2020-2025 LSM-1-A PERMIT RENEWAL
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-No change from the approved LSM-1-A U and W Expansion/Revision Permit and Revisions, 2006 FYPA, and EONs.

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The purpose of this renewal application is to extend operation and reclamation activities for the 2020-2025 mining years within the LSM-1-A permit. Sections 2-6 have not been included in this application as no change was required from the previously approved renewals, revisions, and environmental/operation narratives (EON). All previously submitted and approved renewals, revisions, and EONs are available for review upon request at the office of the Louisiana Office of Conservation. Exhibit 8.A-1, Five Year Mine Plan, and Exhibit 8.A-2, Life of Mine Plan, depict the current permit term and the five year and life of mine mining progression, respectively.

Currently the Oxbow Lignite Surface Mine, which operates under the LSM-1-A permit, has three draglines within its permit (DL1, DL2, and DL3). DL1 is operating in the T-West mining area and will finish mining around the middle of 2020. DL2 and DL3 are sitting idle in the U-North and T-West mining areas, respectively. At this time no further mining is anticipated after DL1 finishes T-West. The draglines present in the LSM-1-A permit may be used for reclamation activities during this renewal permit term. If Dolet Hills Lignite (DHL) plans to resume mining during this permit term it will not do so until all required permitting is approved.

1. ADMINISTRATIVE

1.A Interested Party Information [2305]

1. Applicant Information

a. Name: ***AEP/SWEPCO and CLECO***

b. Type of Business Entity: ***AEP/SWEPCO and CLECO are both corporations.***

c. Charter or Trade Registration Number: ***Not Applicable***

d. Street Address:

AEP/SWEPCO	***CLECO POWER LLC***
428 Travis Street	***2030 Donahue Ferry Road***
Shreveport, LA 71156	***Pineville, LA 71360-5226***

e. Mailing Address:

AEP/SWEPCO	***CLECO POWER LLC***
428 Travis Street	***P.O. Box 5000***
Shreveport, LA 71156	***Pineville, LA 71360-5000***

f. Telephone Number: ***AEP/SWEPCO*** ***CLECO POWER LLC***
(888) 216-3523 ***(318) 484-7400***

g. Employer Identification Number: ***Not Applicable***

2. Applicant's Resident Agent

a. Name: ***Curt Lightle-Mine Manager***

b. Type of Business Entity (If Applicable): ***Not Applicable***

c. Charter or Trade Registration Number: ***Not Applicable***

d. Street Address: ***2002 Crow Lane***
Pelican, LA 71063

e. Mailing Address: ***2002 Crow Lane***
Pelican, LA 71063

f. Telephone Number: ***(318) 871-3800***

g. Employer Identification Number: ***Not Applicable***

3. Person Who Will Pay the Louisiana Reclamation Fee

a. Name: ***Dolet Hills Lignite Company, LLC***

b. Type of Business Entity (If Applicable): ***Limited Liability Company***

c. Charter or Trade Registration No.: ***Not Applicable***

d. Street Address: ***2002 Crow Lane***
Pelican, LA 71063

e. Mailing Address: ***2002 Crow Lane***
Pelican, LA 71063

f. Telephone Number: ***(318) 743-6103***

g. Employer Identification Number: ***Not Applicable***

4. Operator Information (if different from the permittee)

   a. Name: ***Dolet Hills Lignite Company, LLC***

   b. Type of Business Entity (If Applicable): ***Limited Liability Company***

   c. Charter or Trade Registration No.: ***Not Applicable***

   d. Street Address: ***2002 Crow Lane***
   Pelican, LA 71063

   e. Mailing Address: ***2002 Crow Lane***
   Pelican, LA 71063

   f. Telephone Number: ***(318) 871-3800***

   g. Employer Identification Number: ***Not Applicable***

5. Contact Person for Permit Review Issues and Correspondence

   a. Name: ***Randy Harris, P.E. (Texas)***

   b. Mailing Address: ***2002 Crow Lane***
   Pelican, LA 71063

   c. Telephone Number: ***(318) 871-3800***

1.B Mine Information

1. Mine Name: ***Oxbow Lignite Mine***

2. Type of permit application: ***Renewal***

3. Product to be mined: ***Lignite***

4. Type and method of mining operation: ***Surface Mine***

5. Location: ***Refer to Exhibit 1.B.5-1, General Location Map of this 2020-2025 LSM-1-A Permit Renewal.***

6. Parishes: ***DeSoto Parish and Red River Parish***

7. General description of the location of the proposed mining area:

   The U-Area is located in DeSoto Parish in Township 11N, Range 10W in partial Sections 3, 4, 5, 8, 9, 10, 15, and 16. The T-Area is located in Red River Parish in Township 12N, Range 10W, partial Sections 33, 34, and 35 and Township 11N, Range 10W, partial Sections 2, 3, and 4.

1.C Certification

I, (name) _____, (title) _____ state that I have knowledge of the facts set forth in this Permit Application and that the same are true to the best of my knowledge and belief.

Signature _____Date_____

(Applicant)

1.D Permit Area Information

1. Permit Term: ___**X**___Standard 5 year [2313.A]
   The permit term for this application is 2020 to 2025.

2. Give a description of the land upon which the applicant proposes to conduct surface coal mining operations:

   a. Is any part of the Permit Area located on federal, state, or tribal lands? _**X**_ Y ___N
      Dolet Bayou and Bayou Pierre, which are managed by the state, are included in the 2020-2025 LSM-1-A Permit Renewal.

3. Permit Acreage and Estimated Bonding Scenario

   a. Total permit acreage:
      The total acreage of the LSM-1-A permit is approximately 15,332.7 acres and approximately 6,844.6 acres is bonded. Exhibit 1.D.3.b-1 shows the permitted area and bonded area.

   b. Acreage and type of bond for each initial mining increment:

The bond increments are shown on Exhibit 1.D.3.b-1, LSM-1-A Bonding Increments. Below are the total amounts bonded for each increment including their riders and any additional bonding.

Bond Increment	Acreage	Amount Bonded
01A0901	2,639.0	$3,371,852.64
01A1101	467.7	$5,308,713.27
01A1502	168.9	$9,693,598.87
01A1601	3,569.0	$58,737,840.68

c. Increment(s) on which mining will initially begin upon issuance of this permit:
Mining and reclamation activities for the 2020-2025 LSM-1-A Permit Renewal will be ongoing in the 01A0901, 01A1101, 01A1502 and 01A1601 bond increments.

4. __X__ Y ____ N Has any acreage in the proposed permit area been previously disturbed by mining? If yes, supply the following for any and all previously disturbed areas:

a. Boundaries of the previously disturbed area(s) and type and status of mine.

The previously mined areas in T-West and U-Area are shown on Exhibit 1.D.4-1. These areas are located within the active surface mining permit, LSM-1-A. Exhibit 1.D.4-1 also shows areas of the mine that were redisturbed.

No new redisturbance will take place during this permit renewal term.

b. Permit number under which each mine was disturbed and the approximate number of acres.
All previously mined areas were within the LSM-1-A permit boundary.

5. __Y __X__ N Is the property in the permit covered by zoning or other land use restrictions? If yes, indicate the jurisdictional authority and zoning or land use restriction for the entire permit area. If more than one zoning classification exists for the permit area, identify the boundaries of each on the permit map.
There are no known zoning or other land restrictions under local law for the 2020-2025 LSM-1-A Permit Renewal.

6. Describe access to the proposed mine from a known point on the nearest public highway:
The primary access point into the 2020-2025 LSM-1-A Permit Renewal Area is West Red Bayou Road from LA177 and then onto Crow Lane until the guard gate at the newly constructed shop and office facilities. A second access point is from LA1 onto Parish Road 604, through the T mining areas, across the Bayou Pierre Bridge and into the U mining areas.

7. Structures within and adjacent to the Permit Area: Provide two maps showing structures within the Permit Area and within ¼ mile of the outer Permit Boundary.
Exhibit 1.D.7-1 is attached and Exhibit 1.D.7-2 is available upon request from LOC.

   a. On Exhibit 1.D.7-1, show:

      i. Water Wells
      All known water wells within the 2020-2025 LSM-1-A Permit Renewal Area are shown on Exhibit 1.D.7-1.

      ii. All buildings within 1,000 feet of the proposed permit area, with identification of the current use of the buildings; [2535.4]
      All known buildings are shown on Exhibit 1.D.7-1.

      iii. The location of surface and subsurface manmade features within, passing through or passing over the proposed permit area including, but not limited to, major electric transmission lines, roads, and agricultural drainage tile fields; [2535.5]
      All known surface and subsurface manmade features within, passing through or over the 2020-2025 LSM-1-A Permit Renewal Area are shown on Exhibit 1.D.7-1 and Exhibit 8.B.5-1, Road Systems. All mining haulroads and access roads are shown on Exhibit 8.B.5-1, and all other features are shown on Exhibit 1.D.7-1.

      iv. The location and boundaries of any proposed reference areas for determining the success of revegetation; [2535.6]
      No proposed reference areas are planned at the time of the 2020-2025 LSM-1-A Permit Renewal, the Office will be notified if and when a reference area is proposed.

v. The locations of water supply intakes for current users of water flowing into, out of, and within a hydrologic area defined by the office, and those surface waters which will receive discharges from affected areas in the proposed mine plan area; [2535.7]
Water wells and surface water are discussed in depth in Section 5 of the previously approved permits and EONs.

vi. Each public road located in or within 100 feet of the proposed permit area;[2535.8]
All public roads within or near the 2020-2025 LSM-1-A Permit Renewal Area are shown on Exhibit 1.D.7-1.

vii. Each public or private cemetery or Indian burial ground located in or within 100 feet of the proposed permit area; [2535.10]
The Starlight Baptist Church Cemetery is the only known cemetery within the LSM-1-A permit boundary. The Starlight Baptist Church Cemetery will NOT be mined through.

viii. Any land within the proposed mine plan area and adjacent area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System, including study rivers, designated under §5(a) of the Wild and Scenic Rivers Act or the Louisiana Scenic Rivers Act; [2535.11]
None are present.

b. Exhibit 1.D.7-2: Submit this map under separate cover: Oil and Gas infrastructure within the proposed permit area and adjacent one quarter mile:
Exhibit 1.D.7-2 is available upon request for review at LOC.

i. The boundaries of any public park and locations of any cultural or historical resources listed or eligible for listing in the National Register of Historic Places and known archaeological sites within the mine plan or adjacent areas; [2535.9]
Two known archaeological sites are shown on Exhibit 8.A-1, which is available for review in person at the Louisiana Office of Conservation. There are no public parks or any eligible locations for listing in the National Register of Historic Places within the 2020-2025 LSM-1-A Permit Renewal Area.

ii. Provide location and depth (if available) of gas and oil wells;
Gas and oil well locations are based off a current search of SONRIS' records and field surveying. Due to inaccessibility of some areas within the 2020-2025 LSM-1-A Permit Renewal Area, Exhibit 1.D.7-2 may not be complete. If more structures are found, Exhibit 1.D.7-2 will be updated.

iii. Location and size (if available) of pipelines.
Location and size of pipelines is included on Exhibit 1.D.7-2, which was submitted under separate cover and is available for review at the LOC.

