

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.

8060.00 Indigo-Desoto Parish, LA

SGS Job Number: LA49344

Sampling Date: 10/30/18

Report to:

**Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us**

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 70



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-15-7), WV(257)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Sample Results	4
2.1: LA49344-1: 031-7353Z (COWDIN 27 RIG SUPPLY)	5
2.2: LA49344-1F: 031-7353Z (COWDIN 27 RIG SUPPLY)	12
2.3: LA49344-2: FIELD BLANK	13
2.4: LA49344-3: TRIP BLANK	15
Section 3: Misc. Forms	17
3.1: Chain of Custody	18
Section 4: MS Volatiles - QC Data Summaries	20
4.1: Method Blank Summary	21
4.2: Blank Spike/Blank Spike Duplicate Summary	23
Section 5: MS Semi-volatiles - QC Data Summaries	25
5.1: Method Blank Summary	26
5.2: Blank Spike/Blank Spike Duplicate Summary	28
5.3: Matrix Spike/Matrix Spike Duplicate Summary	30
Section 6: GC Volatiles - QC Data Summaries	32
6.1: Method Blank Summary	33
6.2: Blank Spike/Blank Spike Duplicate Summary	35
6.3: Matrix Spike/Matrix Spike Duplicate Summary	37
Section 7: GC/LC Semi-volatiles - QC Data Summaries	39
7.1: Method Blank Summary	40
7.2: Blank Spike/Blank Spike Duplicate Summary	42
7.3: Matrix Spike/Matrix Spike Duplicate Summary	44
Section 8: Metals Analysis - QC Data Summaries	46
8.1: Prep QC MP13233: Al,As,Ba,Cd,Ca,Cr,Fe,Pb,Mg,Mn,K,Se,Ag,Na,Sr,Zn	47
8.2: Prep QC MP13253: Hg	58
Section 9: Misc. Forms (SGS Houston, TX)	63
9.1: Chain of Custody	64
Section 10: General Chemistry - QC Data (SGS Houston, TX)	67
10.1: Method Blank and Spike Results Summary	68
10.2: Duplicate Results Summary	69
10.3: Matrix Spike Results Summary	70



Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA49344

8060.00 Indigo-Desoto Parish, LA

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
LA49344-1	10/30/18	12:05	KC/DC11/01/18	AQ	Water	031-7353Z (COWDIN 27 RIG SUPPLY)
LA49344-1F	10/30/18	12:05	KC/DC11/01/18	AQ	Water Filtered	031-7353Z (COWDIN 27 RIG SUPPLY)
LA49344-2	10/30/18	10:00	KC/DC11/01/18	AQ	Field Blank Water	FIELD BLANK
LA49344-3	10/30/18	06:20	KC/DC11/01/18	AQ	Trip Blank Water	TRIP BLANK

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled:	10/30/18
Lab Sample ID:	LA49344-1	Date Received:	11/01/18
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	8060.00 Indigo-Desoto Parish, LA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0022774.D	1	11/05/18 19:13	PC	11/05/18 07:15	OP12727	EL599
Run #2							

Run #	Initial Volume	Final Volume
Run #1	105 ml	1.0 ml
Run #2		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	0.0048	mg/l	
120-83-2	2,4-Dichlorophenol	ND	0.0048	mg/l	
105-67-9	2,4-Dimethylphenol	ND	0.0048	mg/l	
51-28-5	2,4-Dinitrophenol	ND	0.019	mg/l	
100-02-7	4-Nitrophenol	ND	0.024	mg/l	
87-86-5	Pentachlorophenol	ND	0.00095	mg/l	
108-95-2	Phenol	ND	0.0048	mg/l	
58-90-2	2,3,4,6-Tetrachlorophenol ^a	ND	0.0048	mg/l	
95-95-4	2,4,5-Trichlorophenol ^a	ND	0.0048	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	0.0048	mg/l	
83-32-9	Acenaphthene	ND	0.00019	mg/l	
208-96-8	Acenaphthylene	ND	0.00019	mg/l	
62-53-3	Aniline	ND	0.0048	mg/l	
120-12-7	Anthracene	ND	0.00019	mg/l	
56-55-3	Benzo(a)anthracene	ND	0.00019	mg/l	
50-32-8	Benzo(a)pyrene	ND	0.00019	mg/l	
205-99-2	Benzo(b)fluoranthene	ND	0.00019	mg/l	
207-08-9	Benzo(k)fluoranthene ^a	ND	0.00019	mg/l	
92-52-4	1,1'-Biphenyl	ND	0.0095	mg/l	
85-68-7	Butyl Benzyl Phthalate ^a	ND	0.0048	mg/l	
106-47-8	4-Chloroaniline	ND	0.0048	mg/l	
111-44-4	bis(2-Chloroethyl)ether	ND	0.0048	mg/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	0.0048	mg/l	
91-58-7	2-Chloronaphthalene	ND	0.0048	mg/l	
218-01-9	Chrysene	ND	0.00019	mg/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.00019	mg/l	
132-64-9	Dibenzofuran	ND	0.0048	mg/l	
91-94-1	3,3'-Dichlorobenzidine	ND	0.0095	mg/l	
84-66-2	Diethyl Phthalate	ND	0.0048	mg/l	
131-11-3	Dimethyl Phthalate	ND	0.0048	mg/l	
117-84-0	Di-n-octyl Phthalate ^a	ND	0.0048	mg/l	
99-65-0	1,3-Dinitrobenzene ^a	ND	0.0048	mg/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled:	10/30/18
Lab Sample ID:	LA49344-1	Date Received:	11/01/18
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270D SW846 3510C		
Project:	8060.00 Indigo-Desoto Parish, LA		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
121-14-2	2,4-Dinitrotoluene ^a	ND	0.0048	mg/l	
606-20-2	2,6-Dinitrotoluene	ND	0.0048	mg/l	
117-81-7	bis(2-Ethylhexyl)phthalate ^a	ND	0.0048	mg/l	
206-44-0	Fluoranthene	ND	0.00019	mg/l	
86-73-7	Fluorene	ND	0.00019	mg/l	
118-74-1	Hexachlorobenzene	ND	0.00095	mg/l	
87-68-3	Hexachlorobutadiene	ND	0.00048	mg/l	
77-47-4	Hexachlorocyclopentadiene	ND	0.0095	mg/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.00019	mg/l	
78-59-1	Isophorone	ND	0.0048	mg/l	
91-57-6	2-Methylnaphthalene	ND	0.00019	mg/l	
91-20-3	Naphthalene	ND	0.00019	mg/l	
88-74-4	2-Nitroaniline	ND	0.0048	mg/l	
99-09-2	3-Nitroaniline	ND	0.0048	mg/l	
100-01-6	4-Nitroaniline	ND	0.0048	mg/l	
98-95-3	Nitrobenzene	ND	0.00095	mg/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.0048	mg/l	
86-30-6	N-Nitrosodiphenylamine	ND	0.0048	mg/l	
85-01-8	Phenanthrene	ND	0.00019	mg/l	
129-00-0	Pyrene	ND	0.00019	mg/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	0.00095	mg/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0048	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	57%		23-85%
4165-62-2	Phenol-d5	44%		10-69%
118-79-6	2,4,6-Tribromophenol	84%		48-138%
4165-60-0	Nitrobenzene-d5	70%		51-128%
321-60-8	2-Fluorobiphenyl	71%		55-122%
1718-51-0	Terphenyl-d14	75%		43-138%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled: 10/30/18
Lab Sample ID: LA49344-1	Date Received: 11/01/18
Matrix: AQ - Water	Percent Solids: n/a
Method: MADEP VPH REV 1.1	
Project: 8060.00 Indigo-Desoto Parish, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC381386.D	1	11/03/18 16:15	MB	n/a	n/a	GLC1891
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	105% ^a		70-130%
615-59-8	2,5-Dibromotoluene	100% ^b		70-130%

