.10	0.0095	mg/L
7439-95-4	Magnesium	32.2	0.10	0.023	mg/L
7439-96-5	Manganese	0.21	0.015	0.00057	mg/L
7440-09-7	Potassium	5.52	0.50	0.068	mg/L
7440-23-5	Sodium	424	1.00	0.059	mg/L

## SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0016B	0.010	0.00079	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0025B	0.010	0.00079	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.10	0.010	0.00031	mg/L
7440-70-2	Calcium	97.0	0.10	0.028	mg/L
7439-89-6	Iron	19.7	0.10	0.0095	mg/L
7439-95-4	Magnesium	33.0	0.10	0.023	mg/L
7439-96-5	Manganese	0.36	0.015	0.00057	mg/L
7440-09-7	Potassium	6.60	0.50	0.068	mg/L
7440-23-5	Sodium	429	1.00	0.059	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	772	10.0	1.6	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142605	MW-1C (97-100)	Water	05/13/2010 11:40	05/14/2010 14:30

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.12	0.010	0.00031	mg/L
7440-70-2	Calcium	120	0.10	0.028	mg/L
7439-89-6	Iron	4.51	0.10	0.0095	mg/L
7439-95-4	Magnesium	42.7	0.10	0.023	mg/L
7439-96-5	Manganese	0.21	0.015	0.00057	mg/L
7440-09-7	Potassium	5.84	0.50	0.068	mg/L
7440-23-5	Sodium	467	1.00	0.059	mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	351	1.0	0.17	mg/L CaCO3

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.18	0.010	0.00031	mg/L
7440-70-2	Calcium	124	0.10	0.028	mg/L
7439-89-6	Iron	7.45	0.10	0.0095	mg/L
7439-95-4	Magnesium	43.8	0.10	0.023	mg/L
7439-96-5	Manganese	0.24	0.015	0.00057	mg/L
7440-09-7	Potassium	6.03	0.50	0.068	mg/L
7440-23-5	Sodium	494	1.00	0.059	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1000	20.0	3.2	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2150	10.0	10.0	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142606	SB-1C (46-48)	Solid	05/13/2010 08:20	05/14/2010 14:30

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	176	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142607	SB-1C (51-52)	Solid	05/13/2010 08:53	05/14/2010 14:30

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2380	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142608	SB-1C (53.5-54)	Solid	05/13/2010 09:10	05/14/2010 14:30

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3880	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142609	SB-1C (54-56)	Solid	05/13/2010 09:14	05/14/2010 14:30

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	232	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142610	SB-1C (58-60)	Solid	05/13/2010 09:37	05/14/2010 14:30

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	123	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142601	MW-4D	Water	05/12/2010 08:25	05/14/2010 14:30

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/23/2010 19:02	CLH	432496

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	92	78 - 130
1868-53-7	Dibromofluoromethane	.05	.049	mg/L	97	77 - 127
2037-26-5	Toluene d8	.05	.055	mg/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	109	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	05/27/2010 21:41	SMH	433025

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.6	13	mg/L	83	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 10:25	431820	SW-846 3020A Dissolved	1	05/31/2010 18:26	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0012B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 21:53	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.79</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142601	MW-4D	Water	05/12/2010 08:25	05/14/2010 14:30

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 21:53	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	118	0.10	0.028	mg/L
7439-89-6	Iron	20.3	0.10	0.0095	mg/L
7439-95-4	Magnesium	44.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.45	0.015	0.00057	mg/L
7440-09-7	Potassium	6.18	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	200	1.00	0.059	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 09:05	431819	SW-846 3010A Dissolved	1	05/19/2010 17:47	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.62	0.010	0.00031	mg/L
7440-70-2	Calcium	112	0.10	0.028	mg/L
7439-89-6	Iron	5.84	0.10	0.0095	mg/L
7439-95-4	Magnesium	41.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.26	0.015	0.00057	mg/L
7440-09-7	Potassium	4.57	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	199	1.00	0.059	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 08:45	431821	SW-846 3020A	1	05/31/2010 20:28	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0047B	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 17:20	DJH	431956

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1230	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142601	MW-4D	Water	05/12/2010 08:25	05/14/2010 14:30

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/25/2010 14:56	AEL	432689
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		447	10.0	1.6	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		328	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 12:36	JEM	432561
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142602	MW-5D	Water	05/12/2010 11:40	05/14/2010 14:30

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/23/2010 19:25	CLH	432496

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.05	mg/L	100	77 - 127
2037-26-5	Toluene d8	.05	.056	mg/L	111	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.053	mg/L	105	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	05/27/2010 23:37	SMH	433025

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.8	16.8	mg/L	106	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 10:25	431820	SW-846 3020A Dissolved	1	05/31/2010 18:32	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:24	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.32</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142602	MW-5D	Water	05/12/2010 11:40	05/14/2010 14:30

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:24	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	143	0.10	0.028	mg/L
7439-89-6	Iron	33.0	0.10	0.0095	mg/L
7439-95-4	Magnesium	47.9	0.10	0.023	mg/L
7439-96-5	Manganese	0.73	0.015	0.00057	mg/L
7440-09-7	Potassium	8.23	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	442	1.00	0.059	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 09:05	431819	SW-846 3010A Dissolved	1	05/19/2010 18:19	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.09	0.010	0.00031	mg/L
7440-70-2	Calcium	140	0.10	0.028	mg/L
7439-89-6	Iron	5.16	0.10	0.0095	mg/L
7439-95-4	Magnesium	45.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.27	0.015	0.00057	mg/L
7440-09-7	Potassium	5.97	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	454	1.00	0.059	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 08:45	431821	SW-846 3020A	1	05/31/2010 20:34	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0099B	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 17:20	DJH	431956

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2110	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142602	MW-5D	Water	05/12/2010 11:40	05/14/2010 14:30

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/25/2010 14:57	AEL	432689
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		944	20.0	3.2	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		364	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 12:39	JEM	432561
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142603	MW-6D	Water	05/12/2010 15:40	05/14/2010 14:30

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/23/2010 21:02	CLH	432496

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.043	mg/L	87	78 - 130
1868-53-7	Dibromofluoromethane	.05	.049	mg/L	98	77 - 127
2037-26-5	Toluene d8	.05	.054	mg/L	107	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	05/28/2010 00:36	SMH	433025

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.2	10.9	mg/L	67	60 - 140

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 10:25	431820	SW-846 3020A Dissolved	1	05/31/2010 18:38	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:31	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.31</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142603	MW-6D	Water	05/12/2010 15:40	05/14/2010 14:30

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:31	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	89.4	0.10	0.028	mg/L
7439-89-6	Iron	20.3	0.10	0.0095	mg/L
7439-95-4	Magnesium	31.4	0.10	0.023	mg/L
7439-96-5	Manganese	0.33	0.015	0.00057	mg/L
7440-09-7	Potassium	7.01	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	445	1.00	0.059	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 09:05	431819	SW-846 3010A Dissolved	1	05/19/2010 18:27	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.14	0.010	0.00031	mg/L
7440-70-2	Calcium	86.1	0.10	0.028	mg/L
7439-89-6	Iron	4.07	0.10	0.0095	mg/L
7439-95-4	Magnesium	28.9	0.10	0.023	mg/L
7439-96-5	Manganese	0.14	0.015	0.00057	mg/L
7440-09-7	Potassium	5.10	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	435	1.00	0.059	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 08:45	431821	SW-846 3020A	1	05/31/2010 20:41	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0041B	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 17:20	DJH	431956

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1500	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142603	MW-6D	Water	05/12/2010 15:40	05/14/2010 14:30

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/25/2010 14:58	AEL	432689
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		598	10.0	1.6	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		588	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 12:40	JEM	432561
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		37.8	5.0	1.4	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142604	MW-6S	Water	05/12/2010 17:15	05/14/2010 14:30

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/23/2010 21:24	CLH	432496

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.049	mg/L	98	77 - 127
2037-26-5	Toluene d8	.05	.055	mg/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.052	mg/L	105	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	05/28/2010 01:33	SMH	433025

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	17.2	13.5	mg/L	79	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 10:25	431820	SW-846 3020A Dissolved	1	05/31/2010 17:55	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0016B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:37	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.10</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142604	MW-6S	Water	05/12/2010 17:15	05/14/2010 14:30

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:37	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	97.0	0.10	0.028	mg/L
7439-89-6	Iron	19.7	0.10	0.0095	mg/L
7439-95-4	Magnesium	33.0	0.10	0.023	mg/L
7439-96-5	Manganese	0.36	0.015	0.00057	mg/L
7440-09-7	Potassium	6.60	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	429	1.00	0.059	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 09:05	431819	SW-846 3010A Dissolved	1	05/19/2010 18:33	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.99	0.010	0.00031	mg/L
7440-70-2	Calcium	95.7	0.10	0.028	mg/L
7439-89-6	Iron	7.75	0.10	0.0095	mg/L
7439-95-4	Magnesium	32.2	0.10	0.023	mg/L
7439-96-5	Manganese	0.21	0.015	0.00057	mg/L
7440-09-7	Potassium	5.52	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	424	1.00	0.059	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 08:45	431821	SW-846 3020A	1	06/01/2010 18:58	CLB	433288

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0025B	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 17:20	DJH	431956

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	1590	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142604	MW-6S	Water	05/12/2010 17:15	05/14/2010 14:30

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/25/2010 14:59	AEL	432689
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		772	10.0	1.6	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		474	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 12:41	JEM	432561
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142605	MW-1C (97-100)	Water	05/13/2010 11:40	05/14/2010 14:30

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 10:25	431820	SW-846 3020A Dissolved	1	05/31/2010 18:56	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 07:05	431818	SW-846 3010A	1	05/19/2010 22:44	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.18	0.010	0.00031	mg/L
7440-70-2	Calcium	124	0.10	0.028	mg/L
7439-89-6	Iron	7.45	0.10	0.0095	mg/L
7439-95-4	Magnesium	43.8	0.10	0.023	mg/L
7439-96-5	Manganese	0.24	0.015	0.00057	mg/L
7440-09-7	Potassium	6.03	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	494	1.00	0.059	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 09:05	431819	SW-846 3010A Dissolved	1	05/19/2010 18:40	TEA	432290

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.12	0.010	0.00031	mg/L
7440-70-2	Calcium	120	0.10	0.028	mg/L
7439-89-6	Iron	4.51	0.10	0.0095	mg/L
7439-95-4	Magnesium	42.7	0.10	0.023	mg/L
7439-96-5	Manganese	0.21	0.015	0.00057	mg/L
7440-09-7	Potassium	5.84	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L
7440-23-5	Sodium	467	1.00	0.059	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/16/2010 08:45	431821	SW-846 3020A	1	05/31/2010 20:47	CLB	433286

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

<b>GCAL ID</b> 21005142605	<b>Client ID</b> MW-1C (97-100)	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/13/2010 11:40	<b>Receive Date/Time</b> 05/14/2010 14:30
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### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 17:20	DJH	431956
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		2150	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/25/2010 15:00	AEL	432689
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		1000	20.0	3.2	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		351	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/24/2010 12:42	JEM	432561
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142606	SB-1C (46-48)	Solid	05/13/2010 08:20	05/14/2010 14:30

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:22	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	176	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142607	SB-1C (51-52)	Solid	05/13/2010 08:53	05/14/2010 14:30

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	5	05/25/2010 16:53	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2380	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142608	SB-1C (53.5-54)	Solid	05/13/2010 09:10	05/14/2010 14:30

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	5	05/25/2010 16:36	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3880	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142609	SB-1C (54-56)	Solid	05/13/2010 09:14	05/14/2010 14:30

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:27	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	232	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005142610	SB-1C (58-60)	Solid	05/13/2010 09:37	05/14/2010 14:30

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:28	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	123	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

# GC/MS Volatiles Quality Control Summary

Analytical Batch 432496 Prep Batch N/A		Client ID MB432496 GCAL ID 834587 Sample Type Method Blank Analytical Date 05/23/2010 12:49 Matrix Water			LCS432496 834588 LCS 05/23/2010 11:26 Water			LCSD432496 834589 LCSD 05/23/2010 11:49 Water			
<b>SW-846 8260B</b>		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.058	115	74 - 126	0.054	107	7	30
1330-20-7	Xylene (total)	ND	0.01	0.150	0.152	101	74 - 127	0.145	97	5	30
71-43-2	Benzene	ND	0.005	0.050	0.059	117	70 - 129	0.055	109	7	20
108-88-3	Toluene	ND	0.005	0.050	0.051	101	72 - 120	0.049	99	4	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	45.4	91	50	48.4	97	78 - 130	49.2	98		
1868-53-7	Dibromofluoromethane	48.8	98	50	48.3	97	77 - 127	48.9	98		
2037-26-5	Toluene d8	53	106	50	46.1	92	76 - 134	46.5	93		
17060-07-0	1,2-Dichloroethane-d4	52.4	105	50	53.1	106	71 - 127	51.7	103		

# General Chromatography Quality Control Summary

Analytical Batch 432977 Prep Batch 432124 Prep Method TNRCC 1006/LA 1006		Client ID MB432124 GCAL ID 832979 Sample Type Method Blank Prep Date 05/21/2010 13:00 Analytical Date 05/26/2010 15:05 Matrix Water		LCS432124 832980 LCS 05/21/2010 13:00 05/28/2010 05:23 Water			LCSD432124 832981 LCSD 05/21/2010 13:00 05/26/2010 17:22 Water				
LA1006 Hydrocarbons by Range		Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150								
GCSV-02-10	Aliphatic >C8-C10	ND	0.150								
GCSV-02-11	Aliphatic >C10-C12	ND	0.150								
GCSV-02-12	Aliphatic >C12-C16	ND	0.150								
GCSV-02-31	Aliphatic >C16-C35	ND	0.150								
GCSV-02-14	Aromatic >C8-C10	ND	0.150								
GCSV-02-15	Aromatic >C10-C12	ND	0.150								
GCSV-02-16	Aromatic >C12-C16	ND	0.150								
GCSV-02-17	Aromatic >C16-C21	ND	0.150								
GCSV-05-18	Aromatic >C21-C35	ND	0.150								
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	62.3	58.1	93	60 - 140	59.9	90	3	20
<b>Surrogate</b>											
84-15-1	o-Terphenyl	11200	67	15600	10200	65	60 - 140	11300	68		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433286 <b>Prep Batch</b> 431820 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431820 <b>GCAL ID</b> 831596 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/16/2010 10:25 <b>Analytical Date</b> 05/31/2010 17:43 <b>Matrix</b> Water	LCS431820 831597 LCS 05/16/2010 10:25 05/31/2010 17:49 Water			
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.010	0.040	0.035	86	80 - 120

<b>Analytical Batch</b> 433286 <b>Prep Batch</b> 431820 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MW-6S <b>GCAL ID</b> 21005142604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/16/2010 08:45 <b>Analytical Date</b> 05/31/2010 19:39 <b>Matrix</b> Water	831329MS 831599 MS 05/16/2010 10:25 05/31/2010 18:08 Water			
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	0.0016 0.010	0.040	0.038	90	75 - 125

<b>Analytical Batch</b> 433286 <b>Prep Batch</b> 431820 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MW-6S <b>GCAL ID</b> 21005142604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/16/2010 08:45 <b>Analytical Date</b> 05/31/2010 19:39 <b>Matrix</b> Water	831329DUP 831598 DUP 05/16/2010 10:25 05/31/2010 18:01 Water		
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.0016 0.010	0.0014	13	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432290	<b>Client ID</b> MB431818	LCS431818					
<b>Prep Batch</b> 431818	<b>GCAL ID</b> 831588	831589					
<b>Prep Method</b> SW-846 3010A	<b>Sample Type</b> Method Blank	LCS					
	<b>Prep Date</b> 05/16/2010 07:05	05/16/2010 07:05					
	<b>Analytical Date</b> 05/19/2010 20:04	05/19/2010 20:11					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.00043B	0.010	0.50	0.47	95	80 - 120
7440-70-2	Calcium	0.063B	0.10	5.00	4.72	94	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.68	94	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	4.76	95	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.48	96	80 - 120
7440-09-7	Potassium	0.15B	0.50	10.0	9.84	98	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.47	95	80 - 120
7440-23-5	Sodium	ND	1.00	20.0	21.0	105	80 - 120

<b>Analytical Batch</b> 432290	<b>Client ID</b> MW-4D	831326MS					
<b>Prep Batch</b> 431818	<b>GCAL ID</b> 21005142601	831591					
<b>Prep Method</b> SW-846 3010A	<b>Sample Type</b> SAMPLE	MS					
	<b>Prep Date</b> 05/16/2010 07:05	05/16/2010 07:05					
	<b>Analytical Date</b> 05/19/2010 21:53	05/19/2010 22:05					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.79	0.010	0.50	1.24	89	75 - 125
7440-70-2	Calcium	118	0.10	5.00	121	49*	75 - 125
7439-89-6	Iron	20.3	0.10	5.00	27.0	135*	75 - 125
7439-95-4	Magnesium	44.3	0.10	5.00	48.4	81	75 - 125
7439-96-5	Manganese	0.45	0.015	0.50	0.92	95	75 - 125
7440-09-7	Potassium	6.18	0.50	10.0	18.2	120	75 - 125
7782-49-2	Selenium	0.0	0.040	0.50	0.46	92	75 - 125
7440-23-5	Sodium	200	1.00	20.0	214	71*	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432290	<b>Client ID</b> MW-4D	831326DUP				
<b>Prep Batch</b> 431818	<b>GCAL ID</b> 21005142601	831590				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/16/2010 07:05	05/16/2010 07:05				
	<b>Analytical Date</b> 05/19/2010 21:53	05/19/2010 21:59				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD</b>	
		<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
7440-39-3	Barium	0.79	0.010	0.77	3	20
7440-70-2	Calcium	118	0.10	115	3	20
7439-89-6	Iron	20.3	0.10	17.5	15	20
7439-95-4	Magnesium	44.3	0.10	43.3	2	20
7439-96-5	Manganese	0.45	0.015	0.41	9	20
7440-09-7	Potassium	6.18	0.50	5.49	12	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20
7440-23-5	Sodium	200	1.00	197	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432290	<b>Client ID</b> MB431819	LCS431819					
<b>Prep Batch</b> 431819	<b>GCAL ID</b> 831592	831593					
<b>Prep Method</b> SW-846	<b>Sample Type</b> Method Blank	LCS					
3010A	<b>Prep Date</b> 05/16/2010 09:05	05/16/2010 09:05					
Dissolved	<b>Analytical Date</b> 05/19/2010 17:20	05/19/2010 17:27					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.46	92	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.57	91	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.52	90	80 - 120
7439-95-4	Magnesium	0.060B	0.10	5.00	4.57	91	80 - 120
7439-96-5	Manganese	0.00099B	0.015	0.50	0.46	92	80 - 120
7440-09-7	Potassium	ND	0.50	10.0	9.60	96	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.45	89	80 - 120
7440-23-5	Sodium	ND	1.00	20.0	19.4	97	80 - 120

<b>Analytical Batch</b> 432290	<b>Client ID</b> MW-4D	831326MS					
<b>Prep Batch</b> 431819	<b>GCAL ID</b> 21005142601	831595					
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	MS					
3010A	<b>Prep Date</b> 05/16/2010 09:05	05/16/2010 09:05					
Dissolved	<b>Analytical Date</b> 05/19/2010 17:47	05/19/2010 18:00					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.62	0.010	0.50	1.07	89	75 - 125
7440-70-2	Calcium	112	0.10	5.00	115	69*	75 - 125
7439-89-6	Iron	5.84	0.10	5.00	10.6	95	75 - 125
7439-95-4	Magnesium	41.3	0.10	5.00	45.7	89	75 - 125
7439-96-5	Manganese	0.26	0.015	0.50	0.72	92	75 - 125
7440-09-7	Potassium	4.57	0.50	10.0	15.9	114	75 - 125
7782-49-2	Selenium	0.0	0.040	0.50	0.47	94	75 - 125
7440-23-5	Sodium	199	1.00	20.0	215	79	75 - 125



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432290	<b>Client ID</b> MW-4D	831326DUP				
<b>Prep Batch</b> 431819	<b>GCAL ID</b> 21005142601	831594				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/16/2010 09:05	05/16/2010 09:05				
Dissolved	<b>Analytical Date</b> 05/19/2010 17:47	05/19/2010 17:53				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-39-3	Barium	0.62	0.010	0.64	3	20
7440-70-2	Calcium	112	0.10	112	0	20
7439-89-6	Iron	5.84	0.10	5.93	2	20
7439-95-4	Magnesium	41.3	0.10	42.1	2	20
7439-96-5	Manganese	0.26	0.015	0.26	0	20
7440-09-7	Potassium	4.57	0.50	4.62	1	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20
7440-23-5	Sodium	199	1.00	200	0.5	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 433286 <b>Prep Batch</b> 431821 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431821 <b>GCAL ID</b> 831600 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/16/2010 08:45 <b>Analytical Date</b> 06/01/2010 18:52 <b>Matrix</b> Water	LCS431821 831601 LCS 05/16/2010 08:45 05/31/2010 19:33 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.034	<b>% R</b> 86	<b>Control Limits % R</b> 80 - 120	
7440-38-2	Arsenic	ND	0.010	0.040	0.034	86	80 - 120

<b>Analytical Batch</b> 433286 <b>Prep Batch</b> 431821 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MW-6S <b>GCAL ID</b> 21005142604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/16/2010 08:45 <b>Analytical Date</b> 06/01/2010 18:58 <b>Matrix</b> Water	831329MS 831603 MS 05/16/2010 08:45 05/31/2010 19:52 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0016 <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.041	<b>% R</b> 99	<b>Control Limits % R</b> 75 - 125	
7440-38-2	Arsenic	0.0016	0.010	0.040	0.041	99	75 - 125

<b>Analytical Batch</b> 433286 <b>Prep Batch</b> 431821 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MW-6S <b>GCAL ID</b> 21005142604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/16/2010 08:45 <b>Analytical Date</b> 06/01/2010 18:58 <b>Matrix</b> Water	831329DUP 831602 DUP 05/16/2010 08:45 05/31/2010 19:45 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0016 <b>RDL</b> 0.010	<b>Result</b> 0.0043	<b>RPD</b> 92*	<b>RPD Limit</b> 20	
7440-38-2	Arsenic	0.0016	0.010	0.0043	92*	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431956 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431956 <b>GCAL ID</b> 832065 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/17/2010 17:20 <b>Matrix</b> Water	<b>LCS431956</b> 832066 LCS 05/17/2010 17:20 Water				
<b>SM 2540C TDS</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	1020	102 80 - 120

<b>Analytical Batch</b> 431956 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-4D <b>GCAL ID</b> 21005142601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 17:20 <b>Matrix</b> Water	<b>831326DUP</b> 832067 DUP 05/17/2010 17:20 Water			
<b>SM 2540C TDS</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	1230	10.0	1270	3.2 5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432689 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432689 <b>GCAL ID</b> 835503 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/25/2010 14:47 <b>Matrix</b> Water	LCS432689 835504 LCS 05/25/2010 14:48 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
16887-00-6 Chloride	0.31B 1.0	60.0 55.2 92 80 - 120

<b>Analytical Batch</b> 432689 <b>Prep Batch</b> N/A	<b>Client ID</b> B-51 <b>GCAL ID</b> 21005135301 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 14:49 <b>Matrix</b> Water	830627MS 835505 MS 05/25/2010 14:49 Water	830627MSD 835506 MSD 05/25/2010 14:52 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	126 10.0	600 737 102 75 - 125	749 104 2 25

<b>Analytical Batch</b> 432689 <b>Prep Batch</b> N/A	<b>Client ID</b> B78 <b>GCAL ID</b> 21005190201 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 15:07 <b>Matrix</b> Water	832859MS 835507 MS 05/25/2010 15:08 Water	832859MSD 835508 MSD 05/25/2010 15:09 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	97.7 5.0	300 422 108 75 - 125	419 107 0.7 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432724 <b>GCAL ID</b> 835617 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:09 <b>Matrix</b> Solid	LCS432724 835618 LCS 05/24/2010 15:00 05/25/2010 16:10 Solid				
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6 Chloride	2.48B	10.0	600	594	99	80 - 120

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-BK-06 <b>GCAL ID</b> 21005140201 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:32 <b>Matrix</b> Solid	830815MS 835619 MS 05/24/2010 15:00 05/25/2010 16:33 Solid	830815MSD 835620 MSD 05/24/2010 15:00 05/25/2010 16:34 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	1140	50.0	3000	4530	113	75 - 125	4520	113	0.2	25

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-1C (46-48) <b>GCAL ID</b> 21005142606 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:22 <b>Matrix</b> Solid	831331MS 835621 MS 05/24/2010 15:00 05/25/2010 16:23 Solid	831331MSD 835622 MSD 05/24/2010 15:00 05/25/2010 16:24 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	176	10.0	600	867	115	75 - 125	833	110	4	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431955 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 15:05 <b>Matrix</b> Water	829142DUP 832064 DUP 05/17/2010 15:05 Water
<b>SM 2320B Carbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	60 1.0	60.8 1 11
T-005-C Carbonate Alkalinity	0.00 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432561 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432561 <b>GCAL ID</b> 834857 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/24/2010 12:33 <b>Matrix</b> Water	LCS432561 834858 LCS 05/24/2010 12:33 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> 20.0 <b>Result</b> 21.5 <b>% R</b> 108 <b>Control Limits % R</b> 80 - 120
14808-79-8 Sulfate	ND 5.0	20.0 21.5 108 80 - 120

<b>Analytical Batch</b> 432561 <b>Prep Batch</b> N/A	<b>Client ID</b> LCMW8W01P <b>GCAL ID</b> 21005184601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/24/2010 13:02 <b>Matrix</b> Water	LCMW8W01MS 21005184602 MS 05/24/2010 13:02 Water	LCMW8W01MSD 21005184603 MSD 05/24/2010 13:03 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> 20.0 <b>Result</b> 17.4 <b>% R</b> 87 <b>Control Limits % R</b> 75 - 125	<b>Result</b> 16.9 <b>% R</b> 84 <b>RPD</b> 3 <b>RPD Limit</b> 25
14808-79-8 Sulfate	0.00 5.0	20.0 17.4 87 75 - 125	16.9 84 3 25

<b>Analytical Batch</b> 432561 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-4D <b>GCAL ID</b> 21005142601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/24/2010 12:36 <b>Matrix</b> Water	831326MS 834859 MS 05/24/2010 12:36 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> 20.0 <b>Result</b> 20.9 <b>% R</b> 105 <b>Control Limits % R</b> 75 - 125
14808-79-8 Sulfate	0.00 5.0	20.0 20.9 105 75 - 125



GULF COAST ANALYTICAL LABORATORIES, INC.  
 7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
 Phone 225.769.4900 • Fax 225.767.5717

**CHAIN OF CUSTODY RECORD**

Lab use only  
 Pissani  
 Client Name  
 210051426  
 Workorder #  
 4271  
 Client #  
 5-25-10  
 Due Date

**Report to:**  
 Client: M.P. [Signature]  
 Address: 1122 Baydars, Suite 1430  
 New Orleans, LA 70163  
 Contact: J. Miller  
 Phone: 504.580.2168  
 Fax: [Blank]

**Bill to:**  
 Client: SAME

**Preservatives:**  
 HCL HNO3  
 HCL HNO3  
 HCL HNO3  
 HCL HNO3

P.O. Number	Project Name/Number	Sample Description	Sample			No. Containers	Analytical Requests & Method	Lab use only:	Lab ID
			Date	Time (2400)	g				
07-10	East White Lake VPSA	MW-40	X			3	Asbestos by AM*		1
		MW-50	X			3	Asbestos by AM*		2
		MW-60	X			3	Asbestos by AM*		3
		MW-65	X			3	Asbestos by AM*		4
		MW-1C 97-100	X			3	Asbestos by AM*		5
S 5-13-0200		SB-1C 46-98	X			1	Asbestos by AM*		6
S 5-13-0203		SB-1C 51-52	X			1	Asbestos by AM*		7
S 5-13-0210		SB-1C 53.5-54	X			1	Asbestos by AM*		8
S 5-13-0214		SB-1C 54-56	X			1	Asbestos by AM*		9
S 5-13-0217		SB-1C 58-60	X			1	Asbestos by AM*		10

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

**Requisitioned by:** [Signature] **Received by:** [Signature]

**Revised by:** [Signature] **Time:** 5/14/02

**Revised by:** [Signature] **Time:** 5/14/02

**Revised by:** [Signature] **Time:** 5/14/02

**Note:** Please call J. Miller to confirm parameters list & Method for potential additional soil for these samples. You agree to the terms and conditions contained in our most recent schedule of services. **additional analysis**

Matrix: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag  
 We cannot accept verbal changes. Please fax written changes to (225) 767-5717

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT

GCAL-06 11/98



# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 06/07/2010

**GCAL Report** 210051402



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210051402

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

J Flag (Organics) - Indicates an estimated value. This flag is used when the data indicated the presence of an analyte meeting all the identification criteria for the method and the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RDL (reporting limit based on a low level calibration standard included in the initial calibration curve).

B flag (Inorganics) – This flag is used when the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RL (reporting limit based on a low level calibration standard included in the initial calibration curve or a low level check standard for ICP).

### **METALS**

In the SW-846 6010B analysis, samples 21005140210 (SW BK-01), 21005140211 (SW BK-02), 21005140212 (SW BK-03), 21005140213 (SW BK-04), 21005140214 (SW BK-05), 21005140215 (SW BK-06), 21005140216 (SW BK-07), 21005140217 (SW BK-08), and 21005140218 (SW BK-09) had to be diluted in order to bracket the concentration of a target analyte within the linear dynamic range of the instrument.

The dissolved concentrations of some metals are greater than the total concentrations of these metals for some samples. This is attributed to different aliquots of the samples. It is assumed that these metals are in the dissolved state in these samples.

In the SW-846 6010B analysis for prep batch 431669, the MS/MSD recoveries are not applicable for Calcium, Magnesium, Potassium, and Sodium because the sample concentration is greater than four times the spike concentration.

In the SW-846 6010B analysis for prep batch 431644, the MS recovery is outside the control limits for Barium. The LCS recovery is within the control limits. This indicates the analysis is in control and the sample is affected by matrix interference or the element is non-homogeneous in the sample matrix. The Sample/Duplicate RPD for Arsenic is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B analysis for prep batch 431670, the MS recovery is outside the control limits for Iron. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference. A post-digestion spike was performed on the QC sample for this batch with a recovery of 90%. The MS recovery is not applicable for Calcium because the sample concentration is greater than four times the spike concentration.

In the SW-846 6010B analysis for prep batch 431671, the Sample/Duplicate RPD for Lead is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit

In the SW-846 7471B analysis for prep batch 431666, the Sample/Duplicate RPD for Mercury is not

applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

## **CONVENTIONALS**

In the SM 4500 CL E Chloride analysis, samples 21005140210 (SW BK-01), 21005140211 (SW BK-02), 21005140212 (SW BK-03), 21005140213 (SW BK-04), 21005140214 (SW BK-05), 21005140215 (SW BK-06), 21005140216 (SW BK-07), 21005140217 (SW BK-08), and 21005140218 (SW BK-09) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the EPA 375.4 Sulfate analysis, samples 21005140210 (SW BK-01), 21005140213 (SW BK-04), and 21005140215 (SW BK-06) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the EPA 9251 analysis, sample 21005140201 (SED-BK-06) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

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Robyn Miguez  
Technical Director  
**GCAL REPORT 210051402**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140201	SED-BK-06	Solid	05/10/2010 11:45	05/13/2010 09:49
21005140202	SED-BK-01	Solid	05/10/2010 13:35	05/13/2010 09:49
21005140203	SED-BK-02	Solid	05/10/2010 14:50	05/13/2010 09:49
21005140204	SED-BK-03	Solid	05/10/2010 15:45	05/13/2010 09:49
21005140205	SED-BK-04	Solid	05/10/2010 16:35	05/13/2010 09:49
21005140206	SED-BK-05	Solid	05/11/2010 11:15	05/13/2010 09:49
21005140207	SED-BK-09	Solid	05/11/2010 09:45	05/13/2010 09:49
21005140208	SED-BK-07	Solid	05/11/2010 13:40	05/13/2010 09:49
21005140209	SED-BK-08	Solid	05/11/2010 15:15	05/13/2010 09:49
21005140210	SW BK-01	Water	05/10/2010 13:30	05/13/2010 09:49
21005140211	SW BK-02	Water	05/10/2010 14:30	05/13/2010 09:49
21005140212	SW BK-03	Water	05/10/2010 15:20	05/13/2010 09:49
21005140213	SW BK-04	Water	05/10/2010 16:15	05/13/2010 09:49
21005140214	SW BK-05	Water	05/11/2010 10:30	05/13/2010 09:49
21005140215	SW BK-06	Water	05/11/2010 11:30	05/13/2010 09:49
21005140216	SW BK-07	Water	05/11/2010 13:15	05/13/2010 09:49
21005140217	SW BK-08	Water	05/11/2010 14:45	05/13/2010 09:49
21005140218	SW BK-09	Water	05/11/2010 09:20	05/13/2010 09:49

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140201	SED-BK-06	Solid	05/10/2010 11:45	05/13/2010 09:49

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	55000	200	146	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.97B	1.59	0.22	mg/kg
7440-39-3	Barium	229	0.40	0.017	mg/kg
7440-47-3	Chromium	5.92	0.40	0.023	mg/kg
7439-92-1	Lead	8.00	0.60	0.066	mg/kg
7440-24-6	Strontium	17.7	0.40	0.037	mg/kg
7440-66-6	Zinc	19.3	0.79	0.089	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.028	0.011	0.0029	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1140	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140202	SED-BK-01	Solid	05/10/2010 13:35	05/13/2010 09:49

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.33B	1.60	0.22	mg/kg
7440-39-3	Barium	49.0	0.40	0.017	mg/kg
7440-47-3	Chromium	4.16	0.40	0.024	mg/kg
7439-92-1	Lead	3.66	0.60	0.066	mg/kg
7440-24-6	Strontium	22.0	0.40	0.037	mg/kg
7440-66-6	Zinc	9.82	0.80	0.090	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.010	0.0027	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140202	SED-BK-01	Solid	05/10/2010 13:35	05/13/2010 09:49

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	184000	200	146	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	361	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140203	SED-BK-02	Solid	05/10/2010 14:50	05/13/2010 09:49

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	588	10.0	1.58	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.40B	1.60	0.22	mg/kg
7440-39-3	Barium	96.8	0.40	0.017	mg/kg
7440-47-3	Chromium	4.95	0.40	0.024	mg/kg
7439-92-1	Lead	6.20	0.60	0.066	mg/kg
7440-24-6	Strontium	15.0	0.40	0.037	mg/kg
7440-66-6	Zinc	15.5	0.80	0.090	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.032	0.011	0.0029	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	51500	200	146	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140204	SED-BK-03	Solid	05/10/2010 15:45	05/13/2010 09:49

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	14400	200	146	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.30B	1.60	0.22	mg/kg
7440-39-3	Barium	100	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.014B	0.20	0.0083	mg/kg
7440-47-3	Chromium	5.18	0.40	0.024	mg/kg
7439-92-1	Lead	6.41	0.60	0.066	mg/kg
7440-24-6	Strontium	13.2	0.40	0.037	mg/kg
7440-66-6	Zinc	16.8	0.80	0.090	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.023	0.012	0.0032	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	295	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140205	SED-BK-04	Solid	05/10/2010 16:35	05/13/2010 09:49

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.035	0.011	0.0029	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	42700	200	146	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	250	10.0	1.58	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140205	SED-BK-04	Solid	05/10/2010 16:35	05/13/2010 09:49

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.41B	1.60	0.22	mg/kg
7440-39-3	Barium	212	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.036B	0.20	0.0083	mg/kg
7440-47-3	Chromium	4.82	0.40	0.024	mg/kg
7439-92-1	Lead	7.38	0.60	0.066	mg/kg
7440-24-6	Strontium	15.2	0.40	0.037	mg/kg
7440-66-6	Zinc	15.6	0.80	0.090	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140206	SED-BK-05	Solid	05/11/2010 11:15	05/13/2010 09:49

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.012	0.0032	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	172000	200	146	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.77B	1.60	0.22	mg/kg
7440-39-3	Barium	126	0.40	0.017	mg/kg
7440-47-3	Chromium	2.34	0.40	0.024	mg/kg
7439-92-1	Lead	2.55	0.60	0.066	mg/kg
7440-24-6	Strontium	27.4	0.40	0.037	mg/kg
7440-66-6	Zinc	6.99	0.80	0.090	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	457	10.0	1.58	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140207	SED-BK-09	Solid	05/11/2010 09:45	05/13/2010 09:49

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.012	0.0032	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	255	10.0	1.58	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.05	1.60	0.22	mg/kg
7440-39-3	Barium	63.8	0.40	0.017	mg/kg
7440-47-3	Chromium	2.84	0.40	0.024	mg/kg
7439-92-1	Lead	2.77	0.60	0.066	mg/kg
7440-24-6	Strontium	20.5	0.40	0.037	mg/kg
7440-66-6	Zinc	3.98	0.80	0.090	mg/kg

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	106000	200	146	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140208	SED-BK-07	Solid	05/11/2010 13:40	05/13/2010 09:49

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	66000	200	146	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	220	10.0	1.58	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.90B	1.59	0.22	mg/kg
7440-39-3	Barium	106	0.40	0.017	mg/kg
7440-47-3	Chromium	4.16	0.40	0.023	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140208	SED-BK-07	Solid	05/11/2010 13:40	05/13/2010 09:49

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	5.28	0.60	0.066	mg/kg
7440-24-6	Strontium	14.0	0.40	0.037	mg/kg
7440-66-6	Zinc	15.8	0.79	0.089	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.13	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140209	SED-BK-08	Solid	05/11/2010 15:15	05/13/2010 09:49

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	472	10.0	1.58	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	58800	200	146	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.14B	1.60	0.22	mg/kg
7440-39-3	Barium	92.6	0.40	0.017	mg/kg
7440-47-3	Chromium	4.29	0.40	0.024	mg/kg
7439-92-1	Lead	5.82	0.60	0.066	mg/kg
7440-24-6	Strontium	15.6	0.40	0.037	mg/kg
7440-66-6	Zinc	14.1	0.80	0.090	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.034	0.012	0.0032	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140210	SW BK-01	Water	05/10/2010 13:30	05/13/2010 09:49

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-70-2	Calcium	65.8	0.10	0.028	mg/L
7440-47-3	Chromium	0.0035B	0.010	0.00032	mg/L
7439-89-6	Iron	0.58	0.10	0.0095	mg/L
7439-92-1	Lead	0.0017B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	157	0.10	0.023	mg/L
7439-96-5	Manganese	0.15	0.015	0.00057	mg/L
7440-09-7	Potassium	52.0	0.50	0.068	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0045B	0.020	0.0040	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1230	5.00	0.30	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4800	10.0	10.0	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2510	50.0	7.9	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	65.8	0.10	0.0093	mg/L
000-01-5	Hardness	811	0.33	0.12	mg/L
7439-95-4	Magnesium	157	0.10	0.024	mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	149	50.0	14.3	mg/L

## SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00006B	0.00020	0.000055	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140210	SW BK-01	Water	05/10/2010 13:30	05/13/2010 09:49

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0032B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0023B	0.0080	0.0015	mg/L
7440-24-6	Strontium	1.05	0.050	0.00050	mg/L

### SM 2520B Salinity

CAS#	Parameter	Result	RDL	MDL	Units
WET-028	Salinity	4.5	2.0	2.0	ppt

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140211	SW BK-02	Water	05/10/2010 14:30	05/13/2010 09:49

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-70-2	Calcium	71.5	0.10	0.028	mg/L
7440-47-3	Chromium	0.0035B	0.010	0.00032	mg/L
7439-89-6	Iron	0.70	0.10	0.0095	mg/L
7439-95-4	Magnesium	166	0.10	0.023	mg/L
7439-96-5	Manganese	0.23	0.015	0.00057	mg/L
7440-09-7	Potassium	54.7	0.50	0.068	mg/L
7440-24-6	Strontium	1.13	0.050	0.00050	mg/L
7440-66-6	Zinc	0.13	0.020	0.0040	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1320	5.00	0.30	mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	64.6	1.0	0.17	mg/L CaCO3

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	71.5	0.10	0.0093	mg/L
000-01-5	Hardness	863	0.33	0.12	mg/L
7439-95-4	Magnesium	166	0.10	0.024	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140211	SW BK-02	Water	05/10/2010 14:30	05/13/2010 09:49

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0033B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.12	0.050	0.00050	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2680	50.0	7.9	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	5080	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140212	SW BK-03	Water	05/10/2010 15:20	05/13/2010 09:49

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3820	10.0	10.0	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	52.8	0.10	0.0093	mg/L
000-01-5	Hardness	652	0.33	0.12	mg/L
7439-95-4	Magnesium	126	0.10	0.024	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-70-2	Calcium	52.8	0.10	0.028	mg/L
7440-47-3	Chromium	0.0027B	0.010	0.00032	mg/L
7439-89-6	Iron	0.71	0.10	0.0095	mg/L
7439-95-4	Magnesium	126	0.10	0.023	mg/L
7439-96-5	Manganese	0.34	0.015	0.00057	mg/L
7440-09-7	Potassium	42.2	0.50	0.068	mg/L
7440-24-6	Strontium	0.85	0.050	0.00050	mg/L
7440-66-6	Zinc	0.013B	0.020	0.0040	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140212	SW BK-03	Water	05/10/2010 15:20	05/13/2010 09:49

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1050	5.00	0.30	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2060	50.0	7.9	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.84	0.050	0.00050	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140213	SW BK-04	Water	05/10/2010 16:15	05/13/2010 09:49

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.32	0.010	0.00031	mg/L
7440-70-2	Calcium	66.4	0.10	0.028	mg/L
7440-47-3	Chromium	0.0038B	0.010	0.00032	mg/L
7439-89-6	Iron	0.94	0.10	0.0095	mg/L
7439-92-1	Lead	0.0015B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	161	0.10	0.023	mg/L
7439-96-5	Manganese	0.29	0.015	0.00057	mg/L
7440-09-7	Potassium	53.4	0.50	0.068	mg/L
7440-24-6	Strontium	1.09	0.050	0.00050	mg/L
7440-66-6	Zinc	0.010B	0.020	0.0040	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1340	5.00	0.30	mg/L

## SM 2520B Salinity

CAS#	Parameter	Result	RDL	MDL	Units
WET-028	Salinity	4.5	2.0	2.0	ppt

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140213	SW BK-04	Water	05/10/2010 16:15	05/13/2010 09:49

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2660	50.0	7.9	mg/L

## SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00006B	0.00020	0.000055	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0030B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.06	0.050	0.00050	mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	215	50.0	14.3	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4840	10.0	10.0	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	66.4	0.10	0.0093	mg/L
000-01-5	Hardness	828	0.33	0.12	mg/L
7439-95-4	Magnesium	161	0.10	0.024	mg/L



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140214	SW BK-05	Water	05/11/2010 10:30	05/13/2010 09:49

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0030B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2550	50.0	7.9	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4660	10.0	10.0	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	65.9	0.10	0.0093	mg/L
000-01-5	Hardness	808	0.33	0.12	mg/L
7439-95-4	Magnesium	156	0.10	0.024	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-70-2	Calcium	65.9	0.10	0.028	mg/L
7440-47-3	Chromium	0.0034B	0.010	0.00032	mg/L
7439-89-6	Iron	0.71	0.10	0.0095	mg/L
7439-95-4	Magnesium	156	0.10	0.023	mg/L
7439-96-5	Manganese	0.16	0.015	0.00057	mg/L
7440-09-7	Potassium	53.0	0.50	0.068	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0074B	0.020	0.0040	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1270	5.00	0.30	mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	63.5	1.0	0.17	mg/L CaCO3

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140215	SW BK-06	Water	05/11/2010 11:30	05/13/2010 09:49

## SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0047B	0.010	0.00079	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	97.7	0.10	0.0093	mg/L
000-01-5	Hardness	1250	0.33	0.12	mg/L
7439-95-4	Magnesium	244	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.39	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0036B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0021B	0.0080	0.0015	mg/L
7440-24-6	Strontium	1.56	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.43	0.010	0.00031	mg/L
7440-70-2	Calcium	97.7	0.10	0.028	mg/L
7440-47-3	Chromium	0.0041B	0.010	0.00032	mg/L
7439-89-6	Iron	1.55	0.10	0.0095	mg/L
7439-92-1	Lead	0.0019B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	244	0.10	0.023	mg/L
7439-96-5	Manganese	0.88	0.015	0.00057	mg/L
7440-09-7	Potassium	70.4	0.50	0.068	mg/L
7440-24-6	Strontium	1.65	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0092B	0.020	0.0040	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2010	5.00	0.30	mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	187	50.0	14.3	mg/L

## SW-846 8270C SIM

CAS#	Parameter	Result	RDL	MDL	Units
83-32-9	Acenaphthene	0.000131	0.000102	0.0000137	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140215	SW BK-06	Water	05/11/2010 11:30	05/13/2010 09:49

### SM 2520B Salinity

CAS#	Parameter	Result	RDL	MDL	Units
WET-028	Salinity	6.3	2.0	2.0	ppt

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3690	50.0	7.9	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	6580	10.0	10.0	mg/L

### SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0024B	0.010	0.00079	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140216	SW BK-07	Water	05/11/2010 13:15	05/13/2010 09:49

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	57.0	0.10	0.0093	mg/L
000-01-5	Hardness	709	0.33	0.12	mg/L
7439-95-4	Magnesium	138	0.10	0.024	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4010	10.0	10.0	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2210	50.0	7.9	mg/L

### SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0033B	0.010	0.00079	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140216	SW BK-07	Water	05/11/2010 13:15	05/13/2010 09:49

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	75.1	1.0	0.17	mg/L CaCO3

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.40	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0024B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.95	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.44	0.010	0.00031	mg/L
7440-70-2	Calcium	57.0	0.10	0.028	mg/L
7440-47-3	Chromium	0.0026B	0.010	0.00032	mg/L
7439-89-6	Iron	1.07	0.10	0.0095	mg/L
7439-95-4	Magnesium	138	0.10	0.023	mg/L
7439-96-5	Manganese	0.59	0.015	0.00057	mg/L
7440-09-7	Potassium	42.9	0.50	0.068	mg/L
7440-24-6	Strontium	0.96	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1080	5.00	0.30	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140217	SW BK-08	Water	05/11/2010 14:45	05/13/2010 09:49

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4720	10.0	10.0	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00007B	0.00020	0.000055	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140217	SW BK-08	Water	05/11/2010 14:45	05/13/2010 09:49

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	70.0	0.10	0.0093	mg/L
000-01-5	Hardness	840	0.33	0.12	mg/L
7439-95-4	Magnesium	162	0.10	0.024	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.34	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00021B	0.0027	0.00016	mg/L
7440-70-2	Calcium	70.0	0.10	0.028	mg/L
7440-47-3	Chromium	0.0046B	0.010	0.00032	mg/L
7439-89-6	Iron	1.76	0.10	0.0095	mg/L
7439-92-1	Lead	0.0030B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	162	0.10	0.023	mg/L
7439-96-5	Manganese	0.25	0.015	0.00057	mg/L
7440-09-7	Potassium	50.3	0.50	0.068	mg/L
7440-24-6	Strontium	1.03	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0085B	0.020	0.0040	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1180	5.00	0.30	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2490	50.0	7.9	mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0028B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140218	SW BK-09	Water	05/11/2010 09:20	05/13/2010 09:49

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2530	50.0	7.9	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4870	10.0	10.0	mg/L

### SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0040B	0.010	0.00079	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-70-2	Calcium	63.2	0.10	0.028	mg/L
7440-47-3	Chromium	0.0039B	0.010	0.00032	mg/L
7439-89-6	Iron	1.14	0.10	0.0095	mg/L
7439-92-1	Lead	0.0034B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	152	0.10	0.023	mg/L
7439-96-5	Manganese	0.24	0.015	0.00057	mg/L
7440-09-7	Potassium	50.5	0.50	0.068	mg/L
7440-24-6	Strontium	1.05	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0076B	0.020	0.0040	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1230	5.00	0.30	mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.33	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0030B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.06	0.050	0.00050	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	63.2	0.10	0.0093	mg/L
000-01-5	Hardness	785	0.33	0.12	mg/L
7439-95-4	Magnesium	152	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140201	SED-BK-06	Solid	05/10/2010 11:45	05/13/2010 09:49

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 15:21	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.326	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.326	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.326	0.011	mg/kg
120-12-7	Anthracene	ND	0.326	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.326	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.326	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.326	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.326	0.015	mg/kg
218-01-9	Chrysene	ND	0.326	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.326	0.00894	mg/kg
206-44-0	Fluoranthene	ND	0.326	0.00720	mg/kg
86-73-7	Fluorene	ND	0.326	0.00997	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.326	0.013	mg/kg
91-20-3	Naphthalene	ND	0.326	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.326	0.013	mg/kg
129-00-0	Pyrene	ND	0.326	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.09	mg/kg	66	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.08	mg/kg	66	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.12	mg/kg	68	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:09	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.028</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 20:30	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.97B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>229</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.92</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>8.00</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>17.7</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>19.3</b>	<b>0.79</b>	<b>0.089</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140201	SED-BK-06	Solid	05/10/2010 11:45	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	70.2	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	5	05/25/2010 16:32	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1140	50.0	7.90	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 14:23	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	55000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140202	SED-BK-01	Solid	05/10/2010 13:35	05/13/2010 09:49

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 15:36	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.328	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.328	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.328	0.011	mg/kg
120-12-7	Anthracene	ND	0.328	0.012	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.328	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.328	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.328	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.328	0.015	mg/kg
218-01-9	Chrysene	ND	0.328	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.328	0.00900	mg/kg
206-44-0	Fluoranthene	ND	0.328	0.00725	mg/kg
86-73-7	Fluorene	ND	0.328	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.328	0.013	mg/kg
91-20-3	Naphthalene	ND	0.328	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.328	0.013	mg/kg
129-00-0	Pyrene	ND	0.328	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.66	1.34	mg/kg	81	46 - 123
321-60-8	2-Fluorobiphenyl	1.66	1.28	mg/kg	77	47 - 127
1718-51-0	Terphenyl-d14	1.66	1.42	mg/kg	86	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:02	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.033</b>	<b>0.010</b>	<b>0.0027</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 19:58	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.33B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>49.0</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.16</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>3.66</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>22.0</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>9.82</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140202	SED-BK-01	Solid	05/10/2010 13:35	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	68.3	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:13	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	361	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 14:39	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	184000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140203	SED-BK-02	Solid	05/10/2010 14:50	05/13/2010 09:49

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 17:08	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.326	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.326	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.326	0.011	mg/kg
120-12-7	Anthracene	ND	0.326	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.326	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.326	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.326	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.326	0.015	mg/kg
218-01-9	Chrysene	ND	0.326	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.326	0.00894	mg/kg
206-44-0	Fluoranthene	ND	0.326	0.00720	mg/kg
86-73-7	Fluorene	ND	0.326	0.00997	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.326	0.013	mg/kg
91-20-3	Naphthalene	ND	0.326	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.326	0.013	mg/kg
129-00-0	Pyrene	ND	0.326	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.12	mg/kg	68	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.17	mg/kg	71	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.31	mg/kg	80	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:10	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.032</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 20:36	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.40B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>96.8</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.95</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.20</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>15.0</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>15.5</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140203	SED-BK-02	Solid	05/10/2010 14:50	05/13/2010 09:49

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	66.4	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:14	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	588	10.0	1.58	mg/kg

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 14:49	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	51500	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140204	SED-BK-03	Solid	05/10/2010 15:45	05/13/2010 09:49

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 16:07	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.327	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.327	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.327	0.011	mg/kg
120-12-7	Anthracene	ND	0.327	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.327	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.327	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.327	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.327	0.015	mg/kg
218-01-9	Chrysene	ND	0.327	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.327	0.00897	mg/kg
206-44-0	Fluoranthene	ND	0.327	0.00723	mg/kg
86-73-7	Fluorene	ND	0.327	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.327	0.013	mg/kg
91-20-3	Naphthalene	ND	0.327	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.327	0.013	mg/kg
129-00-0	Pyrene	ND	0.327	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.65	1.16	mg/kg	70	46 - 123
321-60-8	2-Fluorobiphenyl	1.65	.952	mg/kg	58	47 - 127
1718-51-0	Terphenyl-d14	1.65	.984	mg/kg	60	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:15	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.023</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 20:43	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.30B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>100</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.014B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.18</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.41</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>13.2</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>16.8</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140204	SED-BK-03	Solid	05/10/2010 15:45	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	71.2	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:15	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	295	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 13:13	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	14400	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140205	SED-BK-04	Solid	05/10/2010 16:35	05/13/2010 09:49

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 16:22	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.326	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.326	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.326	0.011	mg/kg
120-12-7	Anthracene	ND	0.326	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.326	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.326	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.326	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.326	0.015	mg/kg
218-01-9	Chrysene	ND	0.326	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.326	0.00894	mg/kg
206-44-0	Fluoranthene	ND	0.326	0.00720	mg/kg
86-73-7	Fluorene	ND	0.326	0.00997	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.326	0.013	mg/kg
91-20-3	Naphthalene	ND	0.326	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.326	0.013	mg/kg
129-00-0	Pyrene	ND	0.326	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.3	mg/kg	79	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.32	mg/kg	80	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.51	mg/kg	92	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:16	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.035</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 20:49	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.41B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>212</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.036B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.82</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.38</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>15.2</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>15.6</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140205	SED-BK-04	Solid	05/10/2010 16:35	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	63.6	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:16	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	250	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 13:21	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	42700	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140206	SED-BK-05	Solid	05/11/2010 11:15	05/13/2010 09:49

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 16:38	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.327	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.327	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.327	0.011	mg/kg
120-12-7	Anthracene	ND	0.327	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.327	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.327	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.327	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.327	0.015	mg/kg
218-01-9	Chrysene	ND	0.327	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.327	0.00897	mg/kg
206-44-0	Fluoranthene	ND	0.327	0.00723	mg/kg
86-73-7	Fluorene	ND	0.327	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.327	0.013	mg/kg
91-20-3	Naphthalene	ND	0.327	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.327	0.013	mg/kg
129-00-0	Pyrene	ND	0.327	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.65	1.43	mg/kg	87	46 - 123
321-60-8	2-Fluorobiphenyl	1.65	1.4	mg/kg	85	47 - 127
1718-51-0	Terphenyl-d14	1.65	1.67	mg/kg	101	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:18	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.025</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 20:55	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.77B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>126</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>2.34</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>2.55</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>27.4</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>6.99</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140206	SED-BK-05	Solid	05/11/2010 11:15	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.5	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:17	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	457	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 13:34	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	172000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140207	SED-BK-09	Solid	05/11/2010 09:45	05/13/2010 09:49

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:40	431973	3550B	1	05/20/2010 16:53	RLY	432243

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.325	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.325	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.325	0.011	mg/kg
120-12-7	Anthracene	ND	0.325	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.325	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.325	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.325	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.325	0.015	mg/kg
218-01-9	Chrysene	ND	0.325	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.325	0.00891	mg/kg
206-44-0	Fluoranthene	ND	0.325	0.00718	mg/kg
86-73-7	Fluorene	ND	0.325	0.00993	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325	0.013	mg/kg
91-20-3	Naphthalene	ND	0.325	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.325	0.013	mg/kg
129-00-0	Pyrene	ND	0.325	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.47	mg/kg	90	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.48	mg/kg	90	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.49	mg/kg	91	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:20	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.020</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 21:15	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.05</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>63.8</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>2.84</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>2.77</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>20.5</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>3.98</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140207	SED-BK-09	Solid	05/11/2010 09:45	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	75.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:20	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	255	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 13:51	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	106000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140208	SED-BK-07	Solid	05/11/2010 13:40	05/13/2010 09:49

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 11:30	432525	3550B	1	05/24/2010 18:37	KCB	432591

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.325	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.325	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.325	0.011	mg/kg
120-12-7	Anthracene	ND	0.325	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.325	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.325	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.325	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.325	0.015	mg/kg
218-01-9	Chrysene	ND	0.325	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.325	0.00891	mg/kg
206-44-0	Fluoranthene	ND	0.325	0.00718	mg/kg
86-73-7	Fluorene	ND	0.325	0.00993	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325	0.013	mg/kg
91-20-3	Naphthalene	ND	0.325	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.325	0.013	mg/kg
129-00-0	Pyrene	ND	0.325	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.6	mg/kg	98	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.56	mg/kg	95	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.43	mg/kg	87	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:21	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.13</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 21:21	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.90B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>106</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.16</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>5.28</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>14.0</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>15.8</b>	<b>0.79</b>	<b>0.089</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140208	SED-BK-07	Solid	05/11/2010 13:40	05/13/2010 09:49

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	77.1	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:20	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	220	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 14:02	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	66000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140209	SED-BK-08	Solid	05/11/2010 15:15	05/13/2010 09:49

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 11:30	432525	3550B	1	05/24/2010 19:23	KCB	432591

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.327	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.327	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.327	0.011	mg/kg
120-12-7	Anthracene	ND	0.327	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.327	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.327	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.327	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.327	0.015	mg/kg
218-01-9	Chrysene	ND	0.327	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.327	0.00897	mg/kg
206-44-0	Fluoranthene	ND	0.327	0.00723	mg/kg
86-73-7	Fluorene	ND	0.327	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.327	0.013	mg/kg
91-20-3	Naphthalene	ND	0.327	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.327	0.013	mg/kg
129-00-0	Pyrene	ND	0.327	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.65	1.45	mg/kg	88	46 - 123
321-60-8	2-Fluorobiphenyl	1.65	1.42	mg/kg	86	47 - 127
1718-51-0	Terphenyl-d14	1.65	1.42	mg/kg	86	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431666	SW-846 7471B	1	05/15/2010 14:23	TEA	431732

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.034</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 12:00	431644	SW-846 3050B	1	05/20/2010 21:27	TEA	432227

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.14B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>92.6</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.29</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>5.82</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>15.6</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>14.1</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140209	SED-BK-08	Solid	05/11/2010 15:15	05/13/2010 09:49

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 12:55	DJH	431706

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	75.8	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/24/2010 15:00	432724	EPA 9251	1	05/25/2010 16:21	AEL	432725

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	472	10.0	1.58	mg/kg

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 15:35	AEL	432621

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	58800	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140210	SW BK-01	Water	05/10/2010 13:30	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 11:24	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000103	0.0000522	mg/L
83-32-9	Acenaphthene	ND	0.000103	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000103	0.0000150	mg/L
120-12-7	Anthracene	ND	0.000103	0.00000923	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000103	0.0000506	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000103	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000103	0.0000329	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000103	0.0000225	mg/L
218-01-9	Chrysene	ND	0.000103	0.0000432	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000103	0.0000196	mg/L
206-44-0	Fluoranthene	ND	0.000103	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000103	0.0000185	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000103	0.0000172	mg/L
91-20-3	Naphthalene	ND	0.000103	0.0000284	mg/L
85-01-8	Phenanthrene	ND	0.000103	0.0000167	mg/L
129-00-0	Pyrene	ND	0.000103	0.0000182	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00513	.00343	mg/L	67	52 - 120
321-60-8	2-Fluorobiphenyl	.00513	.00324	mg/L	63	16 - 128
1718-51-0	Terphenyl-d14	.00513	.00393	mg/L	77	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:24	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00006B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 10:47	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:06	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140210	SW BK-01	Water	05/10/2010 13:30	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/23/2010 23:19	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	65.8	0.10	0.028	mg/L
7440-47-3	Chromium	0.0035B	0.010	0.00032	mg/L
7439-89-6	Iron	0.58	0.10	0.0095	mg/L
7439-92-1	Lead	0.0017B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	157	0.10	0.023	mg/L
7439-96-5	Manganese	0.15	0.015	0.00057	mg/L
7440-09-7	Potassium	52.0	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0045B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 14:04	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1230	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 20:41	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0032B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0023B	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.05	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/23/2010 23:19	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	65.8	0.10	0.0093	mg/L
000-01-5	Hardness	811	0.33	0.12	mg/L
7439-95-4	Magnesium	157	0.10	0.024	mg/L