1.E Identification of Interests [2305] *After application approval, the applicant will be required to update the information or certify that the information is complete and accurate within 5 days of permit issuance.*

1. *Applicant's* Ownership and Control Information

a. Organizational Chart [2305.A.2.d]. Attach Figure 1.E.1-1, persons or entities owning or controlling the Applicant.
Attached is Figure 1.E.1-1, Organizational Chart. AEP Utilities is not included on Figure 1.E.1-1 because its control of SWEPCO ended in 2008, which is out of the five year range requirement.

b. Table 1.E.1-x: Listing of each person or entity who currently, or in the past five years, owns or controls the Applicant listed on the Organizational Chart [2305.A.2.d]. Attach one table per company listed on the organizational chart.
Attached are Tables 1.E.1-1 (AEP), 1.E.1-2 (SWEPCO), 1.E.1-3 (CLECO Corporate Holdings), 1.E.1-4 (CLECO Power), Ownership and Control Information of Applicant.

c. Table 1.E.1-5: Other Mines Owned or Controlled by the Applicant, Controllers, or Controlled Companies in the Past Five Years [2305.A.3.d]

TABLE 1.E.1-5				
OTHER MINES OWNED OR CONTROLLED BY APPLICANT OR CONTROLLERS				
Name	**Employer Identification No.**	**Permit No.**	**MSHA No.**	**Date of MSHA No. Issuance**
Dolet Hills Lignite Mine	N/A	LSM-3	16-01031	9/9/1985
South Hallsville No. 1 Mine	31-1005293	33H	41-03101	11/2/1981
Roadside Portal	31-1807360	C-1981-041	05-03012	2/1/1977

d. Table 1.E.1-6: Pending Surface Coal Mining Operations.
There are no pending surface coal mining operations for the Applicant or any person or entity who currently controls the Applicant.

2. *Operator's* Ownership and Control Information, if different from that of the Applicant's

a. Organizational Chart [2305.A.2.d]. Attach Figure 1.E.2-1, persons or entities owning or controlling the Operator.
Attached is Figure 1.E.2-1, Organizational Chart.

b. Table 1.E.2-x: Listing of each person or entity who currently, or in the past five years, owns or controls the Operator on the Organizational Chart [2305.A.2.d]. Attach one table per company listed on the organizational chart.
Attached are Tables 1.E.2-1 (AEP), 1.E.2-2 (SWEPCO), 1.E.2-3 (CLECO Corporate Holdings), 1.E.2-4 (CLECO Power), 1.E.2-5 (DHLC), Ownership and Control Information of Operator.

c. Table 1.E.2-6: Other Mines Owned or Controlled in the Past Five Years [2305.A.3.d]

TABLE 1.E.2-6				
OTHER MINES OWNED OR CONTROLLED BY OPERATOR				
Name	**Employer Identification No.**	**Permit No.**	**MSHA No.**	**Date of MSHA No. Issuance**
Dolet Hills Lignite Mine	N/A	LSM-3	16-01031	9/9/1985

d. Table 1.E.2-7: Pending Surface Coal Mining Operations
There are no pending surface coal mining operations for the Operator or any person or entity who currently controls the Operator.

1.F Compliance Information [2307] After application approval, the applicant will be required to update this information or certify that the information is complete and accurate within 5 days of permit issuance

1. __Y __**X**__N Does the Applicant, Applicant's operator, or and subsidiary, affiliate, or persons controlled by or under common control with the Applicant or Applicant's operator has a federal or state mining Permit suspended or revoked in the last five years, or forfeited a mining bond or similar security deposit in lieu of bond [2307.A.1]? If yes, fill out Table 1.F.1-1 [2307.A.2]. If no, you may delete the table.
The Applicant has had no federal or state mining permits suspended or revoked within the last five years, nor forfeited a mining bond or similar security deposit in lieu of bond.

2. List all Notices of Violation (NOV) and/or Cessation Orders (CO), abated and unabated, received by the applicant and/or the operator or any person who owns or controls the applicant or operator, during the five-year period preceding the application date for any violation pertaining to air, water, or soil environment protection at any surface coal mining operation. You need not list safety violation issued by MSHA. [2307.A.3]
Attached is Table 1.F.2-1, List of All Notice of Violations and/or Cessation Orders.

3. List all anticipated mine-related structures (or existing, if a renewal) that will require MSHA approval [2307.A.4]

Sedimentation Pond 97-E5 is an existing MSHA pond with an MSHA I.D. No. of 1211-LA-09-01031-10. No other MSHA impoundments will exist or be built within the 2020-2025 LSM-1-A Permit Renewal Area.

4. Submit a certificate of proof of Liability Insurance with this application, listing the Louisiana Office of Conservation as the certificate holder. A new certificate must be filed with the Office every time it is renewed [2317].
   Attachment 1.F.4-1, Certificate of Insurance, is attached.

5. List all other licenses and permits required to conduct mining operations including, but not limited to MSHA I.D. and LPDES permit number, [2317] on Table 1.F.5-1
   Attached is Table 1.F.5-1, Identification of Other Licenses and Permits.

1.G Rights of Entry [2305.A.5,2309]

1. Ownership of Property in Permit Area and Right of Entry.

   a. Exhibit 1.G.1-1: Show the property ownership boundaries of each parcel of land in the permit area. Highlight all uncontrolled properties as of the date of application submittal. *If any lands are uncontrolled, an updated map will be required prior to permit issuance. As control is gained over additional lands, the applicant must provide applicable documentation to the Office* ***at least six months*** *prior to disturbing those lands. If control is not gained, changes to the mining plan must be provided to the Office* ***at least six months*** *prior to implementing the changed mining plan.*
   Attached is Exhibit 1.G.1-1, Right of Entry. The land tracts that are listed on Table 1.G.1-1 are differentiated as so on Exhibit 1.G.1-1's legend. The tracts listed in Table 1.G.1-1 are where mining and reclamation activities are currently ongoing. Land control held by the Oxbow Lignite Company is also differentiated on both the table and exhibit.

   b. Provide a description of the documents upon which the applicant bases the legal right to enter and begin surface mining activities in the permit area and whether that right is the subject of pending litigation. The description shall identify those documents by type and date of execution, identify the specific lands to which the document pertains, and explain the legal rights claimed by the applicant. Table 1.G.1-1 Property Owners within the Proposed Permit Area.
   Attached is Table 1.G.1-1, Property Owners within the Proposed Permit Area, which describes Dolet Hills Lignite Company's basis for the right to enter and conduct surface mining activities. All currently held land leases within the 2020-2025 LSM-1-A Permit Renewal Area are included in Appendix 1.G.1-1.

c. For all properties where the surface and the mineral estate have been severed, provide a demonstration of the applicant's right to enter and conduct surface mining by one of the following [230.9.B]:
None of the tracts listed in Table 1.G.1-1 have had their surface and mineral estates severed.

   i. A copy of the written consent of the surface owner to the extraction of coal by surface mining methods; or

   ii. A copy of the document of conveyance that expressly grants or reserves the right to extract the coal by surface mining methods; or

   iii. If the conveyance does not expressly grant the right to extract the coal by surface mining methods, documentation that, under the applicable state law, the applicant has the legal authority to extract the coal by these methods.

d. Provide a demonstration that the land owner consents to the planned post-mining land use:
Appendix 1.G.1-1 contains the land leases and post mining land use consent, if provided.

e. All letters of written consent as required in §2309 and §2723 or §5431. If the surface estate is severed from the mineral estate, show and describe the ownership of each estate separately. In the spaces below, identify: Where the private mineral estate has been severed from the private surface estate, where such severance is authorized under Louisiana law, the application shall also provide for lands within the permit area:
None of the tracts listed in Table 1.G.1-1 have had their surface and mineral estates severed.

2. Ownership of surface and mineral lands contiguous to the area to be mined**.**
Instructions: Provide the information below for the owners of record of all surface and mineral properties contiguous to any part of the proposed permit area and, if applicable, any non-continuous lands within a quarter mile of the permit boundary. Use additional sheets as necessary in the format below.
All information required for Table 1.G.2-1 is included in Table 1.G.1-1.

1.H Areas Unsuitable for Mining

1. The Permit Area is not within an area designated by the State of Louisiana as unsuitable for surface mining activities, nor is it within an area under study for such designation. [2311]

2. In addition, the Permit area is/is not [1107]:
   a. (Y/**N**) on any lands within the boundaries of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including study rivers designated under §5(a) of the Wild and Scenic Rivers Act, 16 U.S.C. 1276(a), or study rivers or study river corridors as established in any guidelines pursuant to that Act, and National Recreation Areas designated by Act of Congress; (must supply proof of right to mine existing prior to August 3, 1977 – see section on Valid Existing Rights)

   b. (**Y**/N) on any state or federal lands within the boundaries of any state or national forest; (for federal lands, must supply proof of right to mine existing prior to August 3, 1977 – see section on Valid Existing Rights)
   Bayou Pierre and Dolet Bayou, waterways managed by the State, are within the 2020-2025 LSM-1-A Permit Renewal Area. A bridge over Bayou Pierre to connect the east and west sides of the LSM-1-A permit, along HR-12, was constructed with appropriate agency approvals.

   c. (Y/**N**) on any lands which will adversely affect any publicly owned park or any place included on the National Register of Historic Places (must supply proof of right to mine existing prior to August 3, 1977 – see section on Valid Existing Rights)

   d. (**Y**/N) within 100 feet measured horizontally of the outside right-of-way line of any public road, except: a. where mine access roads or haulage roads join such right-of-way line; b. where the office allows the public road to be relocated or the area affected to be within 100 feet of such road, after public notice and opportunity for a public hearing in accordance with §1107.D, and after making a written finding that the interests of the affected public and landowners will be protected; (must supply proof of right to mine existing prior to August 3, 1977 – see section on Valid Existing Rights)
   Crow Lane is located within the 2020-2025 LSM-1-A Permit Renewal Area. Dolet Hills Lignite Company requires a section of Crow Lane that lies within

the proposed mining and disturbance area be closed, from the DeSoto Parish Police Jury. The DeSoto Parish Police Jury approved the closure of Crow Lane, which was submitted under separate cover and is available for review at the LOC.

e. (Y/**N**) within 300 feet measured horizontally from any occupied dwelling, (if yes, attach waiver)

f. (Y/**N**) within 300 feet measured horizontally of any public building, school, church, community or institutional building or public park;

g. (Y/**N**) within 100 feet measured horizontally of a cemetery.

h. If YES is answered to any of the above, provide Exhibit 1.H.2-1, showing the locations of each in relation to the Permit Area and structures.
Exhibit 1.H.2-1 is not included in this renewal permit application, but Crow Lane, Bayou Pierre, and Dolet Bayou are shown on Exhibit 1.D.7-1.

1.I Public Notice and Availability for Inspection [2321]

1. Give the name of the approved public office in which a copy of this application will be filed for public inspection following notification of completeness:
Office of the Parish Clerk at the DeSoto Parish Courthouse and Red River Parish Courthouse and at the Office of Conservation in Baton Rouge, LA.

2. Enclose a copy of the notice of filing of this application which will appear in a newspaper of general circulation in the vicinity of the mine and identify the name of the newspaper.
Attached is Attachment 1.I.2-1 which includes the affidavits proving publication in the appropriate newspapers.

1.J Valid Existing Rights [1105, 2323]

1. (Y/**N**) Is the Applicant claiming Valid Existing Rights in order to conduct mining operations within an area subject to prohibition of mining under §922.D of the Act? If yes, supply the required documentation listed in §2323 of the Applicant's valid existing rights under §1105.