- (a) Recovery from Aromatics fraction.
- (b) Recovery from Aliphatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled: 10/30/18
Lab Sample ID: LA49344-1	Date Received: 11/01/18
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8011 SW846 8011	
Project: 8060.00 Indigo-Desoto Parish, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LK113998.D	1	11/08/18 03:57	JS	11/06/18 16:00	OP12750	GLK743
Run #2							

Run #	Initial Volume	Final Volume
Run #1	36.0 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.000019mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
348-51-6	1-Chloro-2-fluorobenzene	87%		55-149%	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 031-7353Z (COWDIN 27 RIG SUPPLY)	
Lab Sample ID: LA49344-1	Date Sampled: 10/30/18
Matrix: AQ - Water	Date Received: 11/01/18
Method: MADEP EPH REV 1.1 SW846 3511	Percent Solids: n/a
Project: 8060.00 Indigo-Desoto Parish, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0005704.D	1	11/05/18 22:20	JT	11/02/18 14:00	OP12712	GLB1657
Run #2	Y0005704.D	1	11/05/18 22:21	JT	11/02/18 14:00	OP12712	GLB1658

Run #	Initial Volume	Final Volume
Run #1	54.6 ml	4.0 ml
Run #2	54.6 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND ^a	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND ^a	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND ^a	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		81%	40-140%
84-15-1	o-Terphenyl	79%		40-140%
321-60-8	2-Fluorobiphenyl	76%		40-140%

(a) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled: 10/30/18
Lab Sample ID: LA49344-1	Date Received: 11/01/18
Matrix: AQ - Water	Percent Solids: n/a
Project: 8060.00 Indigo-Desoto Parish, LA	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Arsenic	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Barium	0.0621	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Cadmium	< 0.0050	0.0050	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Calcium	133	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Chromium	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Iron	42.8	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Lead	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Magnesium	51.0	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Manganese	1.96	0.020	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Mercury	< 0.00020	0.00020	mg/l	1	11/05/18	11/05/18 SA	SW846 7470A ²	SW846 7470A ⁴
Potassium	6.32	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Selenium	< 0.050	0.050	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Silver	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Sodium	153	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Strontium	5.33	0.020	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Zinc	< 0.050	0.050	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³

- (1) Instrument QC Batch: MA13853
- (2) Instrument QC Batch: MA13864
- (3) Prep QC Batch: MP13233
- (4) Prep QC Batch: MP13253

RL = Reporting Limit

Report of Analysis

Client Sample ID: 031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled: 10/30/18
Lab Sample ID: LA49344-1	Date Received: 11/01/18
Matrix: AQ - Water	Percent Solids: n/a
Project: 8060.00 Indigo-Desoto Parish, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate ^a	35.0	5.0	mg/l	1	11/05/18 14:30	ATX	SM18 2320B
Alkalinity, Carbonate ^a	< 5.0	5.0	mg/l	1	11/05/18 14:30	ATX	SM18 2320B
Alkalinity, Total as CaCO3 ^a	35.0	5.0	mg/l	1	11/05/18 14:30	ATX	SM 2320B-2011
Bromide ^a	1.4	0.50	mg/l	1	11/15/18 19:53	ATX	SW846 9056A
Chloride ^a	312	10	mg/l	20	11/15/18 06:25	ATX	SW846 9056A
Silica, Dissolved ^a	74.9	3.5	mg/l	50	11/12/18	ATX	SM4500SIO2 C-2011
Solids, Total Dissolved ^a	1250	10	mg/l	1	11/05/18	ATX	SM 2540C-2011
Specific Conductivity ^b	1680	1.0	umhos/cm	1	11/02/18 16:35	ATX	EPA 120.1
Sulfate ^a	302	10	mg/l	20	11/15/18 06:25	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.

(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

Report of Analysis

Client Sample ID: 031-7353Z (COWDIN 27 RIG SUPPLY)	Date Sampled: 10/30/18
Lab Sample ID: LA49344-1F	Date Received: 11/01/18
Matrix: AQ - Water Filtered	Percent Solids: n/a
Project: 8060.00 Indigo-Desoto Parish, LA	

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Arsenic	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Barium	0.0528	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Cadmium	< 0.0050	0.0050	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Calcium	117	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Chromium	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Iron	38.4	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Lead	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Magnesium	45.3	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Manganese	1.75	0.020	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Mercury	< 0.00020	0.00020	mg/l	1	11/05/18	11/05/18 SA	SW846 7470A ²	SW846 7470A ⁴
Potassium	5.49	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Selenium	< 0.050	0.050	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Silver	< 0.010	0.010	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Sodium	134	1.0	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Strontium	4.70	0.020	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³
Zinc	< 0.050	0.050	mg/l	10	11/02/18	11/03/18 RT	SW846 6020A ¹	SW846 3010A ³

- (1) Instrument QC Batch: MA13853
- (2) Instrument QC Batch: MA13864
- (3) Prep QC Batch: MP13233
- (4) Prep QC Batch: MP13253

RL = Reporting Limit

Report of Analysis

Client Sample ID:	FIELD BLANK	Date Sampled:	10/30/18
Lab Sample ID:	LA49344-2	Date Received:	11/01/18
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	8060.00 Indigo-Desoto Parish, LA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2J0057147.D	1	11/05/18 21:29	CP	n/a	n/a	V2J1660
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD BLANK	Date Sampled:	10/30/18
Lab Sample ID:	LA49344-2	Date Received:	11/01/18
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	8060.00 Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		84-124%
2037-26-5	Toluene-D8	101%		83-115%
460-00-4	4-Bromofluorobenzene	102%		89-111%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	10/30/18
Lab Sample ID:	LA49344-3	Date Received:	11/01/18
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	8060.00 Indigo-Desoto Parish, LA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2J0057145.D	1	11/05/18 21:02	CP	n/a	n/a	V2J1660
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIP BLANK	
Lab Sample ID: LA49344-3	Date Sampled: 10/30/18
Matrix: AQ - Trip Blank Water	Date Received: 11/01/18
Method: SW846 8260B	Percent Solids: n/a
Project: 8060.00 Indigo-Desoto Parish, LA	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		84-124%
2037-26-5	Toluene-D8	102%		83-115%
460-00-4	4-Bromofluorobenzene	101%		89-111%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

LA49344

HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953



SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: Indigo
 Project Number: 8060.00
 Project Location: DeSoto Parish, Louisiana

Laboratory: SGS Lafayette
 Collected By: KC / DC
 Company: Hydro-Environmental Technology, Inc.
 Date: 10/30/2018

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
031-7353Z (Cowdin 27 Rig Supply)	AQ	10/30/2018 12:05	(3) 40mL Glass HCl (3) 60mL Amber Glass HCl (2) 4oz Amber Glass (1) 500mL Plastic (2) 250mL Plastic HNO3	SVOC 8270, VPH, EPH, Chlorides, TDS, Specific Conductance, Silica, Cations*, Anions*, Total Metals*, Dissolved Metals*	4°C Field Filtered: Dissolved metals
Field Blank	AQ	10/30/2018 10:00	(4) 40mL Glass HCl	VOC 8260	4°C
Trip Blank	AQ	10/30/2018 6:20	(6) 40mL Glass HCl	VOC 8260	4°C

*Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, strontium, zinc
 *Cations: aluminum, calcium, iron, magnesium, manganese, potassium, sodium
 *Anions: bromide, sulfate, carbonate alkalinity, bicarbonate alkalinity

Relinquished By: *Ken J. Coyle*
 Date/Time: 11/01/18 11:05
 Received By: *Johnny Helms*
 Date/Time: 11-1-18 11:05

Relinquished By: *Johnny Helms*
 Date/Time: 11-1-18 11:25
 Received By: *Walter Newman*
 Date/Time: 11-1-18 11:25

Analysis Due: Verbal
 Written:
 Temp: 1.7 dV 439 VW(YH) (B1(Y543))
 1101-510c 1102 (KRS62)



SGS Sample Receipt Summary

Job Number: LA49344

Client: HYDRO ENVIRONMENTAL

Project: INDIGO

Date / Time Received: 11/1/2018 11:25:00 AM

Delivery Method: Accutest Courier

Airbill #s:

Cooler Temps (Initial/Adjusted): #1: (1.7/1.7):

Cooler Security

Y or N

- | | | | | | |
|---------------------------|--------------------------|-------------------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. SmpI Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>DV 439</u> | |
| 3. Cooler media: | <u>Ice (direct contact)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservation

Y or N N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

Received six 40ml vials (FB)
 COC states four sent.
 Received five 40ml vials (TB)
 COC states six sent.