<b>GCAL ID</b> 21005140210	<b>Client ID</b> SW BK-01	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/10/2010 13:30	<b>Receive Date/Time</b> 05/13/2010 09:49
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### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 17:48	CLB	432737
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		4800	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:21	AEL	432456
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		2510	50.0	7.9	mg/L

### SM 2520B Salinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 08:30	DJH	431979
CAS#	Parameter		Result	RDL	MDL	Units
WET-028	Salinity		4.5	2.0	2.0	ppt

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/18/2010 11:53	JEM	432023
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		149	50.0	14.3	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140211	SW BK-02	Water	05/10/2010 14:30	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 11:39	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000103	0.0000522	mg/L
83-32-9	Acenaphthene	ND	0.000103	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000103	0.0000150	mg/L
120-12-7	Anthracene	ND	0.000103	0.00000923	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000103	0.0000506	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000103	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000103	0.0000329	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000103	0.0000225	mg/L
218-01-9	Chrysene	ND	0.000103	0.0000432	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000103	0.0000196	mg/L
206-44-0	Fluoranthene	ND	0.000103	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000103	0.0000185	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000103	0.0000172	mg/L
91-20-3	Naphthalene	ND	0.000103	0.0000284	mg/L
85-01-8	Phenanthrene	ND	0.000103	0.0000167	mg/L
129-00-0	Pyrene	ND	0.000103	0.0000182	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00513	.00272	mg/L	53	52 - 120
321-60-8	2-Fluorobiphenyl	.00513	.0035	mg/L	68	16 - 128
1718-51-0	Terphenyl-d14	.00513	.00329	mg/L	64	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:17	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 10:53	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:11	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140211	SW BK-02	Water	05/10/2010 14:30	05/13/2010 09:49

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:24	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	71.5	0.10	0.028	mg/L
7440-47-3	Chromium	0.0035B	0.010	0.00032	mg/L
7439-89-6	Iron	0.70	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	166	0.10	0.023	mg/L
7439-96-5	Manganese	0.23	0.015	0.00057	mg/L
7440-09-7	Potassium	54.7	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.13	0.050	0.00050	mg/L
7440-66-6	Zinc	0.13	0.020	0.0040	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 14:37	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1320	5.00	0.30	mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 21:46	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0033B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.12	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/24/2010 00:24	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	71.5	0.10	0.0093	mg/L
000-01-5	Hardness	863	0.33	0.12	mg/L
7439-95-4	Magnesium	166	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140211	SW BK-02	Water	05/10/2010 14:30	05/13/2010 09:49

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 17:54	CLB	432737
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	5080	10.0	10.0	mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:22	AEL	432456
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	2680	50.0	7.9	mg/L	

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter	Result	RDL	MDL	Units	
T-005-B	Bicarbonate Alkalinity	64.6	1.0	0.17	mg/L CaCO3	

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter	Result	RDL	MDL	Units	
T-005-C	Carbonate Alkalinity	ND	1.0	0.17	mg/L CaCO3	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140212	SW BK-03	Water	05/10/2010 15:20	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 11:54	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000103	0.0000525	mg/L
83-32-9	Acenaphthene	ND	0.000103	0.0000138	mg/L
208-96-8	Acenaphthylene	ND	0.000103	0.0000151	mg/L
120-12-7	Anthracene	ND	0.000103	0.00000928	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000103	0.0000508	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000103	0.0000138	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000103	0.0000331	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000103	0.0000226	mg/L
218-01-9	Chrysene	ND	0.000103	0.0000434	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000103	0.0000197	mg/L
206-44-0	Fluoranthene	ND	0.000103	0.0000135	mg/L
86-73-7	Fluorene	ND	0.000103	0.0000186	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000103	0.0000173	mg/L
91-20-3	Naphthalene	ND	0.000103	0.0000286	mg/L
85-01-8	Phenanthrene	ND	0.000103	0.0000168	mg/L
129-00-0	Pyrene	ND	0.000103	0.0000182	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00515	.00319	mg/L	62	52 - 120
321-60-8	2-Fluorobiphenyl	.00515	.00435	mg/L	84	16 - 128
1718-51-0	Terphenyl-d14	.00515	.0049	mg/L	95	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:25	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 10:59	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:13	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140212	SW BK-03	Water	05/10/2010 15:20	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:31	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	52.8	0.10	0.028	mg/L
7440-47-3	Chromium	0.0027B	0.010	0.00032	mg/L
7439-89-6	Iron	0.71	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	126	0.10	0.023	mg/L
7439-96-5	Manganese	0.34	0.015	0.00057	mg/L
7440-09-7	Potassium	42.2	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.85	0.050	0.00050	mg/L
7440-66-6	Zinc	0.013B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 15:06	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1050	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 21:53	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.84	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/24/2010 00:31	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	52.8	0.10	0.0093	mg/L
000-01-5	Hardness	652	0.33	0.12	mg/L
7439-95-4	Magnesium	126	0.10	0.024	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140212	SW BK-03	Water	05/10/2010 15:20	05/13/2010 09:49

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 18:00	CLB	432737

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3820	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:23	AEL	432456

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2060	50.0	7.9	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140213	SW BK-04	Water	05/10/2010 16:15	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 12:09	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00274	mg/L	54	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00338	mg/L	66	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00387	mg/L	76	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:27	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00006B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 11:05	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:14	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140213	SW BK-04	Water	05/10/2010 16:15	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:38	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.32	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	66.4	0.10	0.028	mg/L
7440-47-3	Chromium	0.0038B	0.010	0.00032	mg/L
7439-89-6	Iron	0.94	0.10	0.0095	mg/L
7439-92-1	Lead	0.0015B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	161	0.10	0.023	mg/L
7439-96-5	Manganese	0.29	0.015	0.00057	mg/L
7440-09-7	Potassium	53.4	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.09	0.050	0.00050	mg/L
7440-66-6	Zinc	0.010B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 15:13	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1340	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 22:00	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0030B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.06	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/24/2010 00:38	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	66.4	0.10	0.0093	mg/L
000-01-5	Hardness	828	0.33	0.12	mg/L
7439-95-4	Magnesium	161	0.10	0.024	mg/L

<b>GCAL ID</b> 21005140213	<b>Client ID</b> SW BK-04	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/10/2010 16:15	<b>Receive Date/Time</b> 05/13/2010 09:49
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### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 18:06	CLB	432737
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		4840	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:24	AEL	432456
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		2660	50.0	7.9	mg/L

### SM 2520B Salinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 08:30	DJH	431979
CAS#	Parameter		Result	RDL	MDL	Units
WET-028	Salinity		4.5	2.0	2.0	ppt

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/18/2010 11:54	JEM	432023
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		215	50.0	14.3	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140214	SW BK-05	Water	05/11/2010 10:30	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 12:24	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00356	mg/L	70	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00341	mg/L	67	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00436	mg/L	85	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:29	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 11:12	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:00	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140214	SW BK-05	Water	05/11/2010 10:30	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:45	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	65.9	0.10	0.028	mg/L
7440-47-3	Chromium	0.0034B	0.010	0.00032	mg/L
7439-89-6	Iron	0.71	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	156	0.10	0.023	mg/L
7439-96-5	Manganese	0.16	0.015	0.00057	mg/L
7440-09-7	Potassium	53.0	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0074B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 15:19	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1270	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 22:07	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0030B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/24/2010 00:45	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	65.9	0.10	0.0093	mg/L
000-01-5	Hardness	808	0.33	0.12	mg/L
7439-95-4	Magnesium	156	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140214	SW BK-05	Water	05/11/2010 10:30	05/13/2010 09:49

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 18:12	CLB	432737
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		4660	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:25	AEL	432456
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		2550	50.0	7.9	mg/L

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		63.5	1.0	0.17	mg/L CaCO3

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140215	SW BK-06	Water	05/11/2010 11:30	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 12:39	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
<b>83-32-9</b>	<b>Acenaphthene</b>	<b>0.000131</b>	<b>0.000102</b>	<b>0.0000137</b>	<b>mg/L</b>
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00328	mg/L	64	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.0033	mg/L	65	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00411	mg/L	81	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:34	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 11:18	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0047B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:16	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140215	SW BK-06	Water	05/11/2010 11:30	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:51	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.43	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	97.7	0.10	0.028	mg/L
7440-47-3	Chromium	0.0041B	0.010	0.00032	mg/L
7439-89-6	Iron	1.55	0.10	0.0095	mg/L
7439-92-1	Lead	0.0019B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	244	0.10	0.023	mg/L
7439-96-5	Manganese	0.88	0.015	0.00057	mg/L
7440-09-7	Potassium	70.4	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.65	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0092B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 15:26	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2010	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 22:13	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.39	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0036B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0021B	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.56	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/24/2010 00:51	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	97.7	0.10	0.0093	mg/L
000-01-5	Hardness	1250	0.33	0.12	mg/L
7439-95-4	Magnesium	244	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140215	SW BK-06	Water	05/11/2010 11:30	05/13/2010 09:49

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 12:11	CLB	432695
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	0.0024B	0.010	0.00079	mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	6580	10.0	10.0	mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:26	AEL	432456
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	3690	50.0	7.9	mg/L	

### SM 2520B Salinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 08:30	DJH	431979
CAS#	Parameter	Result	RDL	MDL	Units	
WET-028	Salinity	6.3	2.0	2.0	ppt	

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	05/18/2010 11:55	JEM	432023
CAS#	Parameter	Result	RDL	MDL	Units	
14808-79-8	Sulfate	187	50.0	14.3	mg/L	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140216	SW BK-07	Water	05/11/2010 13:15	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 12:54	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000104	0.0000530	mg/L
83-32-9	Acenaphthene	ND	0.000104	0.0000140	mg/L
208-96-8	Acenaphthylene	ND	0.000104	0.0000152	mg/L
120-12-7	Anthracene	ND	0.000104	0.00000938	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000104	0.0000514	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000104	0.0000140	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000104	0.0000334	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000104	0.0000228	mg/L
218-01-9	Chrysene	ND	0.000104	0.0000439	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000104	0.0000199	mg/L
206-44-0	Fluoranthene	ND	0.000104	0.0000136	mg/L
86-73-7	Fluorene	ND	0.000104	0.0000188	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000104	0.0000175	mg/L
91-20-3	Naphthalene	ND	0.000104	0.0000289	mg/L
85-01-8	Phenanthrene	ND	0.000104	0.0000170	mg/L
129-00-0	Pyrene	ND	0.000104	0.0000184	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00521	.00369	mg/L	71	52 - 120
321-60-8	2-Fluorobiphenyl	.00521	.00357	mg/L	69	16 - 128
1718-51-0	Terphenyl-d14	.00521	.00456	mg/L	88	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:35	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 11:24	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0033B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:18	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140216	SW BK-07	Water	05/11/2010 13:15	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:58	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.44	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	57.0	0.10	0.028	mg/L
7440-47-3	Chromium	0.0026B	0.010	0.00032	mg/L
7439-89-6	Iron	1.07	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	138	0.10	0.023	mg/L
7439-96-5	Manganese	0.59	0.015	0.00057	mg/L
7440-09-7	Potassium	42.9	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.96	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/26/2010 15:33	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1080	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 22:20	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.40	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0024B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.95	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SM 2340 B	1	05/24/2010 00:58	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	57.0	0.10	0.0093	mg/L
000-01-5	Hardness	709	0.33	0.12	mg/L
7439-95-4	Magnesium	138	0.10	0.024	mg/L

<b>GCAL ID</b> 21005140216	<b>Client ID</b> SW BK-07	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/11/2010 13:15	<b>Receive Date/Time</b> 05/13/2010 09:49
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### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/26/2010 13:47	CLB	432807
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		4010	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:27	AEL	432456
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		2210	50.0	7.9	mg/L

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		75.1	1.0	0.17	mg/L CaCO3

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140217	SW BK-08	Water	05/11/2010 14:45	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 13:09	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00357	mg/L	70	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00633	mg/L	124	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00394	mg/L	77	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:37	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 11:47	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:19	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00007B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140217	SW BK-08	Water	05/11/2010 14:45	05/13/2010 09:49

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:10	431670	SW-846 3010A	1	05/27/2010 15:20	CNB	432911

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.34	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00021B	0.0027	0.00016	mg/L
7440-70-2	Calcium	70.0	0.10	0.028	mg/L
7440-47-3	Chromium	0.0046B	0.010	0.00032	mg/L
7439-89-6	Iron	1.76	0.10	0.0095	mg/L
7439-92-1	Lead	0.0030B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	162	0.10	0.023	mg/L
7439-96-5	Manganese	0.25	0.015	0.00057	mg/L
7440-09-7	Potassium	50.3	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.03	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0085B	0.020	0.0040	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:10	431670	SW-846 3010A	5	05/27/2010 15:27	CNB	432911

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1180	5.00	0.30	mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 22:27	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0028B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.04	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:10	431670	SM 2340 B	1	05/27/2010 15:20	CNB	432911

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	70.0	0.10	0.0093	mg/L
000-01-5	Hardness	840	0.33	0.12	mg/L
7439-95-4	Magnesium	162	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140217	SW BK-08	Water	05/11/2010 14:45	05/13/2010 09:49

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/26/2010 13:53	CLB	432807

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4720	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:29	AEL	432456

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2490	50.0	7.9	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140218	SW BK-09	Water	05/11/2010 09:20	05/13/2010 09:49

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:15	431881	3510C	1	05/19/2010 13:24	KCB	432140

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00337	mg/L	66	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.003	mg/L	59	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00449	mg/L	88	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/27/2010 11:20	431675	SW-846 7470A Dissolved	1	05/27/2010 15:39	CLB	432926

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 09:28	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/26/2010 12:45	431674	SW-846 7470A	1	05/26/2010 18:21	CLB	432839

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140218	SW BK-09	Water	05/11/2010 09:20	05/13/2010 09:49

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:10	431670	SW-846 3010A	1	05/26/2010 17:07	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.31	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	63.2	0.10	0.028	mg/L
7440-47-3	Chromium	0.0039B	0.010	0.00032	mg/L
7439-89-6	Iron	1.14	0.10	0.0095	mg/L
7439-92-1	Lead	0.0034B	0.0080	0.0015	mg/L
7439-95-4	Magnesium	152	0.10	0.023	mg/L
7439-96-5	Manganese	0.24	0.015	0.00057	mg/L
7440-09-7	Potassium	50.5	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.05	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0076B	0.020	0.0040	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:10	431670	SW-846 3010A	5	05/27/2010 15:34	CNB	432911

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1230	5.00	0.30	mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 22:34	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.33	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0030B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.06	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:10	431670	SM 2340 B	1	05/26/2010 17:07	CNB	432716

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	63.2	0.10	0.0093	mg/L
000-01-5	Hardness	785	0.33	0.12	mg/L
7439-95-4	Magnesium	152	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140218	SW BK-09	Water	05/11/2010 09:20	05/13/2010 09:49

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/26/2010 13:59	CLB	432807

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0040B	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4870	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/22/2010 15:30	AEL	432456

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2530	50.0	7.9	mg/L

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432243 Prep Batch 431973 Prep Method 3550B		Client ID MB431973 GCAL ID 832095 Sample Type Method Blank Prep Date 05/19/2010 09:40 Analytical Date 05/20/2010 11:02 Matrix Solid		LCS431973 832096 LCS 05/19/2010 09:40 05/20/2010 11:18 Solid			LCSD431973 832097 LCSD 05/19/2010 09:40 05/20/2010 11:33 Solid				
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
208-96-8	Acenaphthylene	ND	0.327								
120-12-7	Anthracene	ND	0.327								
56-55-3	Benzo(a)anthracene	ND	0.327								
205-99-2	Benzo(b)fluoranthene	ND	0.327								
207-08-9	Benzo(k)fluoranthene	ND	0.327								
50-32-8	Benzo(a)pyrene	ND	0.327								
218-01-9	Chrysene	ND	0.327								
53-70-3	Dibenz(a,h)anthracene	ND	0.327								
206-44-0	Fluoranthene	ND	0.327								
86-73-7	Fluorene	ND	0.327								
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.327								
91-57-6	2-Methylnaphthalene	ND	0.327								
91-20-3	Naphthalene	ND	0.327								
85-01-8	Phenanthrene	ND	0.327								
108-95-2	Phenol	ND	0.327	3.32	2.65	80	42 - 120	2.67	81	0.8	40
95-57-8	2-Chlorophenol	ND	0.327	3.32	2.56	77	48 - 120	2.60	79	2	40
106-46-7	1,4-Dichlorobenzene	ND	0.327	3.32	2.42	73	42 - 120	2.45	74	1	40
621-64-7	n-Nitrosodi-n-propylamine	ND	0.327	3.32	2.95	89	46 - 120	3.01	91	2	40
120-82-1	1,2,4-Trichlorobenzene	ND	0.327	3.32	2.51	76	46 - 120	2.53	77	0.8	40
59-50-7	4-Chloro-3-methylphenol	ND	0.327	3.32	3.13	94	46 - 120	3.15	95	0.6	40
83-32-9	Acenaphthene	ND	0.327	3.32	2.76	83	50 - 120	2.82	85	2	40
100-02-7	4-Nitrophenol	ND	1.63	3.32	2.90	87	32 - 120	2.78	84	4	40
121-14-2	2,4-Dinitrotoluene	ND	0.327	3.32	2.98	90	45 - 120	2.97	90	0.3	40
87-86-5	Pentachlorophenol	ND	1.63	3.32	2.54	76	30 - 124	2.45	74	4	40
129-00-0	Pyrene	ND	0.327	3.32	3.19	96	38 - 136	3.31	100	4	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1420	86	1660	1340	81	46 - 123	1430	87		
321-60-8	2-Fluorobiphenyl	1430	87	1660	1370	82	47 - 127	1450	88		
1718-51-0	Terphenyl-d14	1670	101	1660	1610	97	38 - 167	1790	108		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432243 Prep Batch 431973 Prep Method 3550B		Client ID SB-13-6/12 GCAL ID 21005135019 Sample Type SAMPLE Prep Date 05/19/2010 09:40 Analytical Date 05/20/2010 13:19 Matrix Solid		830587MS 832098 MS 05/19/2010 09:40 05/20/2010 13:34 Solid			830587MSD 832099 MSD 05/19/2010 09:40 05/20/2010 13:49 Solid				
SW-846 8270C		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
108-95-2	Phenol	0.00	0.329	3.32	2.68	81	42 - 120	2.70	82	0.7	40
95-57-8	2-Chlorophenol	0.00	0.329	3.32	2.64	79	48 - 120	2.62	79	0.8	40
106-46-7	1,4-Dichlorobenzene	0.00	0.329	3.32	2.50	75	42 - 120	2.48	75	0.8	40
621-64-7	n-Nitrosodi-n-propylamine	0.00	0.329	3.32	3.13	94	46 - 120	3.00	91	4	40
120-82-1	1,2,4-Trichlorobenzene	0.00	0.329	3.32	2.52	76	46 - 120	2.55	77	1	40
59-50-7	4-Chloro-3-methylphenol	0.00	0.329	3.32	2.93	88	46 - 120	2.89	87	1	40
83-32-9	Acenaphthene	0.00	0.329	3.32	2.77	83	50 - 120	2.86	86	3	40
100-02-7	4-Nitrophenol	0.00	1.64	3.32	2.55	77	32 - 120	2.47	75	3	40
121-14-2	2,4-Dinitrotoluene	0.00	0.329	3.32	2.87	86	45 - 120	2.82	85	2	40
87-86-5	Pentachlorophenol	0.00	1.64	3.32	1.69	51	30 - 124	1.91	58	12	40
129-00-0	Pyrene	0.00	0.329	3.32	3.54	107	38 - 136	3.50	106	1	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5			1660	1480	89	46 - 123	1510	91		
321-60-8	2-Fluorobiphenyl			1660	1510	91	47 - 127	1560	94		
1718-51-0	Terphenyl-d14			1660	1880	113	38 - 167	1860	112		

Analytical Batch 432591 Prep Batch 432525 Prep Method 3550B		Client ID MB432525 GCAL ID 834728 Sample Type Method Blank Prep Date 05/24/2010 11:30 Analytical Date 05/24/2010 16:18 Matrix Solid		LCS432525 834729 LCS 05/24/2010 11:30 05/24/2010 16:33 Solid			LCSD432525 834730 LCSD 05/24/2010 11:30 05/24/2010 16:49 Solid				
SW-846 8270C		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
208-96-8	Acenaphthylene	ND	0.329								
120-12-7	Anthracene	ND	0.329								
56-55-3	Benzo(a)anthracene	ND	0.329								
205-99-2	Benzo(b)fluoranthene	ND	0.329								
207-08-9	Benzo(k)fluoranthene	ND	0.329								
50-32-8	Benzo(a)pyrene	ND	0.329								
218-01-9	Chrysene	ND	0.329								

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432591 Prep Batch 432525 Prep Method 3550B		Client ID MB432525 GCAL ID 834728 Sample Type Method Blank Prep Date 05/24/2010 11:30 Analytical Date 05/24/2010 16:18 Matrix Solid			LCS432525 834729 LCS 05/24/2010 11:30 05/24/2010 16:33 Solid			LCSD432525 834730 LCSD 05/24/2010 11:30 05/24/2010 16:49 Solid			
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
53-70-3	Dibenz(a,h)anthracene	ND	0.329								
206-44-0	Fluoranthene	ND	0.329								
86-73-7	Fluorene	ND	0.329								
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.329								
91-57-6	2-Methylnaphthalene	ND	0.329								
91-20-3	Naphthalene	ND	0.329								
85-01-8	Phenanthrene	ND	0.329								
108-95-2	Phenol	ND	0.329	3.28	2.42	74	42 - 120	2.54	77	5	40
95-57-8	2-Chlorophenol	ND	0.329	3.28	2.58	79	48 - 120	2.70	82	5	40
106-46-7	1,4-Dichlorobenzene	ND	0.329	3.28	2.80	85	42 - 120	2.97	91	6	40
621-64-7	n-Nitrosodi-n-propylamine	ND	0.329	3.28	2.85	87	46 - 120	2.92	89	2	40
120-82-1	1,2,4-Trichlorobenzene	ND	0.329	3.28	3.13	95	46 - 120	3.27	100	4	40
59-50-7	4-Chloro-3-methylphenol	ND	0.329	3.28	2.51	77	46 - 120	2.49	76	0.8	40
83-32-9	Acenaphthene	ND	0.329	3.28	3.33	102	50 - 120	3.40	104	2	40
100-02-7	4-Nitrophenol	ND	1.64	3.28	2.80	85	32 - 120	2.80	85	0	40
121-14-2	2,4-Dinitrotoluene	ND	0.329	3.28	2.74	84	45 - 120	2.81	86	3	40
87-86-5	Pentachlorophenol	ND	1.64	3.28	2.79	85	30 - 124	2.90	88	4	40
129-00-0	Pyrene	ND	0.329	3.28	3.93	120	38 - 136	3.94	120	0.3	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1700	102	1640	1710	104	46 - 123	1730	106		
321-60-8	2-Fluorobiphenyl	1660	100	1640	1740	106	47 - 127	1800	110		
1718-51-0	Terphenyl-d14	1770	107	1640	1730	106	38 - 167	1750	107		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432591 Prep Batch 432525 Prep Method 3550B		Client ID SED-BK-07 GCAL ID 21005140208 Sample Type SAMPLE Prep Date 05/24/2010 11:30 Analytical Date 05/24/2010 18:37 Matrix Solid		830822MS 834731 MS 05/24/2010 11:30 05/24/2010 18:52 Solid			830822MSD 834732 MSD 05/24/2010 11:30 05/24/2010 19:08 Solid				
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
108-95-2	Phenol	0.00	0.329	3.32	2.30	69	42 - 120	2.19	67	5	40
95-57-8	2-Chlorophenol	0.00	0.329	3.32	2.40	72	48 - 120	2.25	69	6	40
106-46-7	1,4-Dichlorobenzene	0.00	0.329	3.32	2.52	76	42 - 120	2.35	72	7	40
621-64-7	n-Nitrosodi-n-propylamine	0.00	0.329	3.32	2.84	85	46 - 120	2.64	81	7	40
120-82-1	1,2,4-Trichlorobenzene	0.00	0.329	3.32	2.87	86	46 - 120	2.57	78	11	40
59-50-7	4-Chloro-3-methylphenol	0.00	0.329	3.32	2.45	74	46 - 120	1.96	60	22	40
83-32-9	Acenaphthene	0.00	0.325	3.32	3.17	95	50 - 120	2.87	88	10	40
100-02-7	4-Nitrophenol	0.00	1.64	3.32	3.01	91	32 - 120	2.37	72	24	40
121-14-2	2,4-Dinitrotoluene	0.00	0.329	3.32	2.83	85	45 - 120	2.46	75	14	40
87-86-5	Pentachlorophenol	0.00	1.64	3.32	2.68	81	30 - 124	2.27	69	17	40
129-00-0	Pyrene	0.00	0.325	3.32	3.32	100	38 - 136	2.99	91	10	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1.6	98	1660	1630	98	46 - 123	1480	90		
321-60-8	2-Fluorobiphenyl	1.56	95	1660	1600	96	47 - 127	1520	93		
1718-51-0	Terphenyl-d14	1.43	87	1660	1420	85	38 - 167	1330	81		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432140 Prep Batch 431881 Prep Method 3510C		Client ID MB431881 GCAL ID 831790 Sample Type Method Blank Prep Date 05/17/2010 13:15 Analytical Date 05/19/2010 09:55 Matrix Water			LCS431881 831791 LCS 05/17/2010 13:15 05/19/2010 10:10 Water			LCSD431881 831792 LCSD 05/17/2010 13:15 05/19/2010 10:25 Water			
SW-846 8270C SIM		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
83-32-9	Acenaphthene	ND	0.000100	0.010	0.00794	79	30 - 120	0.00743	74	7	40
208-96-8	Acenaphthylene	ND	0.000100	0.010	0.00822	82	30 - 130	0.00744	74	10	40
120-12-7	Anthracene	ND	0.000100	0.010	0.00792	79	50 - 120	0.00862	86	8	40
56-55-3	Benzo(a)anthracene	ND	0.000100	0.010	0.00945	95	44 - 123	0.00934	93	1	40
205-99-2	Benzo(b)fluoranthene	ND	0.000100	0.010	0.00838	84	43 - 129	0.00819	82	2	40
207-08-9	Benzo(k)fluoranthene	ND	0.000100	0.010	0.00941	94	46 - 126	0.00843	84	11	40
50-32-8	Benzo(a)pyrene	ND	0.000100	0.010	0.00827	83	42 - 128	0.00800	80	3	40
218-01-9	Chrysene	ND	0.000100	0.00980	0.00878	90	47 - 120	0.00849	87	3	40
53-70-3	Dibenz(a,h)anthracene	ND	0.000100	0.010	0.00843	84	36 - 131	0.00842	84	0.1	40
206-44-0	Fluoranthene	ND	0.000100	0.010	0.00856	86	37 - 129	0.00917	92	7	40
86-73-7	Fluorene	ND	0.000100	0.010	0.00826	83	30 - 125	0.00741	74	11	40
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000100	0.010	0.00847	85	35 - 138	0.00839	84	0.9	40
91-20-3	Naphthalene	ND	0.000100	0.010	0.00592	59	30 - 120	0.00726	73	20	40
85-01-8	Phenanthrene	ND	0.000100	0.010	0.00717	72	43 - 120	0.00810	81	12	40
129-00-0	Pyrene	ND	0.000100	0.010	0.00983	98	47 - 120	0.00806	81	20	40
91-57-6	2-Methylnaphthalene	ND	0.000100	0.010	0.00600	60	30 - 120	0.00609	61	1	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	2.78	56	5	3.57	71	52 - 120	3.66	73		
321-60-8	2-Fluorobiphenyl	4.98	100	5	3.36	67	16 - 128	5.72	114		
1718-51-0	Terphenyl-d14	2.92	58	5	4.34	87	43 - 138	3.66	73		



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432926 <b>Prep Batch</b> 431675 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB431675 <b>GCAL ID</b> 830872 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/27/2010 11:20 <b>Analytical Date</b> 05/27/2010 15:14 <b>Matrix</b> Water	LCS431675 830873 LCS 05/27/2010 11:20 05/27/2010 16:35 Water					
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7439-97-6	Mercury	ND	0.00020	0.00500	0.00502	100	80 - 120

<b>Analytical Batch</b> 432926 <b>Prep Batch</b> 431675 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW BK-02 <b>GCAL ID</b> 21005140211 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/27/2010 11:20 <b>Analytical Date</b> 05/27/2010 15:17 <b>Matrix</b> Water	830825MS 830875 MS 05/27/2010 11:20 05/27/2010 15:20 Water					
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7439-97-6	Mercury	0.00000	0.00020	0.00500	0.00584	117	75 - 125

<b>Analytical Batch</b> 432926 <b>Prep Batch</b> 431675 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW BK-02 <b>GCAL ID</b> 21005140211 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/27/2010 11:20 <b>Analytical Date</b> 05/27/2010 15:17 <b>Matrix</b> Water	830825DUP 830874 DUP 05/27/2010 11:20 05/27/2010 15:19 Water				
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7439-97-6	Mercury	0.00000	0.00020	0.00000	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431673 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431673 <b>GCAL ID</b> 830863 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 09:15 <b>Matrix</b> Water	LCS431673 830864 LCS 05/14/2010 14:40 05/25/2010 09:22 Water			
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.010	0.040	0.034	85	80 - 120

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431673 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-09 <b>GCAL ID</b> 21005140218 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 09:28 <b>Matrix</b> Water	830832MS 830866 MS 05/14/2010 14:40 05/25/2010 09:40 Water			
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	0.0 0.010	0.040	0.037	93	75 - 125

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431673 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-09 <b>GCAL ID</b> 21005140218 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 09:28 <b>Matrix</b> Water	830832DUP 830865 DUP 05/14/2010 14:40 05/25/2010 09:34 Water		
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.0 0.010	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432839 <b>Prep Batch</b> 431674 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB431674 <b>GCAL ID</b> 830867 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/26/2010 12:45 <b>Analytical Date</b> 05/26/2010 17:57 <b>Matrix</b> Water	LCS431674 830868 LCS 05/26/2010 12:45 05/26/2010 17:58 Water					
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.00020 <b>Spike Added</b> 0.00500	<b>Result</b> 0.00432 <b>% R</b> 86 <b>Control Limits % R</b> 80 - 120				
7439-97-6	Mercury	ND	0.00020	0.00500	0.00432	86	80 - 120

<b>Analytical Batch</b> 432839 <b>Prep Batch</b> 431674 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW BK-05 <b>GCAL ID</b> 21005140214 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/26/2010 12:45 <b>Analytical Date</b> 05/26/2010 18:00 <b>Matrix</b> Water	830828MS 830870 MS 05/26/2010 12:45 05/26/2010 18:03 Water					
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> 0.00000 <b>RDL</b> 0.00020 <b>Spike Added</b> 0.00500	<b>Result</b> 0.00449 <b>% R</b> 90 <b>Control Limits % R</b> 75 - 125				
7439-97-6	Mercury	0.00000	0.00020	0.00500	0.00449	90	75 - 125

<b>Analytical Batch</b> 432839 <b>Prep Batch</b> 431674 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW BK-05 <b>GCAL ID</b> 21005140214 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/26/2010 12:45 <b>Analytical Date</b> 05/26/2010 18:00 <b>Matrix</b> Water	830828DUP 830869 DUP 05/26/2010 12:45 05/26/2010 18:01 Water				
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> 0.00000 <b>RDL</b> 0.00020	<b>Result</b> 0.00000 <b>RPD</b> 0 <b>RPD Limit</b> 20			
7439-97-6	Mercury	0.00000	0.00020	0.00000	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431732 <b>Prep Batch</b> 431666 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB431666 <b>GCAL ID</b> 830835 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/15/2010 13:59 <b>Matrix</b> Solid	LCS431666 830836 LCS 05/14/2010 12:00 05/15/2010 14:01 Solid				
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7439-97-6	Mercury	0.0067B	0.010	0.25	0.28	114 80 - 120

<b>Analytical Batch</b> 431732 <b>Prep Batch</b> 431666 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-BK-01 <b>GCAL ID</b> 21005140202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/15/2010 14:02 <b>Matrix</b> Solid	830816MS 830838 MS 05/14/2010 12:00 05/15/2010 14:05 Solid				
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7439-97-6	Mercury	0.033	0.010	0.25	0.25	88 75 - 125

<b>Analytical Batch</b> 431732 <b>Prep Batch</b> 431666 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-BK-01 <b>GCAL ID</b> 21005140202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/15/2010 14:02 <b>Matrix</b> Solid	830816DUP 830837 DUP 05/14/2010 12:00 05/15/2010 14:04 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7439-97-6	Mercury	0.033	0.010	0.026	24* 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431669 <b>GCAL ID</b> 830847 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:06 <b>Matrix</b> Water	LCS431669 830848 LCS 05/14/2010 13:50 05/23/2010 23:13 Water					
<b>SW-846 6010B</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.49	98	80 - 120
7440-43-9	Cadmium	ND	0.0027	0.50	0.47	94	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.80	96	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.48	95	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.78	96	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.48	96	80 - 120
7439-95-4	Magnesium	0.026B	0.10	5.00	4.83	97	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.48	97	80 - 120
7440-09-7	Potassium	0.35B	0.50	10.0	10.3	103	80 - 120
7782-49-2	Selenium	ND	0.0050	0.50	0.46	93	80 - 120
7440-23-5	Sodium	0.44B	1.00	20.0	20.4	102	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.48	96	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.47	93	80 - 120

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:19 <b>Matrix</b> Water	830824MS 830850 MS 05/14/2010 13:50 05/23/2010 23:32 Water					
<b>SW-846 6010B</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.30	0.010	0.50	0.79	99	75 - 125
7440-43-9	Cadmium	0.0	0.0027	0.50	0.46	92	75 - 125
7440-70-2	Calcium	65.8	0.10	5.00	73.5	154*	75 - 125
7440-47-3	Chromium	0.0035	0.010	0.50	0.47	92	75 - 125
7439-89-6	Iron	0.58	0.10	5.00	5.62	101	75 - 125
7439-92-1	Lead	0.0017	0.0080	0.50	0.46	91	75 - 125
7439-95-4	Magnesium	157	0.10	5.00	169	250*	75 - 125
7439-96-5	Manganese	0.15	0.015	0.50	0.65	99	75 - 125
7440-09-7	Potassium	52.0	0.50	10.0	66.1	141*	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:19 <b>Matrix</b> Water	830824MS 830850 MS 05/14/2010 13:50 05/23/2010 23:32 Water
<b>SW-846 6010B</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
7782-49-2 Selenium	0.0 0.0050	0.50 0.49 98 75 - 125
7440-24-6 Strontium	1.04 0.050	0.50 1.57 105 75 - 125
7440-66-6 Zinc	0.0045 0.020	0.50 0.48 96 75 - 125

<b>Analytical Batch</b> 432227 <b>Prep Batch</b> 431644 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MB431644 <b>GCAL ID</b> 830702 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/20/2010 19:30 <b>Matrix</b> Solid	LCS431644 830703 LCS 05/14/2010 12:00 05/20/2010 19:37 Solid
<b>SW-846 6010B</b>	<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
7440-38-2 Arsenic	ND 1.60	20.0 18.6 93 80 - 120
7440-39-3 Barium	ND 0.40	20.0 18.4 92 80 - 120
7440-43-9 Cadmium	ND 0.20	20.0 18.2 91 80 - 120
7440-47-3 Chromium	0.029B 0.40	20.0 18.6 93 80 - 120
7439-92-1 Lead	ND 0.60	20.0 18.2 91 80 - 120
7782-49-2 Selenium	ND 1.60	20.0 17.9 90 80 - 120
7440-24-6 Strontium	ND 0.40	20.0 18.3 91 80 - 120
7440-66-6 Zinc	ND 0.80	20.0 17.4 87 80 - 120

<b>Analytical Batch</b> 432227 <b>Prep Batch</b> 431644 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-BK-01 <b>GCAL ID</b> 21005140202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/20/2010 19:58 <b>Matrix</b> Solid	830816MS 830834 MS 05/14/2010 12:00 05/20/2010 20:10 Solid
<b>SW-846 6010B</b>	<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
7440-38-2 Arsenic	0.33 1.60	20.0 19.4 95 75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432227 <b>Prep Batch</b> 431644 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-BK-01 <b>GCAL ID</b> 21005140202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/20/2010 19:58 <b>Matrix</b> Solid	830816MS 830834 MS 05/14/2010 12:00 05/20/2010 20:10 Solid					
<b>SW-846 6010B</b>		<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-39-3	Barium	49.0	0.40	20.0	75.8	134*	75 - 125
7440-43-9	Cadmium	0.0	0.20	20.0	18.5	92	75 - 125
7440-47-3	Chromium	4.16	0.40	20.0	26.2	110	75 - 125
7439-92-1	Lead	3.66	0.60	20.0	22.7	95	75 - 125
7782-49-2	Selenium	0.0	1.60	20.0	19.4	97	75 - 125
7440-24-6	Strontium	22.0	0.40	20.0	44.1	111	75 - 125
7440-66-6	Zinc	9.82	0.80	20.0	30.9	105	75 - 125

<b>Analytical Batch</b> 432227 <b>Prep Batch</b> 431644 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-BK-01 <b>GCAL ID</b> 21005140202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 12:00 <b>Analytical Date</b> 05/20/2010 19:58 <b>Matrix</b> Solid	830816DUP 830833 DUP 05/14/2010 12:00 05/20/2010 20:04 Solid				
<b>SW-846 6010B</b>		<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-38-2	Arsenic	0.33	1.60	1.24	116*	20
7440-39-3	Barium	49.0	0.40	49.1	0.2	20
7440-43-9	Cadmium	0.0	0.20	0.0	0	20
7440-47-3	Chromium	4.16	0.40	3.79	9	20
7439-92-1	Lead	3.66	0.60	4.13	12	20
7782-49-2	Selenium	0.0	1.60	0.0	0	20
7440-24-6	Strontium	22.0	0.40	22.5	2	20
7440-66-6	Zinc	9.82	0.80	8.51	14	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431670 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431670 <b>GCAL ID</b> 830851 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 13:10 <b>Analytical Date</b> 05/26/2010 16:11 <b>Matrix</b> Water	<b>LCS431670</b> 830852 LCS 05/14/2010 13:10 05/26/2010 16:17 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.47	94	80 - 120
7440-43-9	Cadmium	ND	0.0027	0.50	0.45	91	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.66	93	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.47	93	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.75	95	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.46	93	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	4.81	96	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.47	94	80 - 120
7440-09-7	Potassium	0.11B	0.50	10.0	9.67	97	80 - 120
7782-49-2	Selenium	ND	0.0050	0.50	0.47	93	80 - 120
7440-23-5	Sodium	1.04	1.00	20.0	20.7	104	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.49	98	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.46	93	80 - 120

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/26/2010 14:04 <b>Matrix</b> Water	<b>830824MS</b> 830850 MS 05/14/2010 13:50 05/26/2010 14:17 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-23-5	Sodium	1230	5.00	20.0	1310	391*	75 - 125



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431670 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> B-51 <b>GCAL ID</b> 21005135301 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:10 <b>Analytical Date</b> 05/26/2010 16:24 <b>Matrix</b> Water	830627MS 830854 MS 05/14/2010 13:10 05/26/2010 16:35 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.87	0.010	0.50	1.34	95	75 - 125
7440-43-9	Cadmium	0.0	0.0027	0.50	0.43	85	75 - 125
7440-70-2	Calcium	93.9	0.10	5.00	100	130*	75 - 125
7440-47-3	Chromium	0.034	0.010	0.50	0.49	91	75 - 125
7439-89-6	Iron	19.8	0.10	5.00	28.6	176*	75 - 125
7439-92-1	Lead	0.015	0.0080	0.50	0.45	87	75 - 125
7439-95-4	Magnesium	60.6	0.10	5.00	66.4	117	75 - 125
7439-96-5	Manganese	0.92	0.015	0.50	1.38	91	75 - 125
7440-09-7	Potassium	3.57	0.50	10.0	14.1	105	75 - 125
7782-49-2	Selenium	0.0	0.0050	0.50	0.45	89	75 - 125
7440-23-5	Sodium	71.6	1.00	20.0	90.9	96	75 - 125
7440-24-6	Strontium	0.85	0.050	0.50	1.33	97	75 - 125
7440-66-6	Zinc	0.061	0.020	0.50	0.51	90	75 - 125

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:19 <b>Matrix</b> Water	830824DUP 830849 DUP 05/14/2010 13:50 05/26/2010 13:57 Water				
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>			<b>Limit</b>
7440-70-2	Calcium	65.8	0.10	64.7	2	20
7439-95-4	Magnesium	157	0.10	157	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432716	<b>Client ID</b> SW BK-01	830824DUP				
<b>Prep Batch</b> 431669	<b>GCAL ID</b> 21005140210	830849				
<b>Prep Method</b> SW-846 3010A	<b>Sample Type</b> SAMPLE	DUP				
	<b>Prep Date</b> 05/14/2010 13:50	05/14/2010 13:50				
	<b>Analytical Date</b> 05/26/2010 14:04	05/26/2010 14:10				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-23-5	Sodium	1230	5.00	1270	3	20

<b>Analytical Batch</b> 432716	<b>Client ID</b> B-51	830627DUP				
<b>Prep Batch</b> 431670	<b>GCAL ID</b> 21005135301	830853				
<b>Prep Method</b> SW-846 3010A	<b>Sample Type</b> SAMPLE	DUP				
	<b>Prep Date</b> 05/14/2010 13:10	05/14/2010 13:10				
	<b>Analytical Date</b> 05/26/2010 16:24	05/26/2010 16:29				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-39-3	Barium	0.87	0.010	0.87	0	20
7440-43-9	Cadmium	0.0	0.0027	0.0	0	20
7440-70-2	Calcium	93.9	0.10	94.4	0.5	20
7440-47-3	Chromium	0.034	0.010	0.035	3	20
7439-89-6	Iron	19.8	0.10	20.1	2	20
7439-92-1	Lead	0.015	0.0080	0.014	7	20
7439-95-4	Magnesium	60.6	0.10	59.8	1	20
7439-96-5	Manganese	0.92	0.015	0.92	0	20
7440-09-7	Potassium	3.57	0.50	3.51	2	20
7782-49-2	Selenium	0.0	0.0050	0.0	0	20
7440-23-5	Sodium	71.6	1.00	71.2	0.6	20
7440-24-6	Strontium	0.85	0.050	0.85	0	20
7440-66-6	Zinc	0.061	0.020	0.060	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431671 <b>Prep Method</b> SW-846 3010A Dissolved	<b>Client ID</b> MB431671 <b>GCAL ID</b> 830855 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 14:50 <b>Analytical Date</b> 05/23/2010 20:28 <b>Matrix</b> Water	LCS431671 830856 LCS 05/14/2010 14:50 05/23/2010 20:35 Water			
<b>SW-846 6010B Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-39-3 Barium	ND 0.14	0.50	0.48	97	80 - 120
7440-43-9 Cadmium	ND 0.038	0.50	0.47	94	80 - 120
7440-47-3 Chromium	ND 0.14	0.50	0.48	96	80 - 120
7439-92-1 Lead	ND 0.11	0.50	0.48	96	80 - 120
7782-49-2 Selenium	ND 0.070	0.50	0.48	95	80 - 120
7440-24-6 Strontium	ND 0.70	0.50	0.49	98	80 - 120
7440-66-6 Zinc	ND 0.28	0.50	0.48	96	80 - 120

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431671 <b>Prep Method</b> SW-846 3010A Dissolved	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:50 <b>Analytical Date</b> 05/23/2010 20:41 <b>Matrix</b> Water	830824MS 830858 MS 05/14/2010 14:50 05/23/2010 20:54 Water			
<b>SW-846 6010B Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-39-3 Barium	0.28 0.010	0.50	0.76	96	75 - 125
7440-43-9 Cadmium	0.0 0.0027	0.50	0.46	93	75 - 125
7440-47-3 Chromium	0.0032 0.010	0.50	0.47	93	75 - 125
7439-92-1 Lead	0.0023 0.0080	0.50	0.46	91	75 - 125
7782-49-2 Selenium	0.0 0.0050	0.50	0.49	99	75 - 125
7440-24-6 Strontium	1.05 0.050	0.50	1.54	98	75 - 125
7440-66-6 Zinc	0.0 0.020	0.50	0.50	100	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180	<b>Client ID</b> SW BK-01	830824DUP				
<b>Prep Batch</b> 431671	<b>GCAL ID</b> 21005140210	830857				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/14/2010 14:50	05/14/2010 14:50				
Dissolved	<b>Analytical Date</b> 05/23/2010 20:41	05/23/2010 20:47				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-39-3	Barium	0.28	0.010	0.31	10	20
7440-43-9	Cadmium	0.0	0.0027	0.0	0	20
7440-47-3	Chromium	0.0032	0.010	0.0035	9	20
7439-92-1	Lead	0.0023	0.0080	0.0	<b>200*</b>	20
7782-49-2	Selenium	0.0	0.0050	0.0	0	20
7440-24-6	Strontium	1.05	0.050	1.15	9	20
7440-66-6	Zinc	0.0	0.020	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431669 <b>GCAL ID</b> 830847 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:06 <b>Matrix</b> Water	LCS431669 830848 LCS 05/14/2010 13:50 05/23/2010 23:13 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-70-2	Calcium	ND	0.10	5.00	4.80	96	85 - 115
7439-95-4	Magnesium	0.026B	0.10	5.00	4.83	97	85 - 115
000-01-5	Hardness	ND	0.33	33.1	31.9	96	85 - 115

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431670 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431670 <b>GCAL ID</b> 830851 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 13:10 <b>Analytical Date</b> 05/26/2010 16:11 <b>Matrix</b> Water	LCS431670 830852 LCS 05/14/2010 13:10 05/26/2010 16:17 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-70-2	Calcium	ND	0.10	5.00	4.66	93	85 - 115
7439-95-4	Magnesium	ND	0.10	5.00	4.81	96	85 - 115
000-01-5	Hardness	ND	0.33	33.1	31.4	95	85 - 115

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:19 <b>Matrix</b> Water	830824DUP 830849 DUP 05/14/2010 13:50 05/26/2010 13:57 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-70-2	Calcium	65.8	0.10	64.7	2	20
7439-95-4	Magnesium	157	0.10	157	0	20
000-01-5	Hardness	811	0.33	808	0.4	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431672 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431672 <b>GCAL ID</b> 830859 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 11:59 <b>Matrix</b> Water	LCS431672 830860 LCS 05/14/2010 14:40 05/25/2010 12:05 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.039	<b>% R</b> 97	<b>Control Limits % R</b> 80 - 120	
7440-38-2	Arsenic	ND	0.010	0.040	0.039	97	80 - 120

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431672 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-06 <b>GCAL ID</b> 21005140215 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 12:11 <b>Matrix</b> Water	830829MS 830862 MS 05/14/2010 14:40 05/25/2010 12:23 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0024 <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.037	<b>% R</b> 86	<b>Control Limits % R</b> 75 - 125	
7440-38-2	Arsenic	0.0024	0.010	0.040	0.037	86	75 - 125

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431672 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-06 <b>GCAL ID</b> 21005140215 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 12:11 <b>Matrix</b> Water	830829DUP 830861 DUP 05/14/2010 14:40 05/25/2010 12:17 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0024 <b>RDL</b> 0.010	<b>Result</b> 0.0028	<b>RPD</b> 15	<b>RPD Limit</b> 20	
7440-38-2	Arsenic	0.0024	0.010	0.0028	15	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431679 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431679 <b>GCAL ID</b> 830900 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/14/2010 14:30 <b>Matrix</b> Water	LCS431679 830901 LCS 05/14/2010 14:30 Water					
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	988	98.8	80 - 120

<b>Analytical Batch</b> 431679 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-14R 1S10 <b>GCAL ID</b> 21005135103 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/14/2010 14:30 <b>Matrix</b> Water	MW-14R DUP 1S10 21005135106 DUP 05/14/2010 14:30 Water				
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
WET-035	Total Dissolved Solids(TDS)	1920	10.0	1880	2.1	5

<b>Analytical Batch</b> 431679 <b>Prep Batch</b> N/A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/14/2010 14:30 <b>Matrix</b> Water	830824DUP 830902 DUP 05/14/2010 14:30 Water				
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
WET-035	Total Dissolved Solids(TDS)	4800	10.0	4960	3.3	5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431706 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SED-BK-06 21005140201 SAMPLE 05/14/2010 12:55 Solid	830815DUP 831086 DUP 05/14/2010 12:55 Solid		
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	70.2	0.010	72.7	3.5 25



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432456 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432456 <b>GCAL ID</b> 834457 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/22/2010 13:31 <b>Matrix</b> Water	LCS432456 834458 LCS 05/22/2010 13:32 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
16887-00-6 Chloride	0.33B 1.0	60.0 59.5 99 80 - 120

<b>Analytical Batch</b> 432456 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-44 <b>GCAL ID</b> 21005133307 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/22/2010 13:53 <b>Matrix</b> Water	MW-44 MS 21005133308 MS 05/22/2010 13:54 Water	MW-44 MSD 21005133309 MSD 05/22/2010 13:55 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	5880 200	12000 16600 89 75 - 125	16900 92 2 25

<b>Analytical Batch</b> 432456 <b>Prep Batch</b> N/A	<b>Client ID</b> B-18 <b>GCAL ID</b> 21005126703 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/22/2010 15:18 <b>Matrix</b> Water	829897MS 834459 MS 05/22/2010 15:19 Water	829897MSD 834460 MSD 05/22/2010 15:20 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	827 50.0	3000 3970 105 75 - 125	3970 105 0 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432724 <b>GCAL ID</b> 835617 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:09 <b>Matrix</b> Solid	LCS432724 835618 LCS 05/24/2010 15:00 05/25/2010 16:10 Solid				
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6 Chloride	2.48B	10.0	600	594	99	80 - 120

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-BK-06 <b>GCAL ID</b> 21005140201 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:32 <b>Matrix</b> Solid	830815MS 835619 MS 05/24/2010 15:00 05/25/2010 16:33 Solid	830815MSD 835620 MSD 05/24/2010 15:00 05/25/2010 16:34 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	1140	50.0	3000	4530	113	75 - 125	4520	113	0.2	25

<b>Analytical Batch</b> 432725 <b>Prep Batch</b> 432724 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-1C (46-48) <b>GCAL ID</b> 21005142606 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/24/2010 15:00 <b>Analytical Date</b> 05/25/2010 16:22 <b>Matrix</b> Solid	831331MS 835621 MS 05/24/2010 15:00 05/25/2010 16:23 Solid	831331MSD 835622 MSD 05/24/2010 15:00 05/25/2010 16:24 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	176	10.0	600	867	115	75 - 125	833	110	4	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431955 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 15:05 <b>Matrix</b> Water	829142DUP 832064 DUP 05/17/2010 15:05 Water
<b>SM 2320B Bicarbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	60.0 1.0	60.8 1 11
T-005-C Carbonate Alkalinity	0 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432620 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432620 <b>GCAL ID</b> 835142 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/25/2010 09:22 <b>Matrix</b> Solid	LCS432620 835143 LCS 05/25/2010 09:30 Solid	LCSD432620 835144 LCSD 05/25/2010 09:38 Solid								
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10300	103	69 - 128	10300	103	0	25

<b>Analytical Batch</b> 432620 <b>Prep Batch</b> N/A	<b>Client ID</b> SED-9 <b>GCAL ID</b> 21005112901 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 09:55 <b>Matrix</b> Solid	829152DUP 835147 DUP 05/25/2010 10:28 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	36100	200	35800	0.8	25

<b>Analytical Batch</b> 432621 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432621 <b>GCAL ID</b> 835150 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/25/2010 14:59 <b>Matrix</b> Solid	LCS432621 835151 LCS 05/25/2010 15:11 Solid	LCSD432621 835152 LCSD 05/25/2010 15:26 Solid								
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10200	102	69 - 128	10000	100	2	25

<b>Analytical Batch</b> 432621 <b>Prep Batch</b> N/A	<b>Client ID</b> SED-BK-08 <b>GCAL ID</b> 21005140209 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 15:35 <b>Matrix</b> Solid	830823DUP 835153 DUP 05/25/2010 15:45 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	58800	200	54200	8	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431979 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-01 <b>GCAL ID</b> 21005112805 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/18/2010 08:30 <b>Matrix</b> Water	829141DUP 832146 DUP 05/18/2010 08:30 Water			
<b>SM 2520B Salinity</b>		<b>Units</b> ppt <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
WET-028	Salinity	2.4                      2.0	2.4	0	

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432023 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432023 <b>GCAL ID</b> 832399 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/18/2010 11:18 <b>Matrix</b> Water	<b>LCS432023</b> 832400 LCS 05/18/2010 11:18 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	ND	5.0	20.0	20.7	104 80 - 120

<b>Analytical Batch</b> 432023 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-29 <b>GCAL ID</b> 21005133401 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/18/2010 12:04 <b>Matrix</b> Water	<b>830364MS</b> 832402 MS 05/18/2010 12:08 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	239	100	400	616	94 75 - 125

<b>Analytical Batch</b> 432023 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-29 <b>GCAL ID</b> 21005133401 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/18/2010 12:04 <b>Matrix</b> Water	<b>830364DUP</b> 832401 DUP 05/18/2010 12:04 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
14808-79-8	Sulfate	239	100	236	1	25



GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

**CHAIN OF CUSTODY RECORD**

Lab use only

PISA001

Client Name

Client # 4171

Workerorder # 210051462

Due Date 5-24-10

**Report to:**  
Client: MP #A  
Address: 1100 Poydras St, Suite 1430  
NOLA 70163  
Contact: S. Miller  
Phone: 504-582-2468  
Fax:

**Bill to:**  
Client:  
Address:  
Contact:  
Phone:  
Fax:

P.O. Number 07-47 Project Name/Number East White Lake VPSB

Sampled By: P. Richie

Matrix	Date	Time (2400)	C o m p	G f b	Sample Description	Preservatives	No. Containers	Lab ID
S	5-10	1115	X		Sed BK-00	None	4	1
		1335			Sed BK-01		3	2
		1450			Sed BK-02			3
		1545			Sed BK-03			4
		1635			Sed BK-04			5
	5-11-10	1115			Sed BK-05			6
		945			Sed BK-09			7
		1340			Sed BK-07			8
		1515			Sed BK-08			9

Analytical Requests & Method

Lab use only:  
Custody Seal used  yes  no  
in tact  yes  no  
Temperature °C 6.7

Remarks:

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Received by: (Signature) [Signature] Date: 05/13/10 Time: 0800

Relinquished by: (Signature) [Signature] Date: 5-13-10 Time: 945

Relinquished by: (Signature) [Signature] Date: 5-13-10 Time: 945

Note: Call David Lingle for instructions [Signature]  
Maintain additional soil for potential additional analyses

WHITE: CLIENT FINAL REPORT - CANARY: LABORATORY - PINK: CLIENT

Matrix: W - water S - soil SD - solid L - liquid SI - sludge G - oil OT - chemical tube A - air box  
MA cannot accept verbal shipment. Please fax written shipment to (504) 767-5747



GULF COAST ANALYTICAL LABORATORIES, INC.  
 7979 GSRI AVENUE, Baton Rouge, Louisiana 70820-7402  
 Phone 225-769-4900 • Fax 225-767-5717

### CHAIN OF CUSTODY RECORD

Lab use only

Client Name: P. Smith      Workorder #: 210051402      Due Date: 5-23-00

Citizen #: 4727

**Report to:** MPEA  
 Client: MPEA  
 Address: 1100 Bayou St. Suite 1430  
NOCH 70163  
 Contact: J. Miller  
 Phone: 504-582-2468  
 Fax: jgmiller@ic-nestcom.com

**Bill to:**  
 Client: SAME  
 Address: SAME  
 Contact:      
 Phone:      
 Fax:    

P.O. Number: 07-47      Project Name/Number: East White Lake UPSB

Sampled By: P. Ritchie

Matrix	Date	Time (2400)	Time	Sample Description	Preservatives	Holdy Name	No. Con-tainers
W	5-10-00	1330	X	SW BK-01		HNDY	0
		1430		SW BK-02			
		1500		SW BK-03			
		1615		SW BK-04			
	5-11-00	1030		SW BK-05			
		1130		SW BK-06			
		1315		SW BK-07			
		1445		SW BK-08			
		2200		SW BK-09			

Turn Around Time:  24-48 hrs.     3 days     1 week     Standard     Other

Received by: (Signature) [Signature]      Date: 05/13/00      Time: 0800

Relinquished by: (Signature) [Signature]      Date: 5/13/00      Time: 945

Relinquished by: (Signature) [Signature]      Date:          Time:    

Analytical Requests & Method

Method	Hardness	Chlorides	TDS	SO4/Salinity	Bicarb/Carb Alkalinity	added 5-14-10	Ca, Fe, Mg, Mn, K, Na
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X

Lab use only:  
 Custody Seal used  yes  no  
 in tact  yes  no  
 Temperature °C 0.7

Remarks:

Lab ID:    

Note: \*Total + Dissolved (Field Filtered)  
Call David Lingle for instructions

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.



# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 06/07/2010

**GCAL Report** 210051401



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210051401

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

J Flag (Organics) - Indicates an estimated value. This flag is used when the data indicated the presence of an analyte meeting all the identification criteria for the method and the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RDL (reporting limit based on a low level calibration standard included in the initial calibration curve).

B flag (Inorganics) – This flag is used when the result is greater than or equal to the laboratory MDL (method detection limit) and less than the RL (reporting limit based on a low level calibration standard included in the initial calibration curve or a low level check standard for ICP).

### **METALS**

In the SW-846 6010B analysis, the dissolved concentration for some metals may be slightly greater than the total concentration of the metal in some samples. This is attributed to separate aliquots of sample. It can be assumed that the metal is present in the dissolved state in these samples.

In the SW-846 6010B analysis, samples 21005140158 (SB-2 MW-S), 21005140159 (SB-3-MW-S), and 21005140160 (SB-3-MW-SD) had to be diluted in order to bracket the concentration of a target analyte within the linear dynamic range of the instrument.

In the SW-846 6010B analysis, the MS recoveries are not applicable for Calcium, Magnesium, Potassium, and Sodium because the sample concentration is greater than four times the spike concentration.