TABLE 1.E.1-1
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: American Electric Power Company, Inc.
1 Riverside Plaza
Columbus, Ohio 43215

BOARD OF DIRECTORS			
Name	**Title**	**Start Date**	**End Date**
Margaret M. McCarthy	Director	04/23/2019	Present
Art A. Garcia	Director	09/18/2019	Present
J. Barney Beasley, Jr.	Director	02/25/2014	Present
Oliver G Richard III	Director	01/22/2013	Present
Stephen S Rasmussen	Director	09/25/2012	Present
Sandra Beach Lin	Director	07/24/2012	Present
Nicholas K Akins	Director	10/25/2011	Present
David J Anderson	Director	04/26/2011	Present
Donald M. Carlton	Director	06/15/2000	04/26/2011
Richard C Notebaert	Director	04/26/2011	Present
E. R. Brooks	Director	06/15/2000	04/26/2011
Sara Martinez Tucker	Director	01/27/2009	Present
Thomas E Hoaglin	Director	12/12/2007	Present
Ralph D Crosby Jr	Director	01/25/2006	Present
Linda A Goodspeed	Director	10/26/2005	Present
Lionel L Nowell III	Director	07/27/2004	Present
Michael G Morris	Director	01/01/2004	04/22/2014
Richard L Sandor	Director	06/15/2000	04/22/2014
John F Turner	Director	07/22/2008	04/22/2014
James F Cordes	Director	09/22/2009	04/23/2013
Lester A. Hudson, Jr.	Director	12/26/1987	04/24/2012
Kathryn D. Sullivan	Director	12/17/1997	05/01/2011

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Chairman of the Board	01/01/2014	Present
Michael G Morris	Non-Executive Chairman	01/01/2012	12/31/2013
Michael G Morris	Executive Chairman	11/12/2011	12/31/2011
Michael G Morris	Chairman of the Board	02/24/2004	12/31/2011
Robert P Powers	Vice Chairman	01/01/2017	08/04/2017
Carl L English	Vice Chairman	01/01/2011	04/26/2011
Nicholas K Akins	President	01/01/2011	Present
Michael G Morris	President	01/01/2004	12/31/2010

American Electric Power Company, Inc. (continued)

Nicholas K Akins	Chief Executive Officer	11/12/2011	Present
Michael G Morris	Chief Executive Officer	01/01/2004	11/11/2011
Robert P Powers	Chief Operating Officer	11/12/2011	12/31/2016
Carl L English	Chief Operating Officer	01/01/2008	04/26/2011
Brian X Tierney	Chief Financial Officer	10/01/2009	Present
Holly Keller Koeppel	Chief Financial Officer	09/01/2006	10/01/2009
Gina E. Mazzei-Smith	Chief Compliance Officer	01/01/2017	Present
Julie L Rutter	Chief Compliance Officer	10/22/2013	12/31/2016
Sandra Kay Williams	Chief Compliance Officer	04/26/2011	10/22/2013
John B Keane	Chief Compliance Officer	07/24/2004	06/30/2010
Dennis E Welch	Chief External Officer	12/17/2012	08/31/2015
Lana L Hillebrand	Chief Administrative Officer	12/17/2012	Present
Joseph M Buonaiuto	Chief Accounting Officer	04/25/2001	Present
Lonni L. Dieck	Senior Vice President	05/03/2016	Present
Joseph M Buonaiuto	Senior Vice President	04/27/2004	Present
Lana L Hillebrand	Senior Vice President	12/17/2012	12/31/2016
Charles E Zebula	Senior Vice President	09/01/2008	12/31/2012
Julia A Sloat	Senior Vice President	01/01/2013	05/02/2016
David M Feinberg	Senior Vice President	01/01/2012	12/31/2012
Michael D Miller	Senior Vice President	07/01/2010	12/31/2011
Richard E. Munczinski	Senior Vice President	06/01/2008	01/01/2010
Julia A Sloat	Senior Vice President	01/01/2019	Present
Lisa M Barton	Executive Vice President - Transmission	04/24/2012	12/31/2018
Mark C McCullough	Executive Vice President - Transmission	01/01/2019	Present
Mark C McCullough	Executive Vice President - Generation	04/21/2015	12/31/2018
Paul Chodak, III	Executive Vice President - Generation	01/01/2019	Present
Charles R. Patton	Executive Vice President - External Affairs	01/01/2017	Present
Lana L Hillebrand	Executive Vice President	01/01/2017	Present
Dennis E Welch	Executive Vice President	12/12/2007	08/31/2015
Brian X Tierney	Executive Vice President	04/24/2008	Present
Mark C McCullough	Executive Vice President	04/26/2011	04/21/2015
Venita McCellon Allen	Executive Vice President	07/01/2008	04/26/2011
Robert P Powers	Executive Vice President	11/12/2011	12/31/2016
David M Feinberg	Executive Vice President	01/01/2013	Present
Nicholas K Akins	Executive Vice President	09/01/2006	12/31/2010
John B Keane	Executive Vice President	07/01/2008	06/30/2010
Holly Keller Koeppel	Executive Vice President	09/01/2006	10/01/2009
Charles R. Patton	Executive Vice President	04/27/2010	07/01/2010
Charles E. Zebula	Executive Vice President - Energy Supply	04/22/2014	Present
Paul Chodak, III	Executive Vice President - Utilities	01/01/2017	12/31/2018

American Electric Power Company, Inc. (continued)

Lisa M Barton	Executive Vice President - Utilities	01/01/2019	Present
James X. Llende	Vice President - Tax	04/24/2018	Present
Robert P Powers	President - Utility Group	04/28/2009	11/11/2011
Robert P Powers	President - AEP Utilities	01/01/2008	04/28/2009
Susan Tomasky	President - AEP Transmission	04/22/2008	07/31/2011
Joseph M Buonaiuto	Controller	04/25/2001	Present
Leonard V. Assante	Deputy Controller	07/26/2000	05/31/2010
David M Feinberg	General Counsel	01/01/2012	Present
Michael D Miller	General Counsel	07/01/2010	12/31/2011
John B Keane	General Counsel	07/27/2004	06/30/2010
Lonni L. Dieck	Treasurer	05/03/2016	Present
Julia A Sloat	Treasurer	01/01/2013	05/02/2016
Charles E Zebula	Treasurer	09/01/2008	12/31/2012
Julia A Sloat	Treasurer	01/01/2019	Present
David M Feinberg	Secretary	01/01/2012	Present
Michael D Miller	Secretary	07/01/2010	12/31/2011
John B Keane	Secretary	07/27/2004	06/30/2010
Renee V Hawkins	Assistant Treasurer	04/24/2008	Present
Jeffrey D Cross	Assistant Secretary	07/27/2004	10/30/2015
Thomas G Berkemeyer	Assistant Secretary	07/26/2000	Present

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.1-2
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: Southwestern Electric Power Company
428 Travis Street
Shreveport, Louisiana 71156

BOARD OF DIRECTORS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Director	09/01/2006	Present
Lisa M Barton	Director	08/01/2011	Present
Susan Tomasky	Director	06/28/2000	07/31/2011
David M Feinberg	Director	01/01/2012	Present
Carl L. English	Director	08/01/2004	12/31/2011
Lana L Hillebrand	Director	01/01/2013	Present
Barbara D. Radous	Director	01/28/2010	12/31/2012
Richard E Munczinski	Director	06/28/2008	01/28/2010
Mark C McCullough	Director	01/01/2012	Present
Michael G. Morris	Director	01/01/2004	12/31/2011
Robert P Powers	Director	01/29/2008	08/04/2017
Brian X Tierney	Director	10/01/2009	Present
Venita McCellon Allen	Director	07/01/2008	10/01/2009
Dennis E Welch	Director	08/25/2005	08/31/2015
Paul Chodak III	Director	01/01/2017	Present
John B Keane	Director	07/29/2004	06/30/2010
Michael D. Miller	Director	07/01/2010	12/31/2011
Holly Keller Koeppel	Director	09/01/2006	10/01/2009
Charles R. Patton	Director	01/01/2017	Present

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Chairman of the Board	01/01/2012	Present
Michael G. Morris	Chairman of the Board	01/01/2004	12/31/2011
Charles R. Patton	Vice Chairman of the Board	10/01/2009	05/31/2010
Venita McCellon Allen	Vice Chairman of the Board	07/01/2008	10/01/2009
Malcolm A. Smoak	President	05/12/2018	Present
Venita McCellon-Allen	President	07/01/2010	05/04/2018
Paul Chodak III	President	07/01/2008	06/30/2010
Joseph M Buonaiuto	Chief Accounting Officer	04/24/2001	Present
Nicholas K Akins	Chief Executive Officer	11/12/2011	Present
Michael G. Morris	Chief Executive Officer	01/01/2004	11/11/2011
Brian X Tierney	Chief Financial Officer	10/01/2009	Present

Southwestern Electric Power Company (continued)

Holly Keller Koeppel	Chief Financial Officer	09/01/2006	10/01/2009
Malcolm A Smoak	Chief Operating Officer	05/12/2018	Present
Venita McCellon-Allen	Chief Operating Officer	07/01/2010	05/04/2018
Paul Chodak III	Chief Operating Officer	07/01/2008	06/30/2010
Antonio P. Smyth	Vice President	01/29/2019	Present
Paul Chodak III	Vice President	04/26/2018	Present
Eric J. James	Vice President	09/01/2014	Present
Lonni L. Dieck	Vice President	05/03/2016	12/31/2018
Julie A. Sherwood	Vice President	09/01/2014	Present
Andrew B Reis	Vice President	01/01/2014	08/31/2014
Marguerite C Mills	Vice President	01/01/2014	Present
Thomas Presthus	Vice President	01/01/2018	Present
Michael S Isenberg	Vice President	01/01/2014	04/23/2015
Wade A. Smith	Vice President	08/28/2015	Present
Lana L Hillebrand	Vice President	01/01/2013	Present
Barbara D. Radous	Vice President	01/28/2010	12/31/2012
Mark C McCullough	Vice President	04/25/2012	Present
Scott N Smith	Vice President	01/26/2012	Present
Lisa M Barton	Vice President	08/01/2011	Present
Susan Tomasky	Vice President	04/25/2007	07/31/2011
Brian X Tierney	Vice President	10/01/2009	Present
Venita McCellon Allen	Vice President	07/01/2008	10/01/2009
Timothy K Light	Vice President	01/29/2009	12/08/2016
Robert P Powers	Vice President	01/29/2008	08/04/2017
Dennis E Welch	Vice President	08/25/2005	08/31/2015
Malcolm A Smoak	Vice President - Distribution Region Ops	06/21/2004	11/2/2018
Drew W. Seidel	Vice President - Distribution Region Ops	11/03/2018	Present
Brian Bond	Vice President - External Affairs	06/21/2004	Present
Paul W Franklin	Vice President - Generation Assets	05/01/2008	3/23/2018
Tommy J. Slater	Vice President - Generating Assets	03/24/2018	Present
Sandra S Bennett	Vice President - Reguatory & Finance	10/07/2009	04/12/2017
Thomas P. Brice	Vice President - Reguatory & Finance	05/20/2017	Present
Mark A Pyle	Vice President - Tax	06/02/2005	01/28/2018
James X. Llende	Vice President - Tax	11/17/2017	Present
Julia A. Sloat	Vice President	04/25/2014	Present
Nicholas K. Akins	Vice President	09/01/2006	11/11/2011
Charles R. Patton	Vice President	10/01/2009	05/31/2010
Carl L. English	Vice President	08/01/2004	12/31/2011
Michael Heyeck	Vice President	06/23/2005	04/24/2013
Holly Keller Koeppel	Vice President	09/01/2006	10/01/2009

Southwestern Electric Power Company (continued)