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2J1660-MB2	2J0057113.D	1	11/05/18	CP	n/a	n/a	V2J1660

The QC reported here applies to the following samples:

Method: SW846 8260B

LA49344-2, LA49344-3

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	1.4	50	ug/l	J
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
75-15-0	Carbon Disulfide	ND	1.0	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
542-75-6	1,3-Dichloropropene (total)	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
67-72-1	Hexachloroethane	ND	1.0	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	ug/l	
74-83-9	Methyl Bromide	ND	1.0	ug/l	
74-87-3	Methyl Chloride	ND	1.0	ug/l	
75-09-2	Methylene Chloride	ND	1.0	ug/l	
78-93-3	Methyl Ethyl Ketone	ND	13	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	13	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	

4.1.1
4

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2J1660-MB2	2J0057113.D	1	11/05/18	CP	n/a	n/a	V2J1660

The QC reported here applies to the following samples:

Method: SW846 8260B

LA49344-2, LA49344-3

CAS No.	Compound	Result	RL	Units	Q
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	2.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
17060-07-0	1,2-Dichloroethane-D4	114%	84-124%
2037-26-5	Toluene-D8	100%	83-115%
460-00-4	4-Bromofluorobenzene	98%	89-111%

4.1.1
4

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2J1660-BS1	2J0057107.D	1	11/05/18	CP	n/a	n/a	V2J1660
V2J1660-BSD1	2J0057109.D	1	11/05/18	CP	n/a	n/a	V2J1660

The QC reported here applies to the following samples:

Method: SW846 8260B

LA49344-2, LA49344-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	48.4	97	47.9	96	1	38-178/30
71-43-2	Benzene	20	19.2	96	19.5	98	2	82-119/30
75-27-4	Bromodichloromethane	20	21.7	109	22.0	110	1	79-120/30
75-25-2	Bromoform	20	20.1	101	20.6	103	2	68-128/30
75-15-0	Carbon Disulfide	20	22.3	112	23.3	117	4	64-133/30
56-23-5	Carbon Tetrachloride	20	20.2	101	21.3	107	5	69-132/30
108-90-7	Chlorobenzene	20	18.7	94	18.8	94	1	85-120/30
75-00-3	Chloroethane	20	25.2	126	26.2	131	4	33-170/30
67-66-3	Chloroform	20	20.7	104	20.8	104	0	80-122/30
124-48-1	Dibromochloromethane	20	20.4	102	20.9	105	2	73-125/30
96-12-8	1,2-Dibromo-3-chloropropane	20	20.3	102	19.9	100	2	67-131/30
541-73-1	m-Dichlorobenzene	20	18.2	91	18.7	94	3	84-121/30
95-50-1	o-Dichlorobenzene	20	18.0	90	18.0	90	0	83-120/30
106-46-7	p-Dichlorobenzene	20	18.0	90	18.2	91	1	83-122/30
75-34-3	1,1-Dichloroethane	20	19.9	100	20.8	104	4	78-124/30
107-06-2	1,2-Dichloroethane	20	22.6	113	22.5	113	0	74-127/30
75-35-4	1,1-Dichloroethylene	20	19.7	99	20.5	103	4	70-134/30
156-59-2	cis-1,2-Dichloroethylene	20	20.0	100	21.0	105	5	78-122/30
156-60-5	trans-1,2-Dichloroethylene	20	19.7	99	20.4	102	3	75-127/30
540-59-0	1,2-Dichloroethene (total)	40	39.7	99	41.4	104	4	78-123/30
78-87-5	1,2-Dichloropropane	20	19.1	96	19.5	98	2	82-120/30
10061-01-5	cis-1,3-Dichloropropene	20	20.8	104	21.2	106	2	79-122/30
10061-02-6	trans-1,3-Dichloropropene	20	20.1	101	20.5	103	2	78-124/30
542-75-6	1,3-Dichloropropene (total)	40	40.9	102	41.6	104	2	50-150/30 ^a
100-41-4	Ethylbenzene	20	18.8	94	19.3	97	3	84-117/30
67-72-1	Hexachloroethane	20	21.6	108	21.3	107	1	53-141/30
78-83-1	Isobutyl Alcohol	200	214	107	227	114	6	20-175/30
74-83-9	Methyl Bromide	20	23.6	118	26.1	131	10	37-198/30
74-87-3	Methyl Chloride	20	19.9	100	21.0	105	5	50-136/30
75-09-2	Methylene Chloride	20	19.9	100	20.5	103	3	71-130/30
78-93-3	Methyl Ethyl Ketone	50	56.4	113	57.5	115	2	59-149/30
108-10-1	4-Methyl-2-pentanone	50	55.8	112	55.7	111	0	74-131/30
1634-04-4	Methyl Tert Butyl Ether	20	20.9	105	21.5	108	3	70-126/30
100-42-5	Styrene	20	19.7	99	20.3	102	3	79-128/30
630-20-6	1,1,1,2-Tetrachloroethane	20	19.3	97	20.4	102	6	84-120/30
79-34-5	1,1,2,2-Tetrachloroethane	20	19.5	98	19.3	97	1	77-126/30

* = Outside of Control Limits.

4.2.1
4

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2J1660-BS1	2J0057107.D	1	11/05/18	CP	n/a	n/a	V2J1660
V2J1660-BSD1	2J0057109.D	1	11/05/18	CP	n/a	n/a	V2J1660

The QC reported here applies to the following samples:

Method: SW846 8260B

LA49344-2, LA49344-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
127-18-4	Tetrachloroethylene	20	18.1	91	17.9	90	1	75-133/30
108-88-3	Toluene	20	17.7	89	18.5	93	4	80-121/30
71-55-6	1,1,1-Trichloroethane	20	20.7	104	21.7	109	5	74-126/30
79-00-5	1,1,2-Trichloroethane	20	18.0	90	18.4	92	2	80-123/30
79-01-6	Trichloroethylene	20	19.3	97	19.6	98	2	62-125/30
75-69-4	Trichlorofluoromethane	20	22.7	114	23.5	118	3	62-148/30
75-01-4	Vinyl Chloride	20	21.8	109	23.0	115	5	67-130/30
	m,p-Xylene	40	38.1	95	39.6	99	4	82-121/30
95-47-6	o-Xylene	20	19.1	96	19.8	99	4	84-119/30
1330-20-7	Xylene (total)	60	57.2	95	59.4	99	4	81-122/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17060-07-0	1,2-Dichloroethane-D4	103%	104%	84-124%
2037-26-5	Toluene-D8	101%	101%	83-115%
460-00-4	4-Bromofluorobenzene	102%	103%	89-111%

(a) Advisory control limits.

* = Outside of Control Limits.