### **CONVENTIONALS**

In the Chloride analysis, samples 21005140110 (SB-1 (46.6-47)), 21005140146 (SB-3 (49-49.5)), 21005140149 (SB-3 (40-42)), 21005140150 (SB-3 (37-38)), 21005140155 (SB-3 (53-54)), 21005140158 (SB-2 MW-S), 21005140159 (SB-3-MW-S), and 21005140160 (SB-3-MW-SD) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210051401**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140101	SB-1 (74-76)	Solid	05/11/2010 15:20	05/13/2010 09:49
21005140102	SB-1 (78-80)	Solid	05/11/2010 16:00	05/13/2010 09:49
21005140103	SB-1 (62-64)	Solid	05/11/2010 14:10	05/13/2010 09:49
21005140104	SB-1 (66-68)	Solid	05/11/2010 16:35	05/13/2010 09:49
21005140105	SB-1 (70-72)	Solid	05/11/2010 15:00	05/13/2010 09:49
21005140106	SB-1 (42-43)	Solid	05/05/2010 13:15	05/13/2010 09:49
21005140107	SB-1 (13-15)	Solid	05/05/2010 11:45	05/13/2010 09:49
21005140108	SB-1 (58-60)	Solid	05/05/2010 12:10	05/13/2010 09:49
21005140109	SB-1 (62-64)	Solid	05/05/2010 15:20	05/13/2010 09:49
21005140110	SB-1 (46.6-47)	Solid	05/05/2010 13:57	05/13/2010 09:49
21005140111	SB-1 (33-35)	Solid	05/05/2010 12:17	05/13/2010 09:49
21005140112	SB-1 (17-19)	Solid	05/05/2010 11:55	05/13/2010 09:49
21005140113	SB-1 (21-22)	Solid	05/05/2010 12:00	05/13/2010 09:49
21005140114	SB-1 (25-27)	Solid	05/05/2010 12:05	05/13/2010 09:49
21005140115	SB-1 (9-11)	Solid	05/05/2010 11:30	05/13/2010 09:49
21005140116	SB-1 (37-39)	Solid	05/05/2010 12:25	05/13/2010 09:49
21005140117	SB-1 (45.5-46)	Solid	05/05/2010 13:55	05/13/2010 09:49
21005140118	SB-1 (29-31)	Solid	05/05/2010 12:15	05/13/2010 09:49
21005140119	SB-1 (0-7)	Solid	05/05/2010 11:20	05/13/2010 09:49
21005140120	SB-2 (58-60)	Solid	05/10/2010 11:00	05/13/2010 09:49
21005140121	SB-2 (54-56)	Solid	05/10/2010 10:30	05/13/2010 09:49
21005140122	SB-2 (74-76)	Solid	05/10/2010 12:25	05/13/2010 09:49
21005140123	SB-2 (66-68)	Solid	05/10/2010 11:50	05/13/2010 09:49
21005140124	SB-2 (62-64)	Solid	05/10/2010 11:20	05/13/2010 09:49
21005140125	SB-2 (70-71.5)	Solid	05/10/2010 12:10	05/13/2010 09:49
21005140126	SB-2 (78-80)	Solid	05/10/2010 13:15	05/13/2010 09:49
21005140127	SB-2 (41-43)	Solid	05/07/2010 11:20	05/13/2010 09:49
21005140128	SB-2 (33-35)	Solid	05/07/2010 09:20	05/13/2010 09:49
21005140129	SB-2 (35-36)	Solid	05/07/2010 09:20	05/13/2010 09:49
21005140130	SB-2 (21-23)	Solid	05/07/2010 08:55	05/13/2010 09:49
21005140131	SB-2 (29-31)	Solid	05/07/2010 09:15	05/13/2010 09:49
21005140132	SB-2 (17-19)	Solid	05/07/2010 08:50	05/13/2010 09:49
21005140133	SB-2 (25-27)	Solid	05/07/2010 09:05	05/13/2010 09:49
21005140134	SB-2 (13-15)	Solid	05/07/2010 08:40	05/13/2010 09:49
21005140135	SB-2 (9-11)	Solid	05/07/2010 08:30	05/13/2010 09:49
21005140136	SB-2 (0-6)	Solid	05/07/2010 08:10	05/13/2010 09:49
21005140137	SB-3 (56-58)	Solid	05/11/2010 12:32	05/13/2010 09:49
21005140138	SB-3 (21-22)	Solid	05/10/2010 15:15	05/13/2010 09:49
21005140139	SB-3 (64-66)	Solid	05/11/2010 12:36	05/13/2010 09:49
21005140140	SB-3 (8-10)	Solid	05/10/2010 14:55	05/13/2010 09:49
21005140141	SB-3 (12-14)	Solid	05/10/2010 15:00	05/13/2010 09:49
21005140142	SB-3 (16-18)	Solid	05/10/2010 15:10	05/13/2010 09:49
21005140143	SB-3 (24-26)	Solid	05/10/2010 15:20	05/13/2010 09:49
21005140144	SB-3 (72-73)	Solid	05/11/2010 12:40	05/13/2010 09:49
21005140145	SB-3 (59-60)	Solid	05/11/2010 12:34	05/13/2010 09:49
21005140146	SB-3 (49-49.5)	Solid	05/10/2010 17:20	05/13/2010 09:49

## Report Sample Summary (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140147	SB-3 (68-68.5)	Solid	05/11/2010 12:38	05/13/2010 09:49
21005140148	SB-3 (77-78)	Solid	05/11/2010 12:42	05/13/2010 09:49
21005140149	SB-3 (40-42)	Solid	05/10/2010 16:25	05/13/2010 09:49
21005140150	SB-3 (37-38)	Solid	05/10/2010 16:10	05/13/2010 09:49
21005140151	SB-3 (28-30)	Solid	05/10/2010 15:40	05/13/2010 09:49
21005140152	SB-3 (33-34)	Solid	05/10/2010 15:50	05/13/2010 09:49
21005140153	SB-3 (48-48.5)	Solid	05/10/2010 17:20	05/13/2010 09:49
21005140154	SB-3 (81-82)	Solid	05/11/2010 12:45	05/13/2010 09:49
21005140155	SB-3 (53-54)	Solid	05/11/2010 12:30	05/13/2010 09:49
21005140156	SB-3 (44-46)	Solid	05/10/2010 16:35	05/13/2010 09:49
21005140157	SB-3 (0-6)	Solid	05/10/2010 14:50	05/13/2010 09:49
21005140158	SB-2 MW-S	Water	05/11/2010 10:35	05/13/2010 09:49
21005140159	SB-3-MW-S	Water	05/12/2010 10:20	05/13/2010 09:49
21005140160	SB-3-MW-SD	Water	05/12/2010 10:20	05/13/2010 09:49

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140101	SB-1 (74-76)	Solid	05/11/2010 15:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	244	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140102	SB-1 (78-80)	Solid	05/11/2010 16:00	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	89.1	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140103	SB-1 (62-64)	Solid	05/11/2010 14:10	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	125	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140104	SB-1 (66-68)	Solid	05/11/2010 16:35	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	105	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140105	SB-1 (70-72)	Solid	05/11/2010 15:00	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	101	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140106	SB-1 (42-43)	Solid	05/05/2010 13:15	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	109	10.0	1.58	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140107	SB-1 (13-15)	Solid	05/05/2010 11:45	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	197	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140108	SB-1 (58-60)	Solid	05/05/2010 12:10	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	250	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140109	SB-1 (62-64)	Solid	05/05/2010 15:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	167	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140110	SB-1 (46.6-47)	Solid	05/05/2010 13:57	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2670	100	15.8	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140111	SB-1 (33-35)	Solid	05/05/2010 12:17	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	119	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140112	SB-1 (17-19)	Solid	05/05/2010 11:55	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	113	10.0	1.58	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140113	SB-1 (21-22)	Solid	05/05/2010 12:00	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	113	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140114	SB-1 (25-27)	Solid	05/05/2010 12:05	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	94.5	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140115	SB-1 (9-11)	Solid	05/05/2010 11:30	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	519	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140116	SB-1 (37-39)	Solid	05/05/2010 12:25	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	121	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140117	SB-1 (45.5-46)	Solid	05/05/2010 13:55	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	750	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140118	SB-1 (29-31)	Solid	05/05/2010 12:15	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	110	10.0	1.58	mg/kg



# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140119	SB-1 (0-7)	Solid	05/05/2010 11:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	346	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140120	SB-2 (58-60)	Solid	05/10/2010 11:00	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	108	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140121	SB-2 (54-56)	Solid	05/10/2010 10:30	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	117	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140122	SB-2 (74-76)	Solid	05/10/2010 12:25	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	107	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140123	SB-2 (66-68)	Solid	05/10/2010 11:50	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	220	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140124	SB-2 (62-64)	Solid	05/10/2010 11:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	140	10.0	1.58	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140125	SB-2 (70-71.5)	Solid	05/10/2010 12:10	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	220	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140126	SB-2 (78-80)	Solid	05/10/2010 13:15	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	94.1	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140127	SB-2 (41-43)	Solid	05/07/2010 11:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	157	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140128	SB-2 (33-35)	Solid	05/07/2010 09:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	346	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140129	SB-2 (35-36)	Solid	05/07/2010 09:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	352	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140130	SB-2 (21-23)	Solid	05/07/2010 08:55	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	180	10.0	1.58	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140131	SB-2 (29-31)	Solid	05/07/2010 09:15	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	239	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140132	SB-2 (17-19)	Solid	05/07/2010 08:50	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	192	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140133	SB-2 (25-27)	Solid	05/07/2010 09:05	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	192	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140134	SB-2 (13-15)	Solid	05/07/2010 08:40	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	201	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140135	SB-2 (9-11)	Solid	05/07/2010 08:30	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	665	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140136	SB-2 (0-6)	Solid	05/07/2010 08:10	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	719	10.0	1.58	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140137	SB-3 (56-58)	Solid	05/11/2010 12:32	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	633	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140138	SB-3 (21-22)	Solid	05/10/2010 15:15	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	141	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140139	SB-3 (64-66)	Solid	05/11/2010 12:36	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	216	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140140	SB-3 (8-10)	Solid	05/10/2010 14:55	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	643	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140141	SB-3 (12-14)	Solid	05/10/2010 15:00	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	183	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140142	SB-3 (16-18)	Solid	05/10/2010 15:10	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	155	10.0	1.58	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140143	SB-3 (24-26)	Solid	05/10/2010 15:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	102	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140144	SB-3 (72-73)	Solid	05/11/2010 12:40	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	137	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140145	SB-3 (59-60)	Solid	05/11/2010 12:34	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	796	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140146	SB-3 (49-49.5)	Solid	05/10/2010 17:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1150	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140147	SB-3 (68-68.5)	Solid	05/11/2010 12:38	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	380	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140148	SB-3 (77-78)	Solid	05/11/2010 12:42	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	147	10.0	1.58	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140149	SB-3 (40-42)	Solid	05/10/2010 16:25	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2460	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140150	SB-3 (37-38)	Solid	05/10/2010 16:10	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1440	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140151	SB-3 (28-30)	Solid	05/10/2010 15:40	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	224	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140152	SB-3 (33-34)	Solid	05/10/2010 15:50	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	265	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140153	SB-3 (48-48.5)	Solid	05/10/2010 17:20	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	175	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140154	SB-3 (81-82)	Solid	05/11/2010 12:45	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	115	10.0	1.58	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140155	SB-3 (53-54)	Solid	05/11/2010 12:30	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3020	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140156	SB-3 (44-46)	Solid	05/10/2010 16:35	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	760	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140157	SB-3 (0-6)	Solid	05/10/2010 14:50	05/13/2010 09:49

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	992	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140158	SB-2 MW-S	Water	05/11/2010 10:35	05/13/2010 09:49

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.46	0.010	0.00031	mg/L
7440-70-2	Calcium	200	0.10	0.028	mg/L
7439-89-6	Iron	7.92	0.10	0.0095	mg/L
7439-95-4	Magnesium	70.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.61	0.015	0.00057	mg/L
7440-09-7	Potassium	6.33	0.50	0.068	mg/L

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	581	2.00	0.12	mg/L

SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0023B	0.010	0.00079	mg/L

SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1220	20.0	3.2	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140158	SB-2 MW-S	Water	05/11/2010 10:35	05/13/2010 09:49

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.34	0.010	0.00031	mg/L
7440-70-2	Calcium	187	0.10	0.028	mg/L
7439-89-6	Iron	5.77	0.10	0.0095	mg/L
7439-95-4	Magnesium	67.1	0.10	0.023	mg/L
7439-96-5	Manganese	0.56	0.015	0.00057	mg/L
7440-09-7	Potassium	6.15	0.50	0.068	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	544	2.00	0.12	mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	10.6	5.0	1.4	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	602	1.0	0.17	mg/L CaCO3

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2530	10.0	10.0	mg/L

## SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.00086B	0.010	0.00079	mg/L



# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140159	SB-3-MW-S	Water	05/12/2010 10:20	05/13/2010 09:49

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	395	1.0	0.17	mg/L CaCO3

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.17	0.010	0.00031	mg/L
7440-70-2	Calcium	834	0.10	0.028	mg/L
7439-89-6	Iron	14.0	0.10	0.0095	mg/L
7439-95-4	Magnesium	339	0.10	0.023	mg/L
7439-96-5	Manganese	2.90	0.015	0.00057	mg/L
7440-09-7	Potassium	14.2	0.50	0.068	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2070	5.00	0.30	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	12200	10.0	10.0	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.57	0.010	0.00031	mg/L
7440-70-2	Calcium	880	0.10	0.028	mg/L
7439-89-6	Iron	17.2	0.10	0.0095	mg/L
7439-95-4	Magnesium	357	0.10	0.023	mg/L
7439-96-5	Manganese	3.31	0.015	0.00057	mg/L
7440-09-7	Potassium	13.8	0.50	0.068	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2240	5.00	0.30	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	7270	100	15.8	mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	2.4B	5.0	1.4	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140160	SB-3-MW-SD	Water	05/12/2010 10:20	05/13/2010 09:49

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	7160	100	15.8	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.51	0.010	0.00031	mg/L
7440-70-2	Calcium	860	0.10	0.028	mg/L
7439-89-6	Iron	17.4	0.10	0.0095	mg/L
7439-95-4	Magnesium	356	0.10	0.023	mg/L
7439-96-5	Manganese	3.28	0.015	0.00057	mg/L
7440-09-7	Potassium	13.7	0.50	0.068	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2250	5.00	0.30	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.06	0.010	0.00031	mg/L
7440-70-2	Calcium	831	0.10	0.028	mg/L
7439-89-6	Iron	13.9	0.10	0.0095	mg/L
7439-95-4	Magnesium	333	0.10	0.023	mg/L
7439-96-5	Manganese	2.85	0.015	0.00057	mg/L
7440-09-7	Potassium	13.8	0.50	0.068	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2080	5.00	0.30	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	12000	10.0	10.0	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	385	1.0	0.17	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140101	SB-1 (74-76)	Solid	05/11/2010 15:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:59	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	244	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140102	SB-1 (78-80)	Solid	05/11/2010 16:00	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:04	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	89.1	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140103	SB-1 (62-64)	Solid	05/11/2010 14:10	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:05	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	125	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140104	SB-1 (66-68)	Solid	05/11/2010 16:35	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:06	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	105	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140105	SB-1 (70-72)	Solid	05/11/2010 15:00	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:07	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	101	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140106	SB-1 (42-43)	Solid	05/05/2010 13:15	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:08	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	109	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140107	SB-1 (13-15)	Solid	05/05/2010 11:45	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:08	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	197	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140108	SB-1 (58-60)	Solid	05/05/2010 12:10	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:09	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	250	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140109	SB-1 (62-64)	Solid	05/05/2010 15:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 15:10	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	167	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140110	SB-1 (46.6-47)	Solid	05/05/2010 13:57	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	10	05/20/2010 15:51	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2670	100	15.8	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140111	SB-1 (33-35)	Solid	05/05/2010 12:17	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:18	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	119	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140112	SB-1 (17-19)	Solid	05/05/2010 11:55	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:19	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	113	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140113	SB-1 (21-22)	Solid	05/05/2010 12:00	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:19	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	113	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140114	SB-1 (25-27)	Solid	05/05/2010 12:05	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:20	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	94.5	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140115	SB-1 (9-11)	Solid	05/05/2010 11:30	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:21	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	519	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140116	SB-1 (37-39)	Solid	05/05/2010 12:25	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:22	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	121	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140117	SB-1 (45.5-46)	Solid	05/05/2010 13:55	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:23	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	750	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140118	SB-1 (29-31)	Solid	05/05/2010 12:15	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:26	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	110	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140119	SB-1 (0-7)	Solid	05/05/2010 11:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:27	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	346	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140120	SB-2 (58-60)	Solid	05/10/2010 11:00	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:28	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	108	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140121	SB-2 (54-56)	Solid	05/10/2010 10:30	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:29	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	117	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140122	SB-2 (74-76)	Solid	05/10/2010 12:25	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:30	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	107	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140123	SB-2 (66-68)	Solid	05/10/2010 11:50	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:30	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	220	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140124	SB-2 (62-64)	Solid	05/10/2010 11:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:31	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	140	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140125	SB-2 (70-71.5)	Solid	05/10/2010 12:10	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:32	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	220	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140126	SB-2 (78-80)	Solid	05/10/2010 13:15	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:33	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	94.1	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140127	SB-2 (41-43)	Solid	05/07/2010 11:20	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:34	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	157	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140128	SB-2 (33-35)	Solid	05/07/2010 09:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:39	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	346	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140129	SB-2 (35-36)	Solid	05/07/2010 09:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432239	EPA 9251	1	05/20/2010 15:40	AEL	432240

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	352	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140130	SB-2 (21-23)	Solid	05/07/2010 08:55	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:25	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	180	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140131	SB-2 (29-31)	Solid	05/07/2010 09:15	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:28	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	239	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140132	SB-2 (17-19)	Solid	05/07/2010 08:50	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:29	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	192	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140133	SB-2 (25-27)	Solid	05/07/2010 09:05	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:30	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	192	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140134	SB-2 (13-15)	Solid	05/07/2010 08:40	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:31	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	201	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140135	SB-2 (9-11)	Solid	05/07/2010 08:30	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:32	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	665	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140136	SB-2 (0-6)	Solid	05/07/2010 08:10	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:34	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	719	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140137	SB-3 (56-58)	Solid	05/11/2010 12:32	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:35	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	633	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140138	SB-3 (21-22)	Solid	05/10/2010 15:15	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:36	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	141	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140139	SB-3 (64-66)	Solid	05/11/2010 12:36	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:37	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	216	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140140	SB-3 (8-10)	Solid	05/10/2010 14:55	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:38	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	643	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140141	SB-3 (12-14)	Solid	05/10/2010 15:00	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:39	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	183	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140142	SB-3 (16-18)	Solid	05/10/2010 15:10	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:40	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	155	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140143	SB-3 (24-26)	Solid	05/10/2010 15:20	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:41	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	102	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140144	SB-3 (72-73)	Solid	05/11/2010 12:40	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:42	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	137	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140145	SB-3 (59-60)	Solid	05/11/2010 12:34	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:42	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	796	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140146	SB-3 (49-49.5)	Solid	05/10/2010 17:20	05/13/2010 09:49

## SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	5	05/20/2010 17:03	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1150	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140147	SB-3 (68-68.5)	Solid	05/11/2010 12:38	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:48	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	380	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140148	SB-3 (77-78)	Solid	05/11/2010 12:42	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	1	05/20/2010 16:49	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	147	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140149	SB-3 (40-42)	Solid	05/10/2010 16:25	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432283	EPA 9251	5	05/20/2010 17:08	AEL	432284

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2460	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140150	SB-3 (37-38)	Solid	05/10/2010 16:10	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	5	05/20/2010 17:09	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1440	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140151	SB-3 (28-30)	Solid	05/10/2010 15:40	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	1	05/20/2010 16:57	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	224	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140152	SB-3 (33-34)	Solid	05/10/2010 15:50	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	1	05/20/2010 16:58	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	265	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140153	SB-3 (48-48.5)	Solid	05/10/2010 17:20	05/13/2010 09:49

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	1	05/20/2010 16:59	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	175	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140154	SB-3 (81-82)	Solid	05/11/2010 12:45	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	1	05/20/2010 17:00	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	115	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140155	SB-3 (53-54)	Solid	05/11/2010 12:30	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	5	05/20/2010 17:12	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3020	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140156	SB-3 (44-46)	Solid	05/10/2010 16:35	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	1	05/20/2010 17:02	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	760	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140157	SB-3 (0-6)	Solid	05/10/2010 14:50	05/13/2010 09:49

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432285	EPA 9251	1	05/20/2010 17:03	AEL	432286

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	992	10.0	1.58	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140158	SB-2 MW-S	Water	05/11/2010 10:35	05/13/2010 09:49

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/21/2010 06:53	AGC	432316

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	95	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	109	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.05	mg/L	100	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	05/27/2010 04:28	SMH	432977

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.6	12.4	mg/L	79	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 10:29	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.00086B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/23/2010 23:51	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.46</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140158	SB-2 MW-S	Water	05/11/2010 10:35	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/23/2010 23:51	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	200	0.10	0.028	mg/L
7439-89-6	Iron	7.92	0.10	0.0095	mg/L
7439-95-4	Magnesium	70.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.61	0.015	0.00057	mg/L
7440-09-7	Potassium	6.33	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	2	05/24/2010 17:36	CNB	432623

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	581	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 21:13	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.34	0.010	0.00031	mg/L
7440-70-2	Calcium	187	0.10	0.028	mg/L
7439-89-6	Iron	5.77	0.10	0.0095	mg/L
7439-95-4	Magnesium	67.1	0.10	0.023	mg/L
7439-96-5	Manganese	0.56	0.015	0.00057	mg/L
7440-09-7	Potassium	6.15	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	2	05/24/2010 17:29	CNB	432623

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	544	2.00	0.12	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 17:29	CLB	432737

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0023B	0.010	0.00079	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140158	SB-2 MW-S	Water	05/11/2010 10:35	05/13/2010 09:49

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		2530	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/25/2010 14:24	AEL	432688
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		1220	20.0	3.2	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		602	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 11:30	JEM	432023
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		10.6	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140159	SB-3-MW-S	Water	05/12/2010 10:20	05/13/2010 09:49

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/21/2010 07:16	AGC	432316

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.05	mg/L	100	78 - 130
1868-53-7	Dibromofluoromethane	.05	.057	mg/L	114	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	06/01/2010 03:52	SMH	433340

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	15.8	21.1	mg/L	134	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 10:35	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/23/2010 23:58	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>6.57</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140159	SB-3-MW-S	Water	05/12/2010 10:20	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/23/2010 23:58	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	880	0.10	0.028	mg/L
7439-89-6	Iron	17.2	0.10	0.0095	mg/L
7439-95-4	Magnesium	357	0.10	0.023	mg/L
7439-96-5	Manganese	3.31	0.015	0.00057	mg/L
7440-09-7	Potassium	13.8	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/24/2010 17:49	CNB	432623

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2240	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 21:20	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.17	0.010	0.00031	mg/L
7440-70-2	Calcium	834	0.10	0.028	mg/L
7439-89-6	Iron	14.0	0.10	0.0095	mg/L
7439-95-4	Magnesium	339	0.10	0.023	mg/L
7439-96-5	Manganese	2.90	0.015	0.00057	mg/L
7440-09-7	Potassium	14.2	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	5	05/24/2010 17:43	CNB	432623

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2070	5.00	0.30	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 17:35	CLB	432737

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140159	SB-3-MW-S	Water	05/12/2010 10:20	05/13/2010 09:49

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		12200	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	05/25/2010 14:25	AEL	432688
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		7270	100	15.8	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		395	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 11:31	JEM	432023
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		2.4B	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140160	SB-3-MW-SD	Water	05/12/2010 10:20	05/13/2010 09:49

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/21/2010 07:38	AGC	432316

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	ND	0.005	0.0000542	mg/L
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.049	mg/L	98	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	108	77 - 127
2037-26-5	Toluene d8	.05	.048	mg/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.053	mg/L	106	71 - 127

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/21/2010 13:00	432124	TNRCC 1006/LA 1006	1	06/01/2010 01:58	SMH	433340

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16	13.6	mg/L	85	60 - 140

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431673	SW-846 3020A Dissolved	1	05/25/2010 10:41	CLB	432695

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:05	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>6.51</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140160	SB-3-MW-SD	Water	05/12/2010 10:20	05/13/2010 09:49

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	1	05/24/2010 00:05	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	860	0.10	0.028	mg/L
7439-89-6	Iron	17.4	0.10	0.0095	mg/L
7439-95-4	Magnesium	356	0.10	0.023	mg/L
7439-96-5	Manganese	3.28	0.015	0.00057	mg/L
7440-09-7	Potassium	13.7	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 13:50	431669	SW-846 3010A	5	05/24/2010 18:03	CNB	432623

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2250	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	1	05/23/2010 21:27	CNB	432180

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	6.06	0.010	0.00031	mg/L
7440-70-2	Calcium	831	0.10	0.028	mg/L
7439-89-6	Iron	13.9	0.10	0.0095	mg/L
7439-95-4	Magnesium	333	0.10	0.023	mg/L
7439-96-5	Manganese	2.85	0.015	0.00057	mg/L
7440-09-7	Potassium	13.8	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:50	431671	SW-846 3010A Dissolved	5	05/24/2010 17:56	CNB	432623

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	2080	5.00	0.30	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/14/2010 14:40	431672	SW-846 3020A	1	05/25/2010 17:41	CLB	432737

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005140160	SB-3-MW-SD	Water	05/12/2010 10:20	05/13/2010 09:49

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 14:30	DJH	431679
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		12000	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	05/25/2010 14:26	AEL	432688
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		7160	100	15.8	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		385	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 11:32	JEM	432023
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

# GC/MS Volatiles Quality Control Summary

Analytical Batch 432316 Prep Batch N/A		Client ID MB432316 GCAL ID 833862 Sample Type Method Blank Analytical Date 05/21/2010 00:16 Matrix Water			LCS432316 833863 LCS 05/20/2010 23:08 Water			LCSD432316 833864 LCSD 05/20/2010 23:31 Water			
<b>SW-846 8260B</b>		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.046	91	74 - 126	0.050	101	8	30
1330-20-7	Xylene (total)	ND	0.01	0.150	0.146	97	74 - 127	0.160	107	9	30
71-43-2	Benzene	ND	0.005	0.050	0.056	112	70 - 129	0.058	116	4	20
108-88-3	Toluene	ND	0.005	0.050	0.051	101	72 - 120	0.054	108	6	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	50.5	101	50	54.7	109	78 - 130	56.3	113		
1868-53-7	Dibromofluoromethane	53.3	107	50	53.1	106	77 - 127	51.8	104		
2037-26-5	Toluene d8	46.3	93	50	51	102	76 - 134	51	102		
17060-07-0	1,2-Dichloroethane-d4	49.3	99	50	51.2	102	71 - 127	52.3	105		

# General Chromatography Quality Control Summary

Analytical Batch 432977 Prep Batch 432124 Prep Method TNRCC 1006/LA 1006		Client ID MB432124 GCAL ID 832979 Sample Type Method Blank Prep Date 05/21/2010 13:00 Analytical Date 05/26/2010 15:05 Matrix Water		LCS432124 832980 LCS 05/21/2010 13:00 05/28/2010 05:23 Water			LCSD432124 832981 LCSD 05/21/2010 13:00 05/26/2010 17:22 Water				
LA1006 Hydrocarbons by Range		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150								
GCSV-02-10	Aliphatic >C8-C10	ND	0.150								
GCSV-02-11	Aliphatic >C10-C12	ND	0.150								
GCSV-02-12	Aliphatic >C12-C16	ND	0.150								
GCSV-02-31	Aliphatic >C16-C35	ND	0.150								
GCSV-02-14	Aromatic >C8-C10	ND	0.150								
GCSV-02-15	Aromatic >C10-C12	ND	0.150								
GCSV-02-16	Aromatic >C12-C16	ND	0.150								
GCSV-02-17	Aromatic >C16-C21	ND	0.150								
GCSV-05-18	Aromatic >C21-C35	ND	0.150								
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	62.3	58.1	93	60 - 140	59.9	90	3	20
<b>Surrogate</b>											
84-15-1	o-Terphenyl	11200	67	15600	10200	65	60 - 140	11300	68		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431673 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431673 <b>GCAL ID</b> 830863 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 09:15 <b>Matrix</b> Water	LCS431673 830864 LCS 05/14/2010 14:40 05/25/2010 09:22 Water			
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.010	0.040	0.034	85	80 - 120

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431673 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-09 <b>GCAL ID</b> 21005140218 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 09:28 <b>Matrix</b> Water	830832MS 830866 MS 05/14/2010 14:40 05/25/2010 09:40 Water			
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	0.0 0.010	0.040	0.037	93	75 - 125

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431673 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-09 <b>GCAL ID</b> 21005140218 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 09:28 <b>Matrix</b> Water	830832DUP 830865 DUP 05/14/2010 14:40 05/25/2010 09:34 Water		
<b>SW-846 7010 Arsenic Dissolved</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.0 0.010	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431669 <b>GCAL ID</b> 830847 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:06 <b>Matrix</b> Water	LCS431669 830848 LCS 05/14/2010 13:50 05/23/2010 23:13 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.49	98	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.80	96	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.78	96	80 - 120
7439-95-4	Magnesium	0.026B	0.10	5.00	4.83	97	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.48	97	80 - 120
7440-09-7	Potassium	0.35B	0.50	10.0	10.3	103	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.46	93	80 - 120
7440-23-5	Sodium	0.44B	1.00	20.0	20.4	102	80 - 120

<b>Analytical Batch</b> 432180 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:19 <b>Matrix</b> Water	830824MS 830850 MS 05/14/2010 13:50 05/23/2010 23:32 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.30	0.010	0.50	0.79	99	75 - 125
7440-70-2	Calcium	65.8	0.10	5.00	73.5	154*	75 - 125
7439-89-6	Iron	0.58	0.10	5.00	5.62	101	75 - 125
7439-95-4	Magnesium	157	0.10	5.00	169	250*	75 - 125
7439-96-5	Manganese	0.15	0.015	0.50	0.65	99	75 - 125
7440-09-7	Potassium	52.0	0.50	10.0	66.1	141*	75 - 125
7782-49-2	Selenium	0.0	0.040	0.50	0.49	98	75 - 125



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/26/2010 14:04 <b>Matrix</b> Water	830824MS 830850 MS 05/14/2010 13:50 05/26/2010 14:17 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-23-5	Sodium	1230	5.00	20.0	1310	391* 75 - 125

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/23/2010 23:19 <b>Matrix</b> Water	830824DUP 830849 DUP 05/14/2010 13:50 05/26/2010 13:57 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-70-2	Calcium	65.8	0.10	64.7	2 20
7439-95-4	Magnesium	157	0.10	157	0 20

<b>Analytical Batch</b> 432716 <b>Prep Batch</b> 431669 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW BK-01 <b>GCAL ID</b> 21005140210 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 13:50 <b>Analytical Date</b> 05/26/2010 14:04 <b>Matrix</b> Water	830824DUP 830849 DUP 05/14/2010 13:50 05/26/2010 14:10 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-23-5	Sodium	1230	5.00	1270	3 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180	<b>Client ID</b> MB431671	LCS431671					
<b>Prep Batch</b> 431671	<b>GCAL ID</b> 830855	830856					
<b>Prep Method</b> SW-846	<b>Sample Type</b> Method Blank	LCS					
3010A	<b>Prep Date</b> 05/14/2010 14:50	05/14/2010 14:50					
Dissolved	<b>Analytical Date</b> 05/23/2010 20:28	05/23/2010 20:35					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.14	0.50	0.48	97	80 - 120
7440-70-2	Calcium	ND	1.40	5.00	4.79	96	80 - 120
7439-89-6	Iron	ND	1.40	5.00	4.69	94	80 - 120
7439-95-4	Magnesium	ND	1.40	5.00	4.78	96	80 - 120
7439-96-5	Manganese	ND	0.21	0.50	0.48	97	80 - 120
7440-09-7	Potassium	ND	7.00	10.0	10.5	105	80 - 120
7782-49-2	Selenium	ND	0.56	0.50	0.48	95	80 - 120
7440-23-5	Sodium	ND	14.0	20.0	21.7	108	80 - 120

<b>Analytical Batch</b> 432180	<b>Client ID</b> SW BK-01	830824MS					
<b>Prep Batch</b> 431671	<b>GCAL ID</b> 21005140210	830858					
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	MS					
3010A	<b>Prep Date</b> 05/14/2010 14:50	05/14/2010 14:50					
Dissolved	<b>Analytical Date</b> 05/23/2010 20:41	05/23/2010 20:54					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.28	0.010	0.50	0.76	96	75 - 125
7440-70-2	Calcium	65.3	0.10	5.00	70.8	109	75 - 125
7439-89-6	Iron	0.0	0.10	5.00	4.63	93	75 - 125
7439-95-4	Magnesium	155	0.10	5.00	161	117	75 - 125
7439-96-5	Manganese	0.029	0.015	0.50	0.52	97	75 - 125
7440-09-7	Potassium	53.4	0.50	10.0	64.9	115	75 - 125
7782-49-2	Selenium	0.0	0.040	0.50	0.49	99	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432180	<b>Client ID</b> SW BK-01	830824DUP				
<b>Prep Batch</b> 431671	<b>GCAL ID</b> 21005140210	830857				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/14/2010 14:50	05/14/2010 14:50				
Dissolved	<b>Analytical Date</b> 05/23/2010 20:41	05/23/2010 20:47				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-39-3	Barium	0.28	0.010	0.31	10	20
7440-70-2	Calcium	65.3	0.10	70.5	8	20
7439-89-6	Iron	0.0	0.10	0.0	0	20
7439-95-4	Magnesium	155	0.10	168	8	20
7439-96-5	Manganese	0.029	0.015	0.032	10	20
7440-09-7	Potassium	53.4	0.50	58.9	10	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431672 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431672 <b>GCAL ID</b> 830859 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 11:59 <b>Matrix</b> Water	LCS431672 830860 LCS 05/14/2010 14:40 05/25/2010 12:05 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.039	<b>% R</b> 97	<b>Control Limits % R</b> 80 - 120	
7440-38-2	Arsenic	ND	0.010	0.040	0.039	97	80 - 120

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431672 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-06 <b>GCAL ID</b> 21005140215 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 12:11 <b>Matrix</b> Water	830829MS 830862 MS 05/14/2010 14:40 05/25/2010 12:23 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0024 <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.037	<b>% R</b> 86	<b>Control Limits % R</b> 75 - 125	
7440-38-2	Arsenic	0.0024	0.010	0.040	0.037	86	75 - 125

<b>Analytical Batch</b> 432695 <b>Prep Batch</b> 431672 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW BK-06 <b>GCAL ID</b> 21005140215 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/14/2010 14:40 <b>Analytical Date</b> 05/25/2010 12:11 <b>Matrix</b> Water	830829DUP 830861 DUP 05/14/2010 14:40 05/25/2010 12:17 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0024 <b>RDL</b> 0.010	<b>Result</b> 0.0028	<b>RPD</b> 15	<b>RPD Limit</b> 20	
7440-38-2	Arsenic	0.0024	0.010	0.0028	15	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431679 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	MB431679 830900 Method Blank 05/14/2010 14:30 Water	LCS431679 830901 LCS 05/14/2010 14:30 Water				
<b>SM 2540C TDS</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	988	98.8	80 - 120

<b>Analytical Batch</b> 431679 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	MW-14R 1S10 21005135103 SAMPLE 05/14/2010 14:30 Water	MW-14R DUP 1S10 21005135106 DUP 05/14/2010 14:30 Water			
<b>SM 2540C TDS</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	1920	10.0	1880	2.1	5

<b>Analytical Batch</b> 431679 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SW BK-01 21005140210 SAMPLE 05/14/2010 14:30 Water	830824DUP 830902 DUP 05/14/2010 14:30 Water			
<b>SM 2540C TDS</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	4800	10.0	4960	3.3	5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432688 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432688 <b>GCAL ID</b> 835499 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/25/2010 14:19 <b>Matrix</b> Water	LCS432688 835500 LCS 05/25/2010 14:20 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
16887-00-6 Chloride	0.26B 1.0	60.0 62.4 104 80 - 120

<b>Analytical Batch</b> 432688 <b>Prep Batch</b> N/A	<b>Client ID</b> MW2820100512 <b>GCAL ID</b> 21005141709 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 14:35 <b>Matrix</b> Water	MW2820100512 MS 21005141710 MS 05/25/2010 14:36 Water	MW2820100512 MSD 21005141711 MSD 05/25/2010 14:37 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	242 10.0	600 958 119 75 - 125	957 119 0.1 25

<b>Analytical Batch</b> 432688 <b>Prep Batch</b> N/A	<b>Client ID</b> WELL WATER <b>GCAL ID</b> 21005132001 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 14:21 <b>Matrix</b> Water	830227MS 835501 MS 05/25/2010 14:22 Water	830227MSD 835502 MSD 05/25/2010 14:23 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	6.0 1.0	60.0 74.9 115 75 - 125	75.0 115 0.1 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432238 <b>Prep Batch</b> 432235 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432235 <b>GCAL ID</b> 833537 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 14:44 <b>Matrix</b> Solid	LCS432235 833538 LCS 05/19/2010 09:00 05/20/2010 14:45 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> 600 <b>Result</b> 652 <b>% R</b> 109 <b>Control Limits % R</b> 80 - 120
16887-00-6 Chloride	ND 10.0	

<b>Analytical Batch</b> 432238 <b>Prep Batch</b> 432235 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-9 <b>GCAL ID</b> 21005112901 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 14:46 <b>Matrix</b> Solid	829152MS 833539 MS 05/19/2010 09:00 05/20/2010 14:46 Solid	829152MSD 833540 MSD 05/19/2010 09:00 05/20/2010 14:47 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> 1200 <b>Result</b> 1790 <b>% R</b> 95 <b>Control Limits % R</b> 75 - 125	<b>Result</b> 1790 <b>% R</b> 95 <b>RPD</b> 0 <b>RPD Limit</b> 25
16887-00-6 Chloride	650 20.0		

<b>Analytical Batch</b> 432238 <b>Prep Batch</b> 432235 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-1 (74-76) <b>GCAL ID</b> 21005140101 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 14:59 <b>Matrix</b> Solid	830737MS 833541 MS 05/19/2010 09:00 05/20/2010 15:00 Solid	830737MSD 833542 MSD 05/19/2010 09:00 05/20/2010 15:50 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> 600 <b>Result</b> 862 <b>% R</b> 103 <b>Control Limits % R</b> 75 - 125	<b>Result</b> 900 <b>% R</b> 109 <b>RPD</b> 4 <b>RPD Limit</b> 25
16887-00-6 Chloride	244 10.0		

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432240 <b>Prep Batch</b> 432239 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432239 <b>GCAL ID</b> 833550 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 15:11 <b>Matrix</b> Solid	LCS432239 833551 LCS 05/19/2010 09:00 05/20/2010 15:12 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> Result <b>% R</b> Control Limits % R
16887-00-6 Chloride	ND 10.0	600 659 110 80 - 120

<b>Analytical Batch</b> 432240 <b>Prep Batch</b> 432239 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-1 (46.6-47) <b>GCAL ID</b> 21005140110 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 15:51 <b>Matrix</b> Solid	830746MS 833552 MS 05/19/2010 09:00 05/20/2010 15:52 Solid	830746MSD 833553 MSD 05/19/2010 09:00 05/20/2010 15:53 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> Result <b>% R</b> Control Limits % R	<b>Result</b> % R RPD RPD Limit
16887-00-6 Chloride	2670 100	6000 8780 102 75 - 125	8750 101 0.3 25

<b>Analytical Batch</b> 432240 <b>Prep Batch</b> 432239 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-2 (41-43) <b>GCAL ID</b> 21005140127 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 15:34 <b>Matrix</b> Solid	830763MS 833554 MS 05/19/2010 09:00 05/20/2010 15:37 Solid	830763MSD 833555 MSD 05/19/2010 09:00 05/20/2010 15:38 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> Result <b>% R</b> Control Limits % R	<b>Result</b> % R RPD RPD Limit
16887-00-6 Chloride	157 10.0	600 822 111 75 - 125	814 109 1 25



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432284 <b>Prep Batch</b> 432283 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432283 <b>GCAL ID</b> 833777 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 16:23 <b>Matrix</b> Solid	LCS432283 833778 LCS 05/19/2010 09:00 05/20/2010 16:24 Solid				
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6 Chloride	ND	10.0	600	606	101	80 - 120

<b>Analytical Batch</b> 432284 <b>Prep Batch</b> 432283 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-2 (21-23) <b>GCAL ID</b> 21005140130 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 16:25 <b>Matrix</b> Solid	830766MS 833779 MS 05/19/2010 09:00 05/20/2010 16:26 Solid	830766MSD 833780 MSD 05/19/2010 09:00 05/20/2010 16:27 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	180	10.0	600	822	107	75 - 125	828	108	0.7	25

<b>Analytical Batch</b> 432284 <b>Prep Batch</b> 432283 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-3 (49-49.5) <b>GCAL ID</b> 21005140146 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 17:03 <b>Matrix</b> Solid	830782MS 833781 MS 05/19/2010 09:00 05/20/2010 17:04 Solid	830782MSD 833782 MSD 05/19/2010 09:00 05/20/2010 17:07 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	1150	50.0	3000	4420	109	75 - 125	4460	110	0.9	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432286 <b>Prep Batch</b> 432285 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432285 <b>GCAL ID</b> 833789 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 16:51 <b>Matrix</b> Solid	LCS432285 833790 LCS 05/19/2010 09:00 05/20/2010 16:52 Solid				
<b>SW-846 9251 Chloride</b>		<b>Units</b> mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b> RDL	<b>Added</b>			<b>Limits % R</b>
16887-00-6 Chloride		3.02B 10.0	600	619	103	80 - 120

<b>Analytical Batch</b> 432286 <b>Prep Batch</b> 432285 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-3 (37-38) <b>GCAL ID</b> 21005140150 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 17:09 <b>Matrix</b> Solid	830786MS 833791 MS 05/19/2010 09:00 05/20/2010 17:10 Solid	830786MSD 833792 MSD 05/19/2010 09:00 05/20/2010 17:11 Solid							
<b>SW-846 9251 Chloride</b>		<b>Units</b> mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b> RDL	<b>Added</b>			<b>Limits % R</b>				<b>Limit</b>
16887-00-6 Chloride		1440 50.0	3000	4630	106	75 - 125	4660	107	0.6	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431955 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 15:05 <b>Matrix</b> Water	829142DUP 832064 DUP 05/17/2010 15:05 Water
<b>SM 2320B Carbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	60 1.0	60.8 1 11
T-005-C Carbonate Alkalinity	0.00 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432023 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432023 <b>GCAL ID</b> 832399 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/18/2010 11:18 <b>Matrix</b> Water	<b>LCS432023</b> 832400 LCS 05/18/2010 11:18 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	ND	5.0	20.0	20.7	104 80 - 120

<b>Analytical Batch</b> 432023 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-29 <b>GCAL ID</b> 21005133401 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/18/2010 12:04 <b>Matrix</b> Water	<b>830364MS</b> 832402 MS 05/18/2010 12:08 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	239	100	400	616	94 75 - 125

<b>Analytical Batch</b> 432023 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-29 <b>GCAL ID</b> 21005133401 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/18/2010 12:04 <b>Matrix</b> Water	<b>830364DUP</b> 832401 DUP 05/18/2010 12:04 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>		<b>RPD</b>	<b>Limit</b>
14808-79-8	Sulfate	239	100	236	1	25

## CHAIN OF CUSTODY RECORD

Lab use only

Client Name <i>P. Sani</i>	Client # <i>4271</i>	Workorder # <i>200514</i>	Due Date <i>5.24.16</i>
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<b>Report to:</b> Client: <i>MP&amp;A</i> Address: <i>1100 Poydras</i> <i>Suite 1430, MOBILE</i> Contact: <i>J. Miller</i> Phone: <i>504 582-2468</i> Fax:	<b>Bill to:</b> Client: Address: Contact: Phone: Fax:	<b>Analytical Requests &amp; Method</b> (Grid area)	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <i>0.7</i>
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P.O. Number: *07-47*      Project Name/Number: *East White Lake - VPSB*

Sampled By: *[Signature]* / *Jonathan Miller*

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	Remarks:	Lab ID
S	5-11	1500			SB-1 (74-76')		X		1
		1600			SB-1 (78-80')				2
		14:30			SB-1 (62-64')				3
		16:35			SB-1 (66-68')				4
		1500			SB-1 (70-72')				5
	5-5	1315			SB-1 (42-43')				6
		1145			SB-1 (13-15')				7
		1210			SB-1 (58-60')				8
		1520			SB-1 (62-64')				9
		1357			SB-1 (46.6-47')				10
		1217			SB-1 (33-35')				11
		1155			SB-1 (17-19')				12
		1200			SB-1 (21-22')				13
		1205			SB-1 (25-27')				14

Turn Around Time:  24-48 hrs.     3 days     1 week     Standard     Other

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>5/13/16</i>	Time: <i>0800</i>	Note: <i>Keep addtn'l soil for potential addnt'l analysis</i>
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>5-13-16</i>	Time: <i>949</i>	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

WHITE: CLIENT FINAL REPORT - CANARY-1 LABORATORY

Lab use only

Client Name <b>P. Sami</b>	Client # <b>4271</b>	Workorder # <b>210051401</b>	Due Date <b>5/24/10</b>
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<b>Report to:</b> Client: <b>MPPA</b> Address: <b>1100 Loydway Suite 1430, NOLA</b> Contact: Phone: Fax:	<b>Bill to:</b> Client: Address: Contact: Phone: Fax:	<b>Analytical Requests &amp; Method</b>       <div style="text-align: center;"><b>chlorides</b></div>	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in fact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <b>6.7</b>						
P.O. Number: <b>07-47</b> Project Name/Number: <b>East White Lake VPSB</b>		Analytical Requests & Method (continued)							
Sampled By: <b>At Miller / Donathan Miller</b>									
Matrix <sup>1</sup>	Date <b>2010</b>	Time (2400)	C O M P	G R A B	Sample Description	Preservatives	No Con- tainers	Remarks:	Lab ID
<b>S</b>	<b>5-5</b>	<b>1130</b>		<b>X</b>	<b>SB-1 (9-11')</b>				<b>15</b>
↓	↓	<b>1225</b>			<b>SB-1 (37-39')</b>				<b>16</b>
↓	↓	<b>1355</b>			<b>SB-1 (45.5-46')</b>				<b>17</b>
↓	↓	<b>1215</b>			<b>SB-1 (29-31')</b>				<b>18</b>
↓	↓	<b>1120</b>			<b>SB-1 (0-7')</b>				<b>19</b>

Turn Around Time: <input type="checkbox"/> 24-48 hrs. <input type="checkbox"/> 3 days <input type="checkbox"/> 1 week <input type="checkbox"/> Standard <input type="checkbox"/> Other					
Relinquished by: (Signature) 	Received by: (Signature) 	Date: <b>05/13/2010</b>	Time: <b>0800</b>	Note: <b>Keep additional soil for potential additional analysis</b>	
Relinquished by: (Signature) 	Received by: (Signature) 	Date: <b>5-13-10</b>	Time: <b>949</b>		
Relinquished by: (Signature) 	Received by: (Signature)	Date:	Time:		
By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.					

Matrix: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

We cannot accept verbal changes. Please see written changes to (001) 517-5111



## CHAIN OF CUSTODY RECORD

Lab use only	<i>Pisani</i>	<i>9371</i>	<i>210051401</i>	<i>5-24-10</i>
Client Name	Client #	Workorder #	Due Date	

<b>Report to:</b>	<b>Bill to:</b>	Analytical Requests & Method	
Client: <i>MPEA</i>	Client: _____		Lab use only:
Address: <i>1100 Loyd Ave Suite 1430</i>	Address: _____		Custody Seal
Contact: <i>J. Miller</i>	Contact: _____		used <input type="checkbox"/> yes <input type="checkbox"/> no
Phone: <i>504 582 2468</i>	Phone: _____		in tact <input type="checkbox"/> yes <input type="checkbox"/> no
Fax: _____	Fax: _____		Temperature °C <i>0.7</i>

P.O. Number <i>07-47</i>	Project Name/Number <i>East White Lake - VPSB</i>
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Sampled By: <i>[Signature] / Jonathan Miller</i>	Lab ID          
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Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers		Remarks:	Lab ID
<i>S</i>	<i>5-10</i>	<i>1100</i>			<i>SB-2 (58-60')</i>			<i>x</i>		<i>20</i>
		<i>1030</i>			<i>SB-2 (54-56')</i>					<i>21</i>
		<i>1025</i>			<i>SB-2 (74-76')</i>					<i>22</i>
		<i>1150</i>			<i>SB-2 (66-68')</i>					<i>23</i>
		<i>1120</i>			<i>SB-2 (62-64')</i>					<i>24</i>
		<i>1210</i>			<i>SB-2 (70-71.5')</i>					<i>25</i>
		<i>1315</i>			<i>SB-2 (78-80')</i>					<i>26</i>
	<i>5-7</i>	<i>1120</i>			<i>SB-2 (41-43')</i>					<i>27</i>
		<i>0920</i>			<i>SB-2 (33-35')</i>					<i>28</i>
		<i>0920</i>			<i>SB-2 (35-36')</i>					<i>29</i>
		<i>0855</i>			<i>SB-2 (21-23')</i>					<i>30</i>
		<i>0915</i>			<i>SB-2 (29-31')</i>					<i>31</i>
		<i>0850</i>			<i>SB-2 (17-19')</i>					<i>32</i>
		<i>0905</i>			<i>SB-2 (25-27')</i>					<i>33</i>

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>E. J. [Signature]</i>	Date: <i>05/13/10</i>	Time: <i>0800</i>	Note: <i>Keep addtn'l soil for potential addtn'l analysis</i>  By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>5-13-10</i>	Time: <i>645</i>	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

WHITE CLIENT FINAL REPORT - CANADY LABORATORY

## CHAIN OF CUSTODY RECORD

Lab use only			
Client Name	Client #	Workorder #	Due Date
P. sani	4271	210051401	5-24-10

<b>Report to:</b> Client: <u>MPPA</u> Address: <u>1100 Poydras Suite 1500</u> <u>New Orleans LA 70163</u> Contact: <u>J. Miller</u> Phone: <u>504 582-2460</u> Fax: _____	<b>Bill to:</b> Client: _____ Address: _____ Contact: _____ Phone: _____ Fax: _____	<b>Analytical Requests &amp; Method</b>	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>0.7</u>
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P.O. Number: 07-47      Project Name/Number: East White Lake - VPSB

Sampled By: \_\_\_\_\_

Matrix <sup>1</sup>	Date 2010	Time (2400)	COED	Grab	Sample Description	Preservatives	No Con- tainers	Remarks:	Lab ID
S	5-7	0840		X	SB-2 (13-15')				34
S	5-7	0830		X	SB-2 (9-11')				35
S	5-7	0810		X	SB-2 (0-6')				36

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date: <u>05/13/10</u>	Time: <u>0800</u>	Note: <u>Keep addtn'l soil for potential addtn'l analysis</u>
Relinquished by: (Signature)	Received by: (Signature)	Date: <u>5-13-10</u>	Time: <u>945</u>	
Relinquished by: (Signature)	Received by: (Signature)	Date: _____	Time: _____	

Chlovide

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.



## CHAIN OF CUSTODY RECORD

Lab use only

Client Name <i>P. Sani</i>	Client # <i>4271</i>	Workorder # <i>210051401</i>	Due Date <i>5-24-10</i>
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<b>Report to:</b> Client: <i>MPEA</i> Address: <i>1100 Poydras Suite 1430</i> <i>New Orleans LA 70163</i> Contact: <i>J. Miller</i> Phone: <i>504 582-2468</i> Fax:	<b>Bill to:</b> Client: Address: Contact: Phone: Fax:	<b>Analytical Requests &amp; Method</b> (Grid area for requests)	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <i>07</i>
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P.O. Number: *07-47* Project Name/Number: *East White Lake - VPSB*

Sampled By: *Jonathan Miller*

*chloride*

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	Remarks:	Lab ID
S	5-11	12:30		X	SB-3 (56-58)		X		37
	5-10	1515			SB-3 (21-22)				36
	5-11	1236			SB-3 (64-66)				39
	5-10	1455			SB-3 (8-10)				40
	5-10	1500			SB-3 (12-14)				41
	5-10	1510			SB-3 (16-18)				42
	5-10	1520			SB-3 (24-26)				43
	5-11	1240			SB-3 (72-73)				44
	5-11	1234			SB-3 (59-60)				45
	5-10	1720			SB-3 (49-49.5)				46
	5-11	1238			SB-3 (68-68.5)				47
	5-11	1242			SB-3 (77-78)				48
	5-10	1625			SB-3 (40-42)				49
	5-10	1610			SB-3 (37-38)				50

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>05/13/10</i>	Time: <i>0800</i>	Note: <i>Keep addn'l soil for potential addn'l analysis</i>  By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>5-13-10</i>	Time: <i>945</i>	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — DIM: 01/01/10

## CHAIN OF CUSTODY RECORD

Lab use only

Client Name: Pisani Client #: 4271 Workorder #: 210051401 Due Date: 5-24-10

Report to:  
Client: MPEA  
Address: 1100 Poydras Suite 1400  
New Orleans LA 70163  
Contact: J. Miller  
Phone: 504 582-2462  
Fax:

Bill to:  
Client:  
Address:  
Contact:  
Phone:  
Fax:

Analytical Requests & Method

*Chloride*  
*TDS sulfate Bicarb /alk*  
*TPHG, DFO by 100G*  
*BTEX*  
*Arsenic by At*  
*Ba Ca Mg Fe Mn*  
*K Na Se*  
*(Total, Dissolved Metals)*

Lab use only:  
Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 0.7

P.O. Number: 07-47 Project Name/Number: Eggt White Lake VPSB

Sampled By: Miller / Jonathan Miller & E. Truhan

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	Lab ID
S	5-10	1540		X	SB-3 28-30		X	51
	5-10	1550			SB-3 33-34		X	52
	5-10	1720			SB-3 48-48.5		X	53
	5-11	1245			SB-3 81-82		X	54
	5-11	1230			SB-3 53-54		X	55
	5-10	1635			SB-3 44-46		X	
	5-10	1450			SB-3 0-6		X	
W	5-11-10	1035			SB-2 MW-S	HNO <sub>3</sub> HCl	8	
W	5-12-10	1020	X		SB-3-MW-S	HNO <sub>3</sub> HCl	8	
W	5-12-10	1020			SB-3-MW-SD	HNO <sub>3</sub> HCl	8	

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>J. Miller</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>05/13/10</u>	Time: <u>0800</u>
Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5-13-10</u>	Time: <u>945</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note:  
Please call J. Miller to confirm parameter list & methods keep additional soil for potential additional analysis

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

WHITE: CLIENT FINAL REPORT - CARIANA LABORATORIES



# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 05/26/2010

**GCAL Report** 210051129



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210051129

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

### **METALS**

In the SW-846 6010B analysis for prep batch 431366, the MS recovery is not applicable for Barium because the sample concentration is greater than four times the spike concentration.