Stephen W Burge	Vice President	06/10/2003	05/26/2009
Daniel J. Rogier	Vice President	12/12/2018	Present
Mark J. Leskowitz	Vice President	08/12/2018	Present
Robert W. Bradish	Vice President	01/28/2020	Present
Richard E Munczinski	Vice President	06/26/2008	01/28/2010
Susan Tomasky	Director	06/28/2000	07/31/2011
David M Feinberg	Secretary	01/01/2012	Present
Michael D. Miller	Secretary	07/01/2010	12/31/2011
John B Keane	Secretary	04/02/2009	06/30/2010
Rahmond L Staggers	Secretary	10/01/2007	04/02/2009
Lonni L. Dieck	Treasurer	05/03/2016	12/31/2018
Julia A Sloat	Treasurer	01/01/2013	Present
Charles E. Zebula	Treasurer	09/01/2008	12/31/2012
Joseph M Buonaiuto	Controller	04/24/2001	Present
F. Scott Travis	Assistant Controller	01/22/2014	07/01/2017
Jeffrey W. Hoersdig	Assistant Controller	07/20/2017	Present
Andrew B Reis	Assistant Controller	12/14/2010	02/28/2014
Julie Williams	Assistant Controller	05/18/2010	Present
Susan E Higginson	Assistant Controller	03/29/2007	02/01/2010
Scott M Krawec	Assistant Controller	04/15/2008	08/31/2009
Jeffrey D Cross	Assistant Secretary	06/28/2000	10/30/2015
Thomas G Berkemeyer	Assistant Secretary	06/28/2000	04/23/2015
Anne M. Vogel	Assistant Secretary	04/02/2009	03/13/2012
William E. Johnson	Assistant Secretary	12/17/2015	Present
Renee V Hawkins	Assistant Treasurer	01/29/2008	Present

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.1-3
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: Cleco Corporate Holdings, Inc.
Mailing Address: P.O. Box 5000
Pineville, LA 71361-5000

Physical Address: 2030 Donahue Ferry Road
Pineville, LA 71360-5226

BOARD OF MANAGERS			
Name	**Title**	**Start Date**	**End Date**
Andrew M. Chapman	Manager	04/13/2016	Present
William G. Fontenot	Manager/CEO	01/01/2018	Present
Richard J. Gallot, Jr.	Manager	04/13/2016	Present
Christopher J. Leslie	Manager	04/13/2016	Present
Peggy B. Scott	Manager	04/13/2016	Present
Steven J. Turner	Manager	04/13/2016	Present
Bruce D. Wainer	Manager	04/13/2016	Present
Paraskevas Fronimos	Manager	07/25/2019	Present
Gerald C. Hanrahan	Manager	04/13/2016	Present
Jon R. R. Perry	Manager	09/12/2018	Present
Aaron J. Rubin	Manager	05/31/2018	Present
David R. Gilchrist	Manager	04/13/2016	05/31/2018
Recep C. Kendircioglu	Manager	04/13/2016	05/31/2018
Lincoln H. Webb	Manager	04/13/2016	05/31/2018
Richard W. Dinneny	Manager	04/13/2016	05/31/2018
Mark S. Fay	Manager	04/13/2016	05/31/2018

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
William G. Fontenot	President & Chief Executive Officer	01/01/2018	Present
William G. Fontenot	Interim Chief Executive Officer, Cleco Power	02/01/2017	Present
William G. Fontenot	Chief Operating Officer	04/13/2016	Present
William G. Fontenot	Senior Vice President Utility Operations	03/01/2012	Present
William G. Fontenot	Group Vice President	03/01/2010	Present
Mark Madsen	Chief Digital & Information Officer	05/28/2019	Present
Peggy B. Scott	Interim Chief Executive Officer, Cleco Corporate Holdings, LLC	02/01/2017	12/31/2017
Terry L Taylor	Chief Financial Officer	04/13/2016	11/04/2018
Kazi K. Hasan	Chief Financial Officer	11/05/2018	Present
Terry L Taylor	Chief Accounting Officer & Controller	11/11/2011	04/12/2016

Cleco Corporate Holdings, Inc. (continued)

Terry L Taylor	Assistant Controller	08/31/2006	11/10/2011
Frances T. Laprarie	Chief Accounting Officer & Controller	07/02/2016	Present
Julia E. Callis	Chief Compliance Officer & General Counsel	04/13/2016	Present
Anthony L. Bunting	Vice President - Transmission & Distribution Operations	03/01/2012	04/12/2016
Anthony L. Bunting	Vice President - Customer Services and Energy Delivery	10/01/2004	03/01/2012
Anthony L. Bunting	Chief Transformation Officer	02/09/2019	Present
Patrick M. Dupuy	Interm Vice President - Asset Optimization	02/09/2019	Present
Normanique G. Preston	Chief Human Resources & Diversity Officer	08/13/2018	Present
Justin S. Hilton	Vice President - MISO Operations	04/01/2016	02/08/2019
Justin S. Hilton	President & Chief Executive Officer	02/09/2019	Present
Marcus A. Augustine	Corporate Secretary & Senior Attorney	04/13/2016	Present
Johnathan R. Cleghorn	Vice President - Regulatory Strategy	05/07/2016	Present
Julia E Callis	Associate General Counsel & Corporate Secretary	11/12/2011	04/12/2016
Jeffrey M. Baudier	Chief Marketing & Development Officer	07/01/2016	Present
Anthony L. Bunting	Chief Administrative Officer	04/13/2016	Present
Gregory A. Coco	Vice President - Transmission & Distribution Operations	04/13/2016	Present
Terry J. Whitmore	Vice President -Transmission Services	02/09/2019	Present
Kristin L. Guillory	Vice President - Treasurer	02/01/2018	Present
Robert LaBorde, Jr.	Vice President - Generation Operations & Environmental Services	04/13/2016	02/08/2019
Robert LaBorde, Jr.	Vice President - Generation Operations	11/11/2012	04/12/2016
Russell L. Snyder	Vice President - Generation Operations	02/09/2019	Present
Robert LaBorde, Jr.	Vice President - Strategic Planning, Development & Environmental Policy	11/12/2011	11/10/2012
Robert LaBorde, Jr.	Chief Operations Officer	02/09/2019	Present
Frances T. Laprarie	Controller & Chief Accounting Officer	07/02/2016	Present
Joel M. Prevost	Vice President - Asset Management	05/07/2016	07/28/2019
Mark Prevost	Vice President - Asset Management	07/29/2019	Present
Eric A. Schouest	Vice President - Marketing South	08/01/2016	09/20/2019
Eric A. Schouest	Vice President - Governmental Affairs	09/21/2019	Present
Dean C. Sikes	Vice President - Engineering, Construction & Project Management	05/07/2019	Present
Marty A. Smith	Vice President - Marketing	01/28/2017	Present
Shirley J. Turner	Vice President - Customer Experience	04/13/2016	04/12/2016

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.1-4
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: CLECO POWER LLC
Mailing Address: P.O. Box 5000
Pineville, LA 71361-5000
Physical Address: 2030 Donahue Ferry Road
Pineville, LA 71360-5226

BOARD OF MANAGERS			
Name	**Title**	**Start Date**	**End Date**
Andrew M. Chapman	Manager	04/13/2016	Present
William G. Fontenot	Manager/CEO	04/13/2016	Present
Richard J. Gallot, Jr.	Manager	04/13/2016	Present
David R. Gilchrist	Manager	04/13/2016	Present
Christopher J. Leslie	Manager	04/13/2016	Present
Peggy B. Scott	Manager	04/13/2016	Present
Steven J. Turner	Manager	04/13/2016	Present
Bruce D. Wainer	Manager	04/13/2016	Present
Paraskevas Fronimos	Manager	07/25/2019	Present
Gerald C. Hanrahan	Manager	04/13/2016	Present
Jon R.R. Perry	Manager	09/12/2018	Present
Aaron J. Rubin	Manager	04/13/2016	Present
Recep C. Kendircioglu	Manager	04/13/2016	09/11/2019
Richard W. Dinneny	Manager	04/13/2016	09/11/2019
Mark S. Fay	Manager	04/13/2016	09/11/2019
Lincoln H. Webb	Manager	04/13/2016	09/11/2019
OFFICERS			
Name	**Title**	**Start Date**	**End Date**
William G. Fontenot	Chief Executive Officer	01/01/2018	Present
William G. Fontenot	Interim Chief Financial Officer, Cleco Power	02/01/2017	12/31/2017
William G. Fontenot	Chief Operations Officer	04/13/2016	12/31/2017
William G. Fontenot	Senior Vice President Utility Operations	03/01/2012	04/12/2016
William G. Fontenot	Group Vice President	03/01/2010	03/01/2012
Terry L Taylor	Chief Financial Officer	04/13/2016	11/04/2016
Terry L Taylor	Chief Accounting Officer & Controller	11/11/2011	04/12/2016
Terry L Taylor	Assistant Controller	08/31/2006	11/10/2011
Kazi K. Hasan	Chief Financial Officer	11/05/2016	Present
Julia E Callis	Chief Compliance Officer & General Counsel	04/13/2016	Present
Julia E Callis	Associate General Counsel & Corporate Secretary	11/12/2011	04/12/2016
Jeffrey M. Baudier	Chief Marketing & Development Officer	07/01/2016	Present

CLECO POWER LLC (continued)

Anthony L. Bunting	Chief Administrative Officer	04/13/2016	Present
Anthony L. Bunting	Vice President, Transmission & Distribution Operations	03/01/2012	04/12/2016
Anthony L. Bunting	Vice President, Customer Services and Energy Delivery	10/01/2004	03/01/2012
Gregory A. Coco	Vice President - Transmission & Distribution Operations	05/07/2019	Present
Justin S. Hilton	Vice President, MISO Operations	04/01/2016	02/08/2019
Justin S. Hilton	President	02/09/2019	Present
Marcus A. Augustine	Corporate Secretary & Senior Attorney	04/13/2016	Present
Johnathan R. Cleghorn	Vice President, Regulatory Strategy	05/07/2016	Present
Gregory A. Coco	Vice President, Transmission & Distribution Operations	04/13/2016	Present
Kristin L. Guillory	Vice President, Treasurer	02/01/2018	Present
Robert R LaBorde Jr	Vice President, Generation Operations & Environmental Services	04/13/2016	02/08/2019
Robert R LaBorde Jr	Vice President, Generation Operations	11/11/2012	04/12/2016
Russell L. Snyder	Vice President - Generation Operations	02/09/2019	Present
Robert R LaBorde Jr	Vice President, Strategic Planning, Development & Environmental Policey	11/12/2011	11/10/2012
Frances T. Laprarie	Controller & Chief Accounting Officer	07/02/2016	Present
Joel M. Prevost	Vice President, Asset Management	05/07/2016	Present
Eric A. Schouest	Vice President, Marketing South	08/01/2016	09/20/2019
Eric A. Schouest	Vice President - Governmental Affairs	09/21/2019	Present
Marty A. Smith	Vice President - Marketing	01/28/2017	Present
Dean C. Sikes	Vice President, Engineering, Construction & Project Management	04/13/2016	Present
Marty A. Smith	Vice President, Marketing North	01/01/2017	Present
Shirley J. Turner	Vice President, Customer Experience	04/13/2016	Present

*The information contained in this table is true based on the knowledge and belief of DHLC, and is

TABLE 1.E.2-1
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: American Electric Power Company, Inc.
1 Riverside Plaza
Columbus, Ohio 43215

BOARD OF DIRECTORS			
Name	**Title**	**Start Date**	**End Date**
Margaret M. McCarthy	Director	04/23/2019	Present
Art A. Garcia	Director	09/18/2019	Present
J. Barney Beasley, Jr.	Director	02/25/2014	Present
Oliver G Richard III	Director	01/22/2013	Present
Stephen S Rasmussen	Director	09/25/2012	Present
Sandra Beach Lin	Director	07/24/2012	Present
Nicholas K Akins	Director	10/25/2011	Present
David J Anderson	Director	04/26/2011	Present
Donald M. Carlton	Director	06/15/2000	04/26/2011
Richard C Notebaert	Director	04/26/2011	Present
E. R. Brooks	Director	06/15/2000	04/26/2011
Sara Martinez Tucker	Director	01/27/2009	Present
Thomas E Hoaglin	Director	12/12/2007	Present
Ralph D Crosby Jr	Director	01/25/2006	Present
Linda A Goodspeed	Director	10/26/2005	Present
Lionel L Nowell III	Director	07/27/2004	Present
Michael G Morris	Director	01/01/2004	04/22/2014
Richard L Sandor	Director	06/15/2000	04/22/2014
John F Turner	Director	07/22/2008	04/22/2014
James F Cordes	Director	09/22/2009	04/23/2013
Lester A. Hudson, Jr.	Director	12/26/1987	04/24/2012
Kathryn D. Sullivan	Director	12/17/1997	05/01/2011