4.2.1
4

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MB	L0022765.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples:

Method: SW846 8270D

LA49344-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	10	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	0.20	ug/l	
208-96-8	Acenaphthylene	ND	0.20	ug/l	
62-53-3	Aniline	ND	5.0	ug/l	
120-12-7	Anthracene	ND	0.20	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
92-52-4	1,1'-Biphenyl	ND	10	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
218-01-9	Chrysene	ND	0.20	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	0.20	ug/l	

5.1.1
5

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MB	L0022765.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples:

Method: SW846 8270D

LA49344-1

CAS No.	Compound	Result	RL	Units	Q
86-73-7	Fluorene	ND	0.20	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	0.20	ug/l	
129-00-0	Pyrene	ND	0.20	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	67%	23-85%
4165-62-2	Phenol-d5	53%	10-69%
118-79-6	2,4,6-Tribromophenol	85%	48-138%
4165-60-0	Nitrobenzene-d5	78%	51-128%
321-60-8	2-Fluorobiphenyl	75%	55-122%
1718-51-0	Terphenyl-d14	88%	43-138%

5.1.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-BS	L0022766.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-BSD ^a	L0022767.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples:

Method: SW846 8270D

LA49344-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	5	4.3	86	8.8	176* b	69* c	63-104/19
120-83-2	2,4-Dichlorophenol	5	4.4	88	8.9	178* b	68* c	68-112/19
105-67-9	2,4-Dimethylphenol	5	4.4	88	8.8	176* b	67* c	64-110/20
51-28-5	2,4-Dinitrophenol	25	19.3	77	37.5	150* b	64* c	51-121/30
100-02-7	4-Nitrophenol	25	15.0	60	29.7	119* b	66* c	20-68/23
87-86-5	Pentachlorophenol	25	20.4	82	39.5	158* b	64* c	52-120/29
108-95-2	Phenol	5	2.9	58	5.9	118* b	68* c	18-67/20
58-90-2	2,3,4,6-Tetrachlorophenol	5	4.7	94	9.5	190* b	68* c	67-121/21
95-95-4	2,4,5-Trichlorophenol	5	4.9	98	9.5	190* b	64* c	67-119/21
88-06-2	2,4,6-Trichlorophenol	5	4.5	90	8.9	178* b	66* c	67-120/21
83-32-9	Acenaphthene	5	3.9	78	7.9	158* b	68* c	67-114/28
208-96-8	Acenaphthylene	5	4.1	82	8.1	162* b	66* c	67-119/26
62-53-3	Aniline	5	2.4	48	3.5	70	37 c	40-114/40
120-12-7	Anthracene	5	4.1	82	8.3	166* b	68* c	68-121/24
56-55-3	Benzo(a)anthracene	5	4.3	86	8.0	160* b	60* c	69-113/20
50-32-8	Benzo(a)pyrene	5	4.5	90	8.2	164* b	58* c	71-124/22
205-99-2	Benzo(b)fluoranthene	5	4.2	84	7.3	146* b	54* c	72-120/22
207-08-9	Benzo(k)fluoranthene	5	4.7	94	9.0	180* b	63* c	71-124/21
92-52-4	1,1'-Biphenyl	5	3.8	76	7.7	154* b	68* c	65-122/29
85-68-7	Butyl Benzyl Phthalate	5	5.0	100	9.8	196* b	65* c	73-123/21
106-47-8	4-Chloroaniline	5	3.6	72	6.6	132* b	59* c	58-113/51
111-44-4	bis(2-Chloroethyl)ether	5	4.1	82	8.4	168* b	69* c	50-118/28
108-60-1	2,2'-Oxybis(1-chloropropane)	5	4.1	82	8.0	160* b	64* c	43-138/21
91-58-7	2-Chloronaphthalene	5	3.8	76	7.5	150* b	65* c	64-114/30
218-01-9	Chrysene	5	4.2	84	8.1	162* b	63* c	70-115/20
53-70-3	Dibenzo(a,h)anthracene	5	4.6	92	8.7	174* b	62* c	70-124/21
132-64-9	Dibenzofuran	5	4.0	80	7.9	158* b	66* c	67-117/27
91-94-1	3,3'-Dichlorobenzidine	5	4.1	82	6.9	138* b	51* c	69-122/38
84-66-2	Diethyl Phthalate	5	4.4	88	8.5	170* b	64* c	71-123/21
131-11-3	Dimethyl Phthalate	5	4.4	88	8.6	172* b	65* c	69-119/20
117-84-0	Di-n-octyl Phthalate	5	5.1	102	10.0	200* b	65* c	66-121/22
99-65-0	1,3-Dinitrobenzene	25	24.2	97	47.7	191* b	65* c	71-122/21
121-14-2	2,4-Dinitrotoluene	5	4.9	98	9.7	194* b	66* c	73-122/21
606-20-2	2,6-Dinitrotoluene	5	4.5	90	8.8	176* b	65* c	72-121/21
117-81-7	bis(2-Ethylhexyl)phthalate	5	5.0	100	9.9	198* b	66* c	68-126/21
206-44-0	Fluoranthene	5	4.2	84	8.7	174* b	70* c	73-120/21

* = Outside of Control Limits.

5.2.1
5

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-BS	L0022766.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-BSD ^a	L0022767.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples:

Method: SW846 8270D

LA49344-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
86-73-7	Fluorene	5	4.1	82	8.2	164* b	67* c	69-118/25
118-74-1	Hexachlorobenzene	5	4.0	80	8.3	166* b	70* c	67-117/23
87-68-3	Hexachlorobutadiene	5	3.0	60	6.1	122* b	68* c	42-120/35
77-47-4	Hexachlorocyclopentadiene	5	2.9	58	5.6	112	64* c	35-123/48
193-39-5	Indeno(1,2,3-cd)pyrene	5	4.7	94	8.6	172* b	59* c	70-123/21
78-59-1	Isophorone	5	4.4	88	8.9	178* b	68* c	70-119/19
91-57-6	2-Methylnaphthalene	5	3.9	78	7.8	156* b	67* c	65-113/27
91-20-3	Naphthalene	5	3.8	76	7.6	152* b	67* c	63-114/23
88-74-4	2-Nitroaniline	25	23.6	94	46.6	186* b	66* c	68-125/21
99-09-2	3-Nitroaniline	25	21.5	86	41.8	167* b	64* c	69-117/23
100-01-6	4-Nitroaniline	25	22.3	89	43.9	176* b	65* c	67-122/19
98-95-3	Nitrobenzene	5	4.4	88	8.7	174* b	66* c	69-116/21
621-64-7	N-Nitroso-di-n-propylamine	5	4.4	88	9.4	188* b	72* c	67-120/20
86-30-6	N-Nitrosodiphenylamine	5	4.1	82	8.2	164* b	67* c	67-119/25
85-01-8	Phenanthrene	5	3.9	78	8.1	162* b	70* c	70-117/23
129-00-0	Pyrene	5	4.4	88	8.4	168* b	63* c	70-119/21
95-94-3	1,2,4,5-Tetrachlorobenzene	5	3.6	72	7.1	142* b	65* c	55-117/35
120-82-1	1,2,4-Trichlorobenzene	5	3.6	72	7.1	142* b	65* c	56-111/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	67%	131%*	23-85%
4165-62-2	Phenol-d5	54%	112%*	10-69%
118-79-6	2,4,6-Tribromophenol	88%	174%*	48-138%
4165-60-0	Nitrobenzene-d5	79%	155%*	51-128%
321-60-8	2-Fluorobiphenyl	74%	145%*	55-122%
1718-51-0	Terphenyl-d14	85%	164%*	43-138%

- (a) Internal Standard outside control limits due to spiking error.
- (b) Outside control limits due to low ISTD. Laboratory spiking error suspected.
- (c) Analytical precision exceeds laboratory control limits. Laboratory spiking error suspected.

* = Outside of Control Limits.