### **CONVENTIONALS**

In the EPA 9251 analysis, samples 21005112905 (SED-11), 21005112908 (SED-19) and 21005112910 (SED-120) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the EPA 9251 analysis, a chemical or physical interference necessitated a dilution for sample 21005112901 (SED-9). This is reflected in the elevated reporting limit.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210051129**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112901	SED-9	Solid	05/05/2010 10:50	05/10/2010 14:45
21005112902	SED-24	Solid	05/05/2010 13:50	05/10/2010 14:45
21005112903	SED-31	Solid	05/05/2010 12:45	05/10/2010 14:45
21005112904	SED-8	Solid	05/06/2010 10:10	05/10/2010 14:45
21005112905	SED-11	Solid	05/06/2010 11:35	05/10/2010 14:45
21005112906	SED-13	Solid	05/06/2010 13:30	05/10/2010 14:45
21005112907	SED-15	Solid	05/06/2010 17:10	05/10/2010 14:45
21005112908	SED-19	Solid	05/06/2010 16:00	05/10/2010 14:45
21005112909	SED-115	Solid	05/06/2010 17:10	05/10/2010 14:45
21005112910	SED-120	Solid	05/07/2010 12:15	05/10/2010 14:45
21005112911	SED-26	Solid	05/05/2010 15:10	05/10/2010 14:45

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112901	SED-9	Solid	05/05/2010 10:50	05/10/2010 14:45

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.01	1.59	0.22	mg/kg
7440-39-3	Barium	204	0.40	0.017	mg/kg
7440-47-3	Chromium	4.24	0.40	0.023	mg/kg
7439-92-1	Lead	6.19	0.60	0.066	mg/kg
7440-24-6	Strontium	14.0	0.40	0.037	mg/kg
7440-66-6	Zinc	16.3	0.79	0.089	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	650	20.0	3.16	mg/kg

## SW-846 8270C

CAS#	Parameter	Result	RDL	MDL	Units
205-99-2	Benzo(b)fluoranthene	0.019J	0.326	0.010	mg/kg
218-01-9	Chrysene	0.021J	0.326	0.011	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	0.095J	0.326	0.013	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.035	0.012	0.0032	mg/kg

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	36100	200	146	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112902	SED-24	Solid	05/05/2010 13:50	05/10/2010 14:45

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	3.50	1.59	0.22	mg/kg
7440-39-3	Barium	400	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.0086B	0.20	0.0082	mg/kg
7440-47-3	Chromium	4.93	0.40	0.023	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112902	SED-24	Solid	05/05/2010 13:50	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	8.40	0.60	0.066	mg/kg
7440-24-6	Strontium	23.0	0.40	0.037	mg/kg
7440-66-6	Zinc	20.7	0.79	0.089	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.037	0.012	0.0032	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	829	10.0	1.58	mg/kg

### SW-846 8270C

CAS#	Parameter	Result	RDL	MDL	Units
218-01-9	Chrysene	0.012J	0.325	0.011	mg/kg
85-01-8	Phenanthrene	0.016J	0.325	0.013	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	45600	200	146	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112903	SED-31	Solid	05/05/2010 12:45	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.57	1.60	0.22	mg/kg
7440-39-3	Barium	351	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.019B	0.20	0.0083	mg/kg
7440-47-3	Chromium	5.44	0.40	0.024	mg/kg
7439-92-1	Lead	7.92	0.60	0.066	mg/kg
7440-24-6	Strontium	20.2	0.40	0.037	mg/kg
7440-66-6	Zinc	20.7	0.80	0.090	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112903	SED-31	Solid	05/05/2010 12:45	05/10/2010 14:45

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.051	0.012	0.0032	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	54100	200	146	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	790	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112904	SED-8	Solid	05/06/2010 10:10	05/10/2010 14:45

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	825	10.0	1.58	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.58B	1.60	0.22	mg/kg
7440-39-3	Barium	193	0.40	0.017	mg/kg
7440-47-3	Chromium	5.74	0.40	0.024	mg/kg
7439-92-1	Lead	8.24	0.60	0.066	mg/kg
7440-24-6	Strontium	16.0	0.40	0.037	mg/kg
7440-66-6	Zinc	20.6	0.80	0.090	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.038	0.012	0.0032	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	53000	200	146	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112905	SED-11	Solid	05/06/2010 11:35	05/10/2010 14:45

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.011	0.0029	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1060	20.0	3.16	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	55000	200	146	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.50B	1.60	0.22	mg/kg
7440-39-3	Barium	188	0.40	0.017	mg/kg
7440-47-3	Chromium	4.95	0.40	0.024	mg/kg
7439-92-1	Lead	6.42	0.60	0.066	mg/kg
7440-24-6	Strontium	15.1	0.40	0.037	mg/kg
7440-66-6	Zinc	17.7	0.80	0.090	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112906	SED-13	Solid	05/06/2010 13:30	05/10/2010 14:45

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	974	10.0	1.58	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.029	0.010	0.0027	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	45900	200	146	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112906	SED-13	Solid	05/06/2010 13:30	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.38B	1.60	0.22	mg/kg
7440-39-3	Barium	250	0.40	0.017	mg/kg
7440-47-3	Chromium	5.09	0.40	0.024	mg/kg
7439-92-1	Lead	6.06	0.60	0.066	mg/kg
7440-24-6	Strontium	15.2	0.40	0.037	mg/kg
7440-66-6	Zinc	17.9	0.80	0.090	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112907	SED-15	Solid	05/06/2010 17:10	05/10/2010 14:45

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	67700	200	146	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.66	1.60	0.22	mg/kg
7440-39-3	Barium	232	0.40	0.017	mg/kg
7440-47-3	Chromium	4.42	0.40	0.024	mg/kg
7439-92-1	Lead	5.82	0.60	0.066	mg/kg
7440-24-6	Strontium	16.1	0.40	0.037	mg/kg
7440-66-6	Zinc	18.0	0.80	0.090	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	944	10.0	1.58	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.041	0.011	0.0031	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112908	SED-19	Solid	05/06/2010 16:00	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.80B	1.59	0.22	mg/kg
7440-39-3	Barium	110	0.40	0.017	mg/kg
7440-47-3	Chromium	4.43	0.40	0.023	mg/kg
7439-92-1	Lead	5.06	0.60	0.066	mg/kg
7440-24-6	Strontium	12.6	0.40	0.037	mg/kg
7440-66-6	Zinc	15.2	0.79	0.089	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1110	20.0	3.16	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.038	0.011	0.0031	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	48800	200	146	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112909	SED-115	Solid	05/06/2010 17:10	05/10/2010 14:45

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	947	10.0	1.58	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	40800	200	146	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.040	0.012	0.0031	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112909	SED-115	Solid	05/06/2010 17:10	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.30B	1.59	0.22	mg/kg
7440-39-3	Barium	211	0.40	0.017	mg/kg
7440-47-3	Chromium	4.62	0.40	0.023	mg/kg
7439-92-1	Lead	6.06	0.60	0.066	mg/kg
7440-24-6	Strontium	14.3	0.40	0.037	mg/kg
7440-66-6	Zinc	17.8	0.79	0.089	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112910	SED-120	Solid	05/07/2010 12:15	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.64B	1.60	0.22	mg/kg
7440-39-3	Barium	132	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.038B	0.20	0.0083	mg/kg
7440-47-3	Chromium	6.27	0.40	0.024	mg/kg
7439-92-1	Lead	5.95	0.60	0.066	mg/kg
7440-24-6	Strontium	77.4	0.40	0.037	mg/kg
7440-66-6	Zinc	72.5	0.80	0.090	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1820	20.0	3.16	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.072	0.012	0.0032	mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	284000	200	146	mg/kg

### SW-846 8270C

CAS#	Parameter	Result	RDL	MDL	Units
86-73-7	Fluorene	0.161J	0.330	0.010	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112911	SED-26	Solid	05/05/2010 15:10	05/10/2010 14:45

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.050	0.012	0.0032	mg/kg

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	94500	200	146	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.61	1.60	0.22	mg/kg
7440-39-3	Barium	169	0.40	0.017	mg/kg
7440-47-3	Chromium	5.39	0.40	0.024	mg/kg
7439-92-1	Lead	7.24	0.60	0.066	mg/kg
7440-24-6	Strontium	16.9	0.40	0.037	mg/kg
7440-66-6	Zinc	20.1	0.80	0.090	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	901	10.0	1.58	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112901	SED-9	Solid	05/05/2010 10:50	05/10/2010 14:45

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 16:01	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.326	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.326	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.326	0.011	mg/kg
120-12-7	Anthracene	ND	0.326	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.326	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.326	0.019	mg/kg
<b>205-99-2</b>	<b>Benzo(b)fluoranthene</b>	<b>0.019J</b>	<b>0.326</b>	<b>0.010</b>	<b>mg/kg</b>
207-08-9	Benzo(k)fluoranthene	ND	0.326	0.015	mg/kg
<b>218-01-9</b>	<b>Chrysene</b>	<b>0.021J</b>	<b>0.326</b>	<b>0.011</b>	<b>mg/kg</b>
53-70-3	Dibenz(a,h)anthracene	ND	0.326	0.00894	mg/kg
206-44-0	Fluoranthene	ND	0.326	0.00720	mg/kg
86-73-7	Fluorene	ND	0.326	0.00997	mg/kg
<b>193-39-5</b>	<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.095J</b>	<b>0.326</b>	<b>0.013</b>	<b>mg/kg</b>
91-20-3	Naphthalene	ND	0.326	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.326	0.013	mg/kg
129-00-0	Pyrene	ND	0.326	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.53	mg/kg	93	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.66	mg/kg	101	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.43	mg/kg	87	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:17	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.035</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:00	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.01</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>204</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.24</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.19</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>14.0</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>16.3</b>	<b>0.79</b>	<b>0.089</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112901	SED-9	Solid	05/05/2010 10:50	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	69.6	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	2	05/20/2010 14:46	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	650	20.0	3.16	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 09:55	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	36100	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112902	SED-24	Solid	05/05/2010 13:50	05/10/2010 14:45

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 16:16	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.325	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.325	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.325	0.011	mg/kg
120-12-7	Anthracene	ND	0.325	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.325	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.325	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.325	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.325	0.015	mg/kg
<b>218-01-9</b>	<b>Chrysene</b>	<b>0.012J</b>	<b>0.325</b>	<b>0.011</b>	<b>mg/kg</b>
53-70-3	Dibenz(a,h)anthracene	ND	0.325	0.00891	mg/kg
206-44-0	Fluoranthene	ND	0.325	0.00718	mg/kg
86-73-7	Fluorene	ND	0.325	0.00993	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325	0.013	mg/kg
91-20-3	Naphthalene	ND	0.325	0.011	mg/kg
<b>85-01-8</b>	<b>Phenanthrene</b>	<b>0.016J</b>	<b>0.325</b>	<b>0.013</b>	<b>mg/kg</b>
129-00-0	Pyrene	ND	0.325	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.57	mg/kg	96	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.55	mg/kg	95	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.36	mg/kg	83	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:18	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.037</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:07	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>3.50</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>400</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.0086B</b>	<b>0.20</b>	<b>0.0082</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.93</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>8.40</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>23.0</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>20.7</b>	<b>0.79</b>	<b>0.089</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112902	SED-24	Solid	05/05/2010 13:50	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	66.6	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:48	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	829	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 10:41	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	45600	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112903	SED-31	Solid	05/05/2010 12:45	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 16:32	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.327	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.327	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.327	0.011	mg/kg
120-12-7	Anthracene	ND	0.327	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.327	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.327	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.327	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.327	0.015	mg/kg
218-01-9	Chrysene	ND	0.327	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.327	0.00897	mg/kg
206-44-0	Fluoranthene	ND	0.327	0.00723	mg/kg
86-73-7	Fluorene	ND	0.327	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.327	0.013	mg/kg
91-20-3	Naphthalene	ND	0.327	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.327	0.013	mg/kg
129-00-0	Pyrene	ND	0.327	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.65	1.56	mg/kg	95	46 - 123
321-60-8	2-Fluorobiphenyl	1.65	1.61	mg/kg	98	47 - 127
1718-51-0	Terphenyl-d14	1.65	1.35	mg/kg	82	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:20	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.051</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:13	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.57</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>351</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.019B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.44</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.92</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>20.2</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>20.7</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112903	SED-31	Solid	05/05/2010 12:45	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368
CAS#	Parameter		Result	RDL	MDL	Units
WET-037	Total Moisture		68.0	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:49	AEL	432238
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		790	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 10:53	AEL	432620
CAS#	Parameter		Result	RDL	MDL	Units
C-012	Total Organic Carbon		54100	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112904	SED-8	Solid	05/06/2010 10:10	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 16:47	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.325	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.325	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.325	0.011	mg/kg
120-12-7	Anthracene	ND	0.325	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.325	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.325	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.325	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.325	0.015	mg/kg
218-01-9	Chrysene	ND	0.325	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.325	0.00891	mg/kg
206-44-0	Fluoranthene	ND	0.325	0.00718	mg/kg
86-73-7	Fluorene	ND	0.325	0.00993	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325	0.013	mg/kg
91-20-3	Naphthalene	ND	0.325	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.325	0.013	mg/kg
129-00-0	Pyrene	ND	0.325	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.48	mg/kg	90	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.51	mg/kg	92	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.22	mg/kg	74	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:21	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.038</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:19	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.58B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>193</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.74</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>8.24</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>16.0</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>20.6</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112904	SED-8	Solid	05/06/2010 10:10	05/10/2010 14:45

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	61.1	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:50	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	825	10.0	1.58	mg/kg

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 11:15	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	53000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112905	SED-11	Solid	05/06/2010 11:35	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 17:02	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.327	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.327	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.327	0.011	mg/kg
120-12-7	Anthracene	ND	0.327	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.327	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.327	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.327	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.327	0.015	mg/kg
218-01-9	Chrysene	ND	0.327	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.327	0.00897	mg/kg
206-44-0	Fluoranthene	ND	0.327	0.00723	mg/kg
86-73-7	Fluorene	ND	0.327	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.327	0.013	mg/kg
91-20-3	Naphthalene	ND	0.327	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.327	0.013	mg/kg
129-00-0	Pyrene	ND	0.327	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.65	1.29	mg/kg	78	46 - 123
321-60-8	2-Fluorobiphenyl	1.65	1.38	mg/kg	84	47 - 127
1718-51-0	Terphenyl-d14	1.65	1.12	mg/kg	68	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:23	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.033</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:26	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.50B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>188</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.95</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.42</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>15.1</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>17.7</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112905	SED-11	Solid	05/06/2010 11:35	05/10/2010 14:45

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	65.8	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	2	05/20/2010 15:45	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1060	20.0	3.16	mg/kg

**SW-846 9060 TOC**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 11:28	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	55000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112906	SED-13	Solid	05/06/2010 13:30	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 17:16	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.329	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.329	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.329	0.011	mg/kg
120-12-7	Anthracene	ND	0.329	0.012	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.329	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.329	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.329	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.329	0.015	mg/kg
218-01-9	Chrysene	ND	0.329	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.329	0.00903	mg/kg
206-44-0	Fluoranthene	ND	0.329	0.00728	mg/kg
86-73-7	Fluorene	ND	0.329	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.329	0.013	mg/kg
91-20-3	Naphthalene	ND	0.329	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.329	0.013	mg/kg
129-00-0	Pyrene	ND	0.329	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.66	1.49	mg/kg	90	46 - 123
321-60-8	2-Fluorobiphenyl	1.66	1.59	mg/kg	96	47 - 127
1718-51-0	Terphenyl-d14	1.66	1.34	mg/kg	81	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:10	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.029</b>	<b>0.010</b>	<b>0.0027</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 21:08	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.38B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>250</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.09</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.06</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>15.2</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>17.9</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112906	SED-13	Solid	05/06/2010 13:30	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	72.5	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:54	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	974	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 11:38	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	45900	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112907	SED-15	Solid	05/06/2010 17:10	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:00	431900	3550B	1	05/19/2010 18:04	RLY	432143

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.325	0.017	mg/kg
83-32-9	Acenaphthene	ND	0.325	0.018	mg/kg
208-96-8	Acenaphthylene	ND	0.325	0.011	mg/kg
120-12-7	Anthracene	ND	0.325	0.011	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.325	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.325	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.325	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.325	0.015	mg/kg
218-01-9	Chrysene	ND	0.325	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.325	0.00891	mg/kg
206-44-0	Fluoranthene	ND	0.325	0.00718	mg/kg
86-73-7	Fluorene	ND	0.325	0.00993	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325	0.013	mg/kg
91-20-3	Naphthalene	ND	0.325	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.325	0.013	mg/kg
129-00-0	Pyrene	ND	0.325	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.64	1.33	mg/kg	81	46 - 123
321-60-8	2-Fluorobiphenyl	1.64	1.47	mg/kg	90	47 - 127
1718-51-0	Terphenyl-d14	1.64	1.5	mg/kg	92	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:28	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.041</b>	<b>0.011</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:32	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.66</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>232</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.42</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>5.82</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>16.1</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>18.0</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112907	SED-15	Solid	05/06/2010 17:10	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	75.4	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:55	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	944	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 11:46	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	67700	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112908	SED-19	Solid	05/06/2010 16:00	05/10/2010 14:45

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 17:46	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.328	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.328	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.328	0.011	mg/kg
120-12-7	Anthracene	ND	0.328	0.012	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.328	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.328	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.328	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.328	0.015	mg/kg
218-01-9	Chrysene	ND	0.328	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.328	0.00900	mg/kg
206-44-0	Fluoranthene	ND	0.328	0.00725	mg/kg
86-73-7	Fluorene	ND	0.328	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.328	0.013	mg/kg
91-20-3	Naphthalene	ND	0.328	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.328	0.013	mg/kg
129-00-0	Pyrene	ND	0.328	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.66	.97	mg/kg	59	46 - 123
321-60-8	2-Fluorobiphenyl	1.66	1.17	mg/kg	71	47 - 127
1718-51-0	Terphenyl-d14	1.66	1.11	mg/kg	67	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:29	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.038</b>	<b>0.011</b>	<b>0.0031</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:39	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.80B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>110</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.43</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>5.06</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>12.6</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>15.2</b>	<b>0.79</b>	<b>0.089</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112908	SED-19	Solid	05/06/2010 16:00	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	78.4	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	2	05/20/2010 15:48	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1110	20.0	3.16	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 12:00	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	48800	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112909	SED-115	Solid	05/06/2010 17:10	05/10/2010 14:45

SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 18:01	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.328	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.328	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.328	0.011	mg/kg
120-12-7	Anthracene	ND	0.328	0.012	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.328	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.328	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.328	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.328	0.015	mg/kg
218-01-9	Chrysene	ND	0.328	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.328	0.00900	mg/kg
206-44-0	Fluoranthene	ND	0.328	0.00725	mg/kg
86-73-7	Fluorene	ND	0.328	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.328	0.013	mg/kg
91-20-3	Naphthalene	ND	0.328	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.328	0.013	mg/kg
129-00-0	Pyrene	ND	0.328	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.66	1.49	mg/kg	90	46 - 123
321-60-8	2-Fluorobiphenyl	1.66	1.63	mg/kg	98	47 - 127
1718-51-0	Terphenyl-d14	1.66	1.31	mg/kg	79	38 - 167

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:31	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.040</b>	<b>0.012</b>	<b>0.0031</b>	<b>mg/kg</b>

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 22:45	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.30B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>211</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>4.62</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>6.06</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>14.3</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>17.8</b>	<b>0.79</b>	<b>0.089</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112909	SED-115	Solid	05/06/2010 17:10	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 13:50	DJH	431368

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	73.0	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:56	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	947	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 12:08	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	40800	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112910	SED-120	Solid	05/07/2010 12:15	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 09:30	431363	3550B	1	05/13/2010 18:16	RLY	431544

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.330	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.330	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.330	0.011	mg/kg
120-12-7	Anthracene	ND	0.330	0.012	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.330	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.330	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.330	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.330	0.015	mg/kg
218-01-9	Chrysene	ND	0.330	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.330	0.00906	mg/kg
206-44-0	Fluoranthene	ND	0.330	0.00730	mg/kg
<b>86-73-7</b>	<b>Fluorene</b>	<b>0.161J</b>	<b>0.330</b>	<b>0.010</b>	<b>mg/kg</b>
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.330	0.013	mg/kg
91-20-3	Naphthalene	ND	0.330	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.330	0.013	mg/kg
129-00-0	Pyrene	ND	0.330	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.67	1.56	mg/kg	94	46 - 123
321-60-8	2-Fluorobiphenyl	1.67	1.47	mg/kg	88	47 - 127
1718-51-0	Terphenyl-d14	1.67	1.18	mg/kg	71	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:33	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.072</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 23:05	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.64B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>132</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.038B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>6.27</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>5.95</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>77.4</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>72.5</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21005112910	SED-120	Solid	05/07/2010 12:15	05/10/2010 14:45

### SM 2540G Dry Weight

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	05/11/2010 13:50	DJH	431368

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
WET-037	Total Moisture	82.5	0.010	0.010	%

### SW-846 9251 Chloride

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
05/19/2010 09:00	432235	EPA 9251	2	05/20/2010 15:49	AEL	432238

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
16887-00-6	Chloride	1820	20.0	3.16	mg/kg

### SW-846 9060 TOC

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	05/25/2010 12:37	AEL	432620

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
C-012	Total Organic Carbon	284000	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112911	SED-26	Solid	05/05/2010 15:10	05/10/2010 14:45

### SW-846 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 13:00	431900	3550B	1	05/19/2010 18:19	RLY	432143

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.328	0.018	mg/kg
83-32-9	Acenaphthene	ND	0.328	0.019	mg/kg
208-96-8	Acenaphthylene	ND	0.328	0.011	mg/kg
120-12-7	Anthracene	ND	0.328	0.012	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.328	0.014	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.328	0.019	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.328	0.010	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.328	0.015	mg/kg
218-01-9	Chrysene	ND	0.328	0.011	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.328	0.00900	mg/kg
206-44-0	Fluoranthene	ND	0.328	0.00725	mg/kg
86-73-7	Fluorene	ND	0.328	0.010	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.328	0.013	mg/kg
91-20-3	Naphthalene	ND	0.328	0.011	mg/kg
85-01-8	Phenanthrene	ND	0.328	0.013	mg/kg
129-00-0	Pyrene	ND	0.328	0.046	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.66	1.34	mg/kg	81	46 - 123
321-60-8	2-Fluorobiphenyl	1.66	1.37	mg/kg	83	47 - 127
1718-51-0	Terphenyl-d14	1.66	1.24	mg/kg	75	38 - 167

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:00	431367	SW-846 7471B	1	05/12/2010 12:34	TEA	431453

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.050</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 17:20	431366	SW-846 3050B	1	05/12/2010 23:12	CLB	431454

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.61</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>169</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>5.39</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.24</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>16.9</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>20.1</b>	<b>0.80</b>	<b>0.090</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112911	SED-26	Solid	05/05/2010 15:10	05/10/2010 14:45

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 11:40	DJH	431627

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	68.6	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/19/2010 09:00	432235	EPA 9251	1	05/20/2010 14:58	AEL	432238

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	901	10.0	1.58	mg/kg

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/25/2010 14:13	AEL	432620

CAS#	Parameter	Result	RDL	MDL	Units
C-012	Total Organic Carbon	94500	200	146	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 431443 Prep Batch 431363 Prep Method 3550B		Client ID MB431363 GCAL ID 829184 Sample Type Method Blank Prep Date 05/12/2010 09:30 Analytical Date 05/12/2010 15:15 Matrix Solid			LCS431363 829185 LCS 05/12/2010 09:30 05/12/2010 15:30 Solid			LCSD431363 829186 LCSD 05/12/2010 09:30 05/12/2010 15:46 Solid			
SW-846 8270C		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
208-96-8	Acenaphthylene	ND	0.325		0.00			0.00		0	40
120-12-7	Anthracene	ND	0.325		0.00			0.00		0	40
56-55-3	Benzo(a)anthracene	ND	0.325		0.00			0.00		0	40
205-99-2	Benzo(b)fluoranthene	ND	0.325		0.00			0.00		0	40
207-08-9	Benzo(k)fluoranthene	ND	0.325		0.00			0.00		0	40
50-32-8	Benzo(a)pyrene	ND	0.325		0.00			0.00		0	40
218-01-9	Chrysene	ND	0.325		0.00			0.00		0	40
53-70-3	Dibenz(a,h)anthracene	ND	0.325		0.00			0.00		0	40
206-44-0	Fluoranthene	ND	0.325		0.00			0.00		0	40
86-73-7	Fluorene	ND	0.325		0.00			0.00		0	40
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325		0.00			0.00		0	40
91-57-6	2-Methylnaphthalene	ND	0.325		0.00			0.00		0	40
91-20-3	Naphthalene	ND	0.325		0.00			0.00		0	40
85-01-8	Phenanthrene	ND	0.325		0.00			0.00		0	40
108-95-2	Phenol	ND	0.325	3.28	2.43	74	42 - 120	2.35	71	3	40
95-57-8	2-Chlorophenol	ND	0.325	3.28	2.59	79	48 - 120	2.43	74	6	40
106-46-7	1,4-Dichlorobenzene	ND	0.325	3.28	2.77	84	42 - 120	2.14	65	26	40
621-64-7	n-Nitrosodi-n-propylamine	ND	0.325	3.28	2.92	89	46 - 120	2.60	79	12	40
120-82-1	1,2,4-Trichlorobenzene	ND	0.325	3.28	2.98	91	46 - 120	2.44	74	20	40
59-50-7	4-Chloro-3-methylphenol	ND	0.325	3.28	2.60	79	46 - 120	2.58	78	0.8	40
83-32-9	Acenaphthene	ND	0.325	3.28	3.07	94	50 - 120	2.84	86	8	40
100-02-7	4-Nitrophenol	ND	1.62	3.28	2.24	68	32 - 120	2.40	73	7	40
121-14-2	2,4-Dinitrotoluene	ND	0.325	3.28	2.80	85	45 - 120	2.55	77	9	40
87-86-5	Pentachlorophenol	ND	1.62	3.28	2.40	73	30 - 124	2.43	74	1	40
129-00-0	Pyrene	ND	0.325	3.28	3.52	107	38 - 136	3.05	92	14	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1600	98	1640	1690	103	46 - 123	1470	89		
321-60-8	2-Fluorobiphenyl	1640	100	1640	1750	107	47 - 127	1510	92		
1718-51-0	Terphenyl-d14	1850	113	1640	2000	122	38 - 167	1680	102		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 431443 Prep Batch 431363 Prep Method 3550B		Client ID S-1 GCAL ID 21005103001 Sample Type SAMPLE Prep Date 05/12/2010 09:30 Analytical Date 05/12/2010 16:01 Matrix Solid		828736MS 829187 MS 05/12/2010 09:30 05/12/2010 16:16 Solid			828736MSD 829188 MSD 05/12/2010 09:30 05/12/2010 16:31 Solid				
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
108-95-2	Phenol	0.00	0.326	3.29	2.39	73	42 - 120	2.41	73	0.8	40
95-57-8	2-Chlorophenol	0.00	0.326	3.29	2.63	80	48 - 120	2.53	76	4	40
106-46-7	1,4-Dichlorobenzene	0.00	0.326	3.29	2.73	83	42 - 120	2.62	79	4	40
621-64-7	n-Nitrosodi-n-propylamine	0.00	0.326	3.29	2.93	89	46 - 120	2.79	84	5	40
120-82-1	1,2,4-Trichlorobenzene	0.00	0.326	3.29	2.93	89	46 - 120	2.87	87	2	40
59-50-7	4-Chloro-3-methylphenol	0.00	0.326	3.29	2.61	79	46 - 120	2.48	75	5	40
83-32-9	Acenaphthene	0.00	0.326	3.29	3.22	98	50 - 120	3.09	93	4	40
100-02-7	4-Nitrophenol	0.00	1.63	3.29	2.37	72	32 - 120	2.32	70	2	40
121-14-2	2,4-Dinitrotoluene	0.00	0.326	3.29	2.88	88	45 - 120	2.85	86	1	40
87-86-5	Pentachlorophenol	0.00	1.63	3.29	2.35	71	30 - 124	2.10	63	11	40
129-00-0	Pyrene	0.00	0.326	3.29	3.83	116	38 - 136	3.58	108	7	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5			1640	1630	99	46 - 123	1620	98		
321-60-8	2-Fluorobiphenyl			1640	1720	105	47 - 127	1680	101		
1718-51-0	Terphenyl-d14			1640	2030	123	38 - 167	1940	117		

Analytical Batch 432143 Prep Batch 431900 Prep Method 3550B		Client ID MB431900 GCAL ID 831883 Sample Type Method Blank Prep Date 05/17/2010 13:00 Analytical Date 05/19/2010 17:19 Matrix Solid		LCS431900 831884 LCS 05/17/2010 13:00 05/19/2010 17:34 Solid			LCSD431900 831885 LCSD 05/17/2010 13:00 05/19/2010 17:49 Solid				
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
208-96-8	Acenaphthylene	ND	0.325								
120-12-7	Anthracene	ND	0.325								
56-55-3	Benzo(a)anthracene	ND	0.325								
205-99-2	Benzo(b)fluoranthene	ND	0.325								
207-08-9	Benzo(k)fluoranthene	ND	0.325								
50-32-8	Benzo(a)pyrene	ND	0.325								
218-01-9	Chrysene	ND	0.325								

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432143 Prep Batch 431900 Prep Method 3550B		Client ID MB431900 GCAL ID 831883 Sample Type Method Blank Prep Date 05/17/2010 13:00 Analytical Date 05/19/2010 17:19 Matrix Solid			LCS431900 831884 LCS 05/17/2010 13:00 05/19/2010 17:34 Solid			LCSD431900 831885 LCSD 05/17/2010 13:00 05/19/2010 17:49 Solid			
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
53-70-3	Dibenz(a,h)anthracene	ND	0.325								
206-44-0	Fluoranthene	ND	0.325								
86-73-7	Fluorene	ND	0.325								
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.325								
91-57-6	2-Methylnaphthalene	ND	0.325								
91-20-3	Naphthalene	ND	0.325								
85-01-8	Phenanthrene	ND	0.325								
108-95-2	Phenol	ND	0.325	3.31	2.73	82	42 - 120	2.65	80	3	40
95-57-8	2-Chlorophenol	ND	0.325	3.31	2.78	84	48 - 120	2.81	85	1	40
106-46-7	1,4-Dichlorobenzene	ND	0.325	3.31	2.57	78	42 - 120	2.56	78	0.4	40
621-64-7	n-Nitrosodi-n-propylamine	ND	0.325	3.31	2.92	88	46 - 120	2.91	88	0.3	40
120-82-1	1,2,4-Trichlorobenzene	ND	0.325	3.31	2.66	80	46 - 120	2.64	80	0.8	40
59-50-7	4-Chloro-3-methylphenol	ND	0.325	3.31	2.84	86	46 - 120	2.62	79	8	40
83-32-9	Acenaphthene	ND	0.325	3.31	2.77	84	50 - 120	2.71	82	2	40
100-02-7	4-Nitrophenol	ND	1.62	3.31	2.09	63	32 - 120	1.84	56	13	40
121-14-2	2,4-Dinitrotoluene	ND	0.325	3.31	2.87	87	45 - 120	2.53	77	13	40
87-86-5	Pentachlorophenol	ND	1.62	3.31	1.67	50	30 - 124	1.74	53	4	40
129-00-0	Pyrene	ND	0.325	3.31	2.98	90	38 - 136	2.76	84	8	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	1580	96	1660	1490	90	46 - 123	1360	82		
321-60-8	2-Fluorobiphenyl	1460	89	1660	1490	90	47 - 127	1460	88		
1718-51-0	Terphenyl-d14	1700	104	1660	1580	95	38 - 167	1420	86		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 432143 Prep Batch 431900 Prep Method 3550B		Client ID SB-01-0/6 GCAL ID 21005135001 Sample Type SAMPLE Prep Date 05/17/2010 13:00 Analytical Date 05/19/2010 18:34 Matrix Solid		830568MS 831886 MS 05/17/2010 13:00 05/19/2010 18:49 Solid			830568MSD 831887 MSD 05/17/2010 13:00 05/19/2010 19:04 Solid				
<b>SW-846 8270C</b>		Units	mg/kg	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
108-95-2	Phenol	0.00	0.327	3.30	2.59	78	42 - 120	2.43	73	6	40
95-57-8	2-Chlorophenol	0.00	0.327	3.30	2.58	78	48 - 120	2.50	76	3	40
106-46-7	1,4-Dichlorobenzene	0.00	0.327	3.30	2.56	78	42 - 120	2.42	73	6	40
621-64-7	n-Nitrosodi-n-propylamine	0.00	0.327	3.30	2.94	89	46 - 120	2.80	85	5	40
120-82-1	1,2,4-Trichlorobenzene	0.00	0.327	3.30	2.79	85	46 - 120	2.65	80	5	40
59-50-7	4-Chloro-3-methylphenol	0.00	0.327	3.30	2.79	85	46 - 120	2.92	88	5	40
83-32-9	Acenaphthene	0.00	0.327	3.30	2.89	88	50 - 120	2.95	89	2	40
100-02-7	4-Nitrophenol	0.00	1.63	3.30	2.07	63	32 - 120	2.45	74	17	40
121-14-2	2,4-Dinitrotoluene	0.00	0.327	3.30	3.01	91	45 - 120	2.96	89	2	40
87-86-5	Pentachlorophenol	0.00	1.63	3.30	1.19	36	30 - 124	1.74	53	38	40
129-00-0	Pyrene	0.00	0.327	3.30	2.88	87	38 - 136	3.08	93	7	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5			1650	1500	91	46 - 123	1480	89		
321-60-8	2-Fluorobiphenyl			1650	1520	92	47 - 127	1510	91		
1718-51-0	Terphenyl-d14			1650	1500	91	38 - 167	1620	98		



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431453 <b>Prep Batch</b> 431367 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB431367 <b>GCAL ID</b> 829201 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 17:00 <b>Analytical Date</b> 05/12/2010 12:04 <b>Matrix</b> Solid	LCS431367 829202 LCS 05/11/2010 17:00 05/12/2010 12:09 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
7439-97-6	Mercury	0.0077B	0.010	0.25	0.29	117 80 - 120

<b>Analytical Batch</b> 431453 <b>Prep Batch</b> 431367 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-13 <b>GCAL ID</b> 21005112906 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 17:00 <b>Analytical Date</b> 05/12/2010 12:10 <b>Matrix</b> Solid	829157MS 829204 MS 05/11/2010 17:00 05/12/2010 12:13 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
7439-97-6	Mercury	0.029	0.010	0.25	0.32	117 75 - 125

<b>Analytical Batch</b> 431453 <b>Prep Batch</b> 431367 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-13 <b>GCAL ID</b> 21005112906 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 17:00 <b>Analytical Date</b> 05/12/2010 12:10 <b>Matrix</b> Solid	829157DUP 829203 DUP 05/11/2010 17:00 05/12/2010 12:12 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
7439-97-6	Mercury	0.029	0.010	0.031	7	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431454 <b>Prep Batch</b> 431366 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MB431366 <b>GCAL ID</b> 829197 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 17:20 <b>Analytical Date</b> 05/12/2010 20:53 <b>Matrix</b> Solid	LCS431366 829198 LCS 05/11/2010 17:20 05/12/2010 21:00 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	ND	1.60	20.0	20.0	100	80 - 120
7440-39-3	Barium	0.024B	0.40	20.0	19.3	96	80 - 120
7440-43-9	Cadmium	0.019B	0.20	20.0	19.5	98	80 - 120
7440-47-3	Chromium	ND	0.40	20.0	19.5	98	80 - 120
7439-92-1	Lead	ND	0.60	20.0	19.3	97	80 - 120
7782-49-2	Selenium	ND	1.60	20.0	19.7	98	80 - 120
7440-24-6	Strontium	ND	0.40	20.0	19.0	95	80 - 120
7440-66-6	Zinc	0.16B	0.80	20.0	19.5	98	80 - 120

<b>Analytical Batch</b> 431454 <b>Prep Batch</b> 431366 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-13 <b>GCAL ID</b> 21005112906 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 17:20 <b>Analytical Date</b> 05/12/2010 21:08 <b>Matrix</b> Solid	829157MS 829200 MS 05/11/2010 17:20 05/12/2010 21:20 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	1.38	1.60	20.0	19.9	92	75 - 125
7440-39-3	Barium	250	0.40	20.0	277	138*	75 - 125
7440-43-9	Cadmium	0.0	0.20	20.0	18.2	91	75 - 125
7440-47-3	Chromium	5.09	0.40	20.0	26.7	108	75 - 125
7439-92-1	Lead	6.06	0.60	20.0	25.0	95	75 - 125
7782-49-2	Selenium	0.0	1.60	20.0	18.4	92	75 - 125
7440-24-6	Strontium	15.2	0.40	20.0	35.3	101	75 - 125
7440-66-6	Zinc	17.9	0.80	20.0	41.0	115	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431454	<b>Client ID</b> SED-13	829157DUP				
<b>Prep Batch</b> 431366	<b>GCAL ID</b> 21005112906	829199				
<b>Prep Method</b> SW-846 3050B	<b>Sample Type</b> SAMPLE	DUP				
	<b>Prep Date</b> 05/11/2010 17:20	05/11/2010 17:20				
	<b>Analytical Date</b> 05/12/2010 21:08	05/12/2010 21:14				
	<b>Matrix</b> Solid	Solid				
<b>SW-846 6010B</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-38-2	Arsenic	1.38	1.60	1.36	1	20
7440-39-3	Barium	250	0.40	238	5	20
7440-43-9	Cadmium	0.0	0.20	0.0	0	20
7440-47-3	Chromium	5.09	0.40	5.04	1	20
7439-92-1	Lead	6.06	0.60	6.11	0.8	20
7782-49-2	Selenium	0.0	1.60	0.0	0	20
7440-24-6	Strontium	15.2	0.40	15.1	0.7	20
7440-66-6	Zinc	17.9	0.80	18.1	1	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431368 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SED-9 21005112901 SAMPLE 05/11/2010 13:50 Solid	829152DUP 829210 DUP 05/11/2010 13:50 Solid		
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	69.6	0.010	69.7	0.14 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432238 <b>Prep Batch</b> 432235 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB432235 <b>GCAL ID</b> 833537 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 14:44 <b>Matrix</b> Solid	LCS432235 833538 LCS 05/19/2010 09:00 05/20/2010 14:45 Solid					
<b>SW-846 9251 Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6 Chloride	ND	10.0	600	652	109	80 - 120	

<b>Analytical Batch</b> 432238 <b>Prep Batch</b> 432235 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-9 <b>GCAL ID</b> 21005112901 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 14:46 <b>Matrix</b> Solid	829152MS 833539 MS 05/19/2010 09:00 05/20/2010 14:46 Solid	829152MSD 833540 MSD 05/19/2010 09:00 05/20/2010 14:47 Solid								
<b>SW-846 9251 Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	650	20.0	1200	1790	95	75 - 125	1790	95	0	25	

<b>Analytical Batch</b> 432238 <b>Prep Batch</b> 432235 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SB-1 (74-76) <b>GCAL ID</b> 21005140101 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/19/2010 09:00 <b>Analytical Date</b> 05/20/2010 14:59 <b>Matrix</b> Solid	830737MS 833541 MS 05/19/2010 09:00 05/20/2010 15:00 Solid	830737MSD 833542 MSD 05/19/2010 09:00 05/20/2010 15:50 Solid								
<b>SW-846 9251 Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	244	10.0	600	862	103	75 - 125	900	109	4	25	

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432620 <b>Prep Batch</b> N/A	<b>Client ID</b> MB432620 <b>GCAL ID</b> 835142 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/25/2010 09:22 <b>Matrix</b> Solid	LCS432620 835143 LCS 05/25/2010 09:30 Solid	LCSD432620 835144 LCSD 05/25/2010 09:38 Solid								
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10300	103	69 - 128	10300	103	0	25

<b>Analytical Batch</b> 432620 <b>Prep Batch</b> N/A	<b>Client ID</b> SED-9 <b>GCAL ID</b> 21005112901 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 09:55 <b>Matrix</b> Solid	829152DUP 835145 DUP 05/25/2010 10:05 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	36100	200	35900	0.6	25

<b>Analytical Batch</b> 432620 <b>Prep Batch</b> N/A	<b>Client ID</b> SED-9 <b>GCAL ID</b> 21005112901 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/25/2010 09:55 <b>Matrix</b> Solid	829152DUP 835147 DUP 05/25/2010 10:28 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	36100	200	35800	0.8	25

## CHAIN OF CUSTODY RECORD

Lab use only

Client Name: P. Sani Client #: 4271 Workorder #: 210051129 Due Date: 5-19-10

**Report to:**  
Client: MP+A  
Address: 1100 Poydras St Ste 1430  
MOLA 70163  
Contact: Jonathan Miller  
Phone: 504 582 2468  
Fax: jmiller@ix.netcom.com

**Bill to:**  
Client: \_\_\_\_\_  
Address: SAME  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: pm.ritchie@ix.netcom.com

**Analytical Requests & Method**  
Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Zn) 6010  
Hg 0  
PAH 8270  
Hardness ② TOC  
Chlorides ③  
TDS ④ Total Moisture  
AJW 5-11-10

**Lab use only:**  
Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 5.7

P.O. Number \_\_\_\_\_ Project Name/Number 07-47 East White Lake

Sampled By: Patrick Ritchie

Matrix <sup>1</sup>	Date	Time (2400)	C	P	G	Grab	Sample Description	Preservatives	No Containers	Remarks:	Lab ID
S	5-5-10	1050				X	Sed-9	ice	3		1
		1350					Sed-24		1		2
		1245					Sed-31		1		3
	5-6-10	1010					Sed-8		4		4
		1135					Sed-11		3		5
		1330					Sed-13				6
		1710					Sed-15				7
		1600					Sed-19				8
		1710					Sed-115				9
	5-7-10	1215					Sed-120				10
S	5-5-10	1510					Sed-26				11

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5/16/10</u>	Time: <u>1445</u>	Note: <del>Metals by SW 846 6020 A - Total &amp; Diss.</del> <u>AJW 5-11-10</u> <del>Mercury by SW 846 7472 B</del> <del>Hardness by SW 2340 C</del> <del>Chlorides by SW 846 4500</del> <u>④ TDS M 2540 C</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 05/26/2010

**GCAL Report** 210051128



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47



## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210051128

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

### SEMI-VOLATILES MASS SPECTROMETRY

In the SW-846 8270C SIM analysis for prep batch 431369, no MS/MSD was performed due to insufficient sample volume. An LCS/LCSD is included for review.

### METALS

In the SW-846 6010B analysis, samples 21005112810 (SW-109), 21005112808 (SW-10), 21005112809 (SW-09), 21005112811 (SW-20), 21005112806 (SW-06), 21005112801 (SW-05), 21005112802 (SW-03), 21005112803 (SW-02), 21005112804 (SW-04), 21005112805 (SW-01) and 21005112807 (SW-07) had to be diluted in order to bracket the concentrations within the linear dynamic range of the instrument. This is reflected in the elevated detection limits.

In the SW-846 6010B analysis, the Dissolved Strontium concentration is greater than total concentration of this element in sample several samples. This is attributed to separate aliquots of sample.

In the SW-846 6010B analysis for prep batch 431357, the MS and/or MSD recovery is outside the control limits for Potassium. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference. A post-digestion spike was performed on the QC sample for this batch with a recovery of 110%. The MS recovery is not applicable for Magnesium and Sodium because the sample concentration is greater than four times the spike concentration. The MS recovery is not applicable for Magnesium because the sample concentration is greater than four times the spike concentration.

In the SW-846 6010B analysis for prep batch 431358, the MS recovery is not applicable for Calcium, Magnesium and Sodium because the sample concentration is greater than four times the spike concentration.

In the SM 2340 B analysis for prep batch 431358, the MS recovery is not applicable for Calcium and Magnesium because the sample concentration is greater than four times the spike concentration.

In the SW-846 7470A Dissolved analysis for prep batch 431364, the Sample/Duplicate RPD for Mercury is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B Dissolved analysis for prep batch 431356, the Sample/Duplicate RPD for Cadmium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 7010 analysis for prep batch 431361, the Sample/Duplicate RPD for Arsenic is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

### CONVENTIONALS

In the EPA 375.4 analysis, sample 21005112805 (SW-01), 21005112808 (SW-10) and 21005112809 (SW-09) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the SM 4500 CL E Chloride analysis, sample 21005112801 (SW-05), 21005112802 (SW-03), 21005112803 (SW-02), 21005112804 (SW-04), 21005112805 (SW-01), 21005112806 (SW-06), 21005112807 (SW-07), 21005112808 (SW-10), 21005112809 (SW-09), 21005112810 (SW-109) and 21005112811 (SW-20) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

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Robyn Miguez  
Technical Director  
**GCAL REPORT 210051128**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112801	SW-05	Water	05/05/2010 10:10	05/10/2010 14:45
21005112802	SW-03	Water	05/05/2010 12:30	05/10/2010 14:45
21005112803	SW-02	Water	05/05/2010 13:30	05/10/2010 14:45
21005112804	SW-04	Water	05/05/2010 14:45	05/10/2010 14:45
21005112805	SW-01	Water	05/06/2010 09:45	05/10/2010 14:45
21005112806	SW-06	Water	05/06/2010 11:10	05/10/2010 14:45
21005112807	SW-07	Water	05/06/2010 13:00	05/10/2010 14:45
21005112808	SW-10	Water	05/06/2010 15:40	05/10/2010 14:45
21005112809	SW-09	Water	05/06/2010 16:35	05/10/2010 14:45
21005112810	SW-109	Water	05/06/2010 16:35	05/10/2010 14:45
21005112811	SW-20	Water	05/07/2010 12:05	05/10/2010 14:45

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112801	SW-05	Water	05/05/2010 10:10	05/10/2010 14:45

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2880	10.0	10.0	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	43.1	0.10	0.0093	mg/L
000-01-5	Hardness	425	0.33	0.12	mg/L
7439-95-4	Magnesium	99.1	0.10	0.024	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00009B	0.00020	0.000055	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-70-2	Calcium	43.1	0.10	0.028	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-89-6	Iron	0.85	0.10	0.0095	mg/L
7439-95-4	Magnesium	99.1	0.10	0.023	mg/L
7439-96-5	Manganese	0.31	0.015	0.00057	mg/L
7440-09-7	Potassium	33.1	0.50	0.068	mg/L
7440-24-6	Strontium	0.72	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	769	2.00	0.12	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.26	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0018B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.69	0.050	0.00050	mg/L

## SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00007B	0.00020	0.000055	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112801	SW-05	Water	05/05/2010 10:10	05/10/2010 14:45

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1290	50.0	7.9	mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0019B	0.010	0.00079	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112802	SW-03	Water	05/05/2010 12:30	05/10/2010 14:45

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-70-2	Calcium	43.3	0.10	0.028	mg/L
7440-47-3	Chromium	0.0026B	0.010	0.00032	mg/L
7439-89-6	Iron	1.08	0.10	0.0095	mg/L
7439-95-4	Magnesium	98.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.30	0.015	0.00057	mg/L
7440-09-7	Potassium	32.7	0.50	0.068	mg/L
7440-24-6	Strontium	0.70	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	771	2.00	0.12	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0018B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.71	0.050	0.00050	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1250	20.0	3.2	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	43.3	0.10	0.0093	mg/L
000-01-5	Hardness	424	0.33	0.12	mg/L
7439-95-4	Magnesium	98.3	0.10	0.024	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112802	SW-03	Water	05/05/2010 12:30	05/10/2010 14:45

### SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00007B	0.00020	0.000055	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2780	10.0	10.0	mg/L

### SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00009B	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112803	SW-02	Water	05/05/2010 13:30	05/10/2010 14:45

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2900	10.0	10.0	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1330	20.0	3.2	mg/L

### SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00009B	0.00020	0.000055	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	44.1	0.10	0.0093	mg/L
000-01-5	Hardness	432	0.33	0.12	mg/L
7439-95-4	Magnesium	100	0.10	0.024	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-70-2	Calcium	44.1	0.10	0.028	mg/L
7440-47-3	Chromium	0.0023B	0.010	0.00032	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112803	SW-02	Water	05/05/2010 13:30	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7439-89-6	Iron	0.80	0.10	0.0095	mg/L
7439-95-4	Magnesium	100	0.10	0.023	mg/L
7439-96-5	Manganese	0.27	0.015	0.00057	mg/L
7440-09-7	Potassium	33.3	0.50	0.068	mg/L
7440-24-6	Strontium	0.71	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0045B	0.020	0.0040	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	727	2.00	0.12	mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00027B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0016B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.74	0.050	0.00050	mg/L

### SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00009B	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112804	SW-04	Water	05/05/2010 14:45	05/10/2010 14:45

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.26	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00035B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0017B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.73	0.050	0.00050	mg/L

### SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00006B	0.00020	0.000055	mg/L



# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112804	SW-04	Water	05/05/2010 14:45	05/10/2010 14:45

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00009B	0.00020	0.000055	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3050	10.0	10.0	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	44.6	0.10	0.0093	mg/L
000-01-5	Hardness	441	0.33	0.12	mg/L
7439-95-4	Magnesium	103	0.10	0.024	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1420	20.0	3.2	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.27	0.010	0.00031	mg/L
7440-70-2	Calcium	44.6	0.10	0.028	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7439-89-6	Iron	0.49	0.10	0.0095	mg/L
7439-95-4	Magnesium	103	0.10	0.023	mg/L
7439-96-5	Manganese	0.16	0.015	0.00057	mg/L
7440-09-7	Potassium	34.4	0.50	0.068	mg/L
7440-24-6	Strontium	0.72	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	808	2.00	0.12	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112805	SW-01	Water	05/06/2010 09:45	05/10/2010 14:45

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1210	20.0	3.2	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-70-2	Calcium	38.4	0.10	0.028	mg/L
7440-47-3	Chromium	0.0026B	0.010	0.00032	mg/L
7439-89-6	Iron	1.26	0.10	0.0095	mg/L
7439-95-4	Magnesium	88.2	0.10	0.023	mg/L
7439-96-5	Manganese	0.23	0.015	0.00057	mg/L
7440-09-7	Potassium	29.2	0.50	0.068	mg/L
7440-24-6	Strontium	0.64	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0062B	0.020	0.0040	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	631	2.00	0.12	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2710	10.0	10.0	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00007B	0.00020	0.000055	mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	105	25.0	7.2	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	38.4	0.10	0.0093	mg/L
000-01-5	Hardness	378	0.33	0.12	mg/L
7439-95-4	Magnesium	88.2	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112805	SW-01	Water	05/06/2010 09:45	05/10/2010 14:45

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-43-9	Cadmium	0.00026B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0017B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.69	0.050	0.00050	mg/L

### SM 2520B Salinity

CAS#	Parameter	Result	RDL	MDL	Units
WET-028	Salinity	2.4	2.0	2.0	ppt

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112806	SW-06	Water	05/06/2010 11:10	05/10/2010 14:45

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1610	50.0	7.9	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	54.3	0.10	0.0093	mg/L
000-01-5	Hardness	541	0.33	0.12	mg/L
7439-95-4	Magnesium	127	0.10	0.024	mg/L

### SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00008B	0.00020	0.000055	mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.37	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00020B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0021B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.91	0.050	0.00050	mg/L

### SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00010B	0.00020	0.000055	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112806	SW-06	Water	05/06/2010 11:10	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.39	0.010	0.00031	mg/L
7440-70-2	Calcium	54.3	0.10	0.028	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-89-6	Iron	0.94	0.10	0.0095	mg/L
7439-95-4	Magnesium	127	0.10	0.023	mg/L
7439-96-5	Manganese	0.46	0.015	0.00057	mg/L
7440-09-7	Potassium	38.6	0.50	0.068	mg/L
7440-24-6	Strontium	0.90	0.050	0.00050	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	935	5.00	0.30	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3800	10.0	10.0	mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	60.0	1.0	0.17	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112807	SW-07	Water	05/06/2010 13:00	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.45	0.010	0.00031	mg/L
7440-70-2	Calcium	56.1	0.10	0.028	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-89-6	Iron	0.94	0.10	0.0095	mg/L
7439-95-4	Magnesium	130	0.10	0.023	mg/L
7439-96-5	Manganese	0.61	0.015	0.00057	mg/L
7440-09-7	Potassium	40.7	0.50	0.068	mg/L
7440-24-6	Strontium	0.95	0.050	0.00050	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112807	SW-07	Water	05/06/2010 13:00	05/10/2010 14:45

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	981	2.00	0.12	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1640	50.0	7.9	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00008B	0.00020	0.000055	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	56.1	0.10	0.0093	mg/L
000-01-5	Hardness	554	0.33	0.12	mg/L
7439-95-4	Magnesium	130	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.42	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00024B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0020B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.93	0.050	0.00050	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3590	10.0	10.0	mg/L

## SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00009B	0.00020	0.000055	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112808	SW-10	Water	05/06/2010 15:40	05/10/2010 14:45

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1610	50.0	7.9	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3520	10.0	10.0	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	50.6	0.10	0.0093	mg/L
000-01-5	Hardness	619	0.33	0.12	mg/L
7439-95-4	Magnesium	120	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.35	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7440-24-6	Strontium	0.88	0.050	0.00050	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00007B	0.00020	0.000055	mg/L

## SM 2520B Salinity

CAS#	Parameter	Result	RDL	MDL	Units
WET-028	Salinity	3.2	2.0	2.0	ppt

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.38	0.010	0.00031	mg/L
7440-70-2	Calcium	50.6	0.10	0.028	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7439-89-6	Iron	1.09	0.10	0.0095	mg/L
7439-95-4	Magnesium	120	0.10	0.023	mg/L
7439-96-5	Manganese	0.48	0.015	0.00057	mg/L
7440-09-7	Potassium	37.2	0.50	0.068	mg/L
7440-24-6	Strontium	0.86	0.050	0.00050	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112808	SW-10	Water	05/06/2010 15:40	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	917	5.00	0.30	mg/L

### SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00012B	0.00020	0.000055	mg/L

### EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	106	25.0	7.2	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112809	SW-09	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.42	0.010	0.00031	mg/L
7440-70-2	Calcium	58.6	0.10	0.028	mg/L
7440-47-3	Chromium	0.0027B	0.010	0.00032	mg/L
7439-89-6	Iron	1.12	0.10	0.0095	mg/L
7439-95-4	Magnesium	140	0.10	0.023	mg/L
7439-96-5	Manganese	0.51	0.015	0.00057	mg/L
7440-09-7	Potassium	42.6	0.50	0.068	mg/L
7440-24-6	Strontium	0.99	0.050	0.00050	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	915	5.00	0.30	mg/L

### SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	58.6	0.10	0.0093	mg/L
000-01-5	Hardness	591	0.33	0.12	mg/L
7439-95-4	Magnesium	140	0.10	0.024	mg/L

### SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00011B	0.00020	0.000055	mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112809	SW-09	Water	05/06/2010 16:35	05/10/2010 14:45

### EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	MDL	Units
14808-79-8	Sulfate	83.9	25.0	7.2	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1870	50.0	7.9	mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4220	10.0	10.0	mg/L

### SM 2520B Salinity

CAS#	Parameter	Result	RDL	MDL	Units
WET-028	Salinity	3.7	2.0	2.0	ppt

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.37	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0024B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.00	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0095B	0.020	0.0040	mg/L

### SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00010B	0.00020	0.000055	mg/L



# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112810	SW-109	Water	05/06/2010 16:35	05/10/2010 14:45

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	59.4	0.10	0.0093	mg/L
000-01-5	Hardness	597	0.33	0.12	mg/L
7439-95-4	Magnesium	141	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.38	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00027B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7440-24-6	Strontium	1.03	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.41	0.010	0.00031	mg/L
7440-70-2	Calcium	59.4	0.10	0.028	mg/L
7440-47-3	Chromium	0.0027B	0.010	0.00032	mg/L
7439-89-6	Iron	1.11	0.10	0.0095	mg/L
7439-95-4	Magnesium	141	0.10	0.023	mg/L
7439-96-5	Manganese	0.50	0.015	0.00057	mg/L
7440-09-7	Potassium	42.9	0.50	0.068	mg/L
7440-24-6	Strontium	1.01	0.050	0.00050	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1100	5.00	0.30	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4150	10.0	10.0	mg/L

## SW-846 7470A Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00006B	0.00020	0.000055	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	67.4	1.0	0.17	mg/L CaCO3

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112810	SW-109	Water	05/06/2010 16:35	05/10/2010 14:45

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1840	50.0	7.9	mg/L

### SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00006B	0.00020	0.000055	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112811	SW-20	Water	05/07/2010 12:05	05/10/2010 14:45

### SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.013	0.010	0.00079	mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2220	50.0	7.9	mg/L

### SW-846 7010 Arsenic Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0075B	0.010	0.00079	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.23	0.010	0.00031	mg/L
7440-70-2	Calcium	73.9	0.10	0.028	mg/L
7440-47-3	Chromium	0.0075B	0.010	0.00032	mg/L
7439-89-6	Iron	11.3	0.10	0.0095	mg/L
7439-92-1	Lead	0.021	0.0080	0.0015	mg/L
7439-95-4	Magnesium	149	0.10	0.023	mg/L
7439-96-5	Manganese	0.83	0.015	0.00057	mg/L
7440-09-7	Potassium	59.6	0.50	0.068	mg/L
7440-24-6	Strontium	1.74	0.050	0.00050	mg/L
7440-66-6	Zinc	0.067	0.020	0.0040	mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1230	5.00	0.30	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112811	SW-20	Water	05/07/2010 12:05	05/10/2010 14:45

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4920	10.0	10.0	mg/L

## SW-846 7470A

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00010B	0.00020	0.000055	mg/L

## SM 2340B Hardness

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	73.9	0.10	0.0093	mg/L
000-01-5	Hardness	677	0.33	0.12	mg/L
7439-95-4	Magnesium	149	0.10	0.024	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.10	0.010	0.00031	mg/L
7440-47-3	Chromium	0.0051B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0088	0.0080	0.0015	mg/L
7440-24-6	Strontium	1.66	0.050	0.00050	mg/L
7440-66-6	Zinc	0.023	0.020	0.0040	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112801	SW-05	Water	05/05/2010 10:10	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 10:32	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000101	0.0000514	mg/L
83-32-9	Acenaphthene	ND	0.000101	0.0000135	mg/L
208-96-8	Acenaphthylene	ND	0.000101	0.0000147	mg/L
120-12-7	Anthracene	ND	0.000101	0.00000909	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000101	0.0000498	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000101	0.0000135	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000101	0.0000324	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000101	0.0000221	mg/L
218-01-9	Chrysene	ND	0.000101	0.0000425	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000101	0.0000193	mg/L
206-44-0	Fluoranthene	ND	0.000101	0.0000132	mg/L
86-73-7	Fluorene	ND	0.000101	0.0000182	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000101	0.0000170	mg/L
91-20-3	Naphthalene	ND	0.000101	0.0000280	mg/L
85-01-8	Phenanthrene	ND	0.000101	0.0000165	mg/L
129-00-0	Pyrene	ND	0.000101	0.0000179	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00505	.003	mg/L	59	52 - 120
321-60-8	2-Fluorobiphenyl	.00505	.00245	mg/L	49	16 - 128
1718-51-0	Terphenyl-d14	.00505	.00415	mg/L	82	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 15:43	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00007B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 15:32	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 16:34	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00009B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112801	SW-05	Water	05/05/2010 10:10	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 22:08	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	43.1	0.10	0.028	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-89-6	Iron	0.85	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	99.1	0.10	0.023	mg/L
7439-96-5	Manganese	0.31	0.015	0.00057	mg/L
7440-09-7	Potassium	33.1	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.72	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	2	05/18/2010 21:58	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	769	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:28	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.26	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0018B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.69	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 22:08	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	43.1	0.10	0.0093	mg/L
000-01-5	Hardness	425	0.33	0.12	mg/L
7439-95-4	Magnesium	99.1	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112801	SW-05	Water	05/05/2010 10:10	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/24/2010 17:06	CLB	432562

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.0019B	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2880	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 13:49	AEL	432224

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1290	50.0	7.9	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112802	SW-03	Water	05/05/2010 12:30	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 10:46	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000104	0.0000527	mg/L
83-32-9	Acenaphthene	ND	0.000104	0.0000139	mg/L
208-96-8	Acenaphthylene	ND	0.000104	0.0000151	mg/L
120-12-7	Anthracene	ND	0.000104	0.00000933	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000104	0.0000511	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000104	0.0000139	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000104	0.0000333	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000104	0.0000227	mg/L
218-01-9	Chrysene	ND	0.000104	0.0000436	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000104	0.0000198	mg/L
206-44-0	Fluoranthene	ND	0.000104	0.0000136	mg/L
86-73-7	Fluorene	ND	0.000104	0.0000187	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000104	0.0000174	mg/L
91-20-3	Naphthalene	ND	0.000104	0.0000287	mg/L
85-01-8	Phenanthrene	ND	0.000104	0.0000169	mg/L
129-00-0	Pyrene	ND	0.000104	0.0000183	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00518	.00284	mg/L	55	52 - 120
321-60-8	2-Fluorobiphenyl	.00518	.00218	mg/L	42	16 - 128
1718-51-0	Terphenyl-d14	.00518	.00434	mg/L	84	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:12	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00009B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 15:38	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 16:47	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00007B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112802	SW-03	Water	05/05/2010 12:30	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 22:28	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.30	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	43.3	0.10	0.028	mg/L
7440-47-3	Chromium	0.0026B	0.010	0.00032	mg/L
7439-89-6	Iron	1.08	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	98.3	0.10	0.023	mg/L
7439-96-5	Manganese	0.30	0.015	0.00057	mg/L
7440-09-7	Potassium	32.7	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.70	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	2	05/18/2010 22:04	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	771	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:35	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0018B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.71	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 22:28	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	43.3	0.10	0.0093	mg/L
000-01-5	Hardness	424	0.33	0.12	mg/L
7439-95-4	Magnesium	98.3	0.10	0.024	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112802	SW-03	Water	05/05/2010 12:30	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:14	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2780	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/20/2010 13:52	AEL	432224

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1250	20.0	3.2	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112803	SW-02	Water	05/05/2010 13:30	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 11:01	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000104	0.0000527	mg/L
83-32-9	Acenaphthene	ND	0.000104	0.0000139	mg/L
208-96-8	Acenaphthylene	ND	0.000104	0.0000151	mg/L
120-12-7	Anthracene	ND	0.000104	0.00000933	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000104	0.0000511	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000104	0.0000139	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000104	0.0000333	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000104	0.0000227	mg/L
218-01-9	Chrysene	ND	0.000104	0.0000436	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000104	0.0000198	mg/L
206-44-0	Fluoranthene	ND	0.000104	0.0000136	mg/L
86-73-7	Fluorene	ND	0.000104	0.0000187	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000104	0.0000174	mg/L
91-20-3	Naphthalene	ND	0.000104	0.0000287	mg/L
85-01-8	Phenanthrene	ND	0.000104	0.0000169	mg/L
129-00-0	Pyrene	ND	0.000104	0.0000183	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00518	.00297	mg/L	57	52 - 120
321-60-8	2-Fluorobiphenyl	.00518	.00318	mg/L	61	16 - 128
1718-51-0	Terphenyl-d14	.00518	.00465	mg/L	90	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:13	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00009B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 15:45	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 16:49	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00009B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112803	SW-02	Water	05/05/2010 13:30	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 22:35	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.29	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	44.1	0.10	0.028	mg/L
7440-47-3	Chromium	0.0023B	0.010	0.00032	mg/L
7439-89-6	Iron	0.80	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	100	0.10	0.023	mg/L
7439-96-5	Manganese	0.27	0.015	0.00057	mg/L
7440-09-7	Potassium	33.3	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.71	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0045B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	2	05/18/2010 22:11	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	727	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:42	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00027B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0016B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.74	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 22:35	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	44.1	0.10	0.0093	mg/L
000-01-5	Hardness	432	0.33	0.12	mg/L
7439-95-4	Magnesium	100	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112803	SW-02	Water	05/05/2010 13:30	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:21	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2900	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/20/2010 13:53	AEL	432224

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1330	20.0	3.2	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112804	SW-04	Water	05/05/2010 14:45	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 11:16	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000103	0.0000525	mg/L
83-32-9	Acenaphthene	ND	0.000103	0.0000138	mg/L
208-96-8	Acenaphthylene	ND	0.000103	0.0000151	mg/L
120-12-7	Anthracene	ND	0.000103	0.00000928	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000103	0.0000508	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000103	0.0000138	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000103	0.0000331	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000103	0.0000226	mg/L
218-01-9	Chrysene	ND	0.000103	0.0000434	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000103	0.0000197	mg/L
206-44-0	Fluoranthene	ND	0.000103	0.0000135	mg/L
86-73-7	Fluorene	ND	0.000103	0.0000186	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000103	0.0000173	mg/L
91-20-3	Naphthalene	ND	0.000103	0.0000286	mg/L
85-01-8	Phenanthrene	ND	0.000103	0.0000168	mg/L
129-00-0	Pyrene	ND	0.000103	0.0000182	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00515	.00285	mg/L	55	52 - 120
321-60-8	2-Fluorobiphenyl	.00515	.00215	mg/L	42	16 - 128
1718-51-0	Terphenyl-d14	.00515	.00407	mg/L	79	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:15	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00006B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 15:51	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 16:50	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00009B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112804	SW-04	Water	05/05/2010 14:45	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 22:42	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.27	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	44.6	0.10	0.028	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7439-89-6	Iron	0.49	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	103	0.10	0.023	mg/L
7439-96-5	Manganese	0.16	0.015	0.00057	mg/L
7440-09-7	Potassium	34.4	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.72	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	2	05/18/2010 22:18	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	808	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 17:29	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.26	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00035B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0017B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.73	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 22:42	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	44.6	0.10	0.0093	mg/L
000-01-5	Hardness	441	0.33	0.12	mg/L
7439-95-4	Magnesium	103	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112804	SW-04	Water	05/05/2010 14:45	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:27	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3050	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/20/2010 13:54	AEL	432224