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Chairman of the Board	01/01/2014	Present
Michael G Morris	Non-Executive Chairman	01/01/2012	12/31/2013
Michael G Morris	Executive Chairman	11/12/2011	12/31/2011
Michael G Morris	Chairman of the Board	02/24/2004	12/31/2011
Robert P Powers	Vice Chairman	01/01/2017	08/04/2017
Carl L English	Vice Chairman	01/01/2011	04/26/2011
Nicholas K Akins	President	01/01/2011	Present
Michael G Morris	President	01/01/2004	12/31/2010

American Electric Power Company, Inc. (continued)

Nicholas K Akins	Chief Executive Officer	11/12/2011	Present
Michael G Morris	Chief Executive Officer	01/01/2004	11/11/2011
Robert P Powers	Chief Operating Officer	11/12/2011	12/31/2016
Carl L English	Chief Operating Officer	01/01/2008	04/26/2011
Brian X Tierney	Chief Financial Officer	10/01/2009	Present
Holly Keller Koeppel	Chief Financial Officer	09/01/2006	10/01/2009
Gina E. Mazzei-Smith	Chief Compliance Officer	01/01/2017	Present
Julie L Rutter	Chief Compliance Officer	10/22/2013	12/31/2016
Sandra Kay Williams	Chief Compliance Officer	04/26/2011	10/22/2013
John B Keane	Chief Compliance Officer	07/24/2004	06/30/2010
Dennis E Welch	Chief External Officer	12/17/2012	08/31/2015
Lana L Hillebrand	Chief Administrative Officer	12/17/2012	Present
Joseph M Buonaiuto	Chief Accounting Officer	04/25/2001	Present
Lonni L. Dieck	Senior Vice President	05/03/2016	Present
Joseph M Buonaiuto	Senior Vice President	04/27/2004	Present
Lana L Hillebrand	Senior Vice President	12/17/2012	12/31/2016
Charles E Zebula	Senior Vice President	09/01/2008	12/31/2012
Julia A Sloat	Senior Vice President	01/01/2013	05/02/2016
David M Feinberg	Senior Vice President	01/01/2012	12/31/2012
Michael D Miller	Senior Vice President	07/01/2010	12/31/2011
Richard E. Munczinski	Senior Vice President	06/01/2008	01/01/2010
Julia A Sloat	Senior Vice President	01/01/2019	Present
Lisa M Barton	Executive Vice President - Transmission	04/24/2012	12/31/2018
Mark C McCullough	Executive Vice President - Transmission	01/01/2019	Present
Mark C McCullough	Executive Vice President - Generation	04/21/2015	12/31/2018
Paul Chodak, III	Executive Vice President - Generation	01/01/2019	Present
Charles R. Patton	Executive Vice President - External Affairs	01/01/2017	Present
Lana L Hillebrand	Executive Vice President	01/01/2017	Present
Dennis E Welch	Executive Vice President	12/12/2007	08/31/2015
Brian X Tierney	Executive Vice President	04/24/2008	Present
Mark C McCullough	Executive Vice President	04/26/2011	04/21/2015
Venita McCellon Allen	Executive Vice President	07/01/2008	04/26/2011
Robert P Powers	Executive Vice President	11/12/2011	12/31/2016
David M Feinberg	Executive Vice President	01/01/2013	Present
Nicholas K Akins	Executive Vice President	09/01/2006	12/31/2010
John B Keane	Executive Vice President	07/01/2008	06/30/2010
Holly Keller Koeppel	Executive Vice President	09/01/2006	10/01/2009
Charles R. Patton	Executive Vice President	04/27/2010	07/01/2010
Charles E. Zebula	Executive Vice President - Energy Supply	04/22/2014	Present
Paul Chodak, III	Executive Vice President - Utilities	01/01/2017	12/31/2018

American Electric Power Company, Inc. (continued)

Lisa M Barton	Executive Vice President - Utilities	01/01/2019	Present
James X. Llende	Vice President - Tax	04/24/2018	Present
Robert P Powers	President - Utility Group	04/28/2009	11/11/2011
Robert P Powers	President - AEP Utilities	01/01/2008	04/28/2009
Susan Tomasky	President - AEP Transmission	04/22/2008	07/31/2011
Joseph M Buonaiuto	Controller	04/25/2001	Present
Leonard V. Assante	Deputy Controller	07/26/2000	05/31/2010
David M Feinberg	General Counsel	01/01/2012	Present
Michael D Miller	General Counsel	07/01/2010	12/31/2011
John B Keane	General Counsel	07/27/2004	06/30/2010
Lonni L. Dieck	Treasurer	05/03/2016	Present
Julia A Sloat	Treasurer	01/01/2013	05/02/2016
Charles E Zebula	Treasurer	09/01/2008	12/31/2012
Julia A Sloat	Treasurer	01/01/2019	Present
David M Feinberg	Secretary	01/01/2012	Present
Michael D Miller	Secretary	07/01/2010	12/31/2011
John B Keane	Secretary	07/27/2004	06/30/2010
Renee V Hawkins	Assistant Treasurer	04/24/2008	Present
Jeffrey D Cross	Assistant Secretary	07/27/2004	10/30/2015
Thomas G Berkemeyer	Assistant Secretary	07/26/2000	Present

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.2-2
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: Southwestern Electric Power Company
428 Travis Street
Shreveport, Louisiana 71156

BOARD OF DIRECTORS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Director	09/01/2006	Present
Lisa M Barton	Director	08/01/2011	Present
Susan Tomasky	Director	06/28/2000	07/31/2011
David M Feinberg	Director	01/01/2012	Present
Carl L. English	Director	08/01/2004	12/31/2011
Lana L Hillebrand	Director	01/01/2013	Present
Barbara D. Radous	Director	01/28/2010	12/31/2012
Richard E Munczinski	Director	06/28/2008	01/28/2010
Mark C McCullough	Director	01/01/2012	Present
Michael G. Morris	Director	01/01/2004	12/31/2011
Robert P Powers	Director	01/29/2008	08/04/2017
Brian X Tierney	Director	10/01/2009	Present
Venita McCellon Allen	Director	07/01/2008	10/01/2009
Dennis E Welch	Director	08/25/2005	08/31/2015
Paul Chodak III	Director	01/01/2017	Present
John B Keane	Director	07/29/2004	06/30/2010
Michael D. Miller	Director	07/01/2010	12/31/2011
Holly Keller Koeppel	Director	09/01/2006	10/01/2009
Charles R. Patton	Director	01/01/2017	Present

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Chairman of the Board	01/01/2012	Present
Michael G. Morris	Chairman of the Board	01/01/2004	12/31/2011
Charles R. Patton	Vice Chairman of the Board	10/01/2009	05/31/2010
Venita McCellon Allen	Vice Chairman of the Board	07/01/2008	10/01/2009
Malcolm A. Smoak	President	05/12/2018	Present
Venita McCellon-Allen	President	07/01/2010	05/04/2018
Paul Chodak III	President	07/01/2008	06/30/2010
Joseph M Buonaiuto	Chief Accounting Officer	04/24/2001	Present
Nicholas K Akins	Chief Executive Officer	11/12/2011	Present
Michael G. Morris	Chief Executive Officer	01/01/2004	11/11/2011
Brian X Tierney	Chief Financial Officer	10/01/2009	Present

Southwestern Electric Power Company (continued)

Holly Keller Koeppel	Chief Financial Officer	09/01/2006	10/01/2009
Malcolm A Smoak	Chief Operating Officer	05/12/2018	Present
Venita McCellon-Allen	Chief Operating Officer	07/01/2010	05/04/2018
Paul Chodak III	Chief Operating Officer	07/01/2008	06/30/2010
Antonio P. Smyth	Vice President	01/29/2019	Present
Paul Chodak III	Vice President	04/26/2018	Present
Eric J. James	Vice President	09/01/2014	Present
Lonni L. Dieck	Vice President	05/03/2016	12/31/2018
Julie A. Sherwood	Vice President	09/01/2014	Present
Andrew B Reis	Vice President	01/01/2014	08/31/2014
Marguerite C Mills	Vice President	01/01/2014	Present
Thomas Presthus	Vice President	01/01/2018	Present
Michael S Isenberg	Vice President	01/01/2014	04/23/2015
Wade A. Smith	Vice President	08/28/2015	Present
Lana L Hillebrand	Vice President	01/01/2013	Present
Barbara D. Radous	Vice President	01/28/2010	12/31/2012
Mark C McCullough	Vice President	04/25/2012	Present
Scott N Smith	Vice President	01/26/2012	Present
Lisa M Barton	Vice President	08/01/2011	Present
Susan Tomasky	Vice President	04/25/2007	07/31/2011
Brian X Tierney	Vice President	10/01/2009	Present
Venita McCellon Allen	Vice President	07/01/2008	10/01/2009
Timothy K Light	Vice President	01/29/2009	12/08/2016
Robert P Powers	Vice President	01/29/2008	08/04/2017
Dennis E Welch	Vice President	08/25/2005	08/31/2015
Malcolm A Smoak	Vice President - Distribution Region Ops	06/21/2004	11/2/2018
Drew W. Seidel	Vice President - Distribution Region Ops	11/03/2018	Present
Brian Bond	Vice President - External Affairs	06/21/2004	Present
Paul W Franklin	Vice President - Generation Assets	05/01/2008	3/23/2018
Tommy J. Slater	Vice President - Generating Assets	03/24/2018	Present
Sandra S Bennett	Vice President - Reguatory & Finance	10/07/2009	04/12/2017
Thomas P. Brice	Vice President - Reguatory & Finance	05/20/2017	Present
Mark A Pyle	Vice President - Tax	06/02/2005	01/28/2018
James X. Llende	Vice President - Tax	11/17/2017	Present
Julia A. Sloat	Vice President	04/25/2014	Present
Nicholas K. Akins	Vice President	09/01/2006	11/11/2011
Charles R. Patton	Vice President	10/01/2009	05/31/2010
Carl L. English	Vice President	08/01/2004	12/31/2011
Michael Heyeck	Vice President	06/23/2005	04/24/2013
Holly Keller Koeppel	Vice President	09/01/2006	10/01/2009

Southwestern Electric Power Company (continued)