5.2.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MS	L0022778.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-MSD	L0022779.D	1	11/05/18	PC	11/05/18	OP12727	EL599
LA49355-3	L0022777.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples:

Method: SW846 8270D

LA49344-1

CAS No.	Compound	LA49355-3 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND	4.55	3.8	84	4.55	4.0	88	5	63-104/19
120-83-2	2,4-Dichlorophenol	ND	4.55	3.8	84	4.55	3.9	86	3	68-112/19
105-67-9	2,4-Dimethylphenol	ND	4.55	3.7	81	4.55	3.9	86	5	64-110/20
51-28-5	2,4-Dinitrophenol	ND	22.7	17.5	77	22.7	18.8	83	7	51-121/30
100-02-7	4-Nitrophenol	ND	22.7	11.7	51	22.7	11.9	52	2	20-68/23
87-86-5	Pentachlorophenol	ND	22.7	20.0	88	22.7	20.1	88	0	52-120/29
108-95-2	Phenol	0.54	4.55	2.6	45	4.55	2.8	50	7	18-67/20
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.55	4.3	95	4.55	4.5	99	5	67-121/21
95-95-4	2,4,5-Trichlorophenol	ND	4.55	4.4	97	4.55	4.7	103	7	67-119/21
88-06-2	2,4,6-Trichlorophenol	ND	4.55	4.2	92	4.55	4.3	95	2	67-120/21
83-32-9	Acenaphthene	ND	4.55	3.5	77	4.55	3.7	81	6	67-114/28
208-96-8	Acenaphthylene	ND	4.55	3.6	79	4.55	3.7	81	3	67-119/26
62-53-3	Aniline	ND	4.55	0.64	14* a	4.55	0.70	15* a	9	40-114/40
120-12-7	Anthracene	ND	4.55	3.7	81	4.55	3.9	86	5	68-121/24
56-55-3	Benzo(a)anthracene	ND	4.55	3.8	84	4.55	3.9	86	3	69-113/20
50-32-8	Benzo(a)pyrene	ND	4.55	4.1	90	4.55	4.1	90	0	71-124/22
205-99-2	Benzo(b)fluoranthene	ND	4.55	3.8	84	4.55	4.2	92	10	72-120/22
207-08-9	Benzo(k)fluoranthene	ND	4.55	4.1	90	4.55	3.9	86	5	71-124/21
92-52-4	1,1'-Biphenyl	0.50	4.55	3.9	75	4.55	4.0	77	3	65-122/29
85-68-7	Butyl Benzyl Phthalate	ND	4.55	4.4	97	4.55	4.6	101	4	73-123/21
106-47-8	4-Chloroaniline	ND	4.55	0.95	21* a	4.55	2.2	48* a	79* b	58-113/51
111-44-4	bis(2-Chloroethyl)ether	ND	4.55	3.7	81	4.55	3.9	86	5	50-118/28
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	4.55	3.6	79	4.55	3.6	79	0	43-138/21
91-58-7	2-Chloronaphthalene	ND	4.55	3.5	77	4.55	3.5	77	0	64-114/30
218-01-9	Chrysene	ND	4.55	3.7	81	4.55	3.9	86	5	70-115/20
53-70-3	Dibenzo(a,h)anthracene	ND	4.55	4.3	95	4.55	4.4	97	2	70-124/21
132-64-9	Dibenzofuran	ND	4.55	3.5	77	4.55	3.7	81	6	67-117/27
91-94-1	3,3'-Dichlorobenzidine	ND	4.55	ND	0* a	4.55	ND	0* a	nc	69-122/38
84-66-2	Diethyl Phthalate	ND	4.55	4.0	88	4.55	4.2	92	5	71-123/21
131-11-3	Dimethyl Phthalate	ND	4.55	3.8	84	4.55	4.0	88	5	69-119/20
117-84-0	Di-n-octyl Phthalate	ND	4.55	4.5	99	4.55	4.6	101	2	66-121/22
99-65-0	1,3-Dinitrobenzene	ND	22.7	20.7	91	22.7	22.2	98	7	71-122/21
121-14-2	2,4-Dinitrotoluene	ND	4.55	4.3	95	4.55	4.5	99	5	73-122/21
606-20-2	2,6-Dinitrotoluene	ND	4.55	3.9	86	4.55	4.1	90	5	72-121/21
117-81-7	bis(2-Ethylhexyl)phthalate	0.35	4.55	4.5	91	4.55	4.7	96	4	68-126/21
206-44-0	Fluoranthene	0.027	4.55	4.0	87	4.55	4.1	90	2	73-120/21

* = Outside of Control Limits.

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MS	L0022778.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-MSD	L0022779.D	1	11/05/18	PC	11/05/18	OP12727	EL599
LA49355-3	L0022777.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples:

Method: SW846 8270D

LA49344-1

CAS No.	Compound	LA49355-3 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
86-73-7	Fluorene	ND	4.55	3.6	79	4.55	3.8	84	5	69-118/25
118-74-1	Hexachlorobenzene	ND	4.55	3.8	84	4.55	4.1	90	8	67-117/23
87-68-3	Hexachlorobutadiene	ND	4.55	2.9	64	4.55	3.0	66	3	42-120/35
77-47-4	Hexachlorocyclopentadiene	ND	4.55	2.1	46	4.55	1.6	35	27	35-123/48
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.55	4.3	95	4.55	4.4	97	2	70-123/21
78-59-1	Isophorone	ND	4.55	4.0	88	4.55	4.1	90	2	70-119/19
91-57-6	2-Methylnaphthalene	ND	4.55	3.5	77	4.55	3.6	79	3	65-113/27
91-20-3	Naphthalene	ND	4.55	3.5	77	4.55	3.6	79	3	63-114/23
88-74-4	2-Nitroaniline	ND	22.7	20.5	90	22.7	21.9	96	7	68-125/21
99-09-2	3-Nitroaniline	ND	22.7	14.0	62* a	22.7	15.4	68* a	10	69-117/23
100-01-6	4-Nitroaniline	ND	22.7	13.0	57* a	22.7	13.9	61* a	7	67-122/19
98-95-3	Nitrobenzene	ND	4.55	3.9	86	4.55	4.0	88	3	69-116/21
621-64-7	N-Nitroso-di-n-propylamine	ND	4.55	4.0	88	4.55	4.2	92	5	67-120/20
86-30-6	N-Nitrosodiphenylamine	ND	4.55	3.6	79	4.55	3.9	86	8	67-119/25
85-01-8	Phenanthrene	0.056	4.55	3.6	78	4.55	3.8	82	5	70-117/23
129-00-0	Pyrene	ND	4.55	3.9	86	4.55	4.0	88	3	70-119/21
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.55	3.2	70	4.55	3.3	73	3	55-117/35
120-82-1	1,2,4-Trichlorobenzene	ND	4.55	3.2	70	4.55	3.4	75	6	56-111/30

CAS No.	Surrogate Recoveries	MS	MSD	LA49355-3	Limits
367-12-4	2-Fluorophenol	56%	63%	61%	23-85%
4165-62-2	Phenol-d5	44%	46%	50%	10-69%
118-79-6	2,4,6-Tribromophenol	93%	99%	98%	48-138%
4165-60-0	Nitrobenzene-d5	76%	77%	79%	51-128%
321-60-8	2-Fluorobiphenyl	74%	76%	77%	55-122%
1718-51-0	Terphenyl-d14	80%	83%	85%	43-138%

- (a) Outside control limits due to matrix interference.
- (b) Analytical precision exceeds laboratory control limits.

* = Outside of Control Limits.

5.3.1
5

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC1891-MB1	LC381384.D	1	11/03/18	MB	n/a	n/a	GLC1891

The QC reported here applies to the following samples:

Method: MADEP VPH REV 1.1

LA49344-1

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	30	ug/l	
	Aliphatics > C8-C10 (Unadj.)	ND	50	ug/l	
	Aromatics > C8-C10 (Unadj.)	ND	50	ug/l	

CAS No.	Surrogate Recoveries	Limits	
615-59-8	2,5-Dibromotoluene	105% ^a	70-130%
615-59-8	2,5-Dibromotoluene	101% ^b	70-130%

- (a) Recovery from Aromatics fraction.
- (b) Recovery from Aliphatics fraction.