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1420	20.0	3.2	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112805	SW-01	Water	05/06/2010 09:45	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 11:30	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00313	mg/L	61	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00207	mg/L	41	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00468	mg/L	92	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 17:21	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 15:57	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 17:28	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00007B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112805	SW-01	Water	05/06/2010 09:45	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 22:49	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	38.4	0.10	0.028	mg/L
7440-47-3	Chromium	0.0026B	0.010	0.00032	mg/L
7439-89-6	Iron	1.26	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	88.2	0.10	0.023	mg/L
7439-96-5	Manganese	0.23	0.015	0.00057	mg/L
7440-09-7	Potassium	29.2	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.64	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0062B	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	2	05/18/2010 22:24	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	631	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:49	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.28	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00026B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0017B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.69	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 22:49	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	38.4	0.10	0.0093	mg/L
000-01-5	Hardness	378	0.33	0.12	mg/L
7439-95-4	Magnesium	88.2	0.10	0.024	mg/L

<b>GCAL ID</b> 21005112805	<b>Client ID</b> SW-01	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/06/2010 09:45	<b>Receive Date/Time</b> 05/10/2010 14:45
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### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:33	CLB	432570
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		2710	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/20/2010 13:54	AEL	432224
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		1210	20.0	3.2	mg/L

### SM 2520B Salinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 08:30	DJH	431979
CAS#	Parameter		Result	RDL	MDL	Units
WET-028	Salinity		2.4	2.0	2.0	ppt

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/17/2010 12:08	JEM	431908
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		105	25.0	7.2	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112806	SW-06	Water	05/06/2010 11:10	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 11:46	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000103	0.0000522	mg/L
83-32-9	Acenaphthene	ND	0.000103	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000103	0.0000150	mg/L
120-12-7	Anthracene	ND	0.000103	0.00000923	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000103	0.0000506	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000103	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000103	0.0000329	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000103	0.0000225	mg/L
218-01-9	Chrysene	ND	0.000103	0.0000432	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000103	0.0000196	mg/L
206-44-0	Fluoranthene	ND	0.000103	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000103	0.0000185	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000103	0.0000172	mg/L
91-20-3	Naphthalene	ND	0.000103	0.0000284	mg/L
85-01-8	Phenanthrene	ND	0.000103	0.0000167	mg/L
129-00-0	Pyrene	ND	0.000103	0.0000182	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00513	.00341	mg/L	66	52 - 120
321-60-8	2-Fluorobiphenyl	.00513	.00269	mg/L	52	16 - 128
1718-51-0	Terphenyl-d14	.00513	.00438	mg/L	85	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:18	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00010B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 16:03	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 16:53	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00008B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112806	SW-06	Water	05/06/2010 11:10	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 21:36	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.39	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	54.3	0.10	0.028	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-89-6	Iron	0.94	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	127	0.10	0.023	mg/L
7439-96-5	Manganese	0.46	0.015	0.00057	mg/L
7440-09-7	Potassium	38.6	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.90	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	5	05/18/2010 21:05	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	935	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:56	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.37	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00020B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0021B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.91	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 21:36	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	54.3	0.10	0.0093	mg/L
000-01-5	Hardness	541	0.33	0.12	mg/L
7439-95-4	Magnesium	127	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112806	SW-06	Water	05/06/2010 11:10	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:39	CLB	432570
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	3800	10.0	10.0	mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 13:55	AEL	432224
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	1610	50.0	7.9	mg/L	

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter	Result	RDL	MDL	Units	
T-005-B	Bicarbonate Alkalinity	60.0	1.0	0.17	mg/L CaCO3	

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter	Result	RDL	MDL	Units	
T-005-C	Carbonate Alkalinity	ND	1.0	0.17	mg/L CaCO3	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112807	SW-07	Water	05/06/2010 13:00	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 12:01	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00313	mg/L	61	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.0026	mg/L	51	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00429	mg/L	84	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 17:26	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00009B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 14:10	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 17:30	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00008B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112807	SW-07	Water	05/06/2010 13:00	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	1	05/12/2010 22:56	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.45	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	56.1	0.10	0.028	mg/L
7440-47-3	Chromium	0.0025B	0.010	0.00032	mg/L
7439-89-6	Iron	0.94	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	130	0.10	0.023	mg/L
7439-96-5	Manganese	0.61	0.015	0.00057	mg/L
7440-09-7	Potassium	40.7	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.95	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SW-846 3010A	2	05/18/2010 22:31	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	981	2.00	0.12	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 19:03	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.42	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00024B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0020B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.93	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431357	SM 2340 B	1	05/12/2010 22:56	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	56.1	0.10	0.0093	mg/L
000-01-5	Hardness	554	0.33	0.12	mg/L
7439-95-4	Magnesium	130	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112807	SW-07	Water	05/06/2010 13:00	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:45	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	3590	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 13:58	AEL	432224

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1640	50.0	7.9	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112808	SW-10	Water	05/06/2010 15:40	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/12/2010 10:00	431369	3510C	1	05/13/2010 12:16	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00299	mg/L	59	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00223	mg/L	44	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00386	mg/L	76	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:21	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00012B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 16:09	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 17:31	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00007B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112808	SW-10	Water	05/06/2010 15:40	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 20:37	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.38	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	50.6	0.10	0.028	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7439-89-6	Iron	1.09	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	120	0.10	0.023	mg/L
7439-96-5	Manganese	0.48	0.015	0.00057	mg/L
7440-09-7	Potassium	37.2	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.86	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	5	05/18/2010 20:45	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	917	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 19:11	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.35	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.88	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SM 2340 B	1	05/12/2010 20:37	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	50.6	0.10	0.0093	mg/L
000-01-5	Hardness	619	0.33	0.12	mg/L
7439-95-4	Magnesium	120	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112808	SW-10	Water	05/06/2010 15:40	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:51	CLB	432570
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter	Result	RDL	MDL	Units	
WET-035	Total Dissolved Solids(TDS)	3520	10.0	10.0	mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 13:59	AEL	432224
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	1610	50.0	7.9	mg/L	

### SM 2520B Salinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 08:30	DJH	431979
CAS#	Parameter	Result	RDL	MDL	Units	
WET-028	Salinity	3.2	2.0	2.0	ppt	

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/17/2010 12:09	JEM	431908
CAS#	Parameter	Result	RDL	MDL	Units	
14808-79-8	Sulfate	106	25.0	7.2	mg/L	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112809	SW-09	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/13/2010 06:00	431474	3510C	1	05/13/2010 13:15	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00355	mg/L	70	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00347	mg/L	68	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00493	mg/L	97	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:26	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00010B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 16:15	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 16:58	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00011B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112809	SW-09	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 20:44	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.42	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	58.6	0.10	0.028	mg/L
7440-47-3	Chromium	0.0027B	0.010	0.00032	mg/L
7439-89-6	Iron	1.12	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	140	0.10	0.023	mg/L
7439-96-5	Manganese	0.51	0.015	0.00057	mg/L
7440-09-7	Potassium	42.6	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	0.99	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	5	05/18/2010 20:52	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	915	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 19:18	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.37	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0024B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.00	0.050	0.00050	mg/L
7440-66-6	Zinc	0.0095B	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SM 2340 B	1	05/12/2010 20:44	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	58.6	0.10	0.0093	mg/L
000-01-5	Hardness	591	0.33	0.12	mg/L
7439-95-4	Magnesium	140	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112809	SW-09	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:57	CLB	432570
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		4220	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 14:00	AEL	432224
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		1870	50.0	7.9	mg/L

### SM 2520B Salinity

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 08:30	DJH	431979
CAS#	Parameter		Result	RDL	MDL	Units
WET-028	Salinity		3.7	2.0	2.0	ppt

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			5	05/17/2010 12:10	JEM	431908
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		83.9	25.0	7.2	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112810	SW-109	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/13/2010 06:00	431474	3510C	1	05/13/2010 13:30	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000102	0.0000519	mg/L
83-32-9	Acenaphthene	ND	0.000102	0.0000137	mg/L
208-96-8	Acenaphthylene	ND	0.000102	0.0000149	mg/L
120-12-7	Anthracene	ND	0.000102	0.00000918	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000102	0.0000503	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000102	0.0000137	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000102	0.0000328	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000102	0.0000223	mg/L
218-01-9	Chrysene	ND	0.000102	0.0000430	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000102	0.0000195	mg/L
206-44-0	Fluoranthene	ND	0.000102	0.0000134	mg/L
86-73-7	Fluorene	ND	0.000102	0.0000184	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000102	0.0000171	mg/L
91-20-3	Naphthalene	ND	0.000102	0.0000283	mg/L
85-01-8	Phenanthrene	ND	0.000102	0.0000166	mg/L
129-00-0	Pyrene	ND	0.000102	0.0000181	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.0051	.00311	mg/L	61	52 - 120
321-60-8	2-Fluorobiphenyl	.0051	.00299	mg/L	59	16 - 128
1718-51-0	Terphenyl-d14	.0051	.00389	mg/L	76	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:28	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00006B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 16:21	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 17:00	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00006B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112810	SW-109	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 20:04	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.41	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	59.4	0.10	0.028	mg/L
7440-47-3	Chromium	0.0027B	0.010	0.00032	mg/L
7439-89-6	Iron	1.11	0.10	0.0095	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7439-95-4	Magnesium	141	0.10	0.023	mg/L
7439-96-5	Manganese	0.50	0.015	0.00057	mg/L
7440-09-7	Potassium	42.9	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.01	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	5	05/18/2010 19:59	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1100	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 19:25	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.38	0.010	0.00031	mg/L
7440-43-9	Cadmium	0.00027B	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0022B	0.010	0.00032	mg/L
7439-92-1	Lead	ND	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.03	0.050	0.00050	mg/L
7440-66-6	Zinc	ND	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SM 2340 B	1	05/12/2010 20:04	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	59.4	0.10	0.0093	mg/L
000-01-5	Hardness	597	0.33	0.12	mg/L
7439-95-4	Magnesium	141	0.10	0.024	mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112810	SW-109	Water	05/06/2010 16:35	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 13:03	CLB	432570
CAS#	Parameter		Result	RDL	MDL	Units
7440-38-2	Arsenic		ND	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		4150	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 14:01	AEL	432224
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		1840	50.0	7.9	mg/L

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		67.4	1.0	0.17	mg/L CaCO3

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/17/2010 15:05	JMC	431955
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112811	SW-20	Water	05/07/2010 12:05	05/10/2010 14:45

### SW-846 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/13/2010 06:00	431474	3510C	1	05/13/2010 13:45	RLY	431542

CAS#	Parameter	Result	RDL	MDL	Units
91-57-6	2-Methylnaphthalene	ND	0.000101	0.0000514	mg/L
83-32-9	Acenaphthene	ND	0.000101	0.0000135	mg/L
208-96-8	Acenaphthylene	ND	0.000101	0.0000147	mg/L
120-12-7	Anthracene	ND	0.000101	0.00000909	mg/L
56-55-3	Benzo(a)anthracene	ND	0.000101	0.0000498	mg/L
50-32-8	Benzo(a)pyrene	ND	0.000101	0.0000135	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.000101	0.0000324	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.000101	0.0000221	mg/L
218-01-9	Chrysene	ND	0.000101	0.0000425	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.000101	0.0000193	mg/L
206-44-0	Fluoranthene	ND	0.000101	0.0000132	mg/L
86-73-7	Fluorene	ND	0.000101	0.0000182	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000101	0.0000170	mg/L
91-20-3	Naphthalene	ND	0.000101	0.0000280	mg/L
85-01-8	Phenanthrene	ND	0.000101	0.0000165	mg/L
129-00-0	Pyrene	ND	0.000101	0.0000179	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	.00505	.0033	mg/L	65	52 - 120
321-60-8	2-Fluorobiphenyl	.00505	.00326	mg/L	65	16 - 128
1718-51-0	Terphenyl-d14	.00505	.00378	mg/L	75	43 - 138

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 06:05	431364	SW-846 7470A Dissolved	1	05/12/2010 16:29	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.00020	0.000055	mg/L

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 16:28	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.0075B</b>	<b>0.010</b>	<b>0.00079</b>	<b>mg/L</b>

### SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431365	SW-846 7470A	1	05/12/2010 17:05	TEA	431459

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.00010B</b>	<b>0.00020</b>	<b>0.000055</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112811	SW-20	Water	05/07/2010 12:05	05/10/2010 14:45

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 20:51	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.23	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-70-2	Calcium	73.9	0.10	0.028	mg/L
7440-47-3	Chromium	0.0075B	0.010	0.00032	mg/L
7439-89-6	Iron	11.3	0.10	0.0095	mg/L
7439-92-1	Lead	0.021	0.0080	0.0015	mg/L
7439-95-4	Magnesium	149	0.10	0.023	mg/L
7439-96-5	Manganese	0.83	0.015	0.00057	mg/L
7440-09-7	Potassium	59.6	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.74	0.050	0.00050	mg/L
7440-66-6	Zinc	0.067	0.020	0.0040	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	5	05/18/2010 20:59	CNB	432074

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1230	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 19:32	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.10	0.010	0.00031	mg/L
7440-43-9	Cadmium	ND	0.0027	0.00016	mg/L
7440-47-3	Chromium	0.0051B	0.010	0.00032	mg/L
7439-92-1	Lead	0.0088	0.0080	0.0015	mg/L
7782-49-2	Selenium	ND	0.0050	0.0037	mg/L
7440-24-6	Strontium	1.66	0.050	0.00050	mg/L
7440-66-6	Zinc	0.023	0.020	0.0040	mg/L

### SM 2340B Hardness

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SM 2340 B	1	05/12/2010 20:51	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	73.9	0.10	0.0093	mg/L
000-01-5	Hardness	677	0.33	0.12	mg/L
7439-95-4	Magnesium	149	0.10	0.024	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112811	SW-20	Water	05/07/2010 12:05	05/10/2010 14:45

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 13:52	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.013	0.010	0.00079	mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	4920	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/20/2010 14:02	AEL	432224

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2220	50.0	7.9	mg/L

# GC/MS Semi-Volatiles Quality Control Summary

<b>SW-846 8270C SIM</b>		<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
83-32-9	Acenaphthene	0.010	0.00627	63	30 - 120	0.00659	66	5	40
208-96-8	Acenaphthylene	0.010	0.00739	74	30 - 130	0.00642	64	14	40
120-12-7	Anthracene	0.010	0.00726	73	50 - 120	0.00814	81	11	40
56-55-3	Benzo(a)anthracene	0.010	0.00876	88	44 - 123	0.00840	84	4	40
205-99-2	Benzo(b)fluoranthene	0.010	0.00914	91	43 - 129	0.00853	85	7	40
207-08-9	Benzo(k)fluoranthene	0.010	0.00650	65	46 - 126	0.00583	58	11	40
50-32-8	Benzo(a)pyrene	0.010	0.00825	83	42 - 128	0.00754	75	9	40
218-01-9	Chrysene	0.00980	0.00858	88	47 - 120	0.00814	83	5	40
53-70-3	Dibenz(a,h)anthracene	0.010	0.00984	98	36 - 131	0.00901	90	9	40
206-44-0	Fluoranthene	0.010	0.00745	75	37 - 129	0.00778	78	4	40
86-73-7	Fluorene	0.010	0.00901	90	30 - 125	0.00636	64	34	40
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	0.00961	96	35 - 138	0.00894	89	7	40
91-20-3	Naphthalene	0.010	0.00695	70	30 - 120	0.00642	64	8	40
85-01-8	Phenanthrene	0.010	0.00777	78	43 - 120	0.00816	82	5	40
129-00-0	Pyrene	0.010	0.00995	100	47 - 120	0.00926	93	7	40
91-57-6	2-Methylnaphthalene	0.010	0.00747	75	30 - 120	0.00852	85	13	40
<b>Surrogate</b>		<b>Result</b>	<b>% R</b>						
4165-60-0	Nitrobenzene-d5	5	3.61	72	52 - 120	3.17	63		
321-60-8	2-Fluorobiphenyl	5	4.09	82	16 - 128	2.85	57		
1718-51-0	Terphenyl-d14	5	4.71	94	43 - 138	4.38	88		

<b>SW-846 8270C SIM</b>		<b>Units Result</b>	<b>mg/L RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
83-32-9	Acenaphthene	ND	0.000100	0.010	0.00840	84	30 - 120	0.00827	83	2	40
208-96-8	Acenaphthylene	ND	0.000100	0.010	0.00882	88	30 - 130	0.00845	85	4	40

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 431542 Prep Batch 431474 Prep Method 3510C		Client ID MB431474 GCAL ID 829793 Sample Type Method Blank Prep Date 05/13/2010 06:00 Analytical Date 05/13/2010 12:31 Matrix Water			LCS431474 829794 LCS 05/13/2010 06:00 05/13/2010 12:45 Water			LCSD431474 829795 LCSD 05/13/2010 06:00 05/13/2010 13:00 Water			
<b>SW-846 8270C SIM</b>		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
120-12-7	Anthracene	ND	0.000100	0.010	0.00899	90	50 - 120	0.00877	88	2	40
56-55-3	Benzo(a)anthracene	ND	0.000100	0.010	0.00804	80	44 - 123	0.00793	79	1	40
205-99-2	Benzo(b)fluoranthene	ND	0.000100	0.010	0.00854	85	43 - 129	0.00832	83	3	40
207-08-9	Benzo(k)fluoranthene	ND	0.000100	0.010	0.00575	58	46 - 126	0.00620	62	8	40
50-32-8	Benzo(a)pyrene	ND	0.000100	0.010	0.00757	76	42 - 128	0.00778	78	3	40
218-01-9	Chrysene	ND	0.000100	0.00980	0.00788	80	47 - 120	0.00792	81	0.5	40
53-70-3	Dibenz(a,h)anthracene	ND	0.000100	0.010	0.010	101	36 - 131	0.010	103	0	40
206-44-0	Fluoranthene	ND	0.000100	0.010	0.00783	78	37 - 129	0.00789	79	0.8	40
86-73-7	Fluorene	ND	0.000100	0.010	0.00815	82	30 - 125	0.00873	87	7	40
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.000100	0.010	0.00985	99	35 - 138	0.010	102	2	40
91-20-3	Naphthalene	ND	0.000100	0.010	0.00856	86	30 - 120	0.00822	82	4	40
85-01-8	Phenanthrene	ND	0.000100	0.010	0.00889	89	43 - 120	0.00890	89	0.1	40
129-00-0	Pyrene	ND	0.000100	0.010	0.00933	93	47 - 120	0.00902	90	3	40
91-57-6	2-Methylnaphthalene	ND	0.000100	0.010	0.00884	88	30 - 120	0.00825	83	7	40
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	3.36	67	5	4.48	90	52 - 120	4.67	93		
321-60-8	2-Fluorobiphenyl	3.55	71	5	4.12	82	16 - 128	4.03	81		
1718-51-0	Terphenyl-d14	4.51	90	5	4.71	94	43 - 138	4.25	85		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431459 <b>Prep Batch</b> 431364 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB431364 <b>GCAL ID</b> 829189 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 06:05 <b>Analytical Date</b> 05/12/2010 15:40 <b>Matrix</b> Water	LCS431364 829190 LCS 05/11/2010 06:05 05/12/2010 15:42 Water				
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> ND	<b>RDL</b> 0.00020	<b>Spike Added</b> 0.00500	<b>Result</b> 0.00513	<b>% R</b> 103 <b>Control Limits % R</b> 80 - 120
7439-97-6	Mercury	ND	0.00020	0.00500	0.00513	103 80 - 120

<b>Analytical Batch</b> 431459 <b>Prep Batch</b> 431364 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 16:34 <b>Matrix</b> Water	829137MS 829192 MS 05/11/2010 06:05 05/12/2010 15:46 Water				
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> 0.00009	<b>RDL</b> 0.00020	<b>Spike Added</b> 0.00500	<b>Result</b> 0.00535	<b>% R</b> 105 <b>Control Limits % R</b> 75 - 125
7439-97-6	Mercury	0.00009	0.00020	0.00500	0.00535	105 75 - 125

<b>Analytical Batch</b> 431459 <b>Prep Batch</b> 431364 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 16:34 <b>Matrix</b> Water	829137DUP 829191 DUP 05/11/2010 06:05 05/12/2010 15:45 Water			
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> 0.00009	<b>RDL</b> 0.00020	<b>Result</b> 0.00007	<b>RPD Limit</b> 20
7439-97-6	Mercury	0.00009	0.00020	0.00007	25* 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432570 <b>Prep Batch</b> 431362 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431362 <b>GCAL ID</b> 829180 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/22/2010 13:58 <b>Matrix</b> Water	LCS431362 829181 LCS 05/11/2010 16:05 05/22/2010 14:04 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2 Arsenic	ND	0.010	0.040	0.045	112 80 - 120

<b>Analytical Batch</b> 432570 <b>Prep Batch</b> 431362 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-07 <b>GCAL ID</b> 21005112807 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/22/2010 14:10 <b>Matrix</b> Water	829143MS 829183 MS 05/11/2010 16:05 05/22/2010 14:22 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2 Arsenic	0.0	0.010	0.040	0.047	117 75 - 125

<b>Analytical Batch</b> 432570 <b>Prep Batch</b> 431362 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-07 <b>GCAL ID</b> 21005112807 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/22/2010 14:10 <b>Matrix</b> Water	829143DUP 829182 DUP 05/11/2010 16:05 05/22/2010 14:16 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b>	<b>Limit</b>
<b>Result</b>	<b>RDL</b>				
7440-38-2 Arsenic	0.0	0.010	0.0	0	20



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431459 <b>Prep Batch</b> 431365 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB431365 <b>GCAL ID</b> 829193 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 16:31 <b>Matrix</b> Water	LCS431365 829194 LCS 05/11/2010 15:20 05/12/2010 16:33 Water			
<b>SW-846 7470A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	0.00006B 0.00020	0.00500	0.00463	93	80 - 120

<b>Analytical Batch</b> 431459 <b>Prep Batch</b> 431365 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> ORA-00933: SQL command not properly ended 93342000 <b>Analytical Date</b> ORA-00936: missing expression 93642000 <b>Matrix</b> Water	829137MS 829196 MS 05/11/2010 15:20 05/12/2010 16:38 Water			
<b>SW-846 7470A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	0.00009 0.00020	0.00500	0.00524	103	75 - 125

<b>Analytical Batch</b> 431459 <b>Prep Batch</b> 431365 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> ORA-00933: SQL command not properly ended 93342000 <b>Analytical Date</b> ORA-00936: missing expression 93642000 <b>Matrix</b> Water	829137DUP 829195 DUP 05/11/2010 15:20 05/12/2010 16:36 Water		
<b>SW-846 7470A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6 Mercury	0.00009 0.00020	0.00008	12	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431357 <b>GCAL ID</b> 829158 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:23 <b>Matrix</b> Water	<b>LCS431357</b> 829159 LCS 05/11/2010 15:20 05/12/2010 21:30 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.49	97	80 - 120
7440-43-9	Cadmium	ND	0.0027	0.50	0.49	98	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.77	95	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.49	98	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.75	95	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.49	99	80 - 120
7439-95-4	Magnesium	0.029B	0.10	5.00	4.80	96	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.49	97	80 - 120
7440-09-7	Potassium	0.095B	0.50	10.0	9.75	97	80 - 120
7782-49-2	Selenium	ND	0.0050	0.50	0.50	100	80 - 120
7440-23-5	Sodium	0.75B	1.00	20.0	20.2	101	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.49	98	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.49	98	80 - 120

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431358 <b>GCAL ID</b> 829166 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/13/2010 13:09 <b>Matrix</b> Water	<b>LCS431358</b> 829167 LCS 05/11/2010 16:05 05/12/2010 19:58 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.48	95	80 - 120
7440-43-9	Cadmium	ND	0.0027	0.50	0.48	97	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.65	93	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.48	95	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.59	92	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.49	98	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	4.64	93	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.48	95	80 - 120
7440-09-7	Potassium	0.068B	0.50	10.0	9.33	93	80 - 120

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431358 <b>GCAL ID</b> 829166 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/13/2010 13:09 <b>Matrix</b> Water	LCS431358 829167 LCS 05/11/2010 16:05 05/12/2010 19:58 Water			
<b>SW-846 6010B</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7782-49-2 Selenium	ND 0.0050	0.50	0.50	99	80 - 120
7440-23-5 Sodium	0.50B 1.00	20.0	19.5	97	80 - 120
7440-24-6 Strontium	ND 0.050	0.50	0.48	96	80 - 120
7440-66-6 Zinc	ND 0.020	0.50	0.48	97	80 - 120

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:36 <b>Matrix</b> Water	829142MS 829161 MS 05/11/2010 15:20 05/12/2010 21:50 Water			
<b>SW-846 6010B</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-39-3 Barium	0.39 0.010	0.50	0.89	101	75 - 125
7440-43-9 Cadmium	0.0 0.0027	0.50	0.49	97	75 - 125
7440-70-2 Calcium	54.3 0.10	5.00	59.4	103	75 - 125
7440-47-3 Chromium	0.0025 0.010	0.50	0.49	98	75 - 125
7439-89-6 Iron	0.94 0.10	5.00	6.04	102	75 - 125
7439-92-1 Lead	0.0 0.0080	0.50	0.50	100	75 - 125
7439-95-4 Magnesium	127 0.10	5.00	135	151*	75 - 125
7439-96-5 Manganese	0.46 0.015	0.50	0.95	98	75 - 125
7440-09-7 Potassium	38.6 0.50	10.0	51.9	133*	75 - 125
7782-49-2 Selenium	0.0 0.0050	0.50	0.55	110	75 - 125
7440-24-6 Strontium	0.90 0.050	0.50	1.45	109	75 - 125
7440-66-6 Zinc	0.0 0.020	0.50	0.52	105	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/12/2010 20:04 <b>Matrix</b> Water	829146MS 829293 MS 05/11/2010 16:05 05/12/2010 20:18 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-39-3	Barium	0.41	0.010	0.50	0.88	93	75 - 125
7440-43-9	Cadmium	0.0	0.0027	0.50	0.50	100	75 - 125
7440-70-2	Calcium	59.4	0.10	5.00	60.7	26*	75 - 125
7440-47-3	Chromium	0.0027	0.010	0.50	0.50	99	75 - 125
7439-89-6	Iron	1.11	0.10	5.00	5.87	95	75 - 125
7439-92-1	Lead	0.0	0.0080	0.50	0.50	99	75 - 125
7439-95-4	Magnesium	141	0.10	5.00	138	-70*	75 - 125
7439-96-5	Manganese	0.50	0.015	0.50	0.97	93	75 - 125
7440-09-7	Potassium	42.9	0.50	10.0	51.6	87	75 - 125
7782-49-2	Selenium	0.0	0.0050	0.50	0.55	110	75 - 125
7440-24-6	Strontium	1.01	0.050	0.50	1.45	88	75 - 125
7440-66-6	Zinc	0.0	0.020	0.50	0.53	105	75 - 125

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:36 <b>Matrix</b> Water	829142DUP 829160 DUP 05/11/2010 15:20 05/12/2010 21:43 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-39-3	Barium	0.39	0.010	0.42	7	20
7440-43-9	Cadmium	0.0	0.0027	0.0	0	20
7440-70-2	Calcium	54.3	0.10	55.6	2	20
7440-47-3	Chromium	0.0025	0.010	0.0026	4	20
7439-89-6	Iron	0.94	0.10	0.97	3	20
7439-92-1	Lead	0.0	0.0080	0.0	0	20
7439-95-4	Magnesium	127	0.10	131	3	20
7439-96-5	Manganese	0.46	0.015	0.47	2	20
7440-09-7	Potassium	38.6	0.50	40.2	4	20
7782-49-2	Selenium	0.0	0.0050	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:36 <b>Matrix</b> Water	829142DUP 829160 DUP 05/11/2010 15:20 05/12/2010 21:43 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-24-6	Strontium	0.90	0.050	0.91	1	20
7440-66-6	Zinc	0.0	0.020	0.0	0	20

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/12/2010 20:04 <b>Matrix</b> Water	829146DUP 829292 DUP 05/11/2010 16:05 05/12/2010 20:11 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-39-3	Barium	0.41	0.010	0.39	5	20
7440-43-9	Cadmium	0.0	0.0027	0.0	0	20
7440-70-2	Calcium	59.4	0.10	55.0	8	20
7440-47-3	Chromium	0.0027	0.010	0.0026	4	20
7439-89-6	Iron	1.11	0.10	1.14	3	20
7439-92-1	Lead	0.0	0.0080	0.0	0	20
7439-95-4	Magnesium	141	0.10	131	7	20
7439-96-5	Manganese	0.50	0.015	0.47	6	20
7440-09-7	Potassium	42.9	0.50	40.4	6	20
7782-49-2	Selenium	0.0	0.0050	0.0	0	20
7440-24-6	Strontium	1.01	0.050	0.94	7	20
7440-66-6	Zinc	0.0	0.020	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432074 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/18/2010 21:05 <b>Matrix</b> Water	829142MS 829161 MS 05/11/2010 15:20 05/18/2010 21:19 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-23-5	Sodium	935	5.00	20.0	1010	<b>386*</b> 75 - 125

<b>Analytical Batch</b> 432074 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/18/2010 19:59 <b>Matrix</b> Water	829146MS 829293 MS 05/11/2010 16:05 05/18/2010 20:13 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-23-5	Sodium	1100	5.00	20.0	973	<b>-600*</b> 75 - 125

<b>Analytical Batch</b> 432074 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/18/2010 21:05 <b>Matrix</b> Water	829142DUP 829160 DUP 05/11/2010 15:20 05/18/2010 21:12 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-23-5	Sodium	935	5.00	976	4 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432074 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/18/2010 19:59 <b>Matrix</b> Water	829146DUP 829292 DUP 05/11/2010 16:05 05/18/2010 20:06 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-23-5	Sodium	1100	5.00	1000	10 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478	<b>Client ID</b> MB431356			LCS431356			
<b>Prep Batch</b> 431356	<b>GCAL ID</b> 829148			829149			
<b>Prep Method</b> SW-846	<b>Sample Type</b> Method Blank			LCS			
3010A	<b>Prep Date</b> 05/11/2010 16:20			05/11/2010 16:20			
Dissolved	<b>Analytical Date</b> 05/12/2010 17:16			05/12/2010 17:23			
	<b>Matrix</b> Water			Water			
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.50	101	80 - 120
7440-43-9	Cadmium	0.00025B	0.0027	0.50	0.52	103	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.50	100	80 - 120
7439-92-1	Lead	ND	0.0080	0.50	0.51	103	80 - 120
7782-49-2	Selenium	ND	0.0050	0.50	0.55	109	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.50	101	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.51	103	80 - 120

<b>Analytical Batch</b> 431478	<b>Client ID</b> SW-04			829140MS			
<b>Prep Batch</b> 431356	<b>GCAL ID</b> 21005112804			829151			
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE			MS			
3010A	<b>Prep Date</b> 05/11/2010 16:20			05/11/2010 16:20			
Dissolved	<b>Analytical Date</b> 05/12/2010 17:29			05/12/2010 17:43			
	<b>Matrix</b> Water			Water			
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.26	0.010	0.50	0.74	95	75 - 125
7440-43-9	Cadmium	0.00035	0.0027	0.50	0.49	98	75 - 125
7440-47-3	Chromium	0.0017	0.010	0.50	0.49	97	75 - 125
7439-92-1	Lead	0.0	0.0080	0.50	0.49	99	75 - 125
7782-49-2	Selenium	0.0	0.0050	0.50	0.55	110	75 - 125
7440-24-6	Strontium	0.73	0.050	0.50	1.20	94	75 - 125
7440-66-6	Zinc	0.0	0.020	0.50	0.51	103	75 - 125



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478	<b>Client ID</b> SW-04	829140DUP				
<b>Prep Batch</b> 431356	<b>GCAL ID</b> 21005112804	829150				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/11/2010 16:20	05/11/2010 16:20				
Dissolved	<b>Analytical Date</b> 05/12/2010 17:29	05/12/2010 17:36				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-39-3	Barium	0.26	0.010	0.27	4	20
7440-43-9	Cadmium	0.00035	0.0027	0.00027	26*	20
7440-47-3	Chromium	0.0017	0.010	0.0017	0	20
7439-92-1	Lead	0.0	0.0080	0.0	0	20
7782-49-2	Selenium	0.0	0.0050	0.0	0	20
7440-24-6	Strontium	0.73	0.050	0.75	3	20
7440-66-6	Zinc	0.0	0.020	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431357 <b>GCAL ID</b> 829158 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:23 <b>Matrix</b> Water	LCS431357 829159 LCS 05/11/2010 15:20 05/12/2010 21:30 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>	
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>	
7440-70-2	Calcium	ND	0.10	5.00	4.77	95	85 - 115
7439-95-4	Magnesium	0.029B	0.10	5.00	4.80	96	85 - 115
000-01-5	Hardness	ND	0.33	33.1	31.7	96	85 - 115

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431358 <b>GCAL ID</b> 829166 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/13/2010 13:09 <b>Matrix</b> Water	LCS431358 829167 LCS 05/11/2010 16:05 05/12/2010 19:58 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>	
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>	
7440-70-2	Calcium	ND	0.10	5.00	4.65	93	85 - 115
7439-95-4	Magnesium	ND	0.10	5.00	4.64	93	85 - 115
000-01-5	Hardness	ND	0.33	33.1	30.7	93	85 - 115

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:36 <b>Matrix</b> Water	829142MS 829161 MS 05/11/2010 15:20 05/12/2010 21:50 Water					
<b>SW-846 6010B</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>	
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>	
7440-70-2	Calcium	54.3	0.10	5.00	59.4	103	70 - 130
7439-95-4	Magnesium	127	0.10	5.00	135	151*	70 - 130

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/12/2010 20:04 <b>Matrix</b> Water	829146MS 829293 MS 05/11/2010 16:05 05/12/2010 20:18 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-70-2	Calcium	59.4	0.10	5.00	60.7	26*	70 - 130
7439-95-4	Magnesium	141	0.10	5.00	138	-70*	70 - 130

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431357 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/12/2010 21:36 <b>Matrix</b> Water	829142DUP 829160 DUP 05/11/2010 15:20 05/12/2010 21:43 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-70-2	Calcium	54.3	0.10	55.6	2	20
7439-95-4	Magnesium	127	0.10	131	3	20

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/12/2010 20:04 <b>Matrix</b> Water	829146DUP 829292 DUP 05/11/2010 16:05 05/12/2010 20:11 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-70-2	Calcium	59.4	0.10	55.0	8	20
7439-95-4	Magnesium	141	0.10	131	7	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432413 <b>Prep Batch</b> 431361 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431361 <b>GCAL ID</b> 829174 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/21/2010 16:04 <b>Matrix</b> Water	LCS431361 829175 LCS 05/11/2010 15:20 05/21/2010 16:11 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.038	<b>% R</b> 96	<b>Control Limits % R</b> 80 - 120	
7440-38-2	Arsenic	ND	0.010	0.040	0.038	96	80 - 120

<b>Analytical Batch</b> 432413 <b>Prep Batch</b> 431361 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/24/2010 17:06 <b>Matrix</b> Water	829137MS 829177 MS 05/11/2010 15:20 05/21/2010 16:29 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0019 <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.037	<b>% R</b> 88	<b>Control Limits % R</b> 75 - 125	
7440-38-2	Arsenic	0.0019	0.010	0.040	0.037	88	75 - 125

<b>Analytical Batch</b> 432413 <b>Prep Batch</b> 431361 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/24/2010 17:06 <b>Matrix</b> Water	829137DUP 829176 DUP 05/11/2010 15:20 05/21/2010 16:23 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0019 <b>RDL</b> 0.010	<b>Result</b> 0.0	<b>RPD</b> 200*	<b>RPD Limit</b> 20	
7440-38-2	Arsenic	0.0019	0.010	0.0	200*	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431377 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431377 <b>GCAL ID</b> 829261 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/11/2010 15:15 <b>Matrix</b> Water	<b>LCS431377</b> 829262 LCS 05/11/2010 15:15 Water				
<b>SM 2540C TDS</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	952	95.2 80 - 120

<b>Analytical Batch</b> 431377 <b>Prep Batch</b> N/A	<b>Client ID</b> SB-1-MW-S <b>GCAL ID</b> 21005112701 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/11/2010 15:15 <b>Matrix</b> Water	<b>829135DUP</b> 829263 DUP 05/11/2010 15:15 Water			
<b>SM 2540C TDS</b>		<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	7780	10.0	7660	1.6 5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 432224 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	MB432224 833486 Method Blank 05/20/2010 13:47 Water	LCS432224 833487 LCS 05/20/2010 13:48 Water				
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6	Chloride	ND	1.0	60.0	56.8	95	80 - 120

<b>Analytical Batch</b> 432224 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	MW-54 21005113104 SAMPLE 05/20/2010 14:12 Water	MW-54-MS 21005113105 MS 05/20/2010 14:13 Water				MW-54-MSD 21005113106 MSD 05/20/2010 14:14 Water				
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6	Chloride	645	20.0	1200	1580	78	75 - 125	1640	83	4	25

<b>Analytical Batch</b> 432224 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SW-05 21005112801 SAMPLE 05/20/2010 13:49 Water	829137MS 833488 MS 05/20/2010 13:50 Water				829137MSD 833489 MSD 05/20/2010 13:51 Water				
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6	Chloride	1290	50.0	3000	3830	85	75 - 125	3740	81	2	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431955 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-06 <b>GCAL ID</b> 21005112806 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 15:05 <b>Matrix</b> Water	829142DUP 832064 DUP 05/17/2010 15:05 Water
<b>SM 2320B Bicarbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	60.0 1.0	0.00 <b>200*</b> 11
T-005-C Carbonate Alkalinity	0 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431979 <b>Prep Batch</b> N/A	<b>Client ID</b> SW-01 <b>GCAL ID</b> 21005112805 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/18/2010 08:30 <b>Matrix</b> Water	829141DUP 832146 DUP 05/18/2010 08:30 Water
<b>SM 2520B Salinity</b>	<b>Units</b> ppt <b>Result</b> RDL	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
WET-028 Salinity	2.4 2.0	2.4 0



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431908 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431908 <b>GCAL ID</b> 831905 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/17/2010 12:03 <b>Matrix</b> Water	LCS431908 831906 LCS 05/17/2010 12:04 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
14808-79-8 Sulfate	ND 5.0	20.0 19.7 98 80 - 120

<b>Analytical Batch</b> 431908 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-53 <b>GCAL ID</b> 21005125901 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 12:12 <b>Matrix</b> Water	829853MS 831907 MS 05/17/2010 12:13 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
14808-79-8 Sulfate	0.00 5.0	20.0 20.8 104 75 - 125

## CHAIN OF CUSTODY RECORD

Lab use only

Client Name <i>P. San.</i>	Client # 9271	Workorder # 210051128	Due Date 5-19-10
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<b>Report to:</b> Client: <i>Michael Pisani + Assoc</i> Address: <i>1100 Poydras St. Suite 1430</i> <i>NOLA 70163</i> Contact: <i>Jonathan Miller</i> Phone: <i>(504) 582-2468</i> Fax: <i>jgmiller@ix.netcom.com</i>		<b>Bill to:</b> Client: _____ Address: <i>SAME</i> Contact: _____ Phone: _____ Fax: <i>pmitchie@ix.netcom.com</i>		<b>Analytical Requests &amp; Method</b> Metals (As, Ba, Cd, Cr, Pb, Se, Sg, Zn) <sup>①</sup> PAH 8270 SIM <sup>②</sup> Hardness <sup>③</sup> Chlorides <sup>④</sup> TDS SO <sub>4</sub> Salinity Bicarb/ Carb Alkalinity Ca, Fe, Mg, Mn, K, Na added 5-14-10 AJW		<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <i>5.7</i>	
P.O. Number		Project Name/Number <i>07-47 East White Lake</i>					
Sampled By: <i>Patrick Ritchie</i>							

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	Metals (As, Ba, Cd, Cr, Pb, Se, Sg, Zn) <sup>①</sup>	PAH 8270 SIM <sup>②</sup>	Hardness <sup>③</sup>	Chlorides <sup>④</sup>	TDS	SO <sub>4</sub> Salinity	Bicarb/ Carb Alkalinity	Ca, Fe, Mg, Mn, K, Na	added 5-14-10	AJW	Lab ID
W	5/5/10	1010		X	SW-05	HNO <sub>3</sub> Calc None	6	X	X	X	X	X						1
		1230			SW-03													2
		1330			SW-02													3
		1445			SW-04													4
	5/6/10	945			SW-01								X					5
		1110			SW-06									X				6
		1300			SW-07										X			7
		1540			SW-10								X					8
		1635			SW-09								X					9
		1635			SW-10A								X					10
	5/7/10	1205			SW-20									X				11

Remarks: *\*As by AA*  
*AJW 5-11-10*

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>5/10/10</i>	Time: <i>1445</i>	Note: * Metals by SW-846 GCDA - Total + Dissolved <sup>④</sup> TDS m.250C ① Mercury by SW-846 7470B ② Hardness SM 2340 C ③ Chlorides SW-846 4500 Call David Lingle when samples are received (713) 914-6699
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

Matrix<sup>1</sup>: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

We cannot accept verbal changes. Please fax written changes to (225) 767-5717

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT GCAL-06 11/98

# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date** 05/26/2010

**GCAL Report** 210051127



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210051127

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

### **METALS**

In the SW-846 6010B Dissolved analysis, samples 21005112701 (SB-1-MW-S) and 21005112702 (SB-1-MW-D) had to be diluted in order to bracket the concentrations within the linear dynamic range of the instrument. This is reflected in the elevated detection limits.

In the SW-846 6010B analysis, samples 21005112702 (SB-1-MW-D) and 21005112701 (SB-1-MW-S) had to be diluted in order to bracket the concentrations within the linear dynamic range of the instrument. This is reflected in the elevated detection limits.

In the SW-846 6010B Dissolved analysis for prep batch 431356, the MS recovery is not applicable for Calcium, Magnesium and Sodium because the sample concentration is greater than four times the spike concentration.

In the SW-846 6010B analysis for prep batch 431358, the MS recovery is not applicable for Calcium, Magnesium and Sodium because the sample concentration is greater than four times the spike concentration.

In the SW-846 7010 analysis for prep batch 431361, the Sample/Duplicate RPD for Arsenic is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B analysis, several Dissolved Metals concentration is greater than total concentration of this element in sample 21005112701 (SB-1-MW-S). This is attributed to separate aliquots of sample.

### **CONVENTIONALS**

In the SM 4500 CL E Chloride analysis, samples 21005112701 (SB-1-MW-S) and 21005112702 (SB-1-MW-D) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

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Robyn Miguez  
Technical Director  
**GCAL REPORT 210051127**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112701	SB-1-MW-S	Water	05/07/2010 10:00	05/10/2010 17:10
21005112702	SB-1-MW-D	Water	05/06/2010 17:10	05/10/2010 17:10

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112701	SB-1-MW-S	Water	05/07/2010 10:00	05/10/2010 17:10

## SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.017	0.005	0.0000542	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	349	1.0	0.17	mg/L CaCO3

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	5.02	0.010	0.00031	mg/L
7440-70-2	Calcium	520	0.10	0.028	mg/L
7439-89-6	Iron	15.6	0.10	0.0095	mg/L
7439-95-4	Magnesium	201	0.10	0.023	mg/L
7439-96-5	Manganese	2.96	0.015	0.00057	mg/L
7440-09-7	Potassium	10.3	0.50	0.068	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1710	5.00	0.30	mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	7780	10.0	10.0	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	5.61	0.010	0.00031	mg/L
7440-70-2	Calcium	568	0.10	0.028	mg/L
7439-89-6	Iron	15.4	0.10	0.0095	mg/L
7439-95-4	Magnesium	220	0.10	0.023	mg/L
7439-96-5	Manganese	3.12	0.015	0.00057	mg/L
7440-09-7	Potassium	10.4	0.50	0.068	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1840	5.00	0.30	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4160	50.0	7.9	mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112702	SB-1-MW-D	Water	05/06/2010 17:10	05/10/2010 17:10

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.017	0.010	0.00079	mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity	356	1.0	0.17	mg/L CaCO3

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.81	0.010	0.00031	mg/L
7440-70-2	Calcium	188	0.10	0.028	mg/L
7439-89-6	Iron	9.28	0.10	0.0095	mg/L
7439-95-4	Magnesium	68.2	0.10	0.023	mg/L
7439-96-5	Manganese	0.63	0.015	0.00057	mg/L
7440-09-7	Potassium	5.96	0.50	0.068	mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	563	2.00	0.12	mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.00185J	0.005	0.0000542	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	2.11	0.010	0.00031	mg/L
7440-70-2	Calcium	204	0.10	0.028	mg/L
7439-89-6	Iron	44.4	0.10	0.0095	mg/L
7439-95-4	Magnesium	75.9	0.10	0.023	mg/L
7439-96-5	Manganese	0.97	0.015	0.00057	mg/L
7440-09-7	Potassium	7.55	0.50	0.068	mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	628	2.00	0.12	mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1420	20.0	3.2	mg/L



# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112702	SB-1-MW-D	Water	05/06/2010 17:10	05/10/2010 17:10

## SM 2540C TDS

CAS#	Parameter	Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)	2800	10.0	10.0	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112701	SB-1-MW-S	Water	05/07/2010 10:00	05/10/2010 17:10

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/19/2010 00:52	CLH	432087

CAS#	Parameter	Result	RDL	MDL	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.017</b>	<b>0.005</b>	<b>0.0000542</b>	<b>mg/L</b>
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.048	mg/L	96	78 - 130
1868-53-7	Dibromofluoromethane	.05	.05	mg/L	100	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.05	mg/L	99	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 15:00	431974	TNRCC 1006/LA 1006	1	05/22/2010 21:40	SMH	432653

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.2	10.5	mg/L	65	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 14:41	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 21:10	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>5.02</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112701	SB-1-MW-S	Water	05/07/2010 10:00	05/10/2010 17:10

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 21:10	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	520	0.10	0.028	mg/L
7439-89-6	Iron	15.6	0.10	0.0095	mg/L
7439-95-4	Magnesium	201	0.10	0.023	mg/L
7439-96-5	Manganese	2.96	0.015	0.00057	mg/L
7440-09-7	Potassium	10.3	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	5	05/13/2010 13:56	TEA	431564

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1710	5.00	0.30	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:02	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	5.61	0.010	0.00031	mg/L
7440-70-2	Calcium	568	0.10	0.028	mg/L
7439-89-6	Iron	15.4	0.10	0.0095	mg/L
7439-95-4	Magnesium	220	0.10	0.023	mg/L
7439-96-5	Manganese	3.12	0.015	0.00057	mg/L
7440-09-7	Potassium	10.4	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	5	05/13/2010 13:30	TEA	431564

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	1840	5.00	0.30	mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/24/2010 17:24	CLB	432562

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

<b>GCAL ID</b> 21005112701	<b>Client ID</b> SB-1-MW-S	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/07/2010 10:00	<b>Receive Date/Time</b> 05/10/2010 17:10
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### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		7780	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	05/17/2010 15:52	AEL	431917
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		4160	50.0	7.9	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/13/2010 10:16	JMC	431579
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/13/2010 10:16	JMC	431579
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		349	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 09:55	JEM	431684
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112702	SB-1-MW-D	Water	05/06/2010 17:10	05/10/2010 17:10

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/18/2010 22:31	SLR	432064

CAS#	Parameter	Result	RDL	MDL	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.00185J</b>	<b>0.005</b>	<b>0.0000542</b>	<b>mg/L</b>
100-41-4	Ethylbenzene	ND	0.005	0.0000627	mg/L
108-88-3	Toluene	ND	0.005	0.0000590	mg/L
1330-20-7	Xylene (total)	ND	0.01	0.0000502	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	93	78 - 130
1868-53-7	Dibromofluoromethane	.05	.049	mg/L	98	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.051	mg/L	103	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/17/2010 15:00	431974	TNRCC 1006/LA 1006	1	05/22/2010 22:47	SMH	432653

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	0.131	mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150	0.113	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150	0.113	mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150	0.113	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150	0.131	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	0.131	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150	0.131	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150	0.113	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16	9.03	mg/L	<b>56*</b>	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431362	SW-846 3020A Dissolved	1	05/22/2010 14:47	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	0.010	0.00079	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 21:17	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>2.11</b>	<b>0.010</b>	<b>0.00031</b>	<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21005112702	SB-1-MW-D	Water	05/06/2010 17:10	05/10/2010 17:10

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	1	05/12/2010 21:17	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-70-2	Calcium	204	0.10	0.028	mg/L
7439-89-6	Iron	44.4	0.10	0.0095	mg/L
7439-95-4	Magnesium	75.9	0.10	0.023	mg/L
7439-96-5	Manganese	0.97	0.015	0.00057	mg/L
7440-09-7	Potassium	7.55	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:05	431358	SW-846 3010A	2	05/13/2010 13:50	TEA	431564

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	628	2.00	0.12	mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	1	05/12/2010 18:09	CNB	431478

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1.81	0.010	0.00031	mg/L
7440-70-2	Calcium	188	0.10	0.028	mg/L
7439-89-6	Iron	9.28	0.10	0.0095	mg/L
7439-95-4	Magnesium	68.2	0.10	0.023	mg/L
7439-96-5	Manganese	0.63	0.015	0.00057	mg/L
7440-09-7	Potassium	5.96	0.50	0.068	mg/L
7782-49-2	Selenium	ND	0.040	0.0037	mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 16:20	431356	SW-846 3010A Dissolved	2	05/13/2010 13:37	TEA	431564

CAS#	Parameter	Result	RDL	MDL	Units
7440-23-5	Sodium	563	2.00	0.12	mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
05/11/2010 15:20	431361	SW-846 3020A	1	05/22/2010 12:08	CLB	432570

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.017	0.010	0.00079	mg/L

<b>GCAL ID</b> 21005112702	<b>Client ID</b> SB-1-MW-D	<b>Matrix</b> Water	<b>Collect Date/Time</b> 05/06/2010 17:10	<b>Receive Date/Time</b> 05/10/2010 17:10
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### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/11/2010 15:15	DJH	431377
CAS#	Parameter		Result	RDL	MDL	Units
WET-035	Total Dissolved Solids(TDS)		2800	10.0	10.0	mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	05/17/2010 15:53	AEL	431917
CAS#	Parameter		Result	RDL	MDL	Units
16887-00-6	Chloride		1420	20.0	3.2	mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/13/2010 10:16	JMC	431579
CAS#	Parameter		Result	RDL	MDL	Units
T-005-C	Carbonate Alkalinity		ND	1.0	0.17	mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/13/2010 10:16	JMC	431579
CAS#	Parameter		Result	RDL	MDL	Units
T-005-B	Bicarbonate Alkalinity		356	1.0	0.17	mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	05/14/2010 09:58	JEM	431684
CAS#	Parameter		Result	RDL	MDL	Units
14808-79-8	Sulfate		ND	5.0	1.4	mg/L

# GC/MS Volatiles Quality Control Summary

Analytical Batch 432064 Prep Batch N/A		Client ID MB432064 GCAL ID 832578 Sample Type Method Blank Analytical Date 05/18/2010 14:12 Matrix Water		LCS432064 832579 LCS 05/18/2010 12:46 Water			LCSD432064 832580 LCSD 05/18/2010 13:09 Water				
<b>SW-846 8260B</b>		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.058	116	74 - 126	0.050	99	15	30
1330-20-7	Xylene (total)	ND	0.01	0.150	0.160	107	74 - 127	0.136	91	16	30
71-43-2	Benzene	ND	0.005	0.050	0.056	113	70 - 129	0.047	93	17	20
108-88-3	Toluene	ND	0.005	0.050	0.050	100	72 - 120	0.045	91	11	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	45	90	50	49.3	99	78 - 130	51.1	102		
1868-53-7	Dibromofluoromethane	50.7	101	50	50.4	101	77 - 127	50.2	100		
2037-26-5	Toluene d8	53.3	107	50	47.4	95	76 - 134	50.2	100		
17060-07-0	1,2-Dichloroethane-d4	53.5	107	50	53.2	106	71 - 127	53.2	106		

Analytical Batch 432064 Prep Batch N/A		Client ID AS-EBA-GW38A GCAL ID 21005071301 Sample Type SAMPLE Analytical Date 05/18/2010 14:58 Matrix Water		827690MS 832802 MS 05/18/2010 16:07 Water			827690MSD 832803 MSD 05/18/2010 16:29 Water				
<b>SW-846 8260B</b>		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	23.0	1	10.0	30.5	75	74 - 126	30.7	77	0.7	30
71-43-2	Benzene	0.415	1	10.0	9.76	93	70 - 129	9.63	92	1	30
108-88-3	Toluene	5.93	1	10.0	13.4	75	72 - 120	13.6	77	1	30
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene			10000	9880	99	78 - 130	9930	99		
1868-53-7	Dibromofluoromethane			10000	10800	108	77 - 127	10400	104		
2037-26-5	Toluene d8			10000	9600	96	76 - 134	9910	99		
17060-07-0	1,2-Dichloroethane-d4			10000	10700	107	71 - 127	10000	100		



# GC/MS Volatiles Quality Control Summary

<b>Analytical Batch</b> 432087 <b>Prep Batch</b> N/A		<b>Client ID</b> MB432087 <b>GCAL ID</b> 832720 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/18/2010 16:42 <b>Matrix</b> Water			<b>LCS432087</b> 832721 LCS 05/18/2010 15:40 Water		
<b>SW-846 8260B</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
100-41-4	Ethylbenzene	ND	0.005	0.050	0.048	97	74 - 126
1330-20-7	Xylene (total)	ND	0.01	0.150	0.150	100	74 - 127
71-43-2	Benzene	ND	0.005	0.050	0.047	94	70 - 129
108-88-3	Toluene	ND	0.005	0.050	0.047	94	72 - 120
<b>Surrogate</b>							
460-00-4	4-Bromofluorobenzene	48	96	50	49.6	99	78 - 130
1868-53-7	Dibromofluoromethane	49.4	99	50	49.5	99	77 - 127
2037-26-5	Toluene d8	50.4	101	50	50.1	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	100	50	49.9	100	71 - 127

# General Chromatography Quality Control Summary

Analytical Batch 432653 Prep Batch 431974 Prep Method TNRCC 1006/LA 1006		Client ID MB431974 GCAL ID 832104 Sample Type Method Blank Prep Date 05/17/2010 15:00 Analytical Date 05/21/2010 19:17 Matrix Water		LCS431974 832105 LCS 05/17/2010 15:00 05/21/2010 20:30 Water			LCSD431974 832106 LCSD 05/17/2010 15:00 05/21/2010 21:40 Water				
LA1006 Hydrocarbons by Range		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150								
GCSV-02-10	Aliphatic >C8-C10	ND	0.150								
GCSV-02-11	Aliphatic >C10-C12	ND	0.150								
GCSV-02-12	Aliphatic >C12-C16	ND	0.150								
GCSV-02-31	Aliphatic >C16-C35	ND	0.150								
GCSV-02-14	Aromatic >C8-C10	ND	0.150								
GCSV-02-15	Aromatic >C10-C12	ND	0.150								
GCSV-02-16	Aromatic >C12-C16	ND	0.150								
GCSV-02-17	Aromatic >C16-C21	ND	0.150								
GCSV-05-18	Aromatic >C21-C35	ND	0.150								
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	66.4	56.9	86	60 - 140	47.8	75	17	20
<b>Surrogate</b>											
84-15-1	o-Terphenyl	16200	98	16600	15800	95	60 - 140	10400	65		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432570 <b>Prep Batch</b> 431362 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431362 <b>GCAL ID</b> 829180 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/22/2010 13:58 <b>Matrix</b> Water	LCS431362 829181 LCS 05/11/2010 16:05 05/22/2010 14:04 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2 Arsenic	ND	0.010	0.040	0.045	112 80 - 120

<b>Analytical Batch</b> 432570 <b>Prep Batch</b> 431362 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-07 <b>GCAL ID</b> 21005112807 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/22/2010 14:10 <b>Matrix</b> Water	829143MS 829183 MS 05/11/2010 16:05 05/22/2010 14:22 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2 Arsenic	0.0	0.010	0.040	0.047	117 75 - 125

<b>Analytical Batch</b> 432570 <b>Prep Batch</b> 431362 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-07 <b>GCAL ID</b> 21005112807 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/22/2010 14:10 <b>Matrix</b> Water	829143DUP 829182 DUP 05/11/2010 16:05 05/22/2010 14:16 Water		
<b>SW-846 7010 Arsenic Dissolved</b>				
<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
7440-38-2 Arsenic	0.0	0.010	0.0	0 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB431358 <b>GCAL ID</b> 829166 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/13/2010 13:09 <b>Matrix</b> Water	LCS431358 829167 LCS 05/11/2010 16:05 05/12/2010 19:58 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-39-3	Barium	ND	0.010	0.50	0.48	95	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.65	93	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.59	92	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	4.64	93	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.48	95	80 - 120
7440-09-7	Potassium	0.068B	0.50	10.0	9.33	93	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.50	99	80 - 120
7440-23-5	Sodium	0.50B	1.00	20.0	19.5	97	80 - 120

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/12/2010 20:04 <b>Matrix</b> Water	829146MS 829293 MS 05/11/2010 16:05 05/12/2010 20:18 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7440-39-3	Barium	0.41	0.010	0.50	0.88	93	75 - 125
7440-70-2	Calcium	59.4	0.10	5.00	60.7	26*	75 - 125
7439-89-6	Iron	1.11	0.10	5.00	5.87	95	75 - 125
7439-95-4	Magnesium	141	0.10	5.00	138	-70*	75 - 125
7439-96-5	Manganese	0.50	0.015	0.50	0.97	93	75 - 125
7440-09-7	Potassium	42.9	0.50	10.0	51.6	87	75 - 125
7782-49-2	Selenium	0.0	0.040	0.50	0.55	110	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/12/2010 20:04 <b>Matrix</b> Water	829146DUP 829292 DUP 05/11/2010 16:05 05/12/2010 20:11 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-39-3	Barium	0.41	0.010	0.39	5	20
7440-70-2	Calcium	59.4	0.10	55.0	8	20
7439-89-6	Iron	1.11	0.10	1.14	3	20
7439-95-4	Magnesium	141	0.10	131	7	20
7439-96-5	Manganese	0.50	0.015	0.47	6	20
7440-09-7	Potassium	42.9	0.50	40.4	6	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20

<b>Analytical Batch</b> 432074 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/18/2010 19:59 <b>Matrix</b> Water	829146MS 829293 MS 05/11/2010 16:05 05/18/2010 20:13 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-23-5	Sodium	1100	5.00	20.0	973	-600* 75 - 125

<b>Analytical Batch</b> 432074 <b>Prep Batch</b> 431358 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> SW-109 <b>GCAL ID</b> 21005112810 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 16:05 <b>Analytical Date</b> 05/18/2010 19:59 <b>Matrix</b> Water	829146DUP 829292 DUP 05/11/2010 16:05 05/18/2010 20:06 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-23-5	Sodium	1100	5.00	1000	10	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478	<b>Client ID</b> MB431356			LCS431356			
<b>Prep Batch</b> 431356	<b>GCAL ID</b> 829148			829149			
<b>Prep Method</b> SW-846	<b>Sample Type</b> Method Blank			LCS			
3010A	<b>Prep Date</b> 05/11/2010 16:20			05/11/2010 16:20			
Dissolved	<b>Analytical Date</b> 05/12/2010 17:16			05/12/2010 17:23			
	<b>Matrix</b> Water			Water			
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.50	101	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.94	99	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.95	99	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	5.01	100	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.50	100	80 - 120
7440-09-7	Potassium	ND	0.50	10.0	9.83	98	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.55	109	80 - 120
7440-23-5	Sodium	0.30B	1.00	20.0	20.3	101	80 - 120

<b>Analytical Batch</b> 431478	<b>Client ID</b> SW-04			829140MS			
<b>Prep Batch</b> 431356	<b>GCAL ID</b> 21005112804			829151			
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE			MS			
3010A	<b>Prep Date</b> 05/11/2010 16:20			05/11/2010 16:20			
Dissolved	<b>Analytical Date</b> 05/12/2010 17:29			05/12/2010 17:43			
	<b>Matrix</b> Water			Water			
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.26	0.010	0.50	0.74	95	75 - 125
7440-70-2	Calcium	46.8	0.10	5.00	48.8	40*	75 - 125
7439-89-6	Iron	0.0	0.10	5.00	4.78	96	75 - 125
7439-95-4	Magnesium	107	0.10	5.00	107	-9*	75 - 125
7439-96-5	Manganese	0.015	0.015	0.50	0.50	97	75 - 125
7440-09-7	Potassium	34.1	0.50	10.0	43.3	93	75 - 125
7782-49-2	Selenium	0.0	0.040	0.50	0.55	110	75 - 125
7440-23-5	Sodium	801	1.00	20.0	802	2*	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 431478	<b>Client ID</b> SW-04	829140DUP				
<b>Prep Batch</b> 431356	<b>GCAL ID</b> 21005112804	829150				
<b>Prep Method</b> SW-846	<b>Sample Type</b> SAMPLE	DUP				
3010A	<b>Prep Date</b> 05/11/2010 16:20	05/11/2010 16:20				
Dissolved	<b>Analytical Date</b> 05/12/2010 17:29	05/12/2010 17:36				
	<b>Matrix</b> Water	Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
		<b>Result</b>				
7440-39-3	Barium	0.26	0.010	0.27	4	20
7440-70-2	Calcium	46.8	0.10	47.5	1	20
7439-89-6	Iron	0.0	0.10	0.0	0	20
7439-95-4	Magnesium	107	0.10	109	2	20
7439-96-5	Manganese	0.015	0.015	0.015	0	20
7440-09-7	Potassium	34.1	0.50	34.7	2	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20
7440-23-5	Sodium	801	1.00	815	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 432413 <b>Prep Batch</b> 431361 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB431361 <b>GCAL ID</b> 829174 <b>Sample Type</b> Method Blank <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/21/2010 16:04 <b>Matrix</b> Water	LCS431361 829175 LCS 05/11/2010 15:20 05/21/2010 16:11 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.038	<b>% R</b> 96	<b>Control Limits % R</b> 80 - 120	
7440-38-2	Arsenic	ND	0.010	0.040	0.038	96	80 - 120

<b>Analytical Batch</b> 432413 <b>Prep Batch</b> 431361 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/24/2010 17:06 <b>Matrix</b> Water	829137MS 829177 MS 05/11/2010 15:20 05/21/2010 16:29 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0019 <b>RDL</b> 0.010	<b>Spike Added</b> 0.040	<b>Result</b> 0.037	<b>% R</b> 88	<b>Control Limits % R</b> 75 - 125	
7440-38-2	Arsenic	0.0019	0.010	0.040	0.037	88	75 - 125

<b>Analytical Batch</b> 432413 <b>Prep Batch</b> 431361 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> SW-05 <b>GCAL ID</b> 21005112801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 05/11/2010 15:20 <b>Analytical Date</b> 05/24/2010 17:06 <b>Matrix</b> Water	829137DUP 829176 DUP 05/11/2010 15:20 05/21/2010 16:23 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0019 <b>RDL</b> 0.010	<b>Result</b> 0.0	<b>RPD</b> 200*	<b>RPD Limit</b> 20	
7440-38-2	Arsenic	0.0019	0.010	0.0	200*	20



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431377 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431377 <b>GCAL ID</b> 829261 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/11/2010 15:15 <b>Matrix</b> Water	<b>LCS431377</b> 829262 LCS 05/11/2010 15:15 Water				
<b>SM 2540C TDS</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	952	95.2 80 - 120

<b>Analytical Batch</b> 431377 <b>Prep Batch</b> N/A	<b>Client ID</b> SB-1-MW-S <b>GCAL ID</b> 21005112701 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/11/2010 15:15 <b>Matrix</b> Water	<b>829135DUP</b> 829263 DUP 05/11/2010 15:15 Water			
<b>SM 2540C TDS</b>		<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	7780	10.0	7660	1.6 5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431917 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431917 <b>GCAL ID</b> 831958 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/17/2010 15:29 <b>Matrix</b> Water	LCS431917 831959 LCS 05/17/2010 15:30 Water					
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6	Chloride	ND	1.0	60.0	52.8	88	80 - 120

<b>Analytical Batch</b> 431917 <b>Prep Batch</b> N/A	<b>Client ID</b> MW31B <b>GCAL ID</b> 21005100205 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/17/2010 16:17 <b>Matrix</b> Water	828463MS 831962 MS 05/17/2010 16:18 Water		828463MSD 831963 MSD 05/17/2010 16:19 Water							
<b>SM 4500 CL E Chloride</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6	Chloride	122	5.0	300	439	106	75 - 125	430	103	2	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431579 <b>Prep Batch</b> N/A	<b>Client ID</b> SB-1-MW-S <b>GCAL ID</b> 21005112701 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/13/2010 10:16 <b>Matrix</b> Water	829135DUP 830298 DUP 05/13/2010 10:16 Water
<b>SM 2320B Carbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	349 1.0	327 7 11
T-005-C Carbonate Alkalinity	0.00 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 431684 <b>Prep Batch</b> N/A	<b>Client ID</b> MB431684 <b>GCAL ID</b> 830911 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 05/14/2010 09:43 <b>Matrix</b> Water	LCS431684 830912 LCS 05/14/2010 09:44 Water			
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
14808-79-8 Sulfate	ND 5.0	20.0	21.0	105	80 - 120

<b>Analytical Batch</b> 431684 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-15 <b>GCAL ID</b> 21005113001 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 05/14/2010 09:59 <b>Matrix</b> Water	829205MS 830913 MS 05/14/2010 09:59 Water			
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
14808-79-8 Sulfate	0.00 5.0	20.0	17.2	86	75 - 125

GULF COAST ANALYTICAL LABORATORIES, INC  
 7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
 Phone 225.769.4900 • Fax 225.767.5717

Lab use only

Client Name <i>Pisani</i>	Client # 4271	Workorder # 210051127	Due Date 5-14-10
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**Report to:**

**Bill to:**

**Analytical Requests & Method**

**Lab use only:**

Client: *Michael Pisani & Assoc*  
 Address: *1100 Poydras St*  
*1430 Energy Center*  
 Contact: *Jonathan Miller*  
 Phone: *504-582-2468 x 2471*  
 Fax:

Client: *same*  
 Address:  
 Contact: *Christine Coruba*  
 Phone: *504-582-2478*  
 Fax: *504-582-2470*

Custody Seal  
 used  yes  no  
 in tact  yes  no  
 Temperature °C *4.1*

P.O. Number Project Name/Number  
*07-47 - East White Lake*

Sampled By:

Matrix <sup>1</sup>	Date	Time (2400)	C O M P	G r a b	Sample Description	Preservatives	No Containers	TPH by 1006	BTEX	metals (total)	metals (dissolved)	Bicarb/corb alk	Cl	Sulfates	TDS	Remarks:	Lab ID
W	5/7/10	10:00			SB-1-MW-S	HCl, HNO <sub>3</sub> -	8	X	X	X	X	X	X	X	X		1
W	5/6/10	17:10			SB-1-MW-D	HCl, HNO <sub>3</sub> -	8	X	X	X	X	X	X	X	X		2

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: 5-10-10	Time: 1405
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: 5-10-10	Time: 1710
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: *metal list*  
*As, Ba, Ca, Fe, Mg, Mn, K, Na, Se*

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

WHITE: CLIENT FINAL REPORT CANARY: LABORATORY REPORT PINK: CLIENT

# ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.

**Report Date** 04/06/2010

**GCAL Report** 210030826



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210030826

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

### SEMI-VOLATILES GAS CHROMATOGRAPHY

In the TNRCC 1005/LA 1005 analysis of sample 21003082626 (SED-12, 4-6), the surrogate spiking solution was added twice to this sample extract in the prep phase. The amount spiked was adjusted in the LIMS to reflect the corrected spike amount.