Stephen W Burge	Vice President	06/10/2003	05/26/2009
Daniel J. Rogier	Vice President	12/12/2018	Present
Mark J. Leskowitz	Vice President	08/12/2018	Present
Robert W. Bradish	Vice President	01/28/2020	Present
Richard E Munczinski	Vice President	06/26/2008	01/28/2010
Susan Tomasky	Director	06/28/2000	07/31/2011
David M Feinberg	Secretary	01/01/2012	Present
Michael D. Miller	Secretary	07/01/2010	12/31/2011
John B Keane	Secretary	04/02/2009	06/30/2010
Rahmond L Staggers	Secretary	10/01/2007	04/02/2009
Lonni L. Dieck	Treasurer	05/03/2016	12/31/2018
Julia A Sloat	Treasurer	01/01/2013	Present
Charles E. Zebula	Treasurer	09/01/2008	12/31/2012
Joseph M Buonaiuto	Controller	04/24/2001	Present
F. Scott Travis	Assistant Controller	01/22/2014	07/01/2017
Jeffrey W. Hoersdig	Assistant Controller	07/20/2017	Present
Andrew B Reis	Assistant Controller	12/14/2010	02/28/2014
Julie Williams	Assistant Controller	05/18/2010	Present
Susan E Higginson	Assistant Controller	03/29/2007	02/01/2010
Scott M Krawec	Assistant Controller	04/15/2008	08/31/2009
Jeffrey D Cross	Assistant Secretary	06/28/2000	10/30/2015
Thomas G Berkemeyer	Assistant Secretary	06/28/2000	04/23/2015
Anne M. Vogel	Assistant Secretary	04/02/2009	03/13/2012
William E. Johnson	Assistant Secretary	12/17/2015	Present
Renee V Hawkins	Assistant Treasurer	01/29/2008	Present

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.2-3
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: Cleco Corporate Holdings, Inc.
Mailing Address: P.O. Box 5000
Pineville, LA 71361-5000

Physical Address: 2030 Donahue Ferry Road
Pineville, LA 71360-5226

BOARD OF DIRECTORS			
Name	**Title**	**Start Date**	**End Date**
Andrew M. Chapman	Manager	04/13/2016	Present
William G. Fontenot	Manager/CEO	01/01/2018	Present
Richard J. Gallot, Jr.	Manager	04/13/2016	Present
Christopher J. Leslie	Manager	04/13/2016	Present
Peggy B. Scott	Manager	04/13/2016	Present
Steven J. Turner	Manager	04/13/2016	Present
Bruce D. Wainer	Manager	04/13/2016	Present
Paraskevas Fronimos	Manager	07/25/2019	Present
Gerald C. Hanrahan	Manager	04/13/2016	Present
Jon R. R. Perry	Manager	09/12/2018	Present
Aaron J. Rubin	Manager	05/31/2018	Present
David R. Gilchrist	Manager	04/13/2016	05/31/2018
Recep C. Kendircioglu	Manager	04/13/2016	05/31/2018
Lincoln H. Webb	Manager	04/13/2016	05/31/2018
Richard W. Dinneny	Manager	04/13/2016	05/31/2018
Mark S. Fay	Manager	04/13/2016	05/31/2018

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
William G. Fontenot	President & Chief Executive Officer	01/01/2018	Present
William G. Fontenot	Interim Chief Executive Officer, Cleco Power	02/01/2017	Present
William G. Fontenot	Chief Operating Officer	04/13/2016	Present
William G. Fontenot	Senior Vice President Utility Operations	03/01/2012	Present
William G. Fontenot	Group Vice President	03/01/2010	Present
Mark Madsen	Chief Digital & Information Officer	05/28/2019	Present
Peggy B. Scott	Interim Chief Executive Officer, Cleco Corporate Holdings, LLC	02/01/2017	12/31/2017
Terry L Taylor	Chief Financial Officer	04/13/2016	11/04/2018
Kazi K. Hasan	Chief Financial Officer	11/05/2018	Present
Terry L Taylor	Chief Accounting Officer & Controller	11/11/2011	04/12/2016

Cleco Corporate Holdings, Inc. (continued)

Terry L Taylor	Assistant Controller	08/31/2006	11/10/2011
Frances T. Laprarie	Chief Accounting Officer & Controller	07/02/2016	Present
Julia E. Callis	Chief Compliance Officer & General Counsel	04/13/2016	Present
Anthony L. Bunting	Vice President - Transmission & Distribution Operations	03/01/2012	04/12/2016
Anthony L. Bunting	Vice President - Customer Services and Energy Delivery	10/01/2004	03/01/2012
Anthony L. Bunting	Chief Transformation Officer	02/09/2019	Present
Patrick M. Dupuy	Interm Vice President - Asset Optimization	02/09/2019	Present
Normanique G. Preston	Chief Human Resources & Diversity Officer	08/13/2018	Present
Justin S. Hilton	Vice President - MISO Operations	04/01/2016	02/08/2019
Justin S. Hilton	President & Chief Executive Officer	02/09/2019	Present
Marcus A. Augustine	Corporate Secretary & Senior Attorney	04/13/2016	Present
Johnathan R. Cleghorn	Vice President - Regulatory Strategy	05/07/2016	Present
Julia E Callis	Associate General Counsel & Corporate Secretary	11/12/2011	04/12/2016
Jeffrey M. Baudier	Chief Marketing & Development Officer	07/01/2016	Present
Anthony L. Bunting	Chief Administrative Officer	04/13/2016	Present
Gregory A. Coco	Vice President - Transmission & Distribution Operations	04/13/2016	Present
Terry J. Whitmore	Vice President -Transmission Services	02/09/2019	Present
Kristin L. Guillory	Vice President - Treasurer	02/01/2018	Present
Robert LaBorde, Jr.	Vice President - Generation Operations & Environmental Services	04/13/2016	02/08/2019
Robert LaBorde, Jr.	Vice President - Generation Operations	11/11/2012	04/12/2016
Russell L. Snyder	Vice President - Generation Operations	02/09/2019	Present
Robert LaBorde, Jr.	Vice President - Strategic Planning, Development & Environmental Policy	11/12/2011	11/10/2012
Robert LaBorde, Jr.	Chief Operations Officer	02/09/2019	Present
Frances T. Laprarie	Controller & Chief Accounting Officer	07/02/2016	Present
Joel M. Prevost	Vice President - Asset Management	05/07/2016	07/28/2019
Mark Prevost	Vice President - Asset Management	07/29/2019	Present
Eric A. Schouest	Vice President - Marketing South	08/01/2016	09/20/2019
Eric A. Schouest	Vice President - Governmental Affairs	09/21/2019	Present
Dean C. Sikes	Vice President - Engineering, Construction & Project Management	05/07/2019	Present
Marty A. Smith	Vice President - Marketing	01/28/2017	Present
Shirley J. Turner	Vice President - Customer Experience	04/13/2016	04/12/2016

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.2-4
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: CLECO POWER LLC
Mailing Address: P.O. Box 5000
Pineville, LA 71361-5000
Physical Address: 2030 Donahue Ferry Road
Pineville, LA 71360-5226

BOARD OF MANAGERS			
Name	**Title**	**Start Date**	**End Date**
Andrew M. Chapman	Manager	04/13/2016	Present
William G. Fontenot	Manager/CEO	04/13/2016	Present
Richard J. Gallot, Jr.	Manager	04/13/2016	Present
David R. Gilchrist	Manager	04/13/2016	Present
Christopher J. Leslie	Manager	04/13/2016	Present
Peggy B. Scott	Manager	04/13/2016	Present
Steven J. Turner	Manager	04/13/2016	Present
Bruce D. Wainer	Manager	04/13/2016	Present
Paraskevas Fronimos	Manager	07/25/2019	Present
Gerald C. Hanrahan	Manager	04/13/2016	Present
Jon R.R. Perry	Manager	09/12/2018	Present
Aaron J. Rubin	Manager	04/13/2016	Present
Recep C. Kendircioglu	Manager	04/13/2016	09/11/2019
Richard W. Dinneny	Manager	04/13/2016	09/11/2019
Mark S. Fay	Manager	04/13/2016	09/11/2019
Lincoln H. Webb	Manager	04/13/2016	09/11/2019
OFFICERS			
Name	**Title**	**Start Date**	**End Date**
William G. Fontenot	Chief Executive Officer	01/01/2018	Present
William G. Fontenot	Interim Chief Financial Officer, Cleco Power	02/01/2017	12/31/2017
William G. Fontenot	Chief Operations Officer	04/13/2016	12/31/2017
William G. Fontenot	Senior Vice President Utility Operations	03/01/2012	04/12/2016
William G. Fontenot	Group Vice President	03/01/2010	03/01/2012
Terry L Taylor	Chief Financial Officer	04/13/2016	11/04/2016
Terry L Taylor	Chief Accounting Officer & Controller	11/11/2011	04/12/2016
Terry L Taylor	Assistant Controller	08/31/2006	11/10/2011
Kazi K. Hasan	Chief Financial Officer	11/05/2016	Present
Julia E Callis	Chief Compliance Officer & General Counsel	04/13/2016	Present
Julia E Callis	Associate General Counsel & Corporate Secretary	11/12/2011	04/12/2016
Jeffrey M. Baudier	Chief Marketing & Development Officer	07/01/2016	Present

CLECO POWER LLC (continued)

Anthony L. Bunting	Chief Administrative Officer	04/13/2016	Present
Anthony L. Bunting	Vice President, Transmission & Distribution Operations	03/01/2012	04/12/2016
Anthony L. Bunting	Vice President, Customer Services and Energy Delivery	10/01/2004	03/01/2012
Gregory A. Coco	Vice President - Transmission & Distribution Operations	05/07/2019	Present
Justin S. Hilton	Vice President, MISO Operations	04/01/2016	02/08/2019
Justin S. Hilton	President	02/09/2019	Present
Marcus A. Augustine	Corporate Secretary & Senior Attorney	04/13/2016	Present
Johnathan R. Cleghorn	Vice President, Regulatory Strategy	05/07/2016	Present
Gregory A. Coco	Vice President, Transmission & Distribution Operations	04/13/2016	Present
Kristin L. Guillory	Vice President, Treasurer	02/01/2018	Present
Robert R LaBorde Jr	Vice President, Generation Operations & Environmental Services	04/13/2016	02/08/2019
Robert R LaBorde Jr	Vice President, Generation Operations	11/11/2012	04/12/2016
Russell L. Snyder	Vice President - Generation Operations	02/09/2019	Present
Robert R LaBorde Jr	Vice President, Strategic Planning, Development & Environmental Policey	11/12/2011	11/10/2012
Frances T. Laprarie	Controller & Chief Accounting Officer	07/02/2016	Present
Joel M. Prevost	Vice President, Asset Management	05/07/2016	Present
Eric A. Schouest	Vice President, Marketing South	08/01/2016	09/20/2019
Eric A. Schouest	Vice President - Governmental Affairs	09/21/2019	Present
Marty A. Smith	Vice President - Marketing	01/28/2017	Present
Dean C. Sikes	Vice President, Engineering, Construction & Project Management	04/13/2016	Present
Marty A. Smith	Vice President, Marketing North	01/01/2017	Present
Shirley J. Turner	Vice President, Customer Experience	04/13/2016	Present