6.1.1
6

Method Blank Summary

Job Number: LA49344
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12750-MB	LK113994.D	1	11/08/18	JS	11/06/18	OP12750	GLK743

The QC reported here applies to the following samples:

Method: SW846 8011

LA49344-1

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.020	ug/l	

CAS No.	Surrogate Recoveries	Limits
348-51-6	1-Chloro-2-fluorobenzene	89% 55-149%

6.1.2
6

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC1891-BS1	LC381382.D	1	11/03/18	MB	n/a	n/a	GLC1891
GLC1891-BSD1	LC381383.D	1	11/03/18	MB	n/a	n/a	GLC1891

The QC reported here applies to the following samples:

Method: MADEP VPH REV 1.1

LA49344-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	150	153	102	151	101	1	70-130/30
	Aliphatics > C8-C10 (Unadj.)	250	272	109	273	109	0	70-130/30
	Aromatics > C8-C10 (Unadj.)	250	270	108	268	107	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
615-59-8	2,5-Dibromotoluene	109% ^a	107% ^a	70-130%
615-59-8	2,5-Dibromotoluene	107% ^b	105% ^b	70-130%

- (a) Recovery from Aromatics fraction.
- (b) Recovery from Aliphatics fraction.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12750-BS	LK113995.D	1	11/08/18	JS	11/06/18	OP12750	GLK743
OP12750-BSD	LK113996.D	1	11/08/18	JS	11/06/18	OP12750	GLK743

The QC reported here applies to the following samples:

Method: SW846 8011

LA49344-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	0.251	0.30	119	0.32	127	6	60-148/18

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
348-51-6	1-Chloro-2-fluorobenzene	91%	91%	55-149%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA49317-2MS	LC381397.D	5	11/04/18	MB	n/a	n/a	GLC1891
LA49317-2MSD	LC381398.D	5	11/04/18	MB	n/a	n/a	GLC1891
LA49317-2	LC381388.D	1	11/03/18	MB	n/a	n/a	GLC1891

The QC reported here applies to the following samples:

Method: MADEP VPH REV 1.1

LA49344-1

CAS No.	Compound	LA49317-2 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	1110	750	1560	60* a	750	1600	65* a	3	70-130/50
	Aliphatics > C8-C10 (Unadj.)	733	1250	1760	82	1250	1770	83	1	70-130/50
	Aromatics > C8-C10 (Unadj.)	927	1250	1940	81	1250	1950	82	1	70-130/50

CAS No.	Surrogate Recoveries	MS	MSD	LA49317-2	Limits
615-59-8	2,5-Dibromotoluene	113% b	108% b	112% b	70-130%
615-59-8	2,5-Dibromotoluene	107% c	107% c	106% c	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Recovery from Aromatics fraction.

(c) Recovery from Aliphatics fraction.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12750-MS	LK114013.D	1	11/08/18	JS	11/06/18	OP12750	GLK743
OP12750-MSD	LK114014.D	1	11/08/18	JS	11/06/18	OP12750	GLK743
LA49360-13	LK114012.D	1	11/08/18	JS	11/06/18	OP12750	GLK743

The QC reported here applies to the following samples:

Method: SW846 8011

LA49344-1

CAS No.	Compound	LA49360-13 Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.246	0.30	122	0.25	0.29	116	3	60-151/32

CAS No.	Surrogate Recoveries	MS	MSD	LA49360-13 Limits
348-51-6	1-Chloro-2-fluorobenzene	90%	90%	93% 55-149%

* = Outside of Control Limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MB	X0005679.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA49344-1

CAS No.	Compound	Result	RL	Units	Q
	Aromatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aromatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aromatics > C16-C21 (Unadj.)	ND	140	ug/l	
	Aromatics > C21-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries	Results	Limits
84-15-1	o-Terphenyl	75%	40-140%
321-60-8	2-Fluorobiphenyl	73%	40-140%

7.1.1
7

Method Blank Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MB	Y0005679.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA49344-1

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aliphatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aliphatics > C16-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries	Results	Limits
3386-33-2	1-Chlorooctadecane	76%	40-140%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-BS	X0005680.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657
OP12712-BSD	X0005681.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA49344-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aromatics > C10-C12 (Unadj.)	469	325	69	332	70	2	40-140/30
	Aromatics > C12-C16 (Unadj.)	1410	992	70	1000	71	1	40-140/30
	Aromatics > C16-C21 (Unadj.)	2350	1870	80	1880	80	1	40-140/30
	Aromatics > C21-C35 (Unadj.)	3750	2730	73	2690	71	1	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	78%	76%	40-140%
321-60-8	2-Fluorobiphenyl	72%	69%	40-140%

* = Outside of Control Limits.

7.2.1
7

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-BS	Y0005680.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658
OP12712-BSD	Y0005681.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA49344-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.)	469	255	54	281	60	10	40-140/30
	Aliphatics > C12-C16 (Unadj.)	938	510	54	550	58	8	40-140/30
	Aliphatics > C16-C35 (Unadj.)	4220	2120	50	2300	54	8	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3386-33-2	1-Chlorooctadecane	56%	58%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MS	X0005682.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657
OP12712-MSD	X0005683.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657
LA49340-2	X0005696.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA49344-1

CAS No.	Compound	LA49340-2 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aromatics > C10-C12 (Unadj.)ND		464	341	74	466	323	69	5	40-140/50
	Aromatics > C12-C16 (Unadj.)ND		1390	1040	75	1400	981	70	6	40-140/50
	Aromatics > C16-C21 (Unadj.) 77.9		2320	1960	81	2330	1840	76	6	40-140/50
	Aromatics > C21-C35 (Unadj.)ND		3710	2870	77	3730	2670	72	7	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	LA49340-2	Limits
84-15-1	o-Terphenyl	81%	75%	79%	40-140%
321-60-8	2-Fluorobiphenyl	75%	74%	81%	40-140%

* = Outside of Control Limits.

7.3.1

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49344
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MS	Y0005682.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658
OP12712-MSD	Y0005683.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658
LA49340-2	Y0005696.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA49344-1

CAS No.	Compound	LA49340-2 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.) ND		464	328	71	466	323	69	2	40-140/50
	Aliphatics > C12-C16 (Unadj.) ND		928	636	69	933	642	69	1	40-140/50
	Aliphatics > C16-C35 (Unadj.) 92.4		4170	2700	62	4200	2780	64	3	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	LA49340-2	Limits
3386-33-2	1-Chlorooctadecane	69%	70%	80%	40-140%

* = Outside of Control Limits.

7.3.2
7

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- **Method Blank Summaries**
- **Matrix Spike and Duplicate Summaries**
- **Blank Spike and Lab Control Sample Summaries**
- **Serial Dilution Summaries**

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	6.9	9.3	-1.3	<100
Antimony	1.0	.043	.34		
Arsenic	1.0	.062	.26	-0.022	<1.0
Barium	1.0	.033	.46	0.035	<1.0
Beryllium	1.0	.0077	.28		
Boron	20	1.3	2.9		
Cadmium	0.50	.011	.12	-0.091	<0.50
Calcium	100	5.7	20	1.7	<100
Cerium	1.0	.0041	.16		
Chromium	1.0	.11	.15	-0.19	<1.0
Cobalt	1.0	.012	.14		
Copper	1.0	.91	.74		
Iron	100	48	16	-22	<100
Lanthanum	1.0	.0038	.41		
Lithium	2.0	.1	.61		
Lead	1.0	.0081	.13	-0.13	<1.0
Magnesium	100	1.6	11	-19	<100
Manganese	2.0	.48	.53	-0.072	<2.0
Molybdenum	1.0	.048	.89		
Nickel	1.0	.037	.2		
Potassium	100	3.4	7.6	-20	<100
Selenium	5.0	.38	3.1	-0.30	<5.0
Silver	1.0	.0047	.13	-0.14	<1.0
Silicon	500	6.6	130		
Sodium	100	24	9.9	0.046	<100
Strontium	2.0	.12	.27	-0.033	<2.0
Thallium	1.0	.021	.86		
Tin	2.0	.034	.19		
Titanium	1.0	.15	.77		
Uranium	1.0	.0048	.17		
Vanadium	1.0	.027	.1		
Zinc	5.0	1.5	1.1	-0.34	<5.0

Associated samples MP13233: LA49344-1, LA49344-1F

8.1.1
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

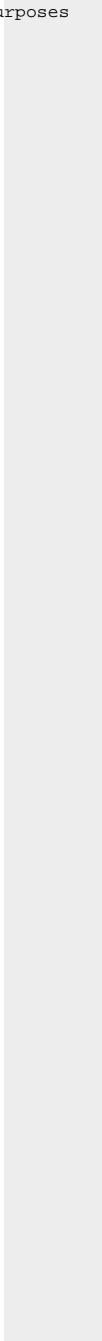
QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	RL	IDL	MDL	MB raw	final
-------	----	-----	-----	-----------	-------