In the TNRCC 1005/LA 1005 analysis, samples 21003082631 (SED-15 (0-2)), 21003082632 (SED-15 (2-4)), 21003082652 (SED-26 (0-2)), 21003082658 (SED-29 (0-2)), 21003082660 (SED-30 (0-2)), 21003082673 (SED-32 (0-2)) and 21003082656 (SED-28 (0-2)) had to be diluted to bracket target compounds within the calibration range of the instrument. This is reflected in elevated reporting limits. The surrogate recovery for o-Terphenyl is reported as DO (diluted out) due to the dilution performed on samples 21003082631 (SED-15 (0-2)), 21003082632 (SED-15 (2-4)) and 21003082656 (SED-28 (0-2)).

In the TNRCC 1006/LA 1006 analysis, samples 21003082656 (SED-28 (0-2)), 21003082631 (SED-15 (0-2)), 21003082632 (SED-15 (2-4)) and 21003082660 (SED-30 (0-2)) had to be diluted to bracket target compounds within the calibration range of the instrument. This is reflected in elevated reporting limits. The surrogate recovery for o-Terphenyl is reported as DO (diluted out) due to the dilution performed on samples 21003082631 (SED-15 (0-2)) and 21003082632 (SED-15 (2-4)).

In the SW-846 8082 analysis, a dilution was required for samples 21003082612 (SED-6 (0-2)) and 21003082616 (SED-8 (0-2)) to eliminate interference from non-target background. This dilution is reflected in elevated detection limits.

In the GCSV SW-846 8082 analysis for 427541, the MS/MSD recoveries were outside QC limits in a similar manner. This can be attributed to a matrix interference.

### METALS

In the SW-846 6010B analysis, samples 21003082632 (SED-15 (2-4)) and 21003082638 (SED-19 (0-2)) had to be diluted in order to bracket the concentrations within the linear dynamic range of the instrument. This is reflected in the elevated detection limits.

In the SW-846 7471B analysis, sample 21003082641 (SS-08 (2-4)) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the SW-846 6010B analysis for prep batch 427500, the MS and/or MSD recovery is outside the control limits for Barium. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference. A post-digestion spike was performed on the QC sample for this batch with a recovery of 87%. The Sample/Duplicate RPD for Cadmium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B analysis for prep batch 427502, the MS recovery is not applicable for Barium because the sample concentration is greater than four times the spike concentration. The Sample/Duplicate RPD for

Arsenic and Selenium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B analysis for prep batch 427501, the MS recovery is not applicable for Barium because the sample concentration is greater than four times the spike concentration. The Sample/Duplicate RPD for Arsenic is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B analysis for prep batch 427512, the Sample/Duplicate RPD for Arsenic, Cadmium and Selenium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 7471B analysis for prep batch 427513, the Sample/Duplicate RPD for Mercury is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 7471B analysis for prep batch 427504, the Sample/Duplicate RPD for Mercury is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

## **CONVENTIONALS**

In the EPA 9251 analysis, all samples except 21003082640 (SS-08 (0-2)), 21003082641 (SS-08 (2-4)), 21003082642 (SS-10 (0-2)) and 21003082643 (SS-10 (2-4)) had to be diluted in order to bracket the concentration within the calibration range of the instrument.



# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [ISO Guide 25](#) and [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210030826**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082601	SED-1 (0-2)	Solid	02/25/2010 10:25	03/03/2010 16:40
21003082602	SED-1 (2-4)	Solid	02/25/2010 10:30	03/03/2010 16:40
21003082603	SED-1 (4-6)	Solid	02/25/2010 10:40	03/03/2010 16:40
21003082604	SED-2 (0-2)	Solid	02/25/2010 11:00	03/03/2010 16:40
21003082605	SED-2 (2-4)	Solid	02/25/2010 11:15	03/03/2010 16:40
21003082606	SED-2 (4-6)	Solid	02/25/2010 11:25	03/03/2010 16:40
21003082607	SED-3 (0-2)	Solid	02/25/2010 11:45	03/03/2010 16:40
21003082608	SED-3 (2-4)	Solid	02/25/2010 12:00	03/03/2010 16:40
21003082609	SED-3 (4-6)	Solid	02/25/2010 12:15	03/03/2010 16:40
21003082610	SED-4 (0-2)	Solid	02/25/2010 13:15	03/03/2010 16:40
21003082611	SED-5 (0-2)	Solid	02/25/2010 13:30	03/03/2010 16:40
21003082612	SED-6 (0-2)	Solid	02/25/2010 13:45	03/03/2010 16:40
21003082613	SED-7 (0-2)	Solid	02/25/2010 14:00	03/03/2010 16:40
21003082614	SED-7 (2-4)	Solid	02/25/2010 14:15	03/03/2010 16:40
21003082615	SED-7 (4-6)	Solid	02/25/2010 14:25	03/03/2010 16:40
21003082616	SED-8 (0-2)	Solid	02/25/2010 14:50	03/03/2010 16:40
21003082617	SED-8 (2-4)	Solid	02/25/2010 15:00	03/03/2010 16:40
21003082618	SED-9 (0-2)	Solid	02/25/2010 15:20	03/03/2010 16:40
21003082619	SED-9 (2-4)	Solid	02/25/2010 15:40	03/03/2010 16:40
21003082620	SED-10 (0-2)	Solid	02/25/2010 15:50	03/03/2010 16:40
21003082621	SED-10 (2-4)	Solid	02/25/2010 16:00	03/03/2010 16:40
21003082622	SED-11 (0-2)	Solid	02/25/2010 16:20	03/03/2010 16:40
21003082623	SED-11 (2-4)	Solid	02/25/2010 16:30	03/03/2010 16:40
21003082624	SED-12 (0-2)	Solid	02/25/2010 16:45	03/03/2010 16:40
21003082625	SED-12 (2-4)	Solid	02/25/2010 17:00	03/03/2010 16:40
21003082626	SED-12 (4-6)	Solid	02/25/2010 17:15	03/03/2010 16:40
21003082627	SED-13 (0-2)	Solid	02/26/2010 08:20	03/03/2010 16:40
21003082628	SED-13 (2-4)	Solid	02/26/2010 08:30	03/03/2010 16:40
21003082629	SED-14 (0-2)	Solid	02/26/2010 08:50	03/03/2010 16:40
21003082630	SED-14 (2-4)	Solid	02/26/2010 09:00	03/03/2010 16:40
21003082631	SED-15 (0-2)	Solid	02/26/2010 09:25	03/03/2010 16:40
21003082632	SED-15 (2-4)	Solid	02/26/2010 09:35	03/03/2010 16:40
21003082633	SED-16 (0-2)	Solid	02/26/2010 09:50	03/03/2010 16:40
21003082634	SED-17 (0-2)	Solid	02/26/2010 10:10	03/03/2010 16:40
21003082635	SED-17 (2-4)	Solid	02/26/2010 10:15	03/03/2010 16:40
21003082636	SED-18 (0-2)	Solid	02/26/2010 10:20	03/03/2010 16:40
21003082637	SED-18 (2-4)	Solid	02/26/2010 10:30	03/03/2010 16:40
21003082638	SED-19 (0-2)	Solid	02/26/2010 10:45	03/03/2010 16:40
21003082639	SED-19 (2-4)	Solid	02/26/2010 10:55	03/03/2010 16:40
21003082640	SS-08 (0-2)	Solid	02/26/2010 11:20	03/03/2010 16:40
21003082641	SS-08 (2-4)	Solid	02/26/2010 11:30	03/03/2010 16:40
21003082642	SS-10 (0-2)	Solid	02/26/2010 11:45	03/03/2010 16:40
21003082643	SS-10 (2-4)	Solid	02/26/2010 11:50	03/03/2010 16:40
21003082644	SED-20 (0-2)	Solid	02/26/2010 12:10	03/03/2010 16:40
21003082645	SED-20 (2-4)	Solid	02/26/2010 12:15	03/03/2010 16:40
21003082646	SED-21 (0-2)	Solid	02/26/2010 12:50	03/03/2010 16:40

## Report Sample Summary (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082647	SED-21 (2-4)	Solid	02/26/2010 13:00	03/03/2010 16:40
21003082648	SED-21 (4-6)	Solid	02/26/2010 13:10	03/03/2010 16:40
21003082649	SED-21 (6-8)	Solid	02/26/2010 13:15	03/03/2010 16:40
21003082650	SED-22 (0-2)	Solid	02/26/2010 13:30	03/03/2010 16:40
21003082651	SED-22 (2-4)	Solid	02/26/2010 13:40	03/03/2010 16:40
21003082652	SED-26 (0-2)	Solid	03/02/2010 13:25	03/05/2010 13:10
21003082653	SED-26 (2-4)	Solid	03/02/2010 13:35	03/05/2010 13:10
21003082654	SED-27 (0-2)	Solid	03/02/2010 12:45	03/05/2010 13:10
21003082655	SED-27 (2-4)	Solid	03/02/2010 12:55	03/05/2010 13:10
21003082656	SED-28 (0-2)	Solid	03/02/2010 14:15	03/05/2010 13:10
21003082657	SED-28 (2-4)	Solid	03/02/2010 14:20	03/05/2010 13:10
21003082658	SED-29 (0-2)	Solid	03/02/2010 15:10	03/05/2010 13:10
21003082659	SED-29 (2-4)	Solid	03/02/2010 15:15	03/05/2010 13:10
21003082660	SED-30 (0-2)	Solid	03/02/2010 14:55	03/05/2010 13:10
21003082661	SED-30 (2-4)	Solid	03/02/2010 15:00	03/05/2010 13:10
21003082662	SED-31 (4-6)	Solid	03/02/2010 09:45	03/05/2010 13:10
21003082663	SED-32 (4-6)	Solid	03/02/2010 10:10	03/05/2010 13:10
21003082664	SED-33 (4-6)	Solid	03/02/2010 10:25	03/05/2010 13:10
21003082665	SED-23 (0-2)	Solid	03/02/2010 11:50	03/05/2010 13:10
21003082666	SED-23 (2-4)	Solid	03/02/2010 12:00	03/05/2010 13:10
21003082667	SED-24 (0-2)	Solid	03/02/2010 11:25	03/05/2010 13:10
21003082668	SED-24 (2-4)	Solid	03/02/2010 11:30	03/05/2010 13:10
21003082669	SED-25 (0-2)	Solid	03/02/2010 11:00	03/05/2010 13:10
21003082670	SED-25 (2-4)	Solid	03/02/2010 11:10	03/05/2010 13:10
21003082671	SED-31 (0-2)	Solid	03/01/2010 09:45	03/05/2010 13:10
21003082672	SED-31 (2-4)	Solid	03/01/2010 09:55	03/05/2010 13:10
21003082673	SED-32 (0-2)	Solid	03/01/2010 10:20	03/05/2010 13:10
21003082674	SED-32 (2-4)	Solid	03/01/2010 10:30	03/05/2010 13:10
21003082675	SED-33 (0-2)	Solid	03/01/2010 11:10	03/05/2010 13:10
21003082676	SED-33 (2-4)	Solid	03/01/2010 11:15	03/05/2010 13:10

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082601	SED-1 (0-2)	Solid	02/25/2010 10:25	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.011	0.0030	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.84B	1.60	0.22	mg/kg
7440-39-3	Barium	81.2	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.0094B	0.20	0.0083	mg/kg
7440-47-3	Chromium	0.75	0.40	0.024	mg/kg
7439-92-1	Lead	4.81	0.60	0.066	mg/kg
7440-24-6	Strontium	12.8	0.40	0.037	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1630	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082602	SED-1 (2-4)	Solid	02/25/2010 10:30	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0084B	0.012	0.0031	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.98	1.60	0.22	mg/kg
7440-39-3	Barium	24.1	0.40	0.017	mg/kg
7439-92-1	Lead	0.59B	0.60	0.066	mg/kg
7440-24-6	Strontium	8.47	0.40	0.037	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1050	20.0	3.16	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082603	SED-1 (4-6)	Solid	02/25/2010 10:40	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0083B	0.012	0.0032	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.63B	1.60	0.22	mg/kg
7440-39-3	Barium	31.1	0.40	0.017	mg/kg
7439-92-1	Lead	2.43	0.60	0.066	mg/kg
7440-24-6	Strontium	9.77	0.40	0.037	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	779	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082604	SED-2 (0-2)	Solid	02/25/2010 11:00	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.19B	1.60	0.22	mg/kg
7440-39-3	Barium	76.8	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.29	0.20	0.0083	mg/kg
7440-47-3	Chromium	2.01	0.40	0.024	mg/kg
7439-92-1	Lead	6.03	0.60	0.066	mg/kg
7440-24-6	Strontium	12.6	0.40	0.037	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.014	0.010	0.0027	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1270	20.0	3.16	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082605	SED-2 (2-4)	Solid	02/25/2010 11:15	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.09	1.59	0.22	mg/kg
7440-39-3	Barium	27.9	0.40	0.017	mg/kg
7439-92-1	Lead	1.30	0.60	0.066	mg/kg
7440-24-6	Strontium	8.33	0.40	0.037	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1260	20.0	3.16	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0085B	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082606	SED-2 (4-6)	Solid	02/25/2010 11:25	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.88B	1.60	0.22	mg/kg
7440-39-3	Barium	40.9	0.40	0.017	mg/kg
7439-92-1	Lead	3.82	0.60	0.066	mg/kg
7440-24-6	Strontium	12.0	0.40	0.037	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011	0.011	0.0029	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	937	20.0	3.16	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082607	SED-3 (0-2)	Solid	02/25/2010 11:45	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.27B	1.59	0.22	mg/kg
7440-39-3	Barium	48.2	0.40	0.017	mg/kg
7439-92-1	Lead	3.85	0.60	0.066	mg/kg
7440-24-6	Strontium	11.4	0.40	0.037	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	743	20.0	3.16	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.011	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082608	SED-3 (2-4)	Solid	02/25/2010 12:00	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0078B	0.011	0.0029	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.00	1.60	0.22	mg/kg
7440-39-3	Barium	23.1	0.40	0.017	mg/kg
7439-92-1	Lead	1.19	0.60	0.066	mg/kg
7440-24-6	Strontium	8.48	0.40	0.037	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	814	20.0	3.16	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082609	SED-3 (4-6)	Solid	02/25/2010 12:15	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.31B	1.60	0.22	mg/kg
7440-39-3	Barium	41.2	0.40	0.017	mg/kg
7439-92-1	Lead	5.27	0.60	0.066	mg/kg
7440-24-6	Strontium	12.4	0.40	0.037	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.016	0.012	0.0031	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	804	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082610	SED-4 (0-2)	Solid	02/25/2010 13:15	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.026	0.011	0.0029	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1110	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.94B	1.59	0.22	mg/kg
7440-39-3	Barium	203	0.40	0.017	mg/kg
7440-47-3	Chromium	3.13	0.40	0.023	mg/kg
7439-92-1	Lead	7.07	0.60	0.066	mg/kg
7440-24-6	Strontium	35.1	0.40	0.037	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082611	SED-5 (0-2)	Solid	02/25/2010 13:30	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.021	0.011	0.0029	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	3.09	1.59	0.22	mg/kg
7440-39-3	Barium	61.4	0.40	0.017	mg/kg
7439-92-1	Lead	7.43	0.60	0.066	mg/kg
7440-24-6	Strontium	18.1	0.40	0.037	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	779	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082612	SED-6 (0-2)	Solid	02/25/2010 13:45	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.43	0.011	0.0030	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	32.9J	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	49.1J	50.0	4.35	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	771	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.62	1.60	0.22	mg/kg
7440-39-3	Barium	111	0.40	0.017	mg/kg
7440-43-9	Cadmium	1.03	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.75	0.40	0.024	mg/kg
7439-92-1	Lead	9.18	0.60	0.066	mg/kg
7440-24-6	Strontium	39.3	0.40	0.037	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082613	SED-7 (0-2)	Solid	02/25/2010 14:00	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.09B	1.60	0.22	mg/kg
7440-39-3	Barium	228	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.030B	0.20	0.0083	mg/kg
7440-47-3	Chromium	2.17	0.40	0.024	mg/kg
7439-92-1	Lead	6.59	0.60	0.066	mg/kg
7440-24-6	Strontium	14.8	0.40	0.037	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.026	0.011	0.0029	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1660	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082614	SED-7 (2-4)	Solid	02/25/2010 14:15	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	294	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	93.6	50.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.060	0.012	0.0032	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	6.41J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	60.5	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	247	10.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.14	1.60	0.22	mg/kg
7440-39-3	Barium	497	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.039B	0.20	0.0083	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082614	SED-7 (2-4)	Solid	02/25/2010 14:15	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-47-3	Chromium	2.61	0.40	0.024	mg/kg
7439-92-1	Lead	9.61	0.60	0.066	mg/kg
7440-24-6	Strontium	29.7	0.40	0.037	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	803	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082615	SED-7 (4-6)	Solid	02/25/2010 14:25	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	171	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	46.0J	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	16.5	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	158	10.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.16B	1.59	0.22	mg/kg
7440-39-3	Barium	250	0.40	0.017	mg/kg
7440-47-3	Chromium	1.64	0.40	0.023	mg/kg
7439-92-1	Lead	6.84	0.60	0.066	mg/kg
7440-24-6	Strontium	34.9	0.40	0.037	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	785	20.0	3.16	mg/kg

### SW-846 8082

CAS#	Parameter	Result	RDL	MDL	Units
11097-69-1	Aroclor-1254	0.083	0.040	0.016	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082615	SED-7 (4-6)	Solid	02/25/2010 14:25	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.030	0.012	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082616	SED-8 (0-2)	Solid	02/25/2010 14:50	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.022	0.012	0.0032	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.42B	1.60	0.22	mg/kg
7440-39-3	Barium	238	0.40	0.017	mg/kg
7440-47-3	Chromium	1.50	0.40	0.024	mg/kg
7439-92-1	Lead	7.31	0.60	0.066	mg/kg
7440-24-6	Strontium	15.7	0.40	0.037	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1400	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082617	SED-8 (2-4)	Solid	02/25/2010 15:00	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.028	0.011	0.0031	mg/kg

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	147	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	26.0J	50.0	4.35	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1200	20.0	3.16	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082617	SED-8 (2-4)	Solid	02/25/2010 15:00	03/03/2010 16:40

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	37.4	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	123	10.0	4.35	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.46B	1.60	0.22	mg/kg
7440-39-3	Barium	267	0.40	0.017	mg/kg
7440-47-3	Chromium	1.76	0.40	0.024	mg/kg
7439-92-1	Lead	7.80	0.60	0.066	mg/kg
7440-24-6	Strontium	17.7	0.40	0.037	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082618	SED-9 (0-2)	Solid	02/25/2010 15:20	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.022	0.012	0.0032	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1410	50.0	7.90	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.38B	1.60	0.22	mg/kg
7440-39-3	Barium	161	0.40	0.017	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082619	SED-9 (2-4)	Solid	02/25/2010 15:40	03/03/2010 16:40

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	620	20.0	3.16	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082619	SED-9 (2-4)	Solid	02/25/2010 15:40	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.031	0.011	0.0029	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.94	1.59	0.22	mg/kg
7440-39-3	Barium	224	0.40	0.017	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082620	SED-10 (0-2)	Solid	02/25/2010 15:50	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.012	0.0031	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.67	1.59	0.22	mg/kg
7440-39-3	Barium	264	0.40	0.017	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	929	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082621	SED-10 (2-4)	Solid	02/25/2010 16:00	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.09	1.60	0.22	mg/kg
7440-39-3	Barium	234	0.40	0.017	mg/kg
7782-49-2	Selenium	0.31B	1.60	0.25	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.010	0.0027	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082621	SED-10 (2-4)	Solid	02/25/2010 16:00	03/03/2010 16:40

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	785	50.0	7.90	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	42.8J	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	4.91J	50.0	4.35	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082622	SED-11 (0-2)	Solid	02/25/2010 16:20	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.62	1.60	0.22	mg/kg
7440-39-3	Barium	689	0.40	0.017	mg/kg
7782-49-2	Selenium	0.38B	1.60	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.029	0.012	0.0032	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1300	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082623	SED-11 (2-4)	Solid	02/25/2010 16:30	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	57.4	50.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.93	1.59	0.22	mg/kg
7440-39-3	Barium	498	0.40	0.017	mg/kg
7782-49-2	Selenium	0.39B	1.59	0.25	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082623	SED-11 (2-4)	Solid	02/25/2010 16:30	03/03/2010 16:40

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	649	20.0	3.16	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	10.0	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	54.5	10.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.011	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082624	SED-12 (0-2)	Solid	02/25/2010 16:45	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.10B	1.60	0.22	mg/kg
7440-39-3	Barium	326	0.40	0.017	mg/kg
7782-49-2	Selenium	0.49B	1.60	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.023	0.011	0.0031	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	980	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082625	SED-12 (2-4)	Solid	02/25/2010 17:00	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	181	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	37.1J	50.0	4.35	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082625	SED-12 (2-4)	Solid	02/25/2010 17:00	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.98	1.59	0.22	mg/kg
7440-39-3	Barium	567	0.40	0.017	mg/kg
7782-49-2	Selenium	0.40B	1.59	0.25	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	850	20.0	3.16	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	47.1	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	175	10.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.031	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082626	SED-12 (4-6)	Solid	02/25/2010 17:15	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	171	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	29.9J	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	21.3	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	125	10.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.26B	1.60	0.22	mg/kg
7440-39-3	Barium	477	0.40	0.017	mg/kg
7782-49-2	Selenium	0.38B	1.60	0.25	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082626	SED-12 (4-6)	Solid	02/25/2010 17:15	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.028	0.011	0.0029	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	486	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082627	SED-13 (0-2)	Solid	02/26/2010 08:20	03/03/2010 16:40

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1710	20.0	3.16	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.018	0.011	0.0031	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.19B	1.60	0.22	mg/kg
7440-39-3	Barium	168	0.40	0.017	mg/kg
7782-49-2	Selenium	0.44B	1.60	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082628	SED-13 (2-4)	Solid	02/26/2010 08:30	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.42B	1.60	0.22	mg/kg
7440-39-3	Barium	382	0.40	0.017	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1430	20.0	3.16	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082628	SED-13 (2-4)	Solid	02/26/2010 08:30	03/03/2010 16:40

SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.015	0.012	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082629	SED-14 (0-2)	Solid	02/26/2010 08:50	03/03/2010 16:40

SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.019	0.011	0.0031	mg/kg

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.00B	1.59	0.22	mg/kg
7440-39-3	Barium	287	0.40	0.017	mg/kg
7782-49-2	Selenium	0.40B	1.59	0.25	mg/kg

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1110	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082630	SED-14 (2-4)	Solid	02/26/2010 09:00	03/03/2010 16:40

SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.011	0.0031	mg/kg

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	846	20.0	3.16	mg/kg

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.45B	1.60	0.22	mg/kg
7440-39-3	Barium	448	0.40	0.017	mg/kg
7782-49-2	Selenium	0.45B	1.60	0.25	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082631	SED-15 (0-2)	Solid	02/26/2010 09:25	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.77	1.59	0.22	mg/kg
7440-39-3	Barium	819	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.20B	0.20	0.0082	mg/kg
7440-47-3	Chromium	137	0.40	0.023	mg/kg
7439-92-1	Lead	60.3	0.60	0.066	mg/kg
7782-49-2	Selenium	0.47B	1.59	0.25	mg/kg
7440-24-6	Strontium	62.7	0.40	0.037	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.28	0.012	0.0032	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	158	100	32.1	mg/kg
GCSV-02-16	Aromatic >C12-C16	1840	150	65.9	mg/kg
GCSV-02-17	Aromatic >C16-C21	2170	150	71.3	mg/kg
GCSV-05-18	Aromatic >C21-C35	1970	150	71.3	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	1220	750	223	mg/kg
GCSV-02-12	Aliphatic >C12-C16	9070	500	218	mg/kg
GCSV-02-31	Aliphatic >C16-C35	17400	500	218	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	45500	5000	435	mg/kg
GCSV-05-03	>C28-C35	3320J	5000	435	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	996	20.0	3.16	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082632	SED-15 (2-4)	Solid	02/26/2010 09:35	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	3.24	1.60	0.22	mg/kg
7440-43-9	Cadmium	0.27	0.20	0.0083	mg/kg
7440-47-3	Chromium	292	0.40	0.024	mg/kg
7439-92-1	Lead	76.7	0.60	0.066	mg/kg
7782-49-2	Selenium	0.66B	1.60	0.25	mg/kg
7440-24-6	Strontium	75.4	0.40	0.037	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1130	0.80	0.034	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	329	100	32.1	mg/kg
GCSV-02-16	Aromatic >C12-C16	3460	150	65.9	mg/kg
GCSV-02-17	Aromatic >C16-C21	3730	150	71.3	mg/kg
GCSV-05-18	Aromatic >C21-C35	3510	150	71.3	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	2850	750	223	mg/kg
GCSV-02-12	Aliphatic >C12-C16	20600	500	218	mg/kg
GCSV-02-31	Aliphatic >C16-C35	40800	500	218	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.15	0.011	0.0029	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1080	20.0	3.16	mg/kg

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	84600	5000	435	mg/kg
GCSV-05-03	>C28-C35	8580	5000	435	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082633	SED-16 (0-2)	Solid	02/26/2010 09:50	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.016	0.012	0.0032	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1240	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.97B	1.59	0.22	mg/kg
7440-39-3	Barium	60.0	0.40	0.017	mg/kg
7782-49-2	Selenium	0.39B	1.59	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082634	SED-17 (0-2)	Solid	02/26/2010 10:10	03/03/2010 16:40

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1150	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.34B	1.60	0.22	mg/kg
7440-39-3	Barium	524	0.40	0.017	mg/kg
7782-49-2	Selenium	0.46B	1.60	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.011	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082635	SED-17 (2-4)	Solid	02/26/2010 10:15	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.012	0.0032	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082635	SED-17 (2-4)	Solid	02/26/2010 10:15	03/03/2010 16:40

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1040	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.90	1.60	0.22	mg/kg
7440-39-3	Barium	838	0.40	0.017	mg/kg
7782-49-2	Selenium	0.57B	1.60	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082636	SED-18 (0-2)	Solid	02/26/2010 10:20	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.030	0.011	0.0029	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	11.5	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	47.3	10.0	4.35	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	80.7	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	6.40J	50.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.79	1.59	0.22	mg/kg
7440-39-3	Barium	554	0.40	0.017	mg/kg
7782-49-2	Selenium	0.41B	1.59	0.25	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1370	20.0	3.16	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082637	SED-18 (2-4)	Solid	02/26/2010 10:30	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.034	0.012	0.0032	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	84.5	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	13.2J	50.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.43B	1.60	0.22	mg/kg
7440-39-3	Barium	611	0.40	0.017	mg/kg
7782-49-2	Selenium	0.44B	1.60	0.25	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	19.0	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	113	10.0	4.35	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	715	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082638	SED-19 (0-2)	Solid	02/26/2010 10:45	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	758	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	153	50.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.73	1.59	0.22	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082638	SED-19 (0-2)	Solid	02/26/2010 10:45	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-47-3	Chromium	6.22	0.40	0.023	mg/kg
7439-92-1	Lead	13.3	0.60	0.066	mg/kg
7782-49-2	Selenium	0.32B	1.59	0.25	mg/kg
7440-24-6	Strontium	41.4	0.40	0.037	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1730	1.98	0.085	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	844	50.0	7.90	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.074	0.012	0.0032	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	6.51J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	92.7	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	442	10.0	4.35	mg/kg
GCSV-02-16	Aromatic >C12-C16	10.4J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	30.4	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	55.1	15.0	7.13	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082639	SED-19 (2-4)	Solid	02/26/2010 10:55	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	306	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	23.5J	50.0	4.35	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082639	SED-19 (2-4)	Solid	02/26/2010 10:55	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.054	0.011	0.0031	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.80	1.60	0.22	mg/kg
7440-39-3	Barium	860	0.40	0.017	mg/kg
7782-49-2	Selenium	0.52B	1.60	0.25	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	618	20.0	3.16	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	5.99J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	72.0	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	247	10.0	4.35	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082640	SS-08 (0-2)	Solid	02/26/2010 11:20	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.85	1.59	0.22	mg/kg
7440-39-3	Barium	376	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.063B	0.20	0.0082	mg/kg
7440-47-3	Chromium	1.79	0.40	0.023	mg/kg
7439-92-1	Lead	12.7	0.60	0.066	mg/kg
7782-49-2	Selenium	0.41B	1.59	0.25	mg/kg
7440-24-6	Strontium	26.9	0.40	0.037	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	65.8	50.0	4.35	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082640	SS-08 (0-2)	Solid	02/26/2010 11:20	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.59	0.012	0.0032	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	11.8	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	47.0	10.0	4.35	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082641	SS-08 (2-4)	Solid	02/26/2010 11:30	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	10.1	0.24	0.065	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.47	1.60	0.22	mg/kg
7440-39-3	Barium	379	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.13B	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.46	0.40	0.024	mg/kg
7439-92-1	Lead	9.72	0.60	0.066	mg/kg
7782-49-2	Selenium	0.55B	1.60	0.25	mg/kg
7440-24-6	Strontium	24.6	0.40	0.037	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082642	SS-10 (0-2)	Solid	02/26/2010 11:45	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	140	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	9.23J	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	24.3	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	61.2	10.0	4.35	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082642	SS-10 (0-2)	Solid	02/26/2010 11:45	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.97	1.60	0.22	mg/kg
7440-39-3	Barium	301	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.094B	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.40	0.40	0.024	mg/kg
7439-92-1	Lead	7.04	0.60	0.066	mg/kg
7782-49-2	Selenium	0.40B	1.60	0.25	mg/kg
7440-24-6	Strontium	18.5	0.40	0.037	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.046	0.010	0.0027	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082643	SS-10 (2-4)	Solid	02/26/2010 11:50	03/03/2010 16:40

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.12	0.011	0.0029	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	159	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	13.9J	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	18.2	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	72.2	10.0	4.35	mg/kg
GCSV-02-16	Aromatic >C12-C16	8.72J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	17.2	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	10.0J	15.0	7.13	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.51	1.59	0.22	mg/kg
7440-39-3	Barium	381	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.12B	0.20	0.0082	mg/kg
7440-47-3	Chromium	1.77	0.40	0.023	mg/kg
7439-92-1	Lead	9.15	0.60	0.066	mg/kg
7782-49-2	Selenium	0.55B	1.59	0.25	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082643	SS-10 (2-4)	Solid	02/26/2010 11:50	03/03/2010 16:40

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-24-6	Strontium	31.9	0.40	0.037	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082644	SED-20 (0-2)	Solid	02/26/2010 12:10	03/03/2010 16:40

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.46B	1.60	0.22	mg/kg
7440-39-3	Barium	246	0.40	0.017	mg/kg
7782-49-2	Selenium	0.38B	1.60	0.25	mg/kg

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	962	20.0	3.16	mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082645	SED-20 (2-4)	Solid	02/26/2010 12:15	03/03/2010 16:40

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.93	1.59	0.22	mg/kg
7440-39-3	Barium	284	0.40	0.017	mg/kg
7782-49-2	Selenium	0.52B	1.59	0.25	mg/kg

SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	789	50.0	7.90	mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.012	0.0032	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082646	SED-21 (0-2)	Solid	02/26/2010 12:50	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.10B	1.59	0.22	mg/kg
7440-39-3	Barium	154	0.40	0.017	mg/kg
7782-49-2	Selenium	0.37B	1.59	0.25	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	982	20.0	3.16	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.013	0.011	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082647	SED-21 (2-4)	Solid	02/26/2010 13:00	03/03/2010 16:40

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011B	0.011	0.0031	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	656	20.0	3.16	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.66	1.59	0.22	mg/kg
7440-39-3	Barium	335	0.40	0.017	mg/kg
7782-49-2	Selenium	0.31B	1.59	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082648	SED-21 (4-6)	Solid	02/26/2010 13:10	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.28	1.60	0.22	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082648	SED-21 (4-6)	Solid	02/26/2010 13:10	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	437	0.40	0.017	mg/kg
7782-49-2	Selenium	0.45B	1.60	0.25	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	137	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	18.2J	50.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.042	0.011	0.0030	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	19.3	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	84.5	10.0	4.35	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	513	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082649	SED-21 (6-8)	Solid	02/26/2010 13:15	03/03/2010 16:40

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	549	20.0	3.16	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	16.4	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	48.9	10.0	4.35	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082649	SED-21 (6-8)	Solid	02/26/2010 13:15	03/03/2010 16:40

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	70.3	50.0	4.35	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.50B	1.60	0.22	mg/kg
7440-39-3	Barium	465	0.40	0.017	mg/kg
7782-49-2	Selenium	0.25B	1.60	0.25	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.037	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082650	SED-22 (0-2)	Solid	02/26/2010 13:30	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.43B	1.60	0.22	mg/kg
7440-39-3	Barium	257	0.40	0.017	mg/kg
7782-49-2	Selenium	0.48B	1.60	0.25	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.022	0.012	0.0032	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1710	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082651	SED-22 (2-4)	Solid	02/26/2010 13:40	03/03/2010 16:40

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.17	1.60	0.22	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082651	SED-22 (2-4)	Solid	02/26/2010 13:40	03/03/2010 16:40

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	220	0.40	0.017	mg/kg
7782-49-2	Selenium	0.59B	1.60	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.024	0.011	0.0029	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1160	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082652	SED-26 (0-2)	Solid	03/02/2010 13:25	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.48B	1.59	0.22	mg/kg
7440-39-3	Barium	377	0.40	0.017	mg/kg
7782-49-2	Selenium	0.29B	1.59	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.11	0.012	0.0032	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	825	20.0	3.16	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	2350	250	21.8	mg/kg
GCSV-05-03	>C28-C35	352	250	21.8	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	31.4	15.0	4.45	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082652	SED-26 (0-2)	Solid	03/02/2010 13:25	03/05/2010 13:10

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	283	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	890	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	5.04J	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	94.9	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	161	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	180	15.0	7.13	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082653	SED-26 (2-4)	Solid	03/02/2010 13:35	03/05/2010 13:10

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	299	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	57.9	50.0	4.35	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.022	0.012	0.0032	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	34.5	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	111	10.0	4.35	mg/kg
GCSV-02-16	Aromatic >C12-C16	8.16J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	15.5	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	7.72J	15.0	7.13	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.20B	1.60	0.22	mg/kg
7440-39-3	Barium	222	0.40	0.017	mg/kg
7782-49-2	Selenium	0.27B	1.60	0.25	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	841	20.0	3.16	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082654	SED-27 (0-2)	Solid	03/02/2010 12:45	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.92B	1.59	0.22	mg/kg
7440-39-3	Barium	163	0.40	0.017	mg/kg
7782-49-2	Selenium	0.27B	1.59	0.25	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	6.79J	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	76.8	10.0	4.35	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1560	20.0	3.16	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	106	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	20.0J	50.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.021	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082655	SED-27 (2-4)	Solid	03/02/2010 12:55	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1420	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.25B	1.60	0.22	mg/kg
7440-39-3	Barium	330	0.40	0.017	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082655	SED-27 (2-4)	Solid	03/02/2010 12:55	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7782-49-2	Selenium	0.40B	1.60	0.25	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	16.2	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	109	10.0	4.35	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	146	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	25.0J	50.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.027	0.012	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082656	SED-28 (0-2)	Solid	03/02/2010 14:15	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1990	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.70B	1.59	0.22	mg/kg
7440-39-3	Barium	104	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.048B	0.20	0.0082	mg/kg
7440-47-3	Chromium	1.40	0.40	0.023	mg/kg
7439-92-1	Lead	4.16	0.60	0.066	mg/kg
7440-24-6	Strontium	62.7	0.40	0.037	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	5420	500	43.5	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082656	SED-28 (0-2)	Solid	03/02/2010 14:15	03/05/2010 13:10

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-05-03	>C28-C35	906	500	43.5	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.13	0.012	0.0031	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	6.60J	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	169	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	290	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	433	15.0	7.13	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	110J	150	44.5	mg/kg
GCSV-02-12	Aliphatic >C12-C16	120	100	43.5	mg/kg
GCSV-02-31	Aliphatic >C16-C35	2690	100	43.5	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082657	SED-28 (2-4)	Solid	03/02/2010 14:20	03/05/2010 13:10

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1710	20.0	3.16	mg/kg

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	153	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	10.5J	50.0	4.35	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	7.72J	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	165	10.0	4.35	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082657	SED-28 (2-4)	Solid	03/02/2010 14:20	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.47B	1.60	0.22	mg/kg
7440-39-3	Barium	56.3	0.40	0.017	mg/kg
7440-47-3	Chromium	0.31B	0.40	0.024	mg/kg
7439-92-1	Lead	1.34	0.60	0.066	mg/kg
7440-24-6	Strontium	62.1	0.40	0.037	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.015	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082658	SED-29 (0-2)	Solid	03/02/2010 15:10	03/05/2010 13:10

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.023	0.012	0.0031	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	1030	100	8.70	mg/kg
GCSV-05-03	>C28-C35	287	100	8.70	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	53.6	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	469	10.0	4.35	mg/kg
GCSV-02-17	Aromatic >C16-C21	60.4	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	183	15.0	7.13	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	137	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.023B	0.20	0.0083	mg/kg
7440-47-3	Chromium	2.85	0.40	0.024	mg/kg
7439-92-1	Lead	4.20	0.60	0.066	mg/kg
7440-24-6	Strontium	44.5	0.40	0.037	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082658	SED-29 (0-2)	Solid	03/02/2010 15:10	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2110	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082659	SED-29 (2-4)	Solid	03/02/2010 15:15	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2550	50.0	7.90	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.70B	1.60	0.22	mg/kg
7440-39-3	Barium	140	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.0084B	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.45	0.40	0.024	mg/kg
7439-92-1	Lead	2.79	0.60	0.066	mg/kg
7440-24-6	Strontium	84.9	0.40	0.037	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082660	SED-30 (0-2)	Solid	03/02/2010 14:55	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	1770	250	21.8	mg/kg
GCSV-05-03	>C28-C35	390	250	21.8	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2230	50.0	7.90	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011B	0.012	0.0031	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-16	Aromatic >C12-C16	25.6	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	100	15.0	7.13	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082660	SED-30 (0-2)	Solid	03/02/2010 14:55	03/05/2010 13:10

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-05-18	Aromatic >C21-C35	215	15.0	7.13	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	17.9J	30.0	8.90	mg/kg
GCSV-02-12	Aliphatic >C12-C16	362	20.0	8.70	mg/kg
GCSV-02-31	Aliphatic >C16-C35	1350	20.0	8.70	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.50B	1.59	0.22	mg/kg
7440-39-3	Barium	119	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.038B	0.20	0.0082	mg/kg
7440-47-3	Chromium	3.72	0.40	0.023	mg/kg
7439-92-1	Lead	4.50	0.60	0.066	mg/kg
7440-24-6	Strontium	52.9	0.40	0.037	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082661	SED-30 (2-4)	Solid	03/02/2010 15:00	03/05/2010 13:10

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4500	50.0	7.90	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.71B	1.60	0.22	mg/kg
7440-39-3	Barium	84.1	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.010B	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.05	0.40	0.024	mg/kg
7439-92-1	Lead	1.97	0.60	0.066	mg/kg
7440-24-6	Strontium	64.5	0.40	0.037	mg/kg

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	13.7	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	59.7	10.0	4.35	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082661	SED-30 (2-4)	Solid	03/02/2010 15:00	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	72.3	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	4.81J	50.0	4.35	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082662	SED-31 (4-6)	Solid	03/02/2010 09:45	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2200	100	15.8	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.50B	1.59	0.22	mg/kg
7440-39-3	Barium	51.3	0.40	0.017	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	20.2J	50.0	4.35	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082663	SED-32 (4-6)	Solid	03/02/2010 10:10	03/05/2010 13:10

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0050B	0.010	0.0027	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	775	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.51B	1.60	0.22	mg/kg
7440-39-3	Barium	37.1	0.40	0.017	mg/kg
7782-49-2	Selenium	0.35B	1.60	0.25	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082664	SED-33 (4-6)	Solid	03/02/2010 10:25	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2290	50.0	7.90	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.56B	1.59	0.22	mg/kg
7440-39-3	Barium	35.2	0.40	0.017	mg/kg
7782-49-2	Selenium	0.32B	1.59	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082665	SED-23 (0-2)	Solid	03/02/2010 11:50	03/05/2010 13:10

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.011	0.0031	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	978	50.0	7.90	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	414	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	110	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	36.3	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	400	10.0	4.35	mg/kg
GCSV-02-16	Aromatic >C12-C16	7.18J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	34.0	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	65.4	15.0	7.13	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.33B	1.60	0.22	mg/kg
7440-39-3	Barium	437	0.40	0.017	mg/kg
7782-49-2	Selenium	0.57B	1.60	0.25	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082666	SED-23 (2-4)	Solid	03/02/2010 12:00	03/05/2010 13:10

## LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	71.5	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	468	10.0	4.35	mg/kg
GCSV-02-17	Aromatic >C16-C21	32.2	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	71.3	15.0	7.13	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.11B	1.60	0.22	mg/kg
7440-39-3	Barium	429	0.40	0.017	mg/kg
7782-49-2	Selenium	0.54B	1.60	0.25	mg/kg

## LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	563	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	123	50.0	4.35	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.012	0.0032	mg/kg

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1220	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082667	SED-24 (0-2)	Solid	03/02/2010 11:25	03/05/2010 13:10

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.038	0.012	0.0032	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082667	SED-24 (0-2)	Solid	03/02/2010 11:25	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.44B	1.59	0.22	mg/kg
7440-39-3	Barium	308	0.40	0.017	mg/kg
7782-49-2	Selenium	0.60B	1.59	0.25	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1010	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082668	SED-24 (2-4)	Solid	03/02/2010 11:30	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	758	20.0	3.16	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.019	0.011	0.0031	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.50B	1.60	0.22	mg/kg
7440-39-3	Barium	192	0.40	0.017	mg/kg
7782-49-2	Selenium	0.56B	1.60	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082669	SED-25 (0-2)	Solid	03/02/2010 11:00	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1390	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.38B	1.59	0.22	mg/kg
7440-39-3	Barium	484	0.40	0.017	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082669	SED-25 (0-2)	Solid	03/02/2010 11:00	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7782-49-2	Selenium	0.52B	1.59	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.026	0.012	0.0032	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	84.4	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	8.38J	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	21.0	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	96.8	10.0	4.35	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082670	SED-25 (2-4)	Solid	03/02/2010 11:10	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	15.8J	50.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.19B	1.60	0.22	mg/kg
7440-39-3	Barium	579	0.40	0.017	mg/kg
7782-49-2	Selenium	0.36B	1.60	0.25	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.039	0.012	0.0032	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082670	SED-25 (2-4)	Solid	03/02/2010 11:10	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1400	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082671	SED-31 (0-2)	Solid	03/01/2010 09:45	03/05/2010 13:10

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011	0.011	0.0031	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	9.46J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	87.3	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	389	10.0	4.35	mg/kg
GCSV-02-17	Aromatic >C16-C21	38.7	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	60.4	15.0	7.13	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2730	50.0	7.90	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	441	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	87.0	50.0	4.35	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.34B	1.60	0.22	mg/kg
7440-39-3	Barium	160	0.40	0.017	mg/kg
7782-49-2	Selenium	0.26B	1.60	0.25	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082672	SED-31 (2-4)	Solid	03/01/2010 09:55	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	22.3	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	98.1	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	190	10.0	4.35	mg/kg
GCSV-02-16	Aromatic >C12-C16	7.95J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	19.1	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	17.1	15.0	7.13	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.77B	1.60	0.22	mg/kg
7440-39-3	Barium	79.8	0.40	0.017	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	299	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	26.8J	50.0	4.35	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0043B	0.011	0.0031	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3380	50.0	7.90	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082673	SED-32 (0-2)	Solid	03/01/2010 10:20	03/05/2010 13:10

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.62B	1.59	0.22	mg/kg
7440-39-3	Barium	133	0.40	0.017	mg/kg
7782-49-2	Selenium	0.26B	1.59	0.25	mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082673	SED-32 (0-2)	Solid	03/01/2010 10:20	03/05/2010 13:10

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.012	0.012	0.0032	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	26.3	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	257	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	736	10.0	4.35	mg/kg
GCSV-02-16	Aromatic >C12-C16	16.6	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	66.9	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	98.3	15.0	7.13	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	905	100	8.70	mg/kg
GCSV-05-03	>C28-C35	177	100	8.70	mg/kg

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1910	20.0	3.16	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082674	SED-32 (2-4)	Solid	03/01/2010 10:30	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1450	20.0	3.16	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.74B	1.60	0.22	mg/kg
7440-39-3	Barium	63.3	0.40	0.017	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	20.6J	50.0	4.35	mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082674	SED-32 (2-4)	Solid	03/01/2010 10:30	03/05/2010 13:10

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0085B	0.012	0.0031	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082675	SED-33 (0-2)	Solid	03/01/2010 11:10	03/05/2010 13:10

### SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2840	100	15.8	mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.016	0.012	0.0031	mg/kg

### SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.52B	1.59	0.22	mg/kg
7440-39-3	Barium	134	0.40	0.017	mg/kg

### LA1005 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	155	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	35.3J	50.0	4.35	mg/kg

### LA1006 Hydrocarbons by Range

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-12	Aliphatic >C12-C16	40.9	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	93.2	10.0	4.35	mg/kg

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082676	SED-33 (2-4)	Solid	03/01/2010 11:15	03/05/2010 13:10

## SW-846 9251 Chloride

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2780	50.0	7.90	mg/kg

## SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.85B	1.60	0.22	mg/kg
7440-39-3	Barium	68.7	0.40	0.017	mg/kg
7782-49-2	Selenium	0.26B	1.60	0.25	mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0040B	0.012	0.0032	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082601	SED-1 (0-2)	Solid	02/25/2010 10:25	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 11:59	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.011	0.0030	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 21:19	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.84B	1.60	0.22	mg/kg
7440-39-3	Barium	81.2	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.0094B	0.20	0.0083	mg/kg
7440-47-3	Chromium	0.75	0.40	0.024	mg/kg
7439-92-1	Lead	4.81	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	12.8	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	78.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	5	03/19/2010 09:36	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1630	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082602	SED-1 (2-4)	Solid	02/25/2010 10:30	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:00	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0084B	0.012	0.0031	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 21:51	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.98	1.60	0.22	mg/kg
7440-39-3	Barium	24.1	0.40	0.017	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
7440-47-3	Chromium	ND	0.40	0.024	mg/kg
7439-92-1	Lead	0.59B	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	8.47	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	88.4	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:39	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1050	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082603	SED-1 (4-6)	Solid	02/25/2010 10:40	03/03/2010 16:40

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:40	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0083B	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 21:57	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.63B	1.60	0.22	mg/kg
7440-39-3	Barium	31.1	0.40	0.017	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
7440-47-3	Chromium	ND	0.40	0.024	mg/kg
7439-92-1	Lead	2.43	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	9.77	0.40	0.037	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	81.7	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:40	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	779	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082604	SED-2 (0-2)	Solid	02/25/2010 11:00	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 11:52	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.014	0.010	0.0027	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 20:51	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.19B	1.60	0.22	mg/kg
7440-39-3	Barium	76.8	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.29	0.20	0.0083	mg/kg
7440-47-3	Chromium	2.01	0.40	0.024	mg/kg
7439-92-1	Lead	6.03	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	12.6	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	77.0	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:41	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1270	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082605	SED-2 (2-4)	Solid	02/25/2010 11:15	03/03/2010 16:40

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:42	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0085B	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:03	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.09	1.59	0.22	mg/kg
7440-39-3	Barium	27.9	0.40	0.017	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
7440-47-3	Chromium	ND	0.40	0.023	mg/kg
7439-92-1	Lead	1.30	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
7440-24-6	Strontium	8.33	0.40	0.037	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	87.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:42	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1260	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082606	SED-2 (4-6)	Solid	02/25/2010 11:25	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:08	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011	0.011	0.0029	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:09	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.88B	1.60	0.22	mg/kg
7440-39-3	Barium	40.9	0.40	0.017	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
7440-47-3	Chromium	ND	0.40	0.024	mg/kg
7439-92-1	Lead	3.82	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	12.0	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	65.5	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:43	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	937	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082607	SED-3 (0-2)	Solid	02/25/2010 11:45	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:10	CLB	427539
CAS#	Parameter	Result	RDL	MDL	Units	
7439-97-6	Mercury	0.020	0.011	0.0031	mg/kg	

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:15	DJH	427548
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	1.27B	1.59	0.22	mg/kg	
7440-39-3	Barium	48.2	0.40	0.017	mg/kg	
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg	
7440-47-3	Chromium	ND	0.40	0.023	mg/kg	
7439-92-1	Lead	3.85	0.60	0.066	mg/kg	
7782-49-2	Selenium	ND	1.59	0.25	mg/kg	
7440-24-6	Strontium	11.4	0.40	0.037	mg/kg	

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038
CAS#	Parameter	Result	RDL	MDL	Units	
WET-037	Total Moisture	85.6	0.010	0.010	%	

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:45	AEL	428121
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	743	20.0	3.16	mg/kg	

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082608	SED-3 (2-4)	Solid	02/25/2010 12:00	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:12	CLB	427539
CAS#	Parameter	Result	RDL	MDL	Units	
7439-97-6	Mercury	0.0078B	0.011	0.0029	mg/kg	

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:21	DJH	427548
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	2.00	1.60	0.22	mg/kg	
7440-39-3	Barium	23.1	0.40	0.017	mg/kg	
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg	
7440-47-3	Chromium	ND	0.40	0.024	mg/kg	
7439-92-1	Lead	1.19	0.60	0.066	mg/kg	
7782-49-2	Selenium	ND	1.60	0.25	mg/kg	
7440-24-6	Strontium	8.48	0.40	0.037	mg/kg	

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038
CAS#	Parameter	Result	RDL	MDL	Units	
WET-037	Total Moisture	88.5	0.010	0.010	%	

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:46	AEL	428121
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	814	20.0	3.16	mg/kg	

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082609	SED-3 (4-6)	Solid	02/25/2010 12:15	03/03/2010 16:40

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:13	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.016	0.012	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:28	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.31B	1.60	0.22	mg/kg
7440-39-3	Barium	41.2	0.40	0.017	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
7440-47-3	Chromium	ND	0.40	0.024	mg/kg
7439-92-1	Lead	5.27	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	12.4	0.40	0.037	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.2	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:47	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	804	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082610	SED-4 (0-2)	Solid	02/25/2010 13:15	03/03/2010 16:40

### SW-846 8082

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 15:00	427541	3550B	1	03/11/2010 12:55	TLS	427698

CAS#	Parameter	Result	RDL	MDL	Units
12674-11-2	Aroclor-1016	ND	0.040	0.00460	mg/kg
11104-28-2	Aroclor-1221	ND	0.040	0.012	mg/kg
11141-16-5	Aroclor-1232	ND	0.040	0.00642	mg/kg
53469-21-9	Aroclor-1242	ND	0.040	0.00734	mg/kg
12672-29-6	Aroclor-1248	ND	0.040	0.011	mg/kg
11097-69-1	Aroclor-1254	ND	0.040	0.016	mg/kg
11096-82-5	Aroclor-1260	ND	0.040	0.00378	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
2051-24-3	Decachlorobiphenyl	.017	.018	mg/kg	109	55 - 139

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 14:22	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	53.6	mg/kg	107	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:15	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.026</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:34	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.94B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>203</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>3.13</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.07</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>35.1</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082610	SED-4 (0-2)	Solid	02/25/2010 13:15	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	40.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:48	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1110	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082611	SED-5 (0-2)	Solid	02/25/2010 13:30	03/03/2010 16:40

### SW-846 8082

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 15:00	427541	3550B	1	03/11/2010 13:13	TLS	427698