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.E.2-5
OWNERSHIP AND CONTROL INFORMATION OF APPLICANT

Company: Dolet Hills Lignite Company, LLC
2002 Crow Lane
Pelican, LA 71063

OFFICERS			
Name	**Title**	**Start Date**	**End Date**
Nicholas K Akins	Chairman of the Board	01/01/2012	Present
Michael G Morris	Chairman of the Board	01/01/2004	12/31/2011
Nicholas K Akins	Chief Executive Officer	11/12/2011	Present
Michael G Morris	Chief Executive Officer	01/01/2004	11/11/2011
Nicholas K Akins	President	05/20/2013	Present
James H Garrett	President	08/27/2012	05/20/2013
James D Henry	President	05/24/2011	08/27/2012
Marguerite C. Mills	President	08/01/2009	05/24/2011
Gerald M Dimmerling	President	04/22/2002	08/01/2009
Joseph M Buonaiuto	Chief Accounting Officer	05/20/2013	Present
Brian X Tierney	Chief Financial Officer	05/20/2013	Present
Paul Chodak	Vice President	01/01/2019	Present
Julia A. Sloat	Vice President	01/01/2019	Present
Lonni L. Dieck	Vice President	05/03/2016	12/31/2018
Jeffrey D Cross	Vice President	04/09/2001	10/30/2015
David M Feinberg	Vice President	05/20/2013	Present
James H Garrett	Vice President	05/20/2013	02/10/2018
Jeffery D. LaFleur	Vice President	01/01/2017	12/02/2017
Timothy K Light	Vice President	09/01/2008	12/08/2016
Mark C McCullough	Vice President	05/24/2011	12/31/2018
Brian X Tierney	Vice President	10/01/2009	Present
Holly Keller Koeppel	Vice President	05/31/2007	10/01/2009
Mark A Pyle	Vice President - Tax	06/23/2005	01/28/2018
James X. Llende	Vice President - Tax	11/17/2017	Present
Nicholas K Akins	Vice President	09/01/2006	11/11/2011
Stephen W Burge	Vice President	06/10/2003	05/26/2009
Julia A. Sloat	Vice President	05/20/2014	05/02/2016
Franklin R. Pifer	Vice President	06/24/2018	Present
Julie A. Sherwood	Vice President	01/01/2018	Present
David M Feinberg	Manager	01/01/2012	Present
Michael D. Miller	Manager	07/01/2010	12/31/2011
John B Keane	Manager	07/29/2004	06/30/2010
Michael G Morris	Manager	01/01/2004	12/31/2011

Dolet Hills Lignite Company, LLC (continued)

Brian X Tierney	Manager	10/01/2009	Present
Holly Keller Koeppel	Manager	02/26/2008	10/01/2009
Nicholas K Akins	Manager	09/01/2006	Present
Robert P. Powers	Manager	05/19/2004	08/04/2017
Joseph M Buonaiuto	Controller	06/28/2004	Present
Julie Williams	Assistant Controller	05/20/2013	Present
Jeffrey W. Hoersdig	Assistant Controller	07/20/2017	Present
F. Scott Travis	Assistant Controller	01/22/2014	07/01/2017
Andrew B Reis	Assistant Controller	05/20/2013	02/28/2014
Julia A Sloat	Treasurer	01/01/2019	Present
Lonni L. Dieck	Treasurer	05/03/2016	12/31/2018
Julia A Sloat	Treasurer	01/01/2008	07/10/2008
Charles E Zebula	Treasurer	09/01/2008	12/31/2012
Renee V Hawkins	Assistant Treasurer	01/29/2008	Present
David M Feinberg	Secretary	01/01/2012	Present
Michael D Miller	Secretary	07/01/2010	12/31/2011
John B Keane	Secretary	04/02/2009	06/30/2010
Rahmond L Staggers	Secretary	10/01/2007	04/02/2009
David C. House	Assistant Secretary	05/26/2016	Present
Thomas G Berkemeyer	Assistant Secretary	04/25/2012	Present
Anne M Vogel	Assistant Secretary	04/02/2009	03/13/2012
Jeffrey D Cross	Assistant Secretary	06/02/2005	10/30/2015

*The information contained in this table is true based on the knowledge and belief of DHLC, and is certified as such in Section 1.C.

TABLE 1.F.2-1
LIST OF ALL NOTICE OF VIOLATION and/or CESSATION ORDERS

Federal or State Permit Number	MSHA Number	MSHA No Date Issued	NOV ID	NOV Date	Name of Person to Whom the NOV was Issued	Issuing Regulatory Authority	A Brief Description of the Particular Violation Alleged	Date, Location, and Type of Any Administrative or Judicial Proceedings	Actions, if Any, Taken by the Applicant to Abate the Violation	Current Status of the Proceedings and of the Violation Notice
LSM-3	16-01031	9/9/85	15-02-01 (TV1)	2/11/15	AEP/ SWEPCO & CLECO	Office of Conservation Injection & Mining Division	Failure to discharge water that meets water quality standards and effluent limitations from Sediment Pond 1R01. §5321.A		Discontinue pumping pit water in 1R01, maintain and operate pond as to prevent further discharge, provide water treatment, develop and implement monitoring protocol, and submit a report on steps taken to satisfy required corrective actions.	Terminated
LSM-3	16-01031	9/9/85	17-01-01 (TV1)	7/19/17	CLECO/ SWEPCO	Office of Conservation Injection & Mining Division	Failure to comply with LSMR Regulation §5323.A.2, to maintain deversion and prevent additional sediment contribution in the dirty water diversion of the Hsouth-South mine area. Failure to control sediment from the spoil peaks by trapping with Best Management Practices per LSMR §5325.A.3.		Measures were taken to remove additional sediment from the diversion and restore it to design specifications. Additional measures take to prevent further infill of sediment in the diversion. Official signed document stationg these measures were taken by August 15, 2017.	Terminated
LSM-3	16-01031	9/9/85	17-01-01 (TV2)	7/19/17	CLECO/ SWEPCO	Office of Conservation Injection & Mining Division	Failure to maintain control measures by preventing contribution of sediment to streamflow and minimizing erosion, per LSMR §5325.A, in the clean water diversion of the H South-South mine area. Failure to refrain from using a drainage channel as an access way per La. R.S. 30:915.18.		Measures were taken to repair the slopes of the diversion to prevent further sediment contribution, to reduce erosion from water flow by adding additional BMPs, to submit a crossing design for access to make repairs, and to submit an official document stating measures taken by August 15, 2017.	Terminated

TABLE 1.F.2-1
LIST OF ALL NOTICE OF VIOLATION and/or CESSATION ORDERS

Federal or State Permit Number	MSHA Number	MSHA No Date Issued	NOV ID	NOV Date	Name of Person to Whom the NOV was Issued	Issuing Regulatory Authority	A Brief Description of the Particular Violation Alleged	Date, Location, and Type of Any Administrative or Judicial Proceedings	Actions, if Any, Taken by the Applicant to Abate the Violation	Current Status of the Proceedings and of the Violation Notice
LSM-3	16-01031	9/9/85	18-01-01 (TV1)	10/17/18	CLECO/ SWEPCO	Office of Conservation Injection & Mining Division	Failure to comply with LSMR Regulation §5321.A, to discharge water that meets water quality standards and affluent limits from Sedimentation Pond 1J09.		Measures to treat water in pond to meet discharge standards, submit a detailed plan that led to this NOV, develop and implement a monitoring protocol to ensure that all final discharges are compliant with quality standards and effluent limitations and then sumbit to LOC.	Terminated
LSM-3	16-01031	9/9/85	18-01-01 (TV2)	10/17/18	CLECO/ SWEPCO	Office of Conservation Injection & Mining Division	Failure to comply with LSMR Regulation §5321.A, to discharge water that meets water quality standards and affluent limits from Sedimentation Pond 1K05.		Measures to treat water in pond to meet discharge standards, submit a detailed plan that led to this NOV, develop and implement a monitoring protocol to ensure that all final discharges are compliant with quality standards and effluent limitations and then sumbit to LOC.	Terminated

TABLE 1.F.5-1 IDENTIFICATION OF OTHER LICENSES AND PERMITS			
License or Permit	**Name and Address of Issuing Authority**	**Permit or Application Number**	**Date of Issuance**
Louisiana Surface Mine	Office of Conservation-Injection & Mining Division-Surface Mining Section Coushatta, Louisiana 71019	LSM-1-A	Transferred to DHLC 12/30/09
Mine Identification No.	Mine Safety & Health Administration U.S. Department of Labor Denver Training Center P.O. Box 25367, DFC 730 Sims Denver, Colorado 80225	MSHA ID: 16-01164 MSHA ID: 16-01031	Issued 6/28/88 to Oxbow Lignite Surface Mine Inactive 12/30/09 Transferred 12/30/09 to DHLC Issued 9/9/85 to Dolet Hills Lignite Mine MSHA ID 16-01031 covers DHLM and OLSM
Waste Water Discharge	Department of Environmental Quality Office of Environmental Services P.O. Box 4313 Baton Rouge, Louisiana 70821-4313	LA 0060291	Issued 04/01/98 Reissued 03/21/06 Reissued 11/1/11
Water Quality Certification	Department of Environmental Quality Office of Environmental Services P.O. Box 4313 Baton Rouge, Louisiana 70821-4313	WQC 080716-01 (MVK-2004-481) WQC 110526-01 (MVK-2010-1682)	Issued 08/25/08 Reissued 08/05/10 Reissued 05/18/12 Issued 07/08/11 Reissued 06/13/12
Prevention of Significant Deterioration (Air Quality)	USEPA, Region VI Allied Bank Tower at Fountain Place 1445 Ross Avenue Dallas, Texas 75202		Declared Exempt 08/18/80
Air Facility System	USEPA, Region VI Allied Bank Tower at Fountain Place 1445 Ross Avenue Dallas, Texas 75202	ID 2208100008	Issued 01/01/00
Lignite Handling Facility Air Quality Permit	Department of Environmental Quality Office of Environmental Services P.O. Box 4313 Baton Rouge, Louisiana 70821-4313	2420-00008-01	Issued 04-30-89 Modified 11/22/10

TABLE 1.F.5-1

IDENTIFICATION OF OTHER LICENSES AND PERMITS

License or Permit	Name and Address of Issuing Authority	Permit or Application Number	Date of Issuance
404 Permit	USCOE Vicksburg District 4155 Clay Street Vicksburg, Mississippi 39183-3435	LMNOD-SP (Bayou Pierre) 19	Approved 02/08/83 Revised 01/25/88 Revision Approved 06/17/88 Revision Transfer to RRMC 12/13/89 Revision Approved 08/09/90 Revision Approved 10/08/93
		Nationwide Permit No. 21 ID 950003114	Approved 10/16/95 Revision Approved 05/07/97 Revision Approved 04/26/99 Revision Approved 04/20/01 Revision Approved 04/18/02
		Nationwide Permit No. 21 MVK-2004-481	Approved 04/06/04 Reauthorized 05/08/06 Reauthorized 8/29/08 Reauthorized/transferred to DHLC 8/31/10 Reauthorized 11/13/12
		Individual Permit SYK-MVK-2010-1682	Approved 08/02/12
		Individual Permit MVK-2011-1237	Approved 07/25/16 Modified 07/19/17 Modified 02/27/19
Construction Permit	Red River Parish Community Development Office P.O. Box 709 Coushatta, Louisiana 71019	No. 88-001	Approved 06/15/88
MSHA Impoundments	Mine Health & Safety Administration U.S. Department of Labor Denver Training Center P.O. Box 25367 Denver, Colorado 80225	1211-LA-09-01164-01 1211-LA-09-01031-10	Pond E3 Phase I Approved 06/14/93 Pond E3 Phase II Approved 06/14/93 Pond E3 has been removed Pond E5 Approved 03/04/97

TABLE 1.F.5-1 IDENTIFICATION OF OTHER LICENSES AND PERMITS			
License or Permit	**Name and Address of Issuing Authority**	**Permit or Application Number**	**Date of Issuance**
DOTD Dam Safety	Department of Transportation & Development Office of Public Works Dam Safety Section P.O. Box 94245 Baton Rouge, LA 70804-9245		Pond E1 Approved 9/6/88 Pond W2 Approved 8/12/91 Pond W3 Approved 1/5/96 Pond E5 Approved 12/11/96 Pond E6.1 Pending Variance Approval Pond E7.1 Pending Variance Approval
Sanitary Treatment Plants	Department of Health & Hospital Office of Public Health 1201 Capitol Access Road P.O. Box 629 Baton Rouge, Louisiana 70821-0629	Permit No. 335	Approved 09/14/88
Notification of Hazardous Waste Activity	Department of Environmental Quality Office of Environmental Services P.O. Box 4313 Baton Rouge, Louisiana 70821-4313	EPA ID. No. LAD 98-275-6793	Received 06/07/89
Notification of Hazardous Waste Activity	USEPA, Region VI Allied Bank Tower at Fountain Place 1445 Ross Avenue Dallas, Texas 75202	EPA ID No. LAD 98-275-6793	Received 06/07/89