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested



8.1.1
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original MS		SpikeLot MPICPMS6	% Rec	QC Limits
Aluminum	0.00	5090	5100	99.8	75-125
Antimony					
Arsenic	11.8	119	100	107.2	75-125
Barium	75.9	161	100	85.1	75-125
Beryllium					
Boron					
Cadmium	0.0	107	100	107.0	75-125
Calcium	51500	44000	5000	-150.0(a)	75-125
Cerium					
Chromium	1.5	112	100	110.5	75-125
Cobalt					
Copper	anr				
Iron	0.00	5420	5000	108.4	75-125
Lanthanum					
Lithium					
Lead	0.0	105	100	105.0	75-125
Magnesium	7860	11800	5000	78.8	75-125
Manganese	69.2	166	100	96.8	75-125
Molybdenum					
Nickel	anr				
Potassium	20300	20400	5000	2.0 (a)	75-125
Selenium	0.0	530	500	106.0	75-125
Silver	0.0	108	100	108.0	75-125
Silicon					
Sodium	12100	15100	5000	60.0N(b)	75-125
Strontium	153	231	100	78.0	75-125
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	311	365	100	54.0N(b)	75-125

Associated samples MP13233: LA49344-1, LA49344-1F

8.1.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original MS	SpikeLot MPICPMS6 % Rec	QC Limits
-------	---------------------------	----------------------------	--------------

Results < IDL are shown as zero for calculation purposes

- (*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- (b) Spike recovery indicates possible matrix interference or sample non-homogeneity.

8.1.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original MSD		SpikeLot MPICPMS6 % Rec		MSD RPD	QC Limit
Aluminum	0.00	5670	5100	111.2	10.8	20
Antimony						
Arsenic	11.8	128	100	116.2	7.3	20
Barium	75.9	188	100	112.1	15.5	20
Beryllium						
Boron						
Cadmium	0.0	118	100	118.0	9.8	20
Calcium	51500	49800	5000	-34.0(a)	12.4	20
Cerium						
Chromium	1.5	120	100	118.5	6.9	20
Cobalt						
Copper	anr					
Iron	0.00	5810	5000	116.2	6.9	20
Lanthanum						
Lithium						
Lead	0.0	117	100	117.0	10.8	20
Magnesium	7860	12800	5000	98.8	8.1	20
Manganese	69.2	179	100	109.8	7.5	20
Molybdenum						
Nickel	anr					
Potassium	20300	23200	5000	58.0 (a)	12.8	20
Selenium	0.0	540	500	108.0	1.9	20
Silver	0.0	125	100	125.0	14.6	20
Silicon						
Sodium	12100	17100	5000	100.0	12.4	20
Strontium	153	248	100	95.0	7.1	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	311	393	100	82.0	7.4	20

Associated samples MP13233: LA49344-1, LA49344-1F

8.12
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original MSD	SpikeLot MPICPMS6 % Rec	MSD RPD	QC Limit
-------	----------------------------	----------------------------	------------	-------------

Results < IDL are shown as zero for calculation purposes

- (*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

8.1.2
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 11/02/18

Metal	BSP Result	Spikelot MPICPMS6	% Rec	QC Limits
Aluminum	5140	5100	100.8	80-120
Antimony				
Arsenic	103	100	103.0	80-120
Barium	102	100	102.0	80-120
Beryllium				
Boron				
Cadmium	101	100	101.0	80-120
Calcium	5120	5000	102.4	80-120
Cerium				
Chromium	101	100	101.0	80-120
Cobalt				
Copper	anr			
Iron	4970	5000	99.4	80-120
Lanthanum				
Lithium				
Lead	104	100	104.0	80-120
Magnesium	5150	5000	103.0	80-120
Manganese	100	100	100.0	80-120
Molybdenum				
Nickel	anr			
Potassium	5200	5000	104.0	80-120
Selenium	509	500	101.8	80-120
Silver	101	100	101.0	80-120
Silicon				
Sodium	5100	5000	102.0	80-120
Strontium	102	100	102.0	80-120
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	104	100	104.0	80-120

Associated samples MP13233: LA49344-1, LA49344-1F

8.1.3
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	BSP Result	Spikelot MPICPMS6 % Rec	QC Limits
-------	---------------	----------------------------	--------------

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.1.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original SDL 10:50%DIF		QC Limits
Aluminum	0.00	0.00	NC 0-10
Antimony			
Arsenic	11.8	9.13	22.5 (a) 0-10
Barium	75.9	44.7	41.1*(b) 0-10
Beryllium			
Boron			
Cadmium	0.00	0.00	NC 0-10
Calcium	51500	28200	45.1*(b) 0-10
Cerium			
Chromium	1.52	0.00	100.0(a) 0-10
Cobalt			
Copper	anr		
Iron	0.00	0.00	NC 0-10
Lanthanum			
Lithium			
Lead	0.00	0.00	NC 0-10
Magnesium	7860	3910	50.2*(b) 0-10
Manganese	69.2	40.8	41.1 (a) 0-10
Molybdenum			
Nickel	anr		
Potassium	20300	10800	46.5*(b) 0-10
Selenium	0.00	0.00	NC 0-10
Silver	0.00	0.00	NC 0-10
Silicon			
Sodium	12100	7340	39.3*(b) 0-10
Strontium	153	91.4	40.2*(b) 0-10
Thallium			
Tin			
Titanium			
Uranium			
Vanadium			
Zinc	311	195	37.4 (a) 0-10

Associated samples MP13233: LA49344-1, LA49344-1F

8.1.4
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original SDL 10:50%DIF	QC Limits
-------	--------------------------------------	--------------

Results < IDL are shown as zero for calculation purposes

- (*) Outside of QC limits
- (anr) Analyte not requested
- (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- (b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date:

11/02/18

Metal	Sample ml	Final ml	TD29644-5F Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Antimony										
Beryllium										
Boron										
Cerium										
Cobalt										
Lanthanum										
Lithium										
Molybdenum										
Silicon										
Sodium	0.2	10	12100	242	5925	0.025	2000	5000	113.7	75-125
Thallium										
Tin										
Titanium										
Uranium										
Vanadium										
Zinc	0.2	10	311	6.22	115.6	0.1	10	100	109.4	75-125

Associated samples MP13233: LA49344-1, LA49344-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

8.1.5
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 11/05/18

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.06	.081	-0.0031	<0.20

Associated samples MP13253: LA49344-1, LA49344-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 11/05/18

Metal	TD29567-16 Original MS	SpikeLot HGSPIKE1	% Rec	QC Limits
-------	---------------------------	----------------------	-------	--------------

Mercury	0.0	4.5	5	90.0	75-125
---------	-----	-----	---	------	--------

Associated samples MP13253: LA49344-1, LA49344-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

8.2.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49344
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 11/05/18

Metal	TD29567-16 Original MSD	Spikelot HGSPIKE1	% Rec	MSD RPD	QC Limit
Mercury	0.0	4.4	5	88.0	2.2 20

Associated samples MP13253: LA49344-1, LA49344-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

8.2.2
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 11/05/18

Metal	BSP Result	Spikelot HGSPIKE1	% Rec	QC Limits
-------	---------------	----------------------	-------	--------------

Mercury 5.1 5 102.0 80-120

Associated samples MP13253: LA49344-1, LA49344-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA49344
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 11/05/18

Metal	TD29567-16	Original	SDL 1:5	%DIF	QC Limits
-------	------------	----------	---------	------	-----------

Mercury 0.00 0.00 NC 0-

Associated samples MP13253: LA49344-1, LA49344-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Misc. Forms

Custody Documents and Other Forms

(SGS Houston, TX)

Includes the following where applicable:

- Chain of Custody

Client / Reporting Information Company Name: SGS North America Inc. Street Address: 500 Ambassador Caffery Parkway City: Scott State: LA Zip: 70583 Project Contact: ralph.frye@sgs.com E-mail: Phone #: 800-304-5227 Fax #: Sampler(s) Name(s): KC/DC Phone:		Project Information Project Name: 8060.00 Indigo-Desoto Parish, LA Billing Information (if different from Report to) Project #: Street Address: Client Purchase Order #: City: State: Zip: Project Manager: Attention:		FED-EX Tracking # SGS Quote # Bottle Order Control # SGS Job # LA49344														
Requested Analysis (see TEST CODE sheet)		Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment DI - Dirt LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EB-Equipment Blank RB- Rinse Blank TB-Trip Blank																
SGS Sample # 1	Field ID / Point of Collection 031-7353Z (COWDIN 27 RIG SUPPLY)	MEQ/HCl Vial #	Date 10/30/18	Time 12:05:00 PM	Sampled by KC/DC	Matrix AQ	# of bottles	HCl <input type="checkbox"/>	NiOH <input type="checkbox"/>	NiOH <input type="checkbox"/>	H2SO4 <input type="checkbox"/>	NONE <input type="checkbox"/>	DI Water <input type="checkbox"/>	MICH <input type="checkbox"/>	ENCORE <input type="checkbox"/>	Number of preserved Bottles X 1	Requested Analysis (see TEST CODE sheet)	Matrix Codes
Turnaround Time (Business days)		Approved By (SGS PM) / Date:		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> TRRP <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDD Format <input type="checkbox"/> FULL T1 (Level 3+4) <input type="checkbox"/> Other <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" X COMMB Commercial "A" = Results Only Commercial "B" = Results + QC Summary				Comments / Special Instructions 1-500ml wrap										
Relinquished by Sampler:		Date Time: 11/1/18	Received By: D. D. D.		Date Time: 11/1/18	Received By: Berni												
Relinquished by Sampler:		Date Time:	Received By: 36 Berni 11-1-18		Date Time: 11/1/18	Received By: 36 Berni 11-1-18												
Relinquished by:		Date Time:	Received By:		Date Time:	Received By:												
Relinquished by:		Date Time:	Received By:		Date Time:	Received By:												
Relinquished by:		Date Time:	Received By:		Date Time:	Received By:												

9.1
9

SGS Sample Receipt Summary

Job Number: LA49344 **Client:** SGS **Project:** 8060.00 INDIGO
Date / Time Received: _____ **Delivery Method:** Accutest Courier **Airbill #'s:** _____
No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;
Cooler Temps (Initial/Adjusted): #1: (2/2);

Cooler Security Y or N Y or N
 1. Custody Seals Present: 3. COC Present:
 2. Custody Seals Intact: 4. Smpl Dates/Time OK

Cooler Temperature Y or N
 1. Temp criteria achieved:
 2. Cooler temp verification: _____
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler:
 2. Trip Blank listed on COC:
 3. Samples preserved properly:
 4. VOCs headspace free:

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles:
 2. Container labeling complete:
 3. Sample container label / COC agree:

Sample Integrity - Condition Y or N
 1. Sample recvd within HT:
 2. All containers accounted for:
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear:
 2. Bottles received for unspecified tests
 3. Sufficient volume recvd for analysis:
 4. Compositing instructions clear:
 5. Filtering instructions clear:

Comments

9.1
9

Sample Receipt Log

Job #: LA49344 _____

Date / Time Received: 11/1/2018 _____

Initials: DS _____

Client: _____

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	LA49344-1	500ml	1	M1A	N/P	Note #2 - Preservative check not applicable.				

9.1
9

LA49344: Chain of Custody
Page 3 of 3

General Chemistry

QC Data Summaries

(SGS Houston, TX)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA49344
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate	GN94106	5.0	2.0	mg/l				
Alkalinity, Carbonate	GN94107	5.0	0.0	mg/l				
Alkalinity, Total as CaCO3	GN94105	5.0	0.0	mg/l	100	104	104.0	90-100%
Bromide	GP50447/GN94345	0.50	0.0	mg/l	10	9.68	96.8	90-110%
Bromide	GP50471/GN94417	0.50	0.0	mg/l	10	9.71	97.1	90-110%
Chloride	GP50447/GN94345	0.50	0.0	mg/l	10	9.37	93.7	90-110%
Chloride	GP50471/GN94417	0.50	0.0	mg/l	10	9.46	94.6	90-110%
Fluoride	GP50447/GN94345	0.50	0.0	mg/l	10	9.87	98.7	90-110%
Fluoride	GP50471/GN94417	0.50	0.0	mg/l	10	9.90	99.0	90-110%
Nitrogen, Nitrate	GP50447/GN94345	0.50	0.0	mg/l	10	9.25	92.5	90-110%
Nitrogen, Nitrate	GP50471/GN94417	0.50	0.0	mg/l	10	9.26	92.6	90-110%
Nitrogen, Nitrite	GP50447/GN94345	0.50	0.0	mg/l	10	9.71	97.1	90-110%
Nitrogen, Nitrite	GP50471/GN94417	0.50	0.0	mg/l	10	9.88	98.8	90-110%
Silica, Dissolved	GN94250	0.070	0.0	mg/l	1.07	1.0	93.5	80-120%
Solids, Total Dissolved	GN94086	10	0.0	mg/l	500	483	96.6	88-110%
Specific Conductivity	GN94054	1.0	<1.0	umhos/cm				
Sulfate	GP50447/GN94345	0.50	0.0	mg/l	10	9.61	96.1	90-110%
Sulfate	GP50471/GN94417	0.50	0.0	mg/l	10	9.71	97.1	90-110%

Associated Samples:

Batch GN94054: LA49344-1
Batch GN94086: LA49344-1
Batch GN94105: LA49344-1
Batch GN94106: LA49344-1
Batch GN94107: LA49344-1
Batch GN94250: LA49344-1
Batch GP50447: LA49344-1
Batch GP50471: LA49344-1
(*) Outside of QC limits

10.1
10

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA49344
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Bicarbonate	GN94106	LA49344-1	mg/l	35.0	35.0	0.0	0-10%
Alkalinity, Carbonate	GN94107	LA49344-1	mg/l	0.0	0.0	0.0	0-20%
Alkalinity, Total as CaCO3	GN94105	LA49344-1	mg/l	35.0	35.0	0.0	0-10%
Bromide	GP50471/GN94417	LA49322-5	mg/l	0.40	0.42	4.9	0-19%
Chloride	GP50447/GN94345	LA49322-7	mg/l	5.1	5.1	0.0	0-13%
Silica, Dissolved	GN94250	LA49341-1	mg/l	14.6	14.0	4.2	0-20%
Solids, Total Dissolved	GN94086	LA49234-3	mg/l	594	598	0.7	0-5%
Specific Conductivity	GN94054	LA49341-1	umhos/cm	1460	1460	0.0	0-10%
Sulfate	GP50447/GN94345	LA49322-7	mg/l	0.0	0.40	200.0 (a)	0-20%
Sulfate	GP50471/GN94417	LA49322-5	mg/l	3.1	3.2	3.2	0-20%

Associated Samples:

Batch GN94054: LA49344-1
Batch GN94086: LA49344-1
Batch GN94105: LA49344-1
Batch GN94106: LA49344-1
Batch GN94107: LA49344-1
Batch GN94250: LA49344-1
Batch GP50447: LA49344-1
Batch GP50471: LA49344-1

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

10.2
10

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA49344
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN94105	LA49344-1	mg/l	35.0	25	56.0	84.0	75-117%
Bromide	GP50471/GN94417	LA49322-5	mg/l	0.40	10	9.9	95.0	80-120%
Chloride	GP50447/GN94345	LA49322-7	mg/l	5.1	10	15.0	99.0	80-120%
Silica, Dissolved	GN94250	LA49341-1	mg/l	14.6	5.35	19.3	87.9	75-125%
Sulfate	GP50447/GN94345	LA49322-7	mg/l	0.0	10	9.7	97.0	80-120%
Sulfate	GP50471/GN94417	LA49322-5	mg/l	3.1	10	12.7	96.0	80-120%

Associated Samples:

Batch GN94105: LA49344-1

Batch GN94250: LA49344-1

Batch GP50447: LA49344-1

Batch GP50471: LA49344-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.3
10