CAS#	Parameter	Result	RDL	MDL	Units
12674-11-2	Aroclor-1016	ND	0.040	0.00463	mg/kg
11104-28-2	Aroclor-1221	ND	0.040	0.012	mg/kg
11141-16-5	Aroclor-1232	ND	0.040	0.00646	mg/kg
53469-21-9	Aroclor-1242	ND	0.040	0.00739	mg/kg
12672-29-6	Aroclor-1248	ND	0.040	0.011	mg/kg
11097-69-1	Aroclor-1254	ND	0.040	0.017	mg/kg
11096-82-5	Aroclor-1260	ND	0.040	0.00381	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
2051-24-3	Decachlorobiphenyl	.017	.014	mg/kg	84	55 - 139

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 15:55	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	53.4	mg/kg	109	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:17	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.021</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 22:40	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>3.09</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>61.4</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
7440-47-3	Chromium	ND	0.40	0.023	mg/kg
<b>7439-92-1</b>	<b>Lead</b>	<b>7.43</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>18.1</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082611	SED-5 (0-2)	Solid	02/25/2010 13:30	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	50.0	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:49	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	779	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082612	SED-6 (0-2)	Solid	02/25/2010 13:45	03/03/2010 16:40

SW-846 8082

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 15:00	427541	3550B	5	03/11/2010 16:12	TLS	427698

CAS#	Parameter	Result	RDL	MDL	Units
12674-11-2	Aroclor-1016	ND	0.200	0.023	mg/kg
11104-28-2	Aroclor-1221	ND	0.200	0.060	mg/kg
11141-16-5	Aroclor-1232	ND	0.200	0.032	mg/kg
53469-21-9	Aroclor-1242	ND	0.200	0.037	mg/kg
12672-29-6	Aroclor-1248	ND	0.200	0.057	mg/kg
11097-69-1	Aroclor-1254	ND	0.200	0.083	mg/kg
11096-82-5	Aroclor-1260	ND	0.200	0.019	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
2051-24-3	Decachlorobiphenyl	.017	.019	mg/kg	113	55 - 139

LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 16:26	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	32.9J	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	49.1J	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	56.1	mg/kg	118	58 - 148

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:18	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.43	0.011	0.0030	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:04	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.62	1.60	0.22	mg/kg
7440-39-3	Barium	111	0.40	0.017	mg/kg
7440-43-9	Cadmium	1.03	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.75	0.40	0.024	mg/kg
7439-92-1	Lead	9.18	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	39.3	0.40	0.037	mg/kg



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082612	SED-6 (0-2)	Solid	02/25/2010 13:45	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	51.0	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:50	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	771	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082613	SED-7 (0-2)	Solid	02/25/2010 14:00	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 16:56	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	63.6	mg/kg	128	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:20	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.026	0.011	0.0029	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:10	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.09B	1.60	0.22	mg/kg
7440-39-3	Barium	228	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.030B	0.20	0.0083	mg/kg
7440-47-3	Chromium	2.17	0.40	0.024	mg/kg
7439-92-1	Lead	6.59	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	14.8	0.40	0.037	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	68.6	0.010	0.010	%

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082613	SED-7 (0-2)	Solid	02/25/2010 14:00	03/03/2010 16:40

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:51	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1660	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082614	<b>Client ID</b> SED-7 (2-4)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 02/25/2010 14:15	<b>Receive Date/Time</b> 03/03/2010 16:40
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SW-846 8082

<b>Prep Date</b> 03/08/2010 15:00	<b>Prep Batch</b> 427541	<b>Prep Method</b> 3550B	<b>Dilution</b> 1	<b>Analyzed</b> 03/11/2010 13:49	<b>By</b> TLS	<b>Analytical Batch</b> 427698
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CAS#	Parameter	Result	RDL	MDL	Units
12674-11-2	Aroclor-1016	ND	0.040	0.00465	mg/kg
11104-28-2	Aroclor-1221	ND	0.040	0.012	mg/kg
11141-16-5	Aroclor-1232	ND	0.040	0.00648	mg/kg
53469-21-9	Aroclor-1242	ND	0.040	0.00741	mg/kg
12672-29-6	Aroclor-1248	ND	0.040	0.011	mg/kg
11097-69-1	Aroclor-1254	ND	0.040	0.017	mg/kg
11096-82-5	Aroclor-1260	ND	0.040	0.00382	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
2051-24-3	Decachlorobiphenyl	.017	.019	mg/kg	115	55 - 139

LA1006 Hydrocarbons by Range

<b>Prep Date</b> 03/23/2010 08:00	<b>Prep Batch</b> 428320	<b>Prep Method</b> TNRCC 1006/LA 1006	<b>Dilution</b> 1	<b>Analyzed</b> 03/24/2010 18:58	<b>By</b> SMH	<b>Analytical Batch</b> 428686
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CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-11</b>	<b>Aliphatic &gt;C10-C12</b>	<b>6.41J</b>	<b>15.0</b>	<b>4.45</b>	<b>mg/kg</b>
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>60.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>247</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	31.1	mg/kg	65	60 - 140

LA1005 Hydrocarbons by Range

<b>Prep Date</b> 03/10/2010 13:00	<b>Prep Batch</b> 427527	<b>Prep Method</b> TNRCC 1005/LA 1005	<b>Dilution</b> 1	<b>Analyzed</b> 03/11/2010 17:27	<b>By</b> SMH	<b>Analytical Batch</b> 427781
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CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>294</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>93.6</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	52.7	mg/kg	111	58 - 148

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082614	SED-7 (2-4)	Solid	02/25/2010 14:15	03/03/2010 16:40

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:21	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.060	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:16	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.14	1.60	0.22	mg/kg
7440-39-3	Barium	497	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.039B	0.20	0.0083	mg/kg
7440-47-3	Chromium	2.61	0.40	0.024	mg/kg
7439-92-1	Lead	9.61	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	29.7	0.40	0.037	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	60.1	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:52	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	803	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082615	<b>Client ID</b> SED-7 (4-6)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 02/25/2010 14:25	<b>Receive Date/Time</b> 03/03/2010 16:40
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SW-846 8082

<b>Prep Date</b> 03/08/2010 15:00	<b>Prep Batch</b> 427541	<b>Prep Method</b> 3550B	<b>Dilution</b> 1	<b>Analyzed</b> 03/11/2010 14:07	<b>By</b> TLS	<b>Analytical Batch</b> 427698
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CAS#	Parameter	Result	RDL	MDL	Units
12674-11-2	Aroclor-1016	ND	0.040	0.00462	mg/kg
11104-28-2	Aroclor-1221	ND	0.040	0.012	mg/kg
11141-16-5	Aroclor-1232	ND	0.040	0.00644	mg/kg
53469-21-9	Aroclor-1242	ND	0.040	0.00736	mg/kg
12672-29-6	Aroclor-1248	ND	0.040	0.011	mg/kg
<b>11097-69-1</b>	<b>Aroclor-1254</b>	<b>0.083</b>	<b>0.040</b>	<b>0.016</b>	<b>mg/kg</b>
11096-82-5	Aroclor-1260	ND	0.040	0.00379	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
2051-24-3	Decachlorobiphenyl	.017	.019	mg/kg	117	55 - 139

LA1006 Hydrocarbons by Range

<b>Prep Date</b> 03/23/2010 08:00	<b>Prep Batch</b> 428320	<b>Prep Method</b> TNRCC 1006/LA 1006	<b>Dilution</b> 1	<b>Analyzed</b> 03/24/2010 19:55	<b>By</b> SMH	<b>Analytical Batch</b> 428686
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CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>16.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>158</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	39.5	mg/kg	80	60 - 140

LA1005 Hydrocarbons by Range

<b>Prep Date</b> 03/10/2010 13:00	<b>Prep Batch</b> 427527	<b>Prep Method</b> TNRCC 1005/LA 1005	<b>Dilution</b> 1	<b>Analyzed</b> 03/11/2010 18:55	<b>By</b> SMH	<b>Analytical Batch</b> 427781
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CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>171</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>46.0J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	53.8	mg/kg	109	58 - 148

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082615	SED-7 (4-6)	Solid	02/25/2010 14:25	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:30	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.030	0.012	0.0031	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:22	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.16B	1.59	0.22	mg/kg
7440-39-3	Barium	250	0.40	0.017	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
7440-47-3	Chromium	1.64	0.40	0.023	mg/kg
7439-92-1	Lead	6.84	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
7440-24-6	Strontium	34.9	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	71.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:53	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	785	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082616	SED-8 (0-2)	Solid	02/25/2010 14:50	03/03/2010 16:40

### SW-846 8082

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 15:00	427541	3550B	5	03/11/2010 16:48	TLS	427698

CAS#	Parameter	Result	RDL	MDL	Units
12674-11-2	Aroclor-1016	ND	0.198	0.023	mg/kg
11104-28-2	Aroclor-1221	ND	0.198	0.059	mg/kg
11141-16-5	Aroclor-1232	ND	0.198	0.032	mg/kg
53469-21-9	Aroclor-1242	ND	0.198	0.037	mg/kg
12672-29-6	Aroclor-1248	ND	0.198	0.056	mg/kg
11097-69-1	Aroclor-1254	ND	0.198	0.082	mg/kg
11096-82-5	Aroclor-1260	ND	0.198	0.019	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
2051-24-3	Decachlorobiphenyl	.017	.013	mg/kg	76	55 - 139

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 19:24	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	63.4	mg/kg	129	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:31	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.022</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:28	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.42B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>238</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>1.50</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.31</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>15.7</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082616	SED-8 (0-2)	Solid	02/25/2010 14:50	03/03/2010 16:40

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.9	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:53	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1400	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082617	SED-8 (2-4)	Solid	02/25/2010 15:00	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/24/2010 21:49	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>37.4</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>123</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	46.5	mg/kg	96	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 19:53	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>147</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>26.0J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	56	mg/kg	115	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:33	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.028</b>	<b>0.011</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:34	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.46B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>267</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>1.76</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.80</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>17.7</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082617	SED-8 (2-4)	Solid	02/25/2010 15:00	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	63.1	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 09:56	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1200	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082618	SED-9 (0-2)	Solid	02/25/2010 15:20	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 20:22	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	60.6	mg/kg	126	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:35	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.022	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:40	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.38B	1.60	0.22	mg/kg
7440-39-3	Barium	161	0.40	0.017	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	64.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	5	03/19/2010 09:57	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1410	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082619	SED-9 (2-4)	Solid	02/25/2010 15:40	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 20:51	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units	
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg	
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg	
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	60.6	mg/kg	125	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:37	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.031	0.011	0.0029	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:46	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.94	1.59	0.22	mg/kg
7440-39-3	Barium	224	0.40	0.017	mg/kg
7782-49-2	Selenium	ND	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	59.7	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 10:00	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	620	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082620	SED-10 (0-2)	Solid	02/25/2010 15:50	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 21:20	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	60.5	mg/kg	121	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427503	SW-846 7471B	1	03/09/2010 12:38	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.012	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/08/2010 16:30	427500	SW-846 3050B	1	03/09/2010 23:52	DJH	427548

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.67	1.59	0.22	mg/kg
7440-39-3	Barium	264	0.40	0.017	mg/kg
7782-49-2	Selenium	ND	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 20:47	DJH	428038

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	61.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428119	EPA 9251	2	03/19/2010 10:01	AEL	428121

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	929	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082621	SED-10 (2-4)	Solid	02/25/2010 16:00	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 21:50	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	42.8J	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	4.91J	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	65.6	mg/kg	131	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:14	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.010	0.0027	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 18:24	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.09	1.60	0.22	mg/kg
7440-39-3	Barium	234	0.40	0.017	mg/kg
7782-49-2	Selenium	0.31B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	61.2	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	5	03/19/2010 10:03	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	785	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082622	SED-11 (0-2)	Solid	02/25/2010 16:20	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 22:19	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units	
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg	
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg	
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	62.5	mg/kg	128	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:21	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.029	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 18:56	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.62	1.60	0.22	mg/kg
7440-39-3	Barium	689	0.40	0.017	mg/kg
7782-49-2	Selenium	0.38B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	65.9	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:08	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1300	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082623	SED-11 (2-4)	Solid	02/25/2010 16:30	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/24/2010 22:47	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>10.0</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>54.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	34.6	mg/kg	72	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 22:50	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>57.4</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	70.9	mg/kg	147	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:22	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.033</b>	<b>0.011</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:02	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.93</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>498</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.39B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082623	SED-11 (2-4)	Solid	02/25/2010 16:30	03/03/2010 16:40

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	63.2	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:09	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	649	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082624	SED-12 (0-2)	Solid	02/25/2010 16:45	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/11/2010 23:19	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	67.3	mg/kg	140	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:24	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.023	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:08	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.10B	1.60	0.22	mg/kg
7440-39-3	Barium	326	0.40	0.017	mg/kg
7782-49-2	Selenium	0.49B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.9	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:10	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	980	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082625	<b>Client ID</b> SED-12 (2-4)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 02/25/2010 17:00	<b>Receive Date/Time</b> 03/03/2010 16:40
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### LA1006 Hydrocarbons by Range

<b>Prep Date</b> 03/23/2010 08:00	<b>Prep Batch</b> 428320	<b>Prep Method</b> TNRCC 1006/LA 1006	<b>Dilution</b> 1	<b>Analyzed</b> 04/02/2010 04:32	<b>By</b> SMH	<b>Analytical Batch</b> 428969
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CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>47.1</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>175</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	46.4	mg/kg	96	60 - 140

### LA1005 Hydrocarbons by Range

<b>Prep Date</b> 03/10/2010 13:00	<b>Prep Batch</b> 427527	<b>Prep Method</b> TNRCC 1005/LA 1005	<b>Dilution</b> 1	<b>Analyzed</b> 03/12/2010 13:52	<b>By</b> SMH	<b>Analytical Batch</b> 427848
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CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>181</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>37.1J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	63	mg/kg	130	58 - 148

### SW-846 7471B

<b>Prep Date</b> 03/09/2010 10:25	<b>Prep Batch</b> 427504	<b>Prep Method</b> SW-846 7471B	<b>Dilution</b> 1	<b>Analyzed</b> 03/09/2010 16:26	<b>By</b> CLB	<b>Analytical Batch</b> 427539
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CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.031</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

<b>Prep Date</b> 03/09/2010 10:25	<b>Prep Batch</b> 427501	<b>Prep Method</b> SW-846 3050B	<b>Dilution</b> 1	<b>Analyzed</b> 03/10/2010 19:28	<b>By</b> CLB	<b>Analytical Batch</b> 427630
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CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.98</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>567</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.40B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082625	SED-12 (2-4)	Solid	02/25/2010 17:00	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	71.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:11	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	850	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21003082626	SED-12 (4-6)	Solid	02/25/2010 17:15	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/25/2010 00:43	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>21.3</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>125</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	70.2	mg/kg	140	60 - 140

### LA1005 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/12/2010 01:17	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>171</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>29.9J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	100	101	mg/kg	101	58 - 148

### SW-846 7471B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:30	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.028</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:34	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.26B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>477</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.38B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082626	SED-12 (4-6)	Solid	02/25/2010 17:15	03/03/2010 16:40

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.2	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:12	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	486	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082627	SED-13 (0-2)	Solid	02/26/2010 08:20	03/03/2010 16:40

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:32	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.018	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:40	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.19B	1.60	0.22	mg/kg
7440-39-3	Barium	168	0.40	0.017	mg/kg
7782-49-2	Selenium	0.44B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	73.4	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:13	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1710	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082628	SED-13 (2-4)	Solid	02/26/2010 08:30	03/03/2010 16:40

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:34	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.015	0.012	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:47	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.42B	1.60	0.22	mg/kg
7440-39-3	Barium	382	0.40	0.017	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	66.6	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:13	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1430	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082629	SED-14 (0-2)	Solid	02/26/2010 08:50	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:35	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.019	0.011	0.0031	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:53	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.00B	1.59	0.22	mg/kg
7440-39-3	Barium	287	0.40	0.017	mg/kg
7782-49-2	Selenium	0.40B	1.59	0.25	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	71.9	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:14	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1110	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082630	SED-14 (2-4)	Solid	02/26/2010 09:00	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:37	CLB	427539
CAS#	Parameter	Result	RDL	MDL	Units	
7439-97-6	Mercury	0.025	0.011	0.0031	mg/kg	

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 19:59	CLB	427630
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	1.45B	1.60	0.22	mg/kg	
7440-39-3	Barium	448	0.40	0.017	mg/kg	
7782-49-2	Selenium	0.45B	1.60	0.25	mg/kg	

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039
CAS#	Parameter	Result	RDL	MDL	Units	
WET-037	Total Moisture	63.8	0.010	0.010	%	

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:15	AEL	428128
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	846	20.0	3.16	mg/kg	

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082631	SED-15 (0-2)	Solid	02/26/2010 09:25	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	10	03/26/2010 12:47	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	158	100	32.1	mg/kg
GCSV-02-16	Aromatic >C12-C16	1840	150	65.9	mg/kg
GCSV-02-17	Aromatic >C16-C21	2170	150	71.3	mg/kg
GCSV-05-18	Aromatic >C21-C35	1970	150	71.3	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	Diluted Out	mg/kg	0*	60 - 140

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	50	03/26/2010 13:16	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	1220	750	223	mg/kg
GCSV-02-12	Aliphatic >C12-C16	9070	500	218	mg/kg
GCSV-02-31	Aliphatic >C16-C35	17400	500	218	mg/kg

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	100	03/12/2010 14:20	SMH	427848

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	45500	5000	435	mg/kg
GCSV-05-03	>C28-C35	3320J	5000	435	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	Diluted Out	mg/kg	0*	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:39	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.28	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:05	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.77	1.59	0.22	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082631	SED-15 (0-2)	Solid	02/26/2010 09:25	03/03/2010 16:40

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:05	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	819	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.20B	0.20	0.0082	mg/kg
7440-47-3	Chromium	137	0.40	0.023	mg/kg
7439-92-1	Lead	60.3	0.60	0.066	mg/kg
7782-49-2	Selenium	0.47B	1.59	0.25	mg/kg
7440-24-6	Strontium	62.7	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	53.9	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:18	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	996	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082632	SED-15 (2-4)	Solid	02/26/2010 09:35	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	10	03/26/2010 13:45	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	329	100	32.1	mg/kg
GCSV-02-16	Aromatic >C12-C16	3460	150	65.9	mg/kg
GCSV-02-17	Aromatic >C16-C21	3730	150	71.3	mg/kg
GCSV-05-18	Aromatic >C21-C35	3510	150	71.3	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	Diluted Out	mg/kg	0*	60 - 140

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	50	03/26/2010 14:15	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	2850	750	223	mg/kg
GCSV-02-12	Aliphatic >C12-C16	20600	500	218	mg/kg
GCSV-02-31	Aliphatic >C16-C35	40800	500	218	mg/kg

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	100	03/12/2010 15:21	SMH	427848

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	84600	5000	435	mg/kg
GCSV-05-03	>C28-C35	8580	5000	435	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	Diluted Out	mg/kg	0*	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:40	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.15	0.011	0.0029	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:11	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	3.24	1.60	0.22	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082632	SED-15 (2-4)	Solid	02/26/2010 09:35	03/03/2010 16:40

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:11	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-43-9	Cadmium	0.27	0.20	0.0083	mg/kg
7440-47-3	Chromium	292	0.40	0.024	mg/kg
7439-92-1	Lead	76.7	0.60	0.066	mg/kg
7782-49-2	Selenium	0.66B	1.60	0.25	mg/kg
7440-24-6	Strontium	75.4	0.40	0.037	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	2	03/11/2010 12:37	CLB	427699

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1130	0.80	0.034	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	44.5	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:19	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1080	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082633	SED-16 (0-2)	Solid	02/26/2010 09:50	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 13:00	427527	TNRCC 1005/LA 1005	1	03/12/2010 02:47	SMH	427781

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	37	mg/kg	78	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:42	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.016	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:18	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.97B	1.59	0.22	mg/kg
7440-39-3	Barium	60.0	0.40	0.017	mg/kg
7782-49-2	Selenium	0.39B	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	81.5	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:20	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1240	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082634	SED-17 (0-2)	Solid	02/26/2010 10:10	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 16:26	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	38.3	mg/kg	78	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:43	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.020	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:24	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.34B	1.60	0.22	mg/kg
7440-39-3	Barium	524	0.40	0.017	mg/kg
7782-49-2	Selenium	0.46B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	69.7	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:21	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1150	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082635	SED-17 (2-4)	Solid	02/26/2010 10:15	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 18:55	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	48.8	mg/kg	98	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:45	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.033	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:43	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.90	1.60	0.22	mg/kg
7440-39-3	Barium	838	0.40	0.017	mg/kg
7782-49-2	Selenium	0.57B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	64.0	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:22	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1040	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21003082636	SED-18 (0-2)	Solid	02/26/2010 10:20	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/25/2010 04:35	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>11.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>47.3</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	29.4	mg/kg	61	60 - 140

### LA1005 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 19:24	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>80.7</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>6.40J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	38.6	mg/kg	80	58 - 148

### SW-846 7471B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:50	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.030</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:50	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.79</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>554</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.41B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082636	SED-18 (0-2)	Solid	02/26/2010 10:20	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	74.1	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:23	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1370	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082637	SED-18 (2-4)	Solid	02/26/2010 10:30	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	04/02/2010 05:32	SMH	428969

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>19.0</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>113</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	40.7	mg/kg	82	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 19:53	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>84.5</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>13.2J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	47.7	mg/kg	96	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:51	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.034</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 20:56	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.43B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>611</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.44B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082637	SED-18 (2-4)	Solid	02/26/2010 10:30	03/03/2010 16:40

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	59.0	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:23	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	715	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082638	SED-19 (0-2)	Solid	02/26/2010 10:45	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/26/2010 14:47	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	6.51J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	92.7	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	442	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	10.4J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	30.4	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	55.1	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	33.1	mg/kg	69	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 20:22	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	758	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	153	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	47.9	mg/kg	100	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:53	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.074	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 21:02	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.73	1.59	0.22	mg/kg
7440-43-9	Cadmium	ND	0.20	0.0082	mg/kg
7440-47-3	Chromium	6.22	0.40	0.023	mg/kg
7439-92-1	Lead	13.3	0.60	0.066	mg/kg
7782-49-2	Selenium	0.32B	1.59	0.25	mg/kg
7440-24-6	Strontium	41.4	0.40	0.037	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082638	SED-19 (0-2)	Solid	02/26/2010 10:45	03/03/2010 16:40

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	5	03/11/2010 12:44	CLB	427699

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	1730	1.98	0.085	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	64.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	5	03/19/2010 10:24	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	844	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21003082639	SED-19 (2-4)	Solid	02/26/2010 10:55	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/25/2010 07:31	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	5.99J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	72.0	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	247	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	37	mg/kg	76	60 - 140

### LA1005 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 20:51	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	306	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	23.5J	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	39.5	mg/kg	81	58 - 148

### SW-846 7471B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:54	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.054	0.011	0.0031	mg/kg

### SW-846 6010B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 21:08	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.80	1.60	0.22	mg/kg
7440-39-3	Barium	860	0.40	0.017	mg/kg
7782-49-2	Selenium	0.52B	1.60	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082639	SED-19 (2-4)	Solid	02/26/2010 10:55	03/03/2010 16:40

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	59.6	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:29	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	618	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082640	SS-08 (0-2)	Solid	02/26/2010 11:20	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	04/02/2010 06:33	SMH	428969

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>11.8</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>47.0</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	34.8	mg/kg	71	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 21:20	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>65.8</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	40.5	mg/kg	83	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427504	SW-846 7471B	1	03/09/2010 16:56	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.59</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 10:25	427501	SW-846 3050B	1	03/10/2010 21:14	CLB	427630

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.85</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>376</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.063B</b>	<b>0.20</b>	<b>0.0082</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>1.79</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>12.7</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.41B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>26.9</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082640	SS-08 (0-2)	Solid	02/26/2010 11:20	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2010 19:00	DJH	428039

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	63.9	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082641	SS-08 (2-4)	Solid	02/26/2010 11:30	03/03/2010 16:40

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	20	03/10/2010 10:34	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	10.1	0.24	0.065	mg/kg

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 21:54	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.47	1.60	0.22	mg/kg
7440-39-3	Barium	379	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.13B	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.46	0.40	0.024	mg/kg
7439-92-1	Lead	9.72	0.60	0.066	mg/kg
7782-49-2	Selenium	0.55B	1.60	0.25	mg/kg
7440-24-6	Strontium	24.6	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	63.2	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082642	SS-10 (0-2)	Solid	02/26/2010 11:45	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/25/2010 10:32	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>24.3</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>61.2</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	31.7	mg/kg	65	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 21:50	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>140</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>9.23J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	39.4	mg/kg	81	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:01	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.046</b>	<b>0.010</b>	<b>0.0027</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 21:25	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.97</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>301</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.094B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>1.40</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>7.04</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.40B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>18.5</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082642	SS-10 (0-2)	Solid	02/26/2010 11:45	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	69.8	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082643	SS-10 (2-4)	Solid	02/26/2010 11:50	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/30/2010 12:44	SMH	428763

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>18.2</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>72.2</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
<b>GCSV-02-16</b>	<b>Aromatic &gt;C12-C16</b>	<b>8.72J</b>	<b>15.0</b>	<b>6.59</b>	<b>mg/kg</b>
<b>GCSV-02-17</b>	<b>Aromatic &gt;C16-C21</b>	<b>17.2</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>
<b>GCSV-05-18</b>	<b>Aromatic &gt;C21-C35</b>	<b>10.0J</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	35.5	mg/kg	75	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 22:19	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>159</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>13.9J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	40.9	mg/kg	86	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:16	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.12</b>	<b>0.011</b>	<b>0.0029</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 22:24	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.51</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>381</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.12B</b>	<b>0.20</b>	<b>0.0082</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>1.77</b>	<b>0.40</b>	<b>0.023</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>9.15</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.55B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>31.9</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082643	SS-10 (2-4)	Solid	02/26/2010 11:50	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	62.3	0.010	0.010	%

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082644	SED-20 (0-2)	Solid	02/26/2010 12:10	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 22:50	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	41.1	mg/kg	84	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:17	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 22:30	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.46B	1.60	0.22	mg/kg
7440-39-3	Barium	246	0.40	0.017	mg/kg
7782-49-2	Selenium	0.38B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	69.4	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 07:00	428127	EPA 9251	2	03/19/2010 10:30	AEL	428128

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	962	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082645	SED-20 (2-4)	Solid	02/26/2010 12:15	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/11/2010 23:19	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	42.1	mg/kg	84	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:19	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.025	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 22:36	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.93	1.59	0.22	mg/kg
7440-39-3	Barium	284	0.40	0.017	mg/kg
7782-49-2	Selenium	0.52B	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	64.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	5	03/19/2010 10:33	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	789	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082646	SED-21 (0-2)	Solid	02/26/2010 12:50	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 00:48	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	50.2	mg/kg	101	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:20	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.013	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 22:42	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.10B	1.59	0.22	mg/kg
7440-39-3	Barium	154	0.40	0.017	mg/kg
7782-49-2	Selenium	0.37B	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	68.3	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:35	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	982	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082647	SED-21 (2-4)	Solid	02/26/2010 13:00	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 01:17	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	37.6	mg/kg	79	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:22	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011B	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 22:48	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.66	1.59	0.22	mg/kg
7440-39-3	Barium	335	0.40	0.017	mg/kg
7782-49-2	Selenium	0.31B	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	64.1	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:36	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	656	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082648	SED-21 (4-6)	Solid	02/26/2010 13:10	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/26/2010 15:45	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>19.3</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>84.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	31.1	mg/kg	65	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 01:47	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>137</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>18.2J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	38.5	mg/kg	81	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:23	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.042</b>	<b>0.011</b>	<b>0.0030</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 22:54	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>2.28</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>437</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.45B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082648	SED-21 (4-6)	Solid	02/26/2010 13:10	03/03/2010 16:40

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	60.5	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:37	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	513	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082649	SED-21 (6-8)	Solid	02/26/2010 13:15	03/03/2010 16:40

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/25/2010 13:31	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>16.4</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>48.9</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	32.5	mg/kg	67	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 02:17	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>70.3</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	46.8	mg/kg	96	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:25	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.037</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:00	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.50B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>465</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.25B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082649	SED-21 (6-8)	Solid	02/26/2010 13:15	03/03/2010 16:40

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	57.4	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:40	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	549	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082650	SED-22 (0-2)	Solid	02/26/2010 13:30	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 02:47	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	40.5	mg/kg	83	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:27	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.022	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:06	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.43B	1.60	0.22	mg/kg
7440-39-3	Barium	257	0.40	0.017	mg/kg
7782-49-2	Selenium	0.48B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	68.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:41	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1710	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082651	SED-22 (2-4)	Solid	02/26/2010 13:40	03/03/2010 16:40

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 03:17	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	39.1	mg/kg	81	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:31	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.024	0.011	0.0029	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:11	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	2.17	1.60	0.22	mg/kg
7440-39-3	Barium	220	0.40	0.017	mg/kg
7782-49-2	Selenium	0.59B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	62.4	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:42	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1160	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082652	<b>Client ID</b> SED-26 (0-2)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/02/2010 13:25	<b>Receive Date/Time</b> 03/05/2010 13:10
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### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/29/2010 13:54	SMH	428763

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	31.4	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	283	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	890	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	5.04J	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	94.9	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	161	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	180	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	39.1	mg/kg	78	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	5	03/12/2010 16:23	SMH	427954

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	2350	250	21.8	mg/kg
GCSV-05-03	>C28-C35	352	250	21.8	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	52.9	mg/kg	106	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:33	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.11	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:17	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.48B	1.59	0.22	mg/kg
7440-39-3	Barium	377	0.40	0.017	mg/kg
7782-49-2	Selenium	0.29B	1.59	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082652	SED-26 (0-2)	Solid	03/02/2010 13:25	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	65.3	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:43	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	825	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082653	<b>Client ID</b> SED-26 (2-4)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/02/2010 13:35	<b>Receive Date/Time</b> 03/05/2010 13:10
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### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/30/2010 13:49	SMH	428763

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>34.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>111</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
<b>GCSV-02-16</b>	<b>Aromatic &gt;C12-C16</b>	<b>8.16J</b>	<b>15.0</b>	<b>6.59</b>	<b>mg/kg</b>
<b>GCSV-02-17</b>	<b>Aromatic &gt;C16-C21</b>	<b>15.5</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>
<b>GCSV-05-18</b>	<b>Aromatic &gt;C21-C35</b>	<b>7.72J</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	39.1	mg/kg	82	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 04:16	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>299</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>57.9</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	50	mg/kg	105	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:35	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.022</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:36	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.20B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>222</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.27B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082653	SED-26 (2-4)	Solid	03/02/2010 13:35	03/05/2010 13:10

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	77.3	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:44	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	841	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082654	SED-27 (0-2)	Solid	03/02/2010 12:45	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/23/2010 08:00	428320	TNRCC 1006/LA 1006	1	03/26/2010 16:15	SMH	428686

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>6.79J</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>76.8</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	30.3	mg/kg	63	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/10/2010 12:00	427528	TNRCC 1005/LA 1005	1	03/12/2010 04:45	SMH	427841

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>106</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>20.0J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	50.2	mg/kg	104	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:36	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.021</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:42	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.92B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>163</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.27B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082654	SED-27 (0-2)	Solid	03/02/2010 12:45	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	72.1	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:44	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1560	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082655	SED-27 (2-4)	Solid	03/02/2010 12:55	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/25/2010 18:14	SMH	428565

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>16.2</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>109</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	32.2	mg/kg	65	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/15/2010 13:00	427810	TNRCC 1005/LA 1005	1	03/16/2010 15:34	SMH	428049

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>146</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>25.0J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	45.5	mg/kg	92	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:38	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.027</b>	<b>0.012</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:48	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.25B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>330</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.40B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082655	SED-27 (2-4)	Solid	03/02/2010 12:55	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	69.7	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:45	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1420	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082656	SED-28 (0-2)	Solid	03/02/2010 14:15	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/25/2010 19:12	SMH	428565

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	6.60J	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	169	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	290	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	433	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	39.5	mg/kg	80	60 - 140

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	10	03/26/2010 12:47	SMH	428615

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	110J	150	44.5	mg/kg
GCSV-02-12	Aliphatic >C12-C16	120	100	43.5	mg/kg
GCSV-02-31	Aliphatic >C16-C35	2690	100	43.5	mg/kg

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/15/2010 13:00	427810	TNRCC 1005/LA 1005	10	03/17/2010 15:13	SMH	428093

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	5420	500	43.5	mg/kg
GCSV-05-03	>C28-C35	906	500	43.5	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	Diluted Out	mg/kg	0*	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:40	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.13	0.012	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:54	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.70B	1.59	0.22	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082656	SED-28 (0-2)	Solid	03/02/2010 14:15	03/05/2010 13:10

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/11/2010 23:54	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	104	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.048B	0.20	0.0082	mg/kg
7440-47-3	Chromium	1.40	0.40	0.023	mg/kg
7439-92-1	Lead	4.16	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
7440-24-6	Strontium	62.7	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	78.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:46	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1990	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082657	SED-28 (2-4)	Solid	03/02/2010 14:20	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/25/2010 21:07	SMH	428565

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>7.72J</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>165</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	41.6	mg/kg	83	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 16:40	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>153</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>10.5J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	41.3	mg/kg	83	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:41	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.015</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/12/2010 00:00	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.47B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>56.3</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7440-43-9	Cadmium	ND	0.20	0.0083	mg/kg
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.31B</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>1.34</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>62.1</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082657	SED-28 (2-4)	Solid	03/02/2010 14:20	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	85.1	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:47	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1710	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082658	SED-29 (0-2)	Solid	03/02/2010 15:10	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 14:15	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>53.6</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>469</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
<b>GCSV-02-17</b>	<b>Aromatic &gt;C16-C21</b>	<b>60.4</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>
<b>GCSV-05-18</b>	<b>Aromatic &gt;C21-C35</b>	<b>183</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	32.5	mg/kg	68	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	2	03/16/2010 12:38	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>1030</b>	<b>100</b>	<b>8.70</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>287</b>	<b>100</b>	<b>8.70</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	48	mg/kg	101	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:43	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.023</b>	<b>0.012</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/12/2010 00:05	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	ND	1.60	0.22	mg/kg
<b>7440-39-3</b>	<b>Barium</b>	<b>137</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.023B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>2.85</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>4.20</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>44.5</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082658	SED-29 (0-2)	Solid	03/02/2010 15:10	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	79.2	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	5	03/19/2010 11:24	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2110	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082659	SED-29 (2-4)	Solid	03/02/2010 15:15	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 17:54	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	40.7	mg/kg	81	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:44	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.012	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/12/2010 00:11	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.70B	1.60	0.22	mg/kg
7440-39-3	Barium	140	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.0084B	0.20	0.0083	mg/kg
7440-47-3	Chromium	1.45	0.40	0.024	mg/kg
7439-92-1	Lead	2.79	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
7440-24-6	Strontium	84.9	0.40	0.037	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	81.6	0.010	0.010	%

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082659	SED-29 (2-4)	Solid	03/02/2010 15:15	03/05/2010 13:10

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	5	03/19/2010 11:25	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2550	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082660	SED-30 (0-2)	Solid	03/02/2010 14:55	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 15:16	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
<b>GCSV-02-16</b>	<b>Aromatic &gt;C12-C16</b>	<b>25.6</b>	<b>15.0</b>	<b>6.59</b>	<b>mg/kg</b>
<b>GCSV-02-17</b>	<b>Aromatic &gt;C16-C21</b>	<b>100</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>
<b>GCSV-05-18</b>	<b>Aromatic &gt;C21-C35</b>	<b>215</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	30.7	mg/kg	61	60 - 140

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	2	03/30/2010 12:44	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-11</b>	<b>Aliphatic &gt;C10-C12</b>	<b>17.9J</b>	<b>30.0</b>	<b>8.90</b>	<b>mg/kg</b>
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>362</b>	<b>20.0</b>	<b>8.70</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>1350</b>	<b>20.0</b>	<b>8.70</b>	<b>mg/kg</b>

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	5	03/16/2010 13:09	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>1770</b>	<b>250</b>	<b>21.8</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>390</b>	<b>250</b>	<b>21.8</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	39.3	mg/kg	79	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427505	SW-846 7471B	1	03/09/2010 17:46	CLB	427539

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.011B</b>	<b>0.012</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/12/2010 00:17	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.50B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082660	SED-30 (0-2)	Solid	03/02/2010 14:55	03/05/2010 13:10

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 12:30	427502	SW-846 3050B	1	03/12/2010 00:17	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	119	0.40	0.017	mg/kg
7440-43-9	Cadmium	0.038B	0.20	0.0082	mg/kg
7440-47-3	Chromium	3.72	0.40	0.023	mg/kg
7439-92-1	Lead	4.50	0.60	0.066	mg/kg
7782-49-2	Selenium	ND	1.59	0.25	mg/kg
7440-24-6	Strontium	52.9	0.40	0.037	mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 08:45	DJH	428050

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	86.1	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	5	03/19/2010 11:26	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2230	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082661	SED-30 (2-4)	Solid	03/02/2010 15:00	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 16:15	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>13.7</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>59.7</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49.5	37	mg/kg	75	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 12:05	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>72.3</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>4.81J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	48.7	mg/kg	97	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:45	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.011	0.0029	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 19:29	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.71B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>84.1</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7440-43-9</b>	<b>Cadmium</b>	<b>0.010B</b>	<b>0.20</b>	<b>0.0083</b>	<b>mg/kg</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>1.05</b>	<b>0.40</b>	<b>0.024</b>	<b>mg/kg</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>1.97</b>	<b>0.60</b>	<b>0.066</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.60	0.25	mg/kg
<b>7440-24-6</b>	<b>Strontium</b>	<b>64.5</b>	<b>0.40</b>	<b>0.037</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082661	SED-30 (2-4)	Solid	03/02/2010 15:00	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	84.4	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	5	03/19/2010 11:27	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	4500	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082662	SED-31 (4-6)	Solid	03/02/2010 09:45	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 19:48	SMH	427985
CAS#	Parameter	Result	RDL	MDL	Units	
GCSV-02-20	>C10-C28	20.2J	50.0	4.35	mg/kg	
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg	
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	46.5	mg/kg	97	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:46	CLB	427616
CAS#	Parameter	Result	RDL	MDL	Units	
7439-97-6	Mercury	ND	0.012	0.0032	mg/kg	

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 19:35	CNB	427663
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	0.50B	1.59	0.22	mg/kg	
7440-39-3	Barium	51.3	0.40	0.017	mg/kg	
7782-49-2	Selenium	ND	1.59	0.25	mg/kg	

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052
CAS#	Parameter	Result	RDL	MDL	Units	
WET-037	Total Moisture	69.4	0.010	0.010	%	

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	10	03/19/2010 11:28	AEL	428132
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	2200	100	15.8	mg/kg	

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082663	SED-32 (4-6)	Solid	03/02/2010 10:10	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 20:23	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	47.9	mg/kg	98	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:38	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0050B	0.010	0.0027	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 19:00	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.51B	1.60	0.22	mg/kg
7440-39-3	Barium	37.1	0.40	0.017	mg/kg
7782-49-2	Selenium	0.35B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	84.1	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	2	03/19/2010 10:56	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	775	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082664	SED-33 (4-6)	Solid	03/02/2010 10:25	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 22:07	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	48	mg/kg	98	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:48	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	ND	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 19:41	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.56B	1.59	0.22	mg/kg
7440-39-3	Barium	35.2	0.40	0.017	mg/kg
7782-49-2	Selenium	0.32B	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	77.9	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428130	EPA 9251	5	03/19/2010 11:36	AEL	428132

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2290	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082665	SED-23 (0-2)	Solid	03/02/2010 11:50	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 17:12	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>36.3</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>400</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
<b>GCSV-02-16</b>	<b>Aromatic &gt;C12-C16</b>	<b>7.18J</b>	<b>15.0</b>	<b>6.59</b>	<b>mg/kg</b>
<b>GCSV-02-17</b>	<b>Aromatic &gt;C16-C21</b>	<b>34.0</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>
<b>GCSV-05-18</b>	<b>Aromatic &gt;C21-C35</b>	<b>65.4</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	37.8	mg/kg	78	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 22:39	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>414</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>110</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	39.6	mg/kg	82	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:53	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.025</b>	<b>0.011</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:00	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.33B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>437</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.57B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082665	SED-23 (0-2)	Solid	03/02/2010 11:50	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	64.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	5	03/19/2010 11:02	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	978	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082666	<b>Client ID</b> SED-23 (2-4)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/02/2010 12:00	<b>Receive Date/Time</b> 03/05/2010 13:10
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### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 18:09	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>71.5</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>468</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
<b>GCSV-02-17</b>	<b>Aromatic &gt;C16-C21</b>	<b>32.2</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>
<b>GCSV-05-18</b>	<b>Aromatic &gt;C21-C35</b>	<b>71.3</b>	<b>15.0</b>	<b>7.13</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	40.6	mg/kg	85	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 23:11	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>563</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>123</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	46	mg/kg	97	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:54	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.020</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:06	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.11B</b>	<b>1.60</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>429</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.54B</b>	<b>1.60</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082666	SED-23 (2-4)	Solid	03/02/2010 12:00	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	68.5	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:05	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1220	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082667	SED-24 (0-2)	Solid	03/02/2010 11:25	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/15/2010 23:43	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	46.8	mg/kg	98	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:56	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.038	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:12	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.44B	1.59	0.22	mg/kg
7440-39-3	Barium	308	0.40	0.017	mg/kg
7782-49-2	Selenium	0.60B	1.59	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	65.2	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:06	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1010	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082668	SED-24 (2-4)	Solid	03/02/2010 11:30	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 00:14	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	39.5	mg/kg	83	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:58	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.019	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:17	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.50B	1.60	0.22	mg/kg
7440-39-3	Barium	192	0.40	0.017	mg/kg
7782-49-2	Selenium	0.56B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.4	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:06	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	758	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082669	SED-25 (0-2)	Solid	03/02/2010 11:00	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 20:04	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>21.0</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>96.8</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	39.2	mg/kg	82	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 00:46	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>84.4</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>8.38J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	39.6	mg/kg	83	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 10:59	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.026</b>	<b>0.012</b>	<b>0.0032</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:23	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>1.38B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>484</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.52B</b>	<b>1.59</b>	<b>0.25</b>	<b>mg/kg</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082669	SED-25 (0-2)	Solid	03/02/2010 11:00	03/05/2010 13:10

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	66.6	0.010	0.010	%

SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:07	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1390	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082670	SED-25 (2-4)	Solid	03/02/2010 11:10	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 01:17	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	15.8J	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	54.2	mg/kg	112	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:01	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.039	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:30	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.19B	1.60	0.22	mg/kg
7440-39-3	Barium	579	0.40	0.017	mg/kg
7782-49-2	Selenium	0.36B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	67.7	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:08	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	1400	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082671	<b>Client ID</b> SED-31 (0-2)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/01/2010 09:45	<b>Receive Date/Time</b> 03/05/2010 13:10
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### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 21:01	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	9.46J	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	87.3	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	389	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	38.7	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	60.4	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	42.7	mg/kg	88	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 01:47	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	441	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	87.0	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	42.4	mg/kg	87	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:02	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.011	0.011	0.0031	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:36	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.34B	1.60	0.22	mg/kg
7440-39-3	Barium	160	0.40	0.017	mg/kg
7782-49-2	Selenium	0.26B	1.60	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082671	SED-31 (0-2)	Solid	03/01/2010 09:45	03/05/2010 13:10

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	70.6	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	5	03/19/2010 11:37	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2730	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21003082672	SED-31 (2-4)	Solid	03/01/2010 09:55	03/05/2010 13:10

### LA1006 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 21:59	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	22.3	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	98.1	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	190	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	7.95J	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	19.1	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	17.1	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	43.2	mg/kg	86	60 - 140

### LA1005 Hydrocarbons by Range

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 02:18	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	299	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	26.8J	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	50	43.9	mg/kg	88	58 - 148

### SW-846 7471B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:04	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0043B	0.011	0.0031	mg/kg

### SW-846 6010B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:42	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.77B	1.60	0.22	mg/kg
7440-39-3	Barium	79.8	0.40	0.017	mg/kg
7782-49-2	Selenium	ND	1.60	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082672	SED-31 (2-4)	Solid	03/01/2010 09:55	03/05/2010 13:10

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	79.8	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	5	03/19/2010 11:38	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	3380	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082673	<b>Client ID</b> SED-32 (0-2)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/01/2010 10:20	<b>Receive Date/Time</b> 03/05/2010 13:10
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### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 22:57	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	26.3	15.0	4.45	mg/kg
GCSV-02-12	Aliphatic >C12-C16	257	10.0	4.35	mg/kg
GCSV-02-31	Aliphatic >C16-C35	736	10.0	4.35	mg/kg
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	16.6	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	66.9	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	98.3	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	42.5	mg/kg	87	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	2	03/16/2010 14:02	SMH	428005

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	905	100	8.70	mg/kg
GCSV-05-03	>C28-C35	177	100	8.70	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	49	45.1	mg/kg	92	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:06	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.012	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:48	CNB	427663

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.62B	1.59	0.22	mg/kg
7440-39-3	Barium	133	0.40	0.017	mg/kg
7782-49-2	Selenium	0.26B	1.59	0.25	mg/kg



<b>GCAL ID</b> 21003082673	<b>Client ID</b> SED-32 (0-2)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/01/2010 10:20	<b>Receive Date/Time</b> 03/05/2010 13:10
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**SM 2540G Dry Weight**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	03/18/2010 10:45	DJH	428052

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
WET-037	Total Moisture	71.9	0.010	0.010	%

**SW-846 9251 Chloride**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:13	AEL	428135

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
16887-00-6	Chloride	1910	20.0	3.16	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082674	SED-32 (2-4)	Solid	03/01/2010 10:30	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 04:15	SMH	427985
CAS#	Parameter	Result	RDL	MDL	Units	
GCSV-02-20	>C10-C28	20.6J	50.0	4.35	mg/kg	
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg	
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.5	44.9	mg/kg	92	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:07	CLB	427616
CAS#	Parameter	Result	RDL	MDL	Units	
7439-97-6	Mercury	0.0085B	0.012	0.0031	mg/kg	

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 20:54	CNB	427663
CAS#	Parameter	Result	RDL	MDL	Units	
7440-38-2	Arsenic	0.74B	1.60	0.22	mg/kg	
7440-39-3	Barium	63.3	0.40	0.017	mg/kg	
7782-49-2	Selenium	ND	1.60	0.25	mg/kg	

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052
CAS#	Parameter	Result	RDL	MDL	Units	
WET-037	Total Moisture	85.3	0.010	0.010	%	

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	2	03/19/2010 11:14	AEL	428135
CAS#	Parameter	Result	RDL	MDL	Units	
16887-00-6	Chloride	1450	20.0	3.16	mg/kg	

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b> 21003082675	<b>Client ID</b> SED-33 (0-2)	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 03/01/2010 11:10	<b>Receive Date/Time</b> 03/05/2010 13:10
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### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/24/2010 14:00	428402	TNRCC 1006/LA 1006	1	03/26/2010 23:56	SMH	428725

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-11	Aliphatic >C10-C12	ND	15.0	4.45	mg/kg
<b>GCSV-02-12</b>	<b>Aliphatic &gt;C12-C16</b>	<b>40.9</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-02-31</b>	<b>Aliphatic &gt;C16-C35</b>	<b>93.2</b>	<b>10.0</b>	<b>4.35</b>	<b>mg/kg</b>
GCSV-02-15	Aromatic >C10-C12	ND	10.0	3.21	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	15.0	6.59	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	15.0	7.13	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	15.0	7.13	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	43.3	mg/kg	90	60 - 140

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 04:44	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
<b>GCSV-02-20</b>	<b>&gt;C10-C28</b>	<b>155</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>
<b>GCSV-05-03</b>	<b>&gt;C28-C35</b>	<b>35.3J</b>	<b>50.0</b>	<b>4.35</b>	<b>mg/kg</b>

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	48.1	51	mg/kg	106	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:12	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
<b>7439-97-6</b>	<b>Mercury</b>	<b>0.016</b>	<b>0.012</b>	<b>0.0031</b>	<b>mg/kg</b>

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 22:00	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.52B</b>	<b>1.59</b>	<b>0.22</b>	<b>mg/kg</b>
<b>7440-39-3</b>	<b>Barium</b>	<b>134</b>	<b>0.40</b>	<b>0.017</b>	<b>mg/kg</b>
7782-49-2	Selenium	ND	1.59	0.25	mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082675	SED-33 (0-2)	Solid	03/01/2010 11:10	03/05/2010 13:10

**SM 2540G Dry Weight**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	80.0	0.010	0.010	%

**SW-846 9251 Chloride**

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	10	03/19/2010 11:41	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2840	100	15.8	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21003082676	SED-33 (2-4)	Solid	03/01/2010 11:15	03/05/2010 13:10

### LA1005 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/11/2010 13:00	427662	TNRCC 1005/LA 1005	1	03/16/2010 05:12	SMH	427985

CAS#	Parameter	Result	RDL	MDL	Units
GCSV-02-20	>C10-C28	ND	50.0	4.35	mg/kg
GCSV-05-03	>C28-C35	ND	50.0	4.35	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	47.6	44.8	mg/kg	94	58 - 148

### SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427513	SW-846 7471B	1	03/10/2010 11:14	CLB	427616

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.0040B	0.012	0.0032	mg/kg

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/09/2010 14:00	427512	SW-846 3050B	1	03/11/2010 22:06	CNB	427747

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	0.85B	1.60	0.22	mg/kg
7440-39-3	Barium	68.7	0.40	0.017	mg/kg
7782-49-2	Selenium	0.26B	1.60	0.25	mg/kg

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/18/2010 10:45	DJH	428052

CAS#	Parameter	Result	RDL	MDL	Units
WET-037	Total Moisture	83.3	0.010	0.010	%

### SW-846 9251 Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/17/2010 09:00	428134	EPA 9251	5	03/19/2010 11:44	AEL	428135

CAS#	Parameter	Result	RDL	MDL	Units
16887-00-6	Chloride	2780	50.0	7.90	mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

# General Chromatography Quality Control Summary

<b>Analytical Batch</b> 427698 <b>Prep Batch</b> 427541 <b>Prep Method</b> 3550B	<b>Client ID</b> MB427541 <b>GCAL ID</b> 808697 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/08/2010 15:00 <b>Analytical Date</b> 03/10/2010 14:45 <b>Matrix</b> Solid	LCS427541 808698 LCS 03/08/2010 15:00 03/10/2010 15:06 Solid	LCSD427541 808699 LCSD 03/08/2010 15:00 03/10/2010 15:24 Solid								
<b>SW-846 8082</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b>	<b>Limit</b>
11104-28-2 Aroclor-1221	ND	0.040									
11141-16-5 Aroclor-1232	ND	0.040									
53469-21-9 Aroclor-1242	ND	0.040									
12672-29-6 Aroclor-1248	ND	0.040									
11097-69-1 Aroclor-1254	ND	0.040									
12674-11-2 Aroclor-1016	ND	0.040	0.133	0.111	84	55 - 130	0.115	87	4	31	
11096-82-5 Aroclor-1260	ND	0.040	0.133	0.118	89	49 - 130	0.119	90	0.8	36	
<b>Surrogate</b>											
2051-24-3 Decachlorobiphenyl	16.5	100	16.6	18.4	111	55 - 139	19.7	120			

<b>Analytical Batch</b> 427698 <b>Prep Batch</b> 427541 <b>Prep Method</b> 3550B	<b>Client ID</b> SAMPLE #2 <b>GCAL ID</b> 21003051202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/08/2010 15:00 <b>Analytical Date</b> 03/10/2010 16:36 <b>Matrix</b> Solid	807613MS 809796 MS 03/08/2010 15:00 03/10/2010 16:54 Solid	807613MSD 809797 MSD 03/08/2010 15:00 03/10/2010 17:12 Solid								
<b>SW-846 8082</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b>	<b>Limit</b>
12674-11-2 Aroclor-1016	0.00	0.040	0.132	0.519	392*	55 - 130	0.491	372*	6	43	
11096-82-5 Aroclor-1260	0.00	0.040	0.132	0.122	92	49 - 130	0.115	87	6	50	
<b>Surrogate</b>											
2051-24-3 Decachlorobiphenyl			16.6	16.9	102	55 - 139	15.5	94			

# General Chromatography Quality Control Summary

<b>Analytical Batch</b> 428565 <b>Prep Batch</b> 428402 <b>Prep Method</b> TNRCC 1006/LA 1006	<b>Client ID</b> MB428402 <b>GCAL ID</b> 813064 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/24/2010 14:00 <b>Analytical Date</b> 03/25/2010 15:20 <b>Matrix</b> Solid	LCS428402 813065 LCS 03/24/2010 14:00 03/25/2010 16:19 Solid	LCSD428402 813066 LCSD 03/24/2010 14:00 03/25/2010 17:17 Solid							
<b>LA1006 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-02-11 Aliphatic >C10-C12	ND	15.0								
GCSV-02-12 Aliphatic >C12-C16	ND	10.0								
GCSV-02-31 Aliphatic >C16-C35	ND	10.0								
GCSV-02-15 Aromatic >C10-C12	ND	10.0								
GCSV-02-16 Aromatic >C12-C16	ND	15.0								
GCSV-02-17 Aromatic >C16-C21	ND	15.0								
GCSV-05-18 Aromatic >C21-C35	ND	15.0								
GCSV-05-04 Total TPH (C6-C35)	ND	150	200	168	84	60 - 140	172	87	3	20
<b>Surrogate</b>										
84-15-1 o-Terphenyl	39400	80	50000	37000	74	60 - 140	43700	88		

<b>Analytical Batch</b> 428686 <b>Prep Batch</b> 428320 <b>Prep Method</b> TNRCC 1006/LA 1006	<b>Client ID</b> MB428320 <b>GCAL ID</b> 812635 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/23/2010 08:00 <b>Analytical Date</b> 03/24/2010 15:51 <b>Matrix</b> Solid	LCS428320 812636 LCS 03/23/2010 08:00 03/24/2010 17:00 Solid	LCSD428320 812637 LCSD 03/23/2010 08:00 03/24/2010 18:00 Solid							
<b>LA1006 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-02-11 Aliphatic >C10-C12	ND	15.0								
GCSV-02-12 Aliphatic >C12-C16	ND	10.0								
GCSV-02-31 Aliphatic >C16-C35	ND	10.0								
GCSV-02-15 Aromatic >C10-C12	ND	10.0								
GCSV-02-16 Aromatic >C12-C16	ND	15.0								
GCSV-02-17 Aromatic >C16-C21	ND	15.0								
GCSV-05-18 Aromatic >C21-C35	ND	15.0								
GCSV-05-04 Total TPH (C6-C35)	ND	150	196	155	79	60 - 140	156	80	1	20
<b>Surrogate</b>										
84-15-1 o-Terphenyl	32000	65	49000	35500	72	60 - 140	38300	78		

# General Chromatography Quality Control Summary

<b>Analytical Batch</b> 427781 <b>Prep Batch</b> 427527 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> MB427527 <b>GCAL ID</b> 808623 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/10/2010 13:00 <b>Analytical Date</b> 03/11/2010 12:50 <b>Matrix</b> Solid	LCS427527 808624 LCS 03/10/2010 13:00 03/11/2010 13:20 Solid	LCSD427527 808625 LCSD 03/10/2010 13:00 03/11/2010 13:51 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-02-20 >C10-C28	ND	50.0								
GCSV-05-03 >C28-C35	ND	50.0								
GCSV-05-04 Total TPH (C6-C35)	ND	50.0	194	147	75	70 - 130	162	81	10	20
<b>Surrogate</b>										
84-15-1 o-Terphenyl	52000	104	48500	50700	104	58 - 148	53500	107		

<b>Analytical Batch</b> 427781 <b>Prep Batch</b> 427527 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> SED-4 (0-2) <b>GCAL ID</b> 21003082610 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/10/2010 13:00 <b>Analytical Date</b> 03/11/2010 14:22 <b>Matrix</b> Solid	808362MS 808626 MS 03/10/2010 13:00 03/11/2010 14:53 Solid	808362MSD 808627 MSD 03/10/2010 13:00 03/11/2010 15:24 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-05-04 Total TPH (C6-C35)	0.00	50.0	192	149	77	70 - 130	157	82	6	20
<b>Surrogate</b>										
84-15-1 o-Terphenyl	53.6	107	48100	49700	103	58 - 148	51100	106		

<b>Analytical Batch</b> 427841 <b>Prep Batch</b> 427528 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> MB427528 <b>GCAL ID</b> 808628 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/10/2010 12:00 <b>Analytical Date</b> 03/11/2010 14:53 <b>Matrix</b> Solid	LCS427528 808629 LCS 03/10/2010 12:00 03/11/2010 15:24 Solid	LCSD427528 808630 LCSD 03/10/2010 12:00 03/11/2010 15:55 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-02-20 >C10-C28	ND	50.0								
GCSV-05-03 >C28-C35	ND	50.0								
GCSV-05-04 Total TPH (C6-C35)	ND	50.0	200	169	85	70 - 130	170	86	0.09	20



# General Chromatography Quality Control Summary

<b>Analytical Batch</b> 427841 <b>Prep Batch</b> 427528 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> MB427528 <b>GCAL ID</b> 808628 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/10/2010 12:00 <b>Analytical Date</b> 03/11/2010 14:53 <b>Matrix</b> Solid	LCS427528 808629 LCS 03/10/2010 12:00 03/11/2010 15:24 Solid	LCSD427528 808630 LCSD 03/10/2010 12:00 03/11/2010 15:55 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
<b>Surrogate</b> 84-15-1 o-Terphenyl	45700	92	50000	44300	89	58 - 148	45500	93		

<b>Analytical Batch</b> 427841 <b>Prep Batch</b> 427528 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> SED-17 (0-2) <b>GCAL ID</b> 21003082634 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/10/2010 12:00 <b>Analytical Date</b> 03/11/2010 16:26 <b>Matrix</b> Solid	808386MS 808631 MS 03/10/2010 12:00 03/11/2010 16:56 Solid	808386MSD 808632 MSD 03/10/2010 12:00 03/11/2010 17:27 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-05-04 Total TPH (C6-C35) <b>Surrogate</b> 84-15-1 o-Terphenyl	0.00 38.3	50.0 78	196 49000	164 44500	84 91	70 - 130 58 - 148	176 46200	88 92	7	20

<b>Analytical Batch</b> 427985 <b>Prep Batch</b> 427662 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> MB427662 <b>GCAL ID</b> 809333 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/11/2010 13:00 <b>Analytical Date</b> 03/15/2010 15:10 <b>Matrix</b> Solid	LCS427662 809334 LCS 03/11/2010 13:00 03/15/2010 15:39 Solid	LCSD427662 809335 LCSD 03/11/2010 13:00 03/15/2010 16:10 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-02-20 >C10-C28 GCSV-05-03 >C28-C35 GCSV-05-04 Total TPH (C6-C35) <b>Surrogate</b> 84-15-1 o-Terphenyl	ND ND ND 40800	50.0 50.0 50.0 82	200 50000	167 40800	84 82	70 - 130 58 - 148	171 39500	86 80	2	20

# General Chromatography Quality Control Summary

<b>Analytical Batch</b> 428049 <b>Prep Batch</b> 427810 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> MB427810 <b>GCAL ID</b> 810176 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/15/2010 13:00 <b>Analytical Date</b> 03/16/2010 14:02 <b>Matrix</b> Solid	LCS427810 810177 LCS 03/15/2010 13:00 03/16/2010 14:31 Solid	LCSD427810 810178 LCSD 03/15/2010 13:00 03/16/2010 14:59 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-02-20 >C10-C28	ND	50.0								
GCSV-05-03 >C28-C35	ND	50.0								
GCSV-05-04 Total TPH (C6-C35)	ND	50.0	200	167	83	70 - 130	153	77	9	20
<b>Surrogate</b>										
84-15-1 o-Terphenyl	52200	105	50000	51800	104	58 - 148	51100	103		

<b>Analytical Batch</b> 428049 <b>Prep Batch</b> 427810 <b>Prep Method</b> TNRCC 1005/LA 1005	<b>Client ID</b> B-73 (4-6) <b>GCAL ID</b> 21003150401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/15/2010 13:00 <b>Analytical Date</b> 03/16/2010 16:33 <b>Matrix</b> Solid	810141MS 810179 MS 03/15/2010 13:00 03/16/2010 17:04 Solid	810141MSD 810180 MSD 03/15/2010 13:00 03/16/2010 17:37 Solid							
<b>LA1005 Hydrocarbons by Range</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
GCSV-05-04 Total TPH (C6-C35)	0.00	50.0	198	155	78	70 - 130	162	83	5	20
<b>Surrogate</b>										
84-15-1 o-Terphenyl			49500	52900	107	58 - 148	52700	108		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427503 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB427503 <b>GCAL ID</b> 808431 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/08/2010 16:30 <b>Analytical Date</b> 03/09/2010 11:49 <b>Matrix</b> Solid	LCS427503 808432 LCS 03/08/2010 16:30 03/09/2010 11:51 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
7439-97-6	Mercury	ND	0.010	0.25	0.26	106 80 - 120

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427504 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB427504 <b>GCAL ID</b> 808435 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 10:25 <b>Analytical Date</b> 03/09/2010 16:11 <b>Matrix</b> Solid	LCS427504 808436 LCS 03/09/2010 10:25 03/09/2010 16:13 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
7439-97-6	Mercury	0.0059B	0.010	0.25	0.27	107 80 - 120

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427505 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB427505 <b>GCAL ID</b> 808439 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 12:30 <b>Analytical Date</b> 03/09/2010 16:57 <b>Matrix</b> Solid	LCS427505 808440 LCS 03/09/2010 12:30 03/09/2010 16:59 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
7439-97-6	Mercury	ND	0.010	0.25	0.25	102 80 - 120

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427504 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-10 (2-4) <b>GCAL ID</b> 21003082621 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 10:25 <b>Analytical Date</b> 03/09/2010 16:14 <b>Matrix</b> Solid	808373MS 808438 MS 03/09/2010 10:25 03/09/2010 16:18 Solid					
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7439-97-6	Mercury	0.025	0.010	0.25	0.23	82	75 - 125

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427505 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SS-10 (0-2) <b>GCAL ID</b> 21003082642 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 12:30 <b>Analytical Date</b> 03/09/2010 17:01 <b>Matrix</b> Solid	808394MS 808442 MS 03/09/2010 12:30 03/09/2010 17:04 Solid					
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7439-97-6	Mercury	0.046	0.010	0.25	0.32	110	75 - 125

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427503 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-2 (0-2) <b>GCAL ID</b> 21003082604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/08/2010 16:30 <b>Analytical Date</b> 03/09/2010 11:52 <b>Matrix</b> Solid	808356MS 808444 MS 03/08/2010 16:30 03/09/2010 11:55 Solid					
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7439-97-6	Mercury	0.014	0.010	0.25	0.26	100	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427504 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-10 (2-4) <b>GCAL ID</b> 21003082621 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 10:25 <b>Analytical Date</b> 03/09/2010 16:14 <b>Matrix</b> Solid	808373DUP 808437 DUP 03/09/2010 10:25 03/09/2010 16:16 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6	Mercury	0.02541	0.010	0.042	50* 20

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427505 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SS-10 (0-2) <b>GCAL ID</b> 21003082642 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 12:30 <b>Analytical Date</b> 03/09/2010 17:01 <b>Matrix</b> Solid	808394DUP 808441 DUP 03/09/2010 12:30 03/09/2010 17:02 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6	Mercury	0.04568	0.010	0.051	12 20

<b>Analytical Batch</b> 427539 <b>Prep Batch</b> 427503 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-2 (0-2) <b>GCAL ID</b> 21003082604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/08/2010 16:30 <b>Analytical Date</b> 03/09/2010 11:52 <b>Matrix</b> Solid	808356DUP 808443 DUP 03/08/2010 16:30 03/09/2010 11:54 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6	Mercury	0.01362	0.010	0.016	17 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427616 <b>Prep Batch</b> 427513 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB427513 <b>GCAL ID</b> 808557 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 14:00 <b>Analytical Date</b> 03/10/2010 10:35 <b>Matrix</b> Solid	LCS427513 808558 LCS 03/09/2010 14:00 03/10/2010 10:37 Solid				
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7439-97-6	Mercury	ND	0.010	0.25	0.27	108 80 - 120

<b>Analytical Batch</b> 427616 <b>Prep Batch</b> 427513 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-32 (4-6) <b>GCAL ID</b> 21003082663 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 14:00 <b>Analytical Date</b> 03/10/2010 10:38 <b>Matrix</b> Solid	808456MS 808560 MS 03/09/2010 14:00 03/10/2010 10:41 Solid				
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7439-97-6	Mercury	0.0050	0.010	0.25	0.23	90 75 - 125

<b>Analytical Batch</b> 427616 <b>Prep Batch</b> 427513 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> SED-32 (4-6) <b>GCAL ID</b> 21003082663 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 14:00 <b>Analytical Date</b> 03/10/2010 10:38 <b>Matrix</b> Solid	808456DUP 808559 DUP 03/09/2010 14:00 03/10/2010 10:40 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7439-97-6	Mercury	0.00504	0.010	0.0	200* 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427548 <b>Prep Batch</b> 427500 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MB427500 <b>GCAL ID</b> 808419 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/08/2010 16:30 <b>Analytical Date</b> 03/09/2010 20:37 <b>Matrix</b> Solid	<b>LCS427500</b> 808420 LCS 03/08/2010 16:30 03/09/2010 20:43 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	ND	1.60	20.0	17.9	89	80 - 120
7440-39-3	Barium	ND	0.40	20.0	18.4	92	80 - 120
7440-43-9	Cadmium	ND	0.20	20.0	17.4	87	80 - 120
7440-47-3	Chromium	ND	0.40	20.0	18.5	93	80 - 120
7439-92-1	Lead	ND	0.60	20.0	18.2	91	80 - 120
7782-49-2	Selenium	ND	1.60	20.0	17.5	88	80 - 120
7440-24-6	Strontium	ND	0.40	20.0	18.8	94	80 - 120

<b>Analytical Batch</b> 427548 <b>Prep Batch</b> 427500 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-2 (0-2) <b>GCAL ID</b> 21003082604 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/08/2010 16:30 <b>Analytical Date</b> 03/09/2010 20:51 <b>Matrix</b> Solid	<b>808356MS</b> 808422 MS 03/08/2010 16:30 03/09/2010 21:02 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	1.19	1.60	20.0	18.6	87	75 - 125
7440-39-3	Barium	76.8	0.40	20.0	90.0	66*	75 - 125
7440-43-9	Cadmium	0.29	0.20	20.0	17.3	85	75 - 125
7440-47-3	Chromium	2.01	0.40	20.0	21.5	97	75 - 125
7439-92-1	Lead	6.03	0.60	20.0	22.5	82	75 - 125
7782-49-2	Selenium	0.0	1.60	20.0	17.1	85	75 - 125
7440-24-6	Strontium	12.6	0.40	20.0	30.8	91	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427548	<b>Client ID</b> SED-2 (0-2)	808356DUP				
<b>Prep Batch</b> 427500	<b>GCAL ID</b> 21003082604	808421				
<b>Prep Method</b> SW-846 3050B	<b>Sample Type</b> SAMPLE	DUP				
	<b>Prep Date</b> 03/08/2010 16:30	03/08/2010 16:30				
	<b>Analytical Date</b> 03/09/2010 20:51	03/09/2010 20:56				
	<b>Matrix</b> Solid	Solid				
<b>SW-846 6010B</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-38-2	Arsenic	1.18767	1.60	1.23	3	20
7440-39-3	Barium	76.75741	0.40	75.6	2	20
7440-43-9	Cadmium	0.28759	0.20	0.089	106*	20
7440-47-3	Chromium	2.00543	0.40	1.90	5	20
7439-92-1	Lead	6.02713	0.60	5.77	4	20
7782-49-2	Selenium	0.0	1.60	0.0	0	20
7440-24-6	Strontium	12.62052	0.40	12.3	2	20

<b>Analytical Batch</b> 427630	<b>Client ID</b> MB427501	LCS427501					
<b>Prep Batch</b> 427501	<b>GCAL ID</b> 808423	808424					
<b>Prep Method</b> SW-846 3050B	<b>Sample Type</b> Method Blank	LCS					
	<b>Prep Date</b> 03/09/2010 10:25	03/09/2010 10:25					
	<b>Analytical Date</b> 03/10/2010 18:10	03/10/2010 18:17					
	<b>Matrix</b> Solid	Solid					
<b>SW-846 6010B</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-38-2	Arsenic	ND	1.60	20.0	20.1	100	80 - 120
7440-39-3	Barium	0.053B	0.40	20.0	19.7	99	80 - 120
7440-43-9	Cadmium	0.013B	0.20	20.0	19.2	96	80 - 120
7440-47-3	Chromium	0.042B	0.40	20.0	19.7	99	80 - 120
7439-92-1	Lead	ND	0.60	20.0	19.7	99	80 - 120
7782-49-2	Selenium	ND	1.60	20.0	18.7	94	80 - 120
7440-24-6	Strontium	ND	0.40	20.0	19.5	97	80 - 120



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427630 <b>Prep Batch</b> 427501 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-10 (2-4) <b>GCAL ID</b> 21003082621 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 10:25 <b>Analytical Date</b> 03/10/2010 18:24 <b>Matrix</b> Solid	808373MS 808426 MS 03/09/2010 10:25 03/10/2010 18:37 Solid					
<b>SW-846 6010B</b>		<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-38-2	Arsenic	2.09	1.60	20.0	20.4	92	75 - 125
7440-39-3	Barium	234	0.40	20.0	280	226*	75 - 125
7440-43-9	Cadmium	0.0	0.20	20.0	18.1	90	75 - 125
7440-47-3	Chromium	2.25	0.40	20.0	22.7	102	75 - 125
7439-92-1	Lead	8.09	0.60	20.0	26.0	90	75 - 125
7782-49-2	Selenium	0.31	1.60	20.0	18.5	91	75 - 125
7440-24-6	Strontium	18.0	0.40	20.0	40.1	111	75 - 125

<b>Analytical Batch</b> 427630 <b>Prep Batch</b> 427501 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-10 (2-4) <b>GCAL ID</b> 21003082621 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 10:25 <b>Analytical Date</b> 03/10/2010 18:24 <b>Matrix</b> Solid	808373DUP 808425 DUP 03/09/2010 10:25 03/10/2010 18:30 Solid				
<b>SW-846 6010B</b>		<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-38-2	Arsenic	2.0948	1.60	1.55	30*	20
7440-39-3	Barium	234.39635	0.40	202	15	20
7440-43-9	Cadmium	0.0	0.20	0.0	0	20
7440-47-3	Chromium	2.25166	0.40	2.40	6	20
7439-92-1	Lead	8.08652	0.60	7.82	3	20
7782-49-2	Selenium	0.31129	1.60	0.35	12	20
7440-24-6	Strontium	17.96992	0.40	16.3	10	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427512 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> MB427512 <b>GCAL ID</b> 808553 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/09/2010 14:00 <b>Analytical Date</b> 03/11/2010 18:47 <b>Matrix</b> Solid	<b>LCS427512</b> 808554 LCS 03/09/2010 14:00 03/11/2010 18:54 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	ND	1.60	20.0	19.8	99	80 - 120
7440-39-3	Barium	0.025B	0.40	20.0	20.5	102	80 - 120
7440-43-9	Cadmium	ND	0.20	20.0	19.9	99	80 - 120
7440-47-3	Chromium	ND	0.40	20.0	20.6	103	80 - 120
7439-92-1	Lead	ND	0.60	20.0	19.9	99	80 - 120
7782-49-2	Selenium	ND	1.60	20.0	19.4	97	80 - 120
7440-24-6	Strontium	ND	0.40	20.0	19.6	98	80 - 120

<b>Analytical Batch</b> 427663 <b>Prep Batch</b> 427512 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SED-32 (4-6) <b>GCAL ID</b> 21003082663 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 14:00 <b>Analytical Date</b> 03/11/2010 19:00 <b>Matrix</b> Solid	<b>808456MS</b> 808556 MS 03/09/2010 14:00 03/11/2010 19:12 Solid					
<b>SW-846 6010B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-38-2	Arsenic	0.51	1.60	20.0	20.1	98	75 - 125
7440-39-3	Barium	37.1	0.40	20.0	59.8	113	75 - 125
7440-43-9	Cadmium	0.016	0.20	20.0	19.3	96	75 - 125
7440-47-3	Chromium	1.13	0.40	20.0	22.1	105	75 - 125
7439-92-1	Lead	2.43	0.60	20.0	21.5	95	75 - 125
7782-49-2	Selenium	0.35	1.60	20.0	20.0	98	75 - 125
7440-24-6	Strontium	19.2	0.40	20.0	39.1	99	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427663	<b>Client ID</b> SED-32 (4-6)	808456DUP				
<b>Prep Batch</b> 427512	<b>GCAL ID</b> 21003082663	808555				
<b>Prep Method</b> SW-846 3050B	<b>Sample Type</b> SAMPLE	DUP				
	<b>Prep Date</b> 03/09/2010 14:00	03/09/2010 14:00				
	<b>Analytical Date</b> 03/11/2010 19:00	03/11/2010 19:06				
	<b>Matrix</b> Solid	Solid				
<b>SW-846 6010B</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-38-2	Arsenic	0.51187	1.60	0.41	22*	20
7440-39-3	Barium	37.1288	0.40	40.3	8	20
7440-43-9	Cadmium	0.0156	0.20	0.012	23*	20
7440-47-3	Chromium	1.1304	0.40	1.26	11	20
7439-92-1	Lead	2.43441	0.60	2.82	15	20
7782-49-2	Selenium	0.34925	1.60	0.0	200*	20
7440-24-6	Strontium	19.18513	0.40	21.0	9	20

<b>Analytical Batch</b> 427747	<b>Client ID</b> MB427502	LCS427502					
<b>Prep Batch</b> 427502	<b>GCAL ID</b> 808427	808428					
<b>Prep Method</b> SW-846 3050B	<b>Sample Type</b> Method Blank	LCS					
	<b>Prep Date</b> 03/09/2010 12:30	03/09/2010 12:30					
	<b>Analytical Date</b> 03/11/2010 21:12	03/11/2010 21:19					
	<b>Matrix</b> Solid	Solid					
<b>SW-846 6010B</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-38-2	Arsenic	ND	1.60	20.0	19.1	95	80 - 120
7440-39-3	Barium	ND	0.40	20.0	19.9	99	80 - 120
7440-43-9	Cadmium	ND	0.20	20.0	19.1	96	80 - 120
7440-47-3	Chromium	ND	0.40	20.0	20.0	100	80 - 120
7439-92-1	Lead	ND	0.60	20.0	19.3	97	80 - 120
7782-49-2	Selenium	ND	1.60	20.0	18.9	94	80 - 120
7440-24-6	Strontium	ND	0.40	20.0	19.5	98	80 - 120

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 427747 <b>Prep Batch</b> 427502 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SS-10 (0-2) <b>GCAL ID</b> 21003082642 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 12:30 <b>Analytical Date</b> 03/11/2010 21:25 <b>Matrix</b> Solid	808394MS 808430 MS 03/09/2010 12:30 03/11/2010 21:37 Solid					
<b>SW-846 6010B</b>		<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-38-2	Arsenic	1.97	1.60	20.0	20.5	93	75 - 125
7440-39-3	Barium	301	0.40	20.0	348	236*	75 - 125
7440-43-9	Cadmium	0.094	0.20	20.0	17.9	89	75 - 125
7440-47-3	Chromium	1.40	0.40	20.0	21.1	99	75 - 125
7439-92-1	Lead	7.04	0.60	20.0	25.0	90	75 - 125
7782-49-2	Selenium	0.40	1.60	20.0	18.0	88	75 - 125
7440-24-6	Strontium	18.5	0.40	20.0	37.4	94	75 - 125

<b>Analytical Batch</b> 427747 <b>Prep Batch</b> 427502 <b>Prep Method</b> SW-846 3050B	<b>Client ID</b> SS-10 (0-2) <b>GCAL ID</b> 21003082642 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/09/2010 12:30 <b>Analytical Date</b> 03/11/2010 21:25 <b>Matrix</b> Solid	808394DUP 808429 DUP 03/09/2010 12:30 03/11/2010 21:31 Solid				
<b>SW-846 6010B</b>		<b>Units</b> mg/kg <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-38-2	Arsenic	1.96975	1.60	3.43	54*	20
7440-39-3	Barium	300.7338	0.40	322	7	20
7440-43-9	Cadmium	0.09403	0.20	0.11	15	20
7440-47-3	Chromium	1.40012	0.40	1.57	11	20
7439-92-1	Lead	7.03857	0.60	8.35	17	20
7782-49-2	Selenium	0.39678	1.60	0.55	32*	20
7440-24-6	Strontium	18.52252	0.40	18.8	2	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 428038 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SED-1 (0-2) 21003082601 SAMPLE 03/17/2010 20:47 Solid	808353DUP 811262 DUP 03/17/2010 20:47 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	78.61	0.010	78.3	0.42	25

<b>Analytical Batch</b> 428039 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SED-10 (2-4) 21003082621 SAMPLE 03/17/2010 19:00 Solid	808373DUP 811266 DUP 03/17/2010 19:00 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	61.22	0.010	60.9	0.52	25

<b>Analytical Batch</b> 428050 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SS-08 (2-4) 21003082641 SAMPLE 03/18/2010 08:45 Solid	808393DUP 811328 DUP 03/18/2010 08:45 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	63.19	0.010	64.2	1.6	25

<b>Analytical Batch</b> 428052 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SED-30 (2-4) 21003082661 SAMPLE 03/18/2010 10:45 Solid	808454DUP 811330 DUP 03/18/2010 10:45 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	84.37	0.010	81.0	4.1	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 428121 <b>Prep Batch</b> 428119 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB428119 <b>GCAL ID</b> 811624 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 09:34 <b>Matrix</b> Solid	LCS428119 811625 LCS 03/17/2010 09:00 03/19/2010 09:35 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> Result <b>% R</b> Control Limits % R
16887-00-6 Chloride	ND 10.0	600 587 98 80 - 120

<b>Analytical Batch</b> 428121 <b>Prep Batch</b> 428119 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-1 (0-2) <b>GCAL ID</b> 21003082601 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 09:36 <b>Matrix</b> Solid	808353MS 811626 MS 03/17/2010 09:00 03/19/2010 09:37 Solid	808353MSD 811627 MSD 03/17/2010 09:00 03/19/2010 09:38 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> Result <b>% R</b> Control Limits % R	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	1630 50.0	3000 4580 99 75 - 125	4560 98 0.5 25

<b>Analytical Batch</b> 428121 <b>Prep Batch</b> 428119 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-9 (0-2) <b>GCAL ID</b> 21003082618 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 09:57 <b>Matrix</b> Solid	808370MS 811628 MS 03/17/2010 09:00 03/19/2010 09:58 Solid	808370MSD 811629 MSD 03/17/2010 09:00 03/19/2010 09:59 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> Result <b>% R</b> Control Limits % R	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	1410 50.0	3000 4460 102 75 - 125	4450 101 0.3 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 428128 <b>Prep Batch</b> 428127 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB428127 <b>GCAL ID</b> 811643 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/17/2010 07:00 <b>Analytical Date</b> 03/19/2010 10:02 <b>Matrix</b> Solid	LCS428127 811644 LCS 03/17/2010 07:00 03/19/2010 10:03 Solid				
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6 Chloride	ND	10.0	600	586	98	80 - 120

<b>Analytical Batch</b> 428128 <b>Prep Batch</b> 428127 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-10 (2-4) <b>GCAL ID</b> 21003082621 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 07:00 <b>Analytical Date</b> 03/19/2010 10:03 <b>Matrix</b> Solid	808373MS 811645 MS 03/17/2010 07:00 03/19/2010 10:04 Solid	808373MSD 811646 MSD 03/17/2010 07:00 03/19/2010 10:07 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	785	50.0	3000	3730	98	75 - 125	3770	100	1	25

<b>Analytical Batch</b> 428128 <b>Prep Batch</b> 428127 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-19 (0-2) <b>GCAL ID</b> 21003082638 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 07:00 <b>Analytical Date</b> 03/19/2010 10:24 <b>Matrix</b> Solid	808390MS 811647 MS 03/17/2010 07:00 03/19/2010 10:25 Solid	808390MSD 811648 MSD 03/17/2010 07:00 03/19/2010 10:26 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	844	50.0	3000	3970	104	75 - 125	3920	102	1	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 428132 <b>Prep Batch</b> 428130 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB428130 <b>GCAL ID</b> 811654 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 10:31 <b>Matrix</b> Solid	LCS428130 811655 LCS 03/17/2010 09:00 03/19/2010 10:32 Solid				
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
16887-00-6 Chloride	1.71B	10.0	600	620	103	80 - 120

<b>Analytical Batch</b> 428132 <b>Prep Batch</b> 428130 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-20 (2-4) <b>GCAL ID</b> 21003082645 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 10:33 <b>Matrix</b> Solid	808397MS 811656 MS 03/17/2010 09:00 03/19/2010 10:34 Solid	808397MSD 811657 MSD 03/17/2010 09:00 03/19/2010 10:34 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	789	50.0	3000	4040	108	75 - 125	4030	108	0.3	25

<b>Analytical Batch</b> 428132 <b>Prep Batch</b> 428130 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-31 (4-6) <b>GCAL ID</b> 21003082662 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 11:28 <b>Matrix</b> Solid	808455MS 811658 MS 03/17/2010 09:00 03/19/2010 11:34 Solid	808455MSD 811659 MSD 03/17/2010 09:00 03/19/2010 11:35 Solid							
<b>SW-846 9251 Chloride</b>	<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
16887-00-6 Chloride	2200	100	6000	8100	98	75 - 125	8160	99	0.8	25



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 428135 <b>Prep Batch</b> 428134 <b>Prep Method</b> EPA 9251	<b>Client ID</b> MB428134 <b>GCAL ID</b> 811668 <b>Sample Type</b> Method Blank <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 10:58 <b>Matrix</b> Solid	LCS428134 811669 LCS 03/17/2010 09:00 03/19/2010 10:59 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> 600 <b>Result</b> 604 <b>% R</b> 101 <b>Control Limits % R</b> 80 - 120
16887-00-6 Chloride	ND 10.0	600 604 101 80 - 120

<b>Analytical Batch</b> 428135 <b>Prep Batch</b> 428134 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-23 (0-2) <b>GCAL ID</b> 21003082665 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 11:02 <b>Matrix</b> Solid	808461MS 811670 MS 03/17/2010 09:00 03/19/2010 11:03 Solid	808461MSD 811671 MSD 03/17/2010 09:00 03/19/2010 11:04 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> 3000 <b>Result</b> 4080 <b>% R</b> 103 <b>Control Limits % R</b> 75 - 125	<b>Result</b> 4090 <b>% R</b> 104 <b>RPD</b> 0.4 <b>RPD Limit</b> 25
16887-00-6 Chloride	978 50.0	3000 4080 103 75 - 125	4090 104 0.4 25

<b>Analytical Batch</b> 428135 <b>Prep Batch</b> 428134 <b>Prep Method</b> EPA 9251	<b>Client ID</b> SED-33 (0-2) <b>GCAL ID</b> 21003082675 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 03/17/2010 09:00 <b>Analytical Date</b> 03/19/2010 11:41 <b>Matrix</b> Solid	808471MS 811672 MS 03/17/2010 09:00 03/19/2010 11:42 Solid	808471MSD 811673 MSD 03/17/2010 09:00 03/19/2010 11:43 Solid
<b>SW-846 9251 Chloride</b>	<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike Added</b> 6000 <b>Result</b> 8740 <b>% R</b> 98 <b>Control Limits % R</b> 75 - 125	<b>Result</b> 8690 <b>% R</b> 98 <b>RPD</b> 0.5 <b>RPD Limit</b> 25
16887-00-6 Chloride	2840 100	6000 8740 98 75 - 125	8690 98 0.5 25

## CHAIN OF CUSTODY RECORD

Lab use only

Client Name Pisani Client # 4271 Workorder # 210030826 Due Date \_\_\_\_\_

**Report to:**

Client: MICHAEL PISANI  
Address: 1100 POYDRAS ST #300  
N.O., LA. 70163  
Contact: JONATHAN MILLER  
Phone: 504.582.2468  
Fax: 504.582.2470

**Bill to:**

Client: \_\_\_\_\_  
Address: SAME  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

**Analytical Requests & Method**

%Moisture  
Total Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Hg)  
Chloride  
TPH D/0 - TX 1005 \*  
PCBs  
TPH D/0 - TX 1006

**Lab use only:**

Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 1.8

P.O. Number \_\_\_\_\_ Project Name/Number EAST WHITE LAKE 07-47

Sampled By: PATRICK RITCHIE

Matrix <sup>1</sup>	Date	Time (2400)	Depth	Sample Description	Preservatives	No Containers	%Moisture	Total Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Hg)	Chloride	TPH D/0 - TX 1005 *	PCBs	TPH D/0 - TX 1006	Remarks:	Lab ID
S	07/25/10	1025	1030	SED. 1 (0-2')	ICE	2	✓	✓	✓				<del>*</del>	1
			1030	SED. 1 (2-4')			✓	✓	✓				CALL	2
			1040	SED. 1 (4-6')			✓	✓	✓				JONATHAN	3
			1100	SED. 2 (0-2')			✓	✓	✓				MILLER FOR	4
			1115	SED. 2 (2-4')			✓	✓	✓				LIST OF	5
			1135	SED. 2 (4-6')			✓	✓	✓				PARAMETERS	6
			1145	SED. 3 (0-2')			✓	✓	✓				<del>*</del>	7
			1200	SED. 3 (2-4')			✓	✓	✓				E	8
			1215	SED. 3 (4-6')			✓	✓	✓					9
			1315	SED. 4 (0-2')			✓	✓	✓	✓	✓			10

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>B. Ritchie</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>3-3-10</u>	Time: <u>1640</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: \* Run TX1006 if TX1005 exceeds RECAP.  
Soils will be reported on a wet wt. basis.

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.



GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

Lab use only

Client Name: Pisani Client #: 4271 Workorder #: 210030826 Due Date: \_\_\_\_\_

**Report to:**  
Client: Michael Pisani  
Address: 1100 POYDRAS ST, 3rd fl.  
N.O., LA 70163  
Contact: JONATHAN MILLER  
Phone: 504-582-3468  
Fax: 504-582-3470

**Bill to:**  
Client: \_\_\_\_\_  
Address: SAME  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

P.O. Number: \_\_\_\_\_ Project Name/Number: EAST WHITE LAKE 07-47

Sampled By: PATRICK RITCHIE

Matrix <sup>1</sup>	Date	Time (2400)	Container	Grab	Sample Description	Preservatives	No Containers	% Moisture	T. Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Hg)	Chloride	TPH D10 - TX1005 *	T. Metals (As, Ba, Se, Hg)	PCBs	TPH D10 - TX1006	Remarks:	Lab ID
S	3/5/10	1330	✓	✓	SED. 5 (0-2')	ICE	2	✓	✓	✓	✓	✓	✓	✓	CALL	11
		1345			SED. 6 (0-2')			✓	✓	✓	✓	✓	✓	✓	JONATHAN	12
		1400			SED. 7 (0-2')			✓	✓	✓	✓	✓	✓	✓	MILLER FOR	13
		1415			SED. 7 (2-4')			✓	✓	✓	✓	✓	✓	✓	LIST OF	14
		1435			SED. 7 (4-6')			✓	✓	✓	✓	✓	✓	✓	PARAMETERS	15
		1450			SED. 8 (0-2')			✓	✓	✓	✓	✓	✓	✓		16
		1500			SED. 8 (2-4')			✓	✓	✓	✓	✓	✓	✓		17
					<del>SED. 8 (4-6')</del> (MB)			✓	✓	✓	✓	✓	✓	✓		
		1520			SED. 9 (0-2')			✓	✓	✓	✓	✓	✓	✓		18
		1540			SED. 9 (2-4')			✓	✓	✓	✓	✓	✓	✓		19
		1550			SED. 10 (0-2')			✓	✓	✓	✓	✓	✓	✓		20

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>3-3-10</u>	Time: <u>1640</u>	Note: <u>* Run TX1006 if TX1005 exceeds RECAP.</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT



GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

Lab use only

Client Name: P. Sami Client #: 9271 Workorder #: 210030826 Due Date: \_\_\_\_\_

**Report to:**  
Client: MICHAEL PISANI  
Address: 1100 FOYORAS #1430  
N.O., LA. 70163  
Contact: JONATHAN MILLER  
Phone: 504-582-2468  
Fax: 504-582-2470

**Bill to:**  
Client: \_\_\_\_\_  
Address: SAME  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

**Analytical Requests & Method**  
% Moisture  
T. Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Hg)  
Chloride  
TPH D/O - TX1005 \*  
T. Metals (As, Ba, Se, Hg)  
TPH D/O - TX1006

**Lab use only:**  
Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 1.8

P.O. Number: \_\_\_\_\_ Project Name/Number: EAST WHITE LAKE 07-47

Sampled By: PATRICK RITCHIE

Matrix <sup>1</sup>	Date	Time (2400)	C	G	Sample Description	Preservatives	No Containers	% Moisture	T. Metals (As, Ba, Cd, Cr, Pb, Se, Sr, Hg)	Chloride	TPH D/O - TX1005 *	T. Metals (As, Ba, Se, Hg)	TPH D/O - TX1006	Remarks:	Lab ID
S	2/25/10	1600	*		SED-10 (2-4') ✓	ICE	2	✓	✓	✓	✓	✓	✓	CALL	21
		1620			SED-11 (0-2') ✓			✓	✓	✓	✓	✓	✓	JONATHAN	22
		1630			SED-11 (2-4') ✓			✓	✓	✓	✓	✓	✓	MILLER FOR	23
		1645			SED-12 (0-2') ✓			✓	✓	✓	✓	✓	✓	LIST OF PARAMETERS	24
		1700			SED-12 (2-4') ✓			✓	✓	✓	✓	✓	✓		25
		1715			SED-12 (4-6') ✓			✓	✓	✓	✓	✓	✓		26
	2/26/10	0820			SED-13 (0-2') ✓			✓	✓	✓	✓	✓	✓		27
		0830			SED-13 (2-4') ✓			✓	✓	✓	✓	✓	✓		28
		0850			SED-14 (0-2') ✓			✓	✓	✓	✓	✓	✓		29
		0906			SED-14 (2-4') ✓			✓	✓	✓	✓	✓	✓		30

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>ML</u>	Date: <u>3-3-10</u>	Time: <u>1648</u>	Note: <u>* Run TX1006 if TX1005 exceeds RECAP.</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.



GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

Lab use only

Client Name: P. Sani Client #: 4271 Workorder #: 210030826 Due Date: \_\_\_\_\_

**Report to:**  
Client: MICHAEL PISANI  
Address: 1100 POYDRAS ST 1430  
N.O., LA. 70163  
Contact: JONATHAN MILLER  
Phone: 504-582-2468  
Fax: 504-582-2470

**Bill to:**  
Client: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact: SAME  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

**Analytical Requests & Method**

% Moisture  
T. Metals (As, Ba, Cd, Cr, Pb, Se, S, Hg)  
Chloride  
TPH D/O - TX1005\*  
T. Metals (As, Ba, Se, Hg)  
TPH D/O - TX1006

**Lab use only:**  
Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 1.8

P.O. Number \_\_\_\_\_ Project Name/Number EAST WHITE LAKE 07-47

Sampled By: PATRICK RIZCHIE

Matrix <sup>1</sup>	Date	Time (2400)	C	P	G	S	Sample Description	Preservatives	No Containers	% Moisture	T. Metals (As, Ba, Cd, Cr, Pb, Se, S, Hg)	Chloride	TPH D/O - TX1005*	T. Metals (As, Ba, Se, Hg)	TPH D/O - TX1006	Remarks:	Lab ID
S	02/16/09	0935					SED-15 (0-2')	ICE	2	✓	✓	✓	✓	✓	✓	* CALL	31
		0958					SED-15 (2-4')			✓	✓	✓	✓	✓	✓	JONATHAN MILLER FOR	32
		1010					SED-16 (0-2')			✓	✓	✓	✓	✓	✓	MILLER FOR	33
		1015					SED-17 (0-2')			✓	✓	✓	✓	✓	✓	LIST OF	34
		1020					SED-17 (2-4')			✓	✓	✓	✓	✓	✓	PARAMETERS *35	35
		1030					SED-18 (0-2')			✓	✓	✓	✓	✓	✓		36
		1045					SED-18 (2-4')			✓	✓	✓	✓	✓	✓		37
		1055					SED-19 (0-2')			✓	✓	✓	✓	✓	✓		38
		1120					SED-19 (2-4')			✓	✓	✓	✓	✓	✓		39
		1130					SS-08 (0-2')			✓	✓	✓	✓	✓	✓		40
		1130					SS-08 (2-4')			✓	✓	✓	✓	✓	✓		41

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <u>B. Bluh</u>	Received by: (Signature) <u>M</u>	Date: <u>3-3-10</u>	Time: <u>1640</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: \*Run TX1006 if TX1005 exceeds RECAP.

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT



## CHAIN OF CUSTODY RECORD

Lab use only

Client Name: Pisani Client #: 4271 Workorder #: 210030826 Due Date: \_\_\_\_\_

**Report to:**  
Client: Michael Pisani  
Address: 1100 POYARAS ST 1430  
N.O., LA 70103  
Contact: JONATHAN MILLER  
Phone: 504.582.2468  
Fax: 504.582.2470

**Bill to:**  
Client: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact: SAME  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

**Analytical Requests & Method**

% Moisture  
T. Metals (As, Ba, Cd, Cr, Pb, Se, Sn)  
Chloride  
TPH D/O - TX1005\*  
T. Metals (As, Ba, Se, Hg)  
TPH D/O - TX1006

**Lab use only:**  
Custody Seal  
used  yes  no  
in tact  yes  no  
Temperature °C 1.8

P.O. Number: \_\_\_\_\_ Project Name/Number: EAST WHITE LAKE 07-47

Sampled By: PATRICK RITCHIE

Matrix <sup>1</sup>	Date	Time (2400)	C O C P	G T A B	Sample Description	Preservatives	No Containers	% Moisture	T. Metals (As, Ba, Cd, Cr, Pb, Se, Sn)	Chloride	TPH D/O - TX1005*	T. Metals (As, Ba, Se, Hg)	TPH D/O - TX1006	Remarks:	Lab ID
S	02/26/10	1145			SS-10 (0-2') ✓	ICE	2	✓	✓	✓	✓	✓	✓	*CALL	42
		1150			SS-10 (2-4') ✓			✓	✓	✓	✓	✓	✓	JONATHAN	43
		1210			SED. 20 (0-2') ✓			✓	✓	✓	✓	✓	✓	MILLER FOR	44
		1215			SED. 20 (2-4') ✓			✓	✓	✓	✓	✓	✓	LIST OF	45
		1250			SED. 21 (0-2') ✓			✓	✓	✓	✓	✓	✓	PARAMETERS	46
		1300			SED. 21 (2-4') ✓			✓	✓	✓	✓	✓	✓		47
		1310			SED. 21 (4-6') ✓			✓	✓	✓	✓	✓	✓		48
		1315			SED. 21 (6-8') ✓			✓	✓	✓	✓	✓	✓		49
		1330			SED. 22 (0-2') ✓			✓	✓	✓	✓	✓	✓		50
		1340			SED. 22 (2-4') ✓			✓	✓	✓	✓	✓	✓		51

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <u>R. Ritchie</u>	Received by: (Signature) <u>K</u>	Date: <u>3-3-10</u>	Time: <u>1640</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: \* Run TX1006 if TX1005 exceeds RECAP.

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.





# Sherry Laboratories - Chain of Custody Record

Laboratory Number: **L10030202**

<b>Client Information:</b>		<b>Billing Information:</b>		PO Number:	Project Name/Number:	<b>Matrix Code</b> DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous    OT = Other SL = Sludge      SOL = Solid O = Oil            SO = Soil F = Food          SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
Company Name: <i>Michael Pisan &amp; Assoc</i>		<b>SAME</b>		Quote Number:	<i>F White Lake 07-17</i>	
Contact Name: <i>Jessitha Miller</i>				Sampler's Signature:	<i>[Signature]</i>	
Address: <i>1100 Paydous Ave 1430 Finney Ln</i>				Required QC Level:		
City, State, Zip: <i>New Orleans, LA</i>		Bill Monthly:	Shipping Method:			
Phone Number: <i>504.822.2463</i> Ext:		<input type="checkbox"/> Yes	UPS / FedEx / Airborne			
Fax Number:		<input type="checkbox"/> No	DHL / Sherry / Hand / Mail			
E-mail Address: <i>jp@herpdx.netcom.com</i>						

Which Regulations Apply:	Turn Time	Collection Information	Container	Pres.	Requested Tests							Comments			
					Quantity	Type	HCl, HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, Na <sub>2</sub> SO <sub>3</sub>	<del>As</del>	<del>Pb</del>	<del>Cd</del>	<del>Cr</del>		<del>Pb</del>	Total Chloride	Total Moisture
<input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	<input type="checkbox"/> Standard <b>RUSH</b> <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Date:      Time:      Grab/Composite:      Matrix:													
Sed - 26 0-2'		2/26/10 1325	Grab	SO	1	C	ice							✓ 52	*1005-run 1006
Sed - 26 2-4'														✓ 53	if 1005 exceeds
Sed - 27 0-2'														✓ 54	RECAP
Sed - 27 2-4'														✓ 55	
Sed - 28 0-2'														✓ 56	
Sed - 28 2-4'														✓ 57	
Sed - 29 0-2'														✓ 58	
Sed - 29 2-4'														✓ 59	
Sed - 30 0-2'														✓ 60	
Sed - 30 2-4'														✓ 61	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1				
2				Received at lab on ice?
3 <i>[Signature]</i>	3/3/10 16:17	<i>[Signature]</i>	3/3/10 16:17	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 4.1, 5.0, 5.8 gkb

All samples submitted to Sherry Laboratories for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Sherry Laboratories reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 125 PO Box 569 Daleville, IN 47334-9569 765-378-4103 Fax: 765-378-4109	629 Washington St. Suite 300 Columbus, IN 47201 812-375-0531 Fax: 812-375-0731	2121 E. Washington Blvd. Fort Wayne, IN 46803 260-471-7000 Fax: 260-471-7777	560 South Zimmer Road PO Box 1849 Warsaw, IN 46581-1849 574-267-3305 Fax: 574-269-6569	2471 W. Pinhook Rd. Lafayette, LA 70508 337-235-0483 Fax: 337-233-6540	3371 Cleveland Road Suite 100A South Bend, IN 46628 574-277-0707 Fax: 574-273-4599
---	--	---	--	---	--

*Del. H. Jamak 3/5/10 11:27*      *Rec. John Foster GCAL 3-5-10 11:27*



# Sherry Laboratories - Chain of Custody Record

Phone: 14271 / 21003066

Laboratory Number: **L10030202**

Page 2 of 3

<b>Client Information:</b>		<b>Billing Information:</b>		<b>PO Number:</b>	<b>Project Name/Number:</b>	<b>Matrix Code</b>
Company Name: <u>Michael Pisoni &amp; Assoc</u>		Quote Number:		<b>Required QC Level</b>	<b>Sampler's Signature</b>	DW = Drinking Water
Contact Name: <u>Jonathan Miller</u>		Required QC Level: <u>SAPE</u>		<b>Bill Monthly</b>	<u>Robert Brown</u>	WW = Waste Water
Address: <u>1430 E. 4th St</u>		EXT: <u>505.582.3446</u>		<input type="checkbox"/> Yes	<b>Shipping Method:</b>	GW = Ground Water
City, State, Zip: <u>New Orleans, LA</u>		EXT: <u>505.582.3446</u>		<input type="checkbox"/> No	<u>UPS / FedEx / Airborne</u>	AQ = Aqueous
Phone Number: <u>505.582.3446</u>		EXT: <u>505.582.3446</u>		<input type="checkbox"/> No	<b>DHL / Sherry / Hand / Mail</b>	SL = Sludge
Fax Number: <u>505.582.3446</u>		EXT: <u>505.582.3446</u>				O = Oil
E-mail Address: <u>John.Miller@pisoni.com</u>		EXT: <u>505.582.3446</u>				F = Food
		EXT: <u>505.582.3446</u>				NG = Natural Gas
		EXT: <u>505.582.3446</u>				NGL = Natural Gas Liquid
		EXT: <u>505.582.3446</u>				PW = Produced Water
		EXT: <u>505.582.3446</u>				CF = Completion Fluid

Sample ID/Description	Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container	Pres.	Requested Tests	Comments
	Date	Time					
Sed - 31 4-6'	9A	10:04:45	6.6h	50	1	6	62 *1005 - Run 1006
Sed - 32 4-6'		10:10					63 if 1005 exceeds
Sed - 33 4-6'		10:25					64 RECAP
Sed - 23 0-2'		11:50					65
Sed - 24 0-2'		12:00					66
Sed - 24 0-2'		11:25					67
Sed - 24 2-4'		11:30					68
Sed - 25 0-2'		11:00					69
Sed - 25 2-4'		11:10					70

Retinquished by	Date/Time	Received by	Date/Time	Field Notes:
1				Received at lab on ice? <input type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>4.1, 5.0,</u>
2				
3	<u>Robert Brown</u>	<u>Robert Brown</u>	<u>3-3-10 16:17</u>	<u>58 gts</u>

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9301 Innovation Drive, Suite 125  
 PO Box 569  
 Daleville, IN 47314-9569  
 765-378-4103  
 Fax: 765-378-4100

629 Washington St.  
 Suite 300  
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 812-375-0531  
 Fax: 812-375-0731

2121 E. Washington Blvd.  
 Fort Wayne, IN 46803  
 260-471-7000  
 Fax: 260-471-7777

560 South Zimmer Road  
 PO Box 1849  
 Warsaw, IN 46581-1849  
 574-267-3305  
 Fax: 574-269-6569

2417 W. Pinhook Rd.  
 Lafayette, LA 70508  
 337-235-0484  
 Fax: 337-231-6540

3371 Cleveland Road  
 Suite 100A  
 South Bend, IN 46628  
 574-277-0707  
 Fax: 574-273-4599

REC. N. Amarak 3/5/10 11:27

REC. Robert Brown 3/5/10 13:10

REC. Robert Brown 3/5/10 11:27



P. San. 14271/210030202



# Sherry Laboratories - Chain of Custody Record

Laboratory Number: **L10030202**

Page **3** of **3**

Company Name: <b>Michael Pisani Assoc</b>	Billing Information:	PO Number:	Project Name/Number: <b>E. White Lake 07-47</b>	<b>Matrix Code</b> DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
Contact Name: <b>Jonathan Miller</b>	<b>SAME</b>	Quote Number:	Sampler's Signature: <b>[Signature]</b>	
Address: <b>1100 Poydras St 400 1430 Energy Ctr</b>		Required QC Level:	Shipping Method: <b>UPS / FedEx / Airborne DHL / Sherry (Hand) Mail</b>	
City, State, Zip: <b>New Orleans, LA</b>	Ext:	Bill Monthly: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Phone Number: <b>504.582.2468</b>				
E-mail Address: <b>jcmiller@ix.netcom.com</b>				

Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	Turn Time (Rush turn times will incur a surcharge and must be pre-approved by lab.) <input type="checkbox"/> Standard <b>RUSH</b> <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Container Quantity	Pres. HCL, HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, Na <sub>2</sub> SO <sub>3</sub>	Requested Tests										Comments				
		Date	Time			Grabs/Composite	Matrix	Type Plastic, Glass, Vial	TPH	DIO	1006	As, Pb	Arsenicity	Ba, Selenium	Mercury		% moisture	Total Chloride		
		1 Mar 10	0945	Grabs	SO	1	G	ice	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	* report dry wt	71
			0955						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	* 1005 - Run 1006	72
			1020						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	if 1005 exceeds	73
			1030						✓	✓	✓	✓	✓	✓	✓	✓	✓	RECAP		74
			1110						✓	✓	✓	✓	✓	✓	✓	✓	✓			75
			1115						✓	✓	✓	✓	✓	✓	✓	✓	✓			76

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1				
2				Received at lab on ice?
3	<b>[Signature]</b>	<b>[Signature]</b>	3/3/10 16:17	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 4.1, 5.0

All samples submitted to Sherry Laboratories for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Sherry Laboratories reserves the right to return unused sample portions.

5.8 gKR

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Del. H. Jamak 3/5/10 11:27

Rec. John Lessor GLAL  
3/5/10 13:10

3-5-10 11:27  
2/5/10 13:10

Eberline Final Lab Report #1005133

Pending

**Site Photographs**  
**Attachment E**

*Vermilion Parish School Board v.*  
*Louisiana Land, et al*

*Expert Report*  
*Michael E. Pisani, P.E.*  
*David G. Angle, P.G.*

# Current Site Conditions

MP&A documented current conditions of the former UNOCAL Exploration Co. operations during a site visit on March 17, 2009

Photo 33: Schooner Bayou



Photo 34: Schooner Bayou



Photo 35: Main Operating Facility





Photo 36: Schooner Bayou Facility



Photo 37: Schooner Bayou Facility



Photo 38: Schooner Bayou Facility



Photo 40: Schooner Bayou Facility



Photo 46: Plaintiff sampling location AB18: East



Photo 47: Plaintiff sampling location AB18: North East



Photo 48: Plaintiff sampling location AB18: North



Photo 49: Plaintiff sampling location AB18: North West





Photo 50: Plaintiff sampling location AB18: Site Walk



Photo 51: Plaintiff sampling location AB18: Site Walk



Photo 52: Plaintiff sampling location AB18: Site Walk



Photo 53: Plaintiff sampling location AB18: Site Walk



Photo 54: Plaintiff sampling location AB18: Site Walk



Photo 55: Plaintiff sampling location AB18: Site Walk



Photo 56: Plaintiff sampling location AB18: Site Walk



Photo 57: Bayou Heading North to Schooner Bayou





Photo 58: Bayou Heading North to Schooner Bayou



Photo 59: Bayou Heading North to Schooner Bayou



Photo 65: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 66: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 67: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 68: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 69: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 70: Plaintiff sampling locations AB5-AB9: Site Walk





Photo 71: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 72: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 73: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 74: Plaintiff sampling locations AB5-AB9: Site Walk





Photo 75: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 76: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 77: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 79: Plaintiff Monitoring Well





Photo 80: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 81: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 83: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 84: Plaintiff sampling locations AB5-AB9: Site Walk





Photo 86: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 87: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 88: Plaintiff sampling locations AB5-AB9: Site Walk



Photo 89: South West AB5-AB9 Area



Photo 90: South West of plaintiff sample area AB5-AB9



Photo 91: South West of plaintiff sample area AB5-AB9



Photo 92: Facing North on West side of plaintiff sample area AB5-AB9



Photo 93: Facing North on West side of plaintiff sample area AB5-AB9





Photo 94: South East Corner of plaintiff sample area AB5-AB9



Photo 95: South East Corner of plaintiff sample area AB5-AB9



Photo 96: Due South of Main Operating Facility



Photo 97: Due South of Main Operating Facility





Photo 98: Due South of main Operating Facility



Photo 99: Facing North near Main Operating Facility



Photo 100: Main Operating Facility



Photo 101: Main Operating Facility



Photo 102: Facility South Bank



Photo 103: Facility South Bank



Photo 104: Flowlines NE corner of plaintiff sample area AB5-AB9



Photo 105: Flowlines NE corner of plaintiff sample area AB5-AB9





Photo 106: Flowlines NE corner of plaintiff sample area AB5-AB9



Photo 107: Main Operating Facility



Photo 108: Well West of Facility (No placard visible)



Photo 109: Soil at Facility



Photo 110: Main Operating Facility



Photo 111: Flowlines from Facility



Photo 112: Flowline and Soil from Facility



Photo 113: Flowline and Soil from Facility





Photo 114: Flowlines from Facility



Photo 115: Flowlines East Facility



Photo 116: Flowlines East Facility



Photo 117: Well East of Facility (No placard visible)



Photo 118: Well East Facility (No placard visible)



Photo 119: 970723 SWD



Photo 120: 970723 SWD



Photo 121: 970723 SWD





Photo 123: Well East of plaintiff sample location AB11



Photo 124: Plaintiff sample location AB13: Flowline



Photo 125: AB13 Adjacent wells (No placard visible)



Photo 126: AB13 Adjacent flowline



Photo 127: AB13 Adjacent well (No placard visible)



Photo 129: Plaintiff sample location AB13



Photo 130: Plaintiff sample location AB13



Photo 131: Plaintiff sample location AB13





Photo 132: Flowline and soil from facility



Photo 133: Heading South on main canal



Photo 134: Former oil field equipment



Photo 135: Heading South on main canal



Photo 137: End of Section 16



Photo 138: End of Section 16



Photo 139: End of Section 16



Photo 142: Area South of former oil field equipment





Photo 143: Former oil field equipment



Photo 145: Former oil field equipment



Photo 146: Well West of plaintiff sample location SS5 (No placard visible)



Photo 147: Plaintiff sample location SS7



Photo 150: East of former oil field equipment



Photo 151: East of former oil field equipment



Photo 152: East of former oil field equipment



Photo 155: Well East of former oil field equipment (No placard visible)





Photo 156: Well near plaintiff sampling location AB 14



Photo 157: Active wells near plaintiff sample location AB 14



Photo 158: Active wells near plaintiff sample location AB 14



Photo 159: Active wells near plaintiff sample location AB 14



Photo 160: Active wells near plaintiff sample location AB 14



Photo 164: Flowlines near plaintiff sampling location AB 14



Photo 165: Active Well near plaintiff sample location AB 14



Photo 168: Active Well near plaintiff sample location AB 14





Photo 173: Flowlines near camp



Photo 174: Flowlines near camp



Photo 175: Camp North of facility



Photo 176: Camp North of facility







WP2 145



039



041



042



043



044



045



AB5-AB9 Site Walk 065



AB5-AB9 Site Walk 066



AB5-AB9 Site Walk 067



AB5-AB9 Site Walk 068



AB5-AB9 Site Walk 069



AB5-AB9 Site Walk 070



AB5-AB9 Site Walk 071



AB5-AB9 Site Walk 072



AB5-AB9 Site Walk 073



AB5-AB9 Site Walk 074



AB5-AB9 Site Walk 075



AB5-AB9 Site Walk 076



AB5-AB9 Site Walk 077



AB5-AB9 Site Walk 079



AB5-AB9 Site Walk 080



AB5-AB9 Site Walk 081



AB5-AB9 Site Walk 082



AB5-AB9 Site Walk 083



AB5-AB9 Site Walk 084



AB5-AB9 Site Walk 085



AB5-AB9 Site Walk 086



AB5-AB9 Site Walk 087



AB5-AB9 Site Walk 088



AB13 Adjacent flowline 126



AB13 Adjacent wells 125



AB13 Adjacent wells 127



AB13 facing N 130



AB13 facing NE 131





AB13 facing NW 129



AB13 Flowline 124



AB14 156



AB14 157



AB14 158



AB14 159



AB14 160



AB14 161



AB14 Flowlines 162



AB14 flowlines 163



AB14 flowlines 164



AB18 East 046



AB18 N 048



AB18 NE 047



AB18 NW 049



AB18 Site Walk 050



AB18 Site Walk 051



AB18 Site Walk 052



AB18 Site Walk 053



AB18 Site Walk 054



AB18 Site Walk 055



AB18 Site Walk 056



AB 11 122



AB 11 970723 SWD 119



AB 11 970723 SWD 120



AB 11 970723 SWD 121



AB 14 Active Well Chem 165



AB 14 Active Well Chem 166



AB 14 Active Well Chem 167



AB 14 Active Well Chem 168



Bayou N to Schooner 057



Bayou N to Schooner 058



Bayou N to Schooner 059



Bayou N to Schooner 060



Bayou N to Schooner 061





Bayou N to Schooner 062



Bayou N to Schooner 063



Bayou N to Schooner 064



Camp N of facility 175



Camp N of facility 176



Due S of Facility 096



Due S of Facility 097



Due S of Facility 098



E of WP2 149



E of WP2 150



E of WP2 151



E of WP2 152



E of WP2 153



E of WP2 154



E of WP2 155



End of Section 16 137



End of Section 16 138



End of Section 16 139



Facility S Bank 102



Facility S Bank 103



Facing N at Facility 099



Facing N at Facility 100



Facing N at Facility 101



Facing N on W of AB5-AB9  
092



Facing N on W of AB5-AB9  
093



Flowline and Soil from  
Facility 112



Flowline and Soil from  
Facility 113



Flowline and soil from facility  
132



Flowlines 169



Flowlines 170



Flowlines 171



Flowlines 172



Flowlines from Facility 111



Flowlines from Facility 114



Flowlines NE corner of AB5-  
AB9 104





Flowlines NE corner of AB5-AB9 105



Flowlines NE corner of AB5-AB9 106



Flowlines near camp 173



Flowlines near camp 174



Flowlines S Schooner E Facility 115



Flowlines S Schooner E Facility 116



Headin S on main canal 136



Heading S on main canal 133



Heading S on main canal 134



Heading S on main canal 135



Main Facility Working 107



Main Operating Facility 035



Main Operating Facility 110



Scenic Photo 078



Scenic Photo 140



Schooner Bayou 033



Schooner Bayou 034



Schooner Bayou Canal Little Prairie Bridge 032



Schooner Bayou Facility 036



Schooner Bayou Facility 037



Schooner Bayou Facility 038



Schooner Bayou Facility 040



SE Corner of AB5-AB9 094



SE Corner of AB5-AB9 095



Soil at Facility 109



SS7 147



SS7 148



SW AB5-AB9 Area 089



SW AB5-AB9 Area 090



SW AB5-AB9 Area 091



SW of AB13 128



Well E of AB11 123



Well S Schooner E Facility 117



Well S Schooner E Facility 118



Well W of Facility 108



Well W of WP2 SS5 146



WP2 141



WP2 142



WP2 143



WP2 144





IMG\_0128



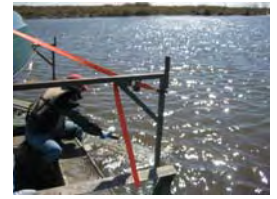
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IMG\_1462



IMG\_1463



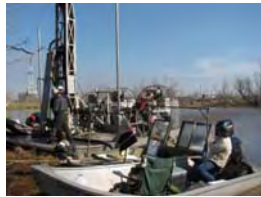
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IMG\_1465



IMG\_1466



IMG\_1467



IMG\_1468





Bk-03 SAV\_0001



Bk-03 SAV\_0002



Bk-03 SAV\_0003



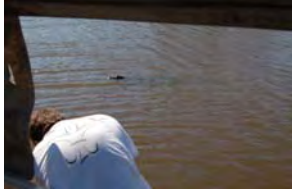
Drilling SB 2\_0055



Drilling SB 2\_0056



DSC\_0004



Gator\_0030



Gator\_0031



Gator\_0032



Gator\_0050



Gator\_0053



Gator\_0060



Gator\_0061



Gator\_0062



Gator\_0063



Gator\_0064



Gator\_0065



Gator\_0101



Heberts Boat Launch\_0005



Heberts Boat Launch\_0006



Heberts Boat Launch\_0007



Heberts Boat Launch\_0008



Heberts Boat Launch\_0009



ICON Well\_0051



ICON Well\_0052



SB 1 MW S\_0036



SB 1 MW S\_0037



SB 1 MW S\_0038



SB 2 Facing W\_0054



SB 2A (52-56)\_0057



SB 2A (56-60)\_0066



SB 2A (60-64)\_0067



SB 2A (64-68)\_0068

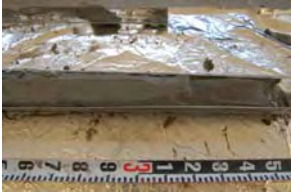


SB 2A (64-68)\_0069



SB 2A (68-72)\_0070





SB 2A (68-72)\_0071



SB 2A (72-76)\_0072



SB 2A (76-80)\_0073



SB 3 (0-6)\_0074



SB 3 (6-10)\_0075



SB 3 (6-10)\_0076



SB 3 (10-14)\_0077



SB 3 (14-18)\_0078



SB 3 (18-22)\_0079



SB 3 (22-26)\_0080



SB 3 (26-30)\_0081



SB 3 (26-30)\_0082



SB 3 (30-34)\_0083



SB 3 (34-38)\_0084



SB 3 (38-42)\_0085



SB 3 (42-46)\_0086



SB 3 (46-50)\_0087



SB 3 MW S\_0097



SB 3 MW S\_0098



SB 3 MW S\_0099



SB 3 MW S\_0100



SB 3 MW S\_0102



SB 3 MW S\_0103



SB 3 MW S\_0104



Scenic\_0039



Scenic\_0058



Scenic\_0059



Sed 8\_0021



Sed 8\_0022



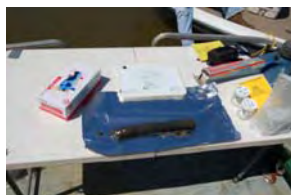
Sed 8\_0023



Sed 8\_0024



Sed 8\_0025



Sed 9\_0014



Sed 11\_0026

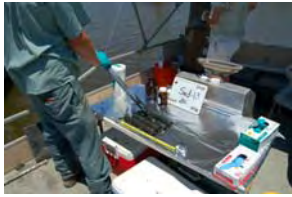


Sed 13\_0027





Sed 13\_0028



Sed 13\_0029



Sed 15\_0034



Sed 15\_0035



Sed 19\_0033



Sed 24\_0018



Sed 26\_0019



Sed 26\_0020



Sed 31\_0016



Sed 31\_0017



Sed 120\_0047



Sed 120\_0048



Sed 120\_0049



Sed Bk 05\_0093



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Sed Bk 08\_0096



Sed Bk 09\_0090



Sed Bk 09\_0091



SPLP-3



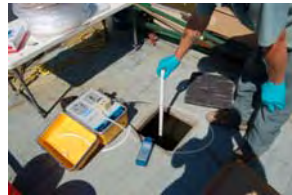
SPLP-5



SW 03\_0015



SW 05\_0010



SW 05\_0011



Sw 05\_0012



SW 05\_0013



SW 20 Location\_0040



SW 20 Location\_0041



SW 20 Location\_0042



SW 20 Location\_0043



SW 20 Location\_0044



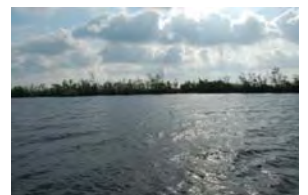
SW 20 Location\_0045



SW 20 Location\_0046



SW Bk 05\_0092



SW Bk 11\_0088



SW Bk 11\_0089





Photos 091



050410 001



050410 002



050510 001



050510 002



050510 003



050510 004



050510 005



050510 006



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050710 001



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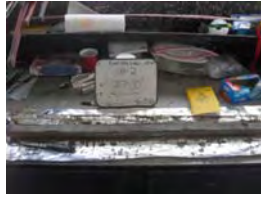
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051210 002



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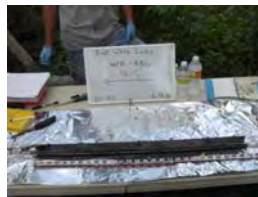
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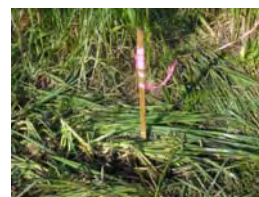
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Photos 078