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
Section 2, Township 11 North, Range 10 West										
2-1	931640	Little Wincey Farms, LLC c/o Stanley Warren Smith P.O. Box 605 Coushatta, LA 71019	Right to mine and use of surface	Lease	10/19/2011	No	No	See Note **3**	X	
2-2	931641	Rex and Sandra Outlaw Young Route 1, Box 26 Coushatta, LA 71019	Right to mine and use of surface	Lease	10/26/2011	No	No	See Note **2, 3**	X	
x3100-2		Little Wincey Farms, LLC c/o Stanley Warren Smith P.O. Box 605 Coushatta, LA 71019	Not Established						X	
x3064-2		Little Wincey Farms, LLC c/o Stanley Warren Smith P.O. Box 605 Coushatta, LA 71019	Not Established							X
Beds and Bottoms of Winsey Bayou		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**	X	X
Pipelines		Exxon/Mobil Pipeline Company P.O. Box 220 Houston, TX 77001	Not Established					See Note **4**	X	

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
Section 3, Township 11 North, Range 10 West										
3-1.1	FC-2238 RRC001 Tract #6	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No	See Note **1**	X	
3-1.2	FC-2238 RRC001 Tract #9	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No	See Note **1**	X	
3-1.3	FC-2238 RRC001 Tract #6	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	
3-2.1	FC-2245 RRC002 Tract #2	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	5/7/2001	No	No	See Note **1**	X	
3-2.2	FC-2245 RRC002 Tract #3	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	5/7/2001	No	No	See Note **1**	X	
Beds and Bottoms of Bayou Pierre		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**	X	
Pipelines		Exxon/Mobil Pipeline Company P.O. Box 220 Houston, TX 77001	Not Established					See Note **4**	X	

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
Section 4, Township 11 North, Range 10 West										
4-1.1	FC-2238 RRC001 Tract #5	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	
4-1.2	FC-2238 RRC001 Tract #6	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	
4-2	RRC010 Tract #3	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	8/28/1981	No	No		X	
x3023-4		NRG New Roads Holdings, LLC 112 Telly Street New Roads, LA 70760	Not Established				No	See Note **4**	X	X
Beds and Bottoms of Bayou Pierre		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**	X	
Section 5, Township 11 North, Range 10 West										
5-2	FC-2238 RRC001 Tract #4	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	X
5-1.1	RRC010 Tract #4	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	8/28/1981	No	No		X	

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
5-1.2	RRC010 Tract #5	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	8/28/1981	No	No		X	
x3023-5		NRG New Roads Holdings, LLC 112 Telly Street New Roads, LA 70760	Not Established				No	See Note **4**		X
Section 6, Township 11 North, Range 10 West										
x3080		NRG New Roads Holdings, LLC 112 Telly Street New Roads, LA 70760	Not Established			No		See Note **4**		X
Section 7, Township 11 North, Range 10 West										
x3042		Claire Kramer Properties 424 Huron Str Shreveport, LA 71106 Donald Powell 424 Huron Street Shreveport, LA 71106	Surface	Right of Way	4/30/2015	No	No		X	X
x3043		Sharron Flores Cook et al 1520 HWY 513 Mansfield, LA 71052	Not Established			No				X
x3044		Dusty Lee Litton 750 E Red Bayou Rd Pelican, LA 71063	Right to Mine and Use of Surface	Lignite Lease	1/20/2016	No			X	X
x3047		A. L. Properties, LLC 750 E Red Bayou Rd Pelican, LA 71063	Surface	Right of Way	1/20/2016	No	No			X

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Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3048		Timothy and Kimberly Hogan 783 E Red Bayou Rd Pelican, LA 71063	Not Established			No	No			X
x3049		Dusty Lee Litton 750 E Red Bayou Rd Pelican, LA 71063	Right to Mine and Use of Surface	Lignite Lease	1/20/2016	No				X
x3045		Earl A. Rambin 2573 Crape Myrtle Str Shreveport, LA 71118	Surface	Right of Way	3/13/2015	No	No		X	X
x3050		Alana Royale Priest Britt 204 Hallmark Dr Stonewall, LA 71078 Gloria Day Utley 209 Evangeline Walk Bossier City, LA 71111 Rambin Priest Able & Son Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019 Rambin Priest Able & Daughter Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019	Surface	Right of Way		No			X	X
x3052		Alana Royale Priest Britt 204 Hallmark Dr Stonewall, LA 71078	Surface	Right of Way	4/2/2015	No	No			X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3052(cont'd)		Gloria Day Utley 209 Evangeline Walk Bossier City, LA 71111 Rambin Priest Able & Son Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019 Rambin Priest Able & Daughter Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019	Surface	Right of Way	4/2/2015	No	No			X
x3051		Alana Royale Priest Britt 204 Hallmark Dr Stonewall, LA 71078 Gloria Day Utley 209 Evangeline Walk Bossier City, LA 71111 Rambin Priest Able & Son Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019 Rambin Priest Able & Daughter Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019	Surface	Right of Way	4/2/2015	No	No			X
x3054		A. L. Litton Properties, LLC 750 E Red Bayou Rd Pelican, LA 71063	Not Established			No	No			X

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Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3055		Dennis Anthony Evans 2031 Windway Rd Auburn, AL 36830	Not Established			No	No			X
x3057		Dirt Properties, Inc. 307 Gibbs St Mansfield, LA 71052	Not Established			No	No			X
x3058		Mary Catherine Evans Golden 26714 Bridle Creek Dr S Mangnolia, TX 77355	Not Established			No	No			X
Section 8, Township 11 North, Range 10 West										
8-1	FC-2238 RRC001 Tract #7	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	X
x3024-8		Ronnie Nornberg 1400 West Broadway Little Falls, MN 56345	Use of Surface	Surface Lease	2/10/2015	No	No		X	
x3025-8		Accudocx Corp 1321 Upland Dr. Suite 4163 Houston, TX 77043 Natalie Johnson White 12940 NE Rose Parkway Portalnd, OR 97230 Kristi Johnson 4016 SE Sunrise DR Camus, WA 98607	Not Established				No		X	X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3025-8(cont'd)		Karen Cage P. O. Box 87605 Vancouver, WA 98687 Glen McCraw 3221 Fashion AVE Long Beach, CA 90810 Kid McCraw 6331 Bahn Avenue Long Beach, CA 90805 Issac McCraw, Jr. 1408 E 218th St. Carson, CA 90745 Viola Moore 716 SE 119th Avenue Vancouver, WA 98684 Lucy McCraw 716 SE 119th Avenue Vancouver, WA 98684 Lawrence McCraw 1595 Locust Avenue Long Beach, CA 90813 Doris Jean Black 137 West 99th St. Los Angeles, CA 90003 Sheila Blackman 230 E. 118th St. Los Angeles, CA 90003	Not Established			No		X	X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3025-8(cont'd)		Shari Lynn Blackman 341 E. 99th St. Los Angeles, CA 90061 Alvin McCraw 12015 Muriel Drive Lynwood , CA 90262 Michael McCraw 12015 Muriel Drive Lynwood , CA 90262 Billy Eddy 773 Hwy 346 Pelican, LA 71063	Not established				No		X	X
x3033-8		Beth Magee P.O. Box 168 Pelican, LA 71063	Use of Surface	Surface Lease	1/1/2015	No	No		X	
x3034-8		Kent Walk Mason 1305 Majestic Hills Blvd. Spicewood, TX 78669 Lloyd Glenn Mason 3466 Bayou Crossing Shreveport, LA 71105 Michael Humphrey Mason 2405 Fairfield Shreveport, LA 71104 Ky Ellen Shaw Mason 3876 Fairfield Shreveport, LA 71106	Not Established				No	See Note **4**		X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3035-8		Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of Surface	Fee	3/4/2016	No	No		X	
x3036-8		A.L. Properties, LLC 750 E. Red Bayou Rd Pelican, LA 71063	Surface	Right of Way	1/20/2016	No	No	See Note **4**	X	X
Beds and Bottoms of Dolet Bayou		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**	X	X
Section 9, Township 11 North, Range 10 West										
9-1	FC-2238 RRC001 Tract #8	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	
Section 10, Township 11 North, Range 10 West										
10-1	FC-2238 RRC001 Tract #9	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No		X	X
Beds and Bottoms of Bayou Pierre		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**		X
Section 11, Township 11 North, Range 10 West										
x3037-11		Phillip Morgan Route 2 Box 279 Coushatta, LA 71019	Not Established				No	See Note **4**		X

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Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3060-11		Duco-Smith Properties LLC P.O. Box 171 Coushatta, LA 71019	Not Established				No	See Note **4**		X
x3061-11		Lysander Webb 6708 Hwy 1 Coushatta, LA 71019	Not Established				No	See Note **4**		X
x3062-11		Billie Jean Green 311 East and West Minden, LA 71055	Not Established				No	See Note **4**		X
x3063-11		Cindy D. Coffey P.O. Box 505 Coushatta, LA 71019	Not Established				No	See Note **4**		X
x3100-2		Little Wincey Farms, LLC c/o Stanley Warren Smith P.O. Box 605 Coushatta, LA 71019	Not Established						X	
Beds and Bottoms of Bayou Pierre		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**		X
Section 12, Township 11 North, Range 11 West										
999F1212		Jeff Evans 130 Jefferson St Mansfield, LA 71052	Not Established			No	No			X
999F1211		Dirt Properties 307 Gibbs St Mansfield, LA 71052	Not Established			No	No			X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
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99F1211(cont'd)		Jeff Evans 130 Jefferson St Mansfield, LA 71052	Not Established			No	No			X
999F1210		Dirt Properties 307 Gibbs St Mansfield, LA 71052 Jeff Evans 130 Jefferson St Mansfield, LA 71052 Rambin Priest Able & Daughter Heritage, LLC 1519 Rinnggold Ave Coushatta, LA 71019 James Hodges Unknown	Surface	Right of Way	3/4/2016	No	No			X
999F1209		Dirt Properties 307 Gibbs St Mansfield, LA 71052 Jeff Evans 130 Jefferson St Mansfield, LA 71052	Surface	Right of Way	3/4/2016	No	No			X
Section 14, Township 11 North, Range 10 West										
x3039-14		Roger Bierden Route 4 Box 173 Coushatta, LA 71019	Not Established				No	See Note **4**		X

TABLE 1.G.1-1

PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA

Exhibit 1.G.1-1 ID	Tract No./Name	Equitable Owner/Holder/Purchaser of Record and Address	Rights Granted to OXC	Type of Document	Date of Execution of Document	Surface and Mineral Estate Severed	Pending Litigation	Landowner's Consent to Post-mining Land Use	Tract Within LSM-1-A Expansion/ Revision Permit Area	Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area
x3040-14		Phillip Morgan Route 2 Box 279 Coushatta, LA 71019	Not Established				No	See Note **4**		X
Beds and Bottoms of Bayou Pierre		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**		X
Section 15, Township 11 North, Range 10 West										
x3022-15		Robert E. Crow P. O. Box 482 Coushatta, LA 71019 Linda Feazell 8169 Fleetwood Greenwood, LA 71033 William Crow P. O. Box 286 Hall Summit, LA 71034 Barbara Crow P. O. Box 43 Hall Summit, LA 71034	Right to Mine and Use of Surface	Lignite Lease	3/27/2015		No	See Note 4	X	
x3038-15		Northwestern State University of Louisiana 715 University Parkway Natchitoches, LA 71497	Not Established				No	See Note **4**		X
x3026-15		Robert E. Crow P. O. Box 482 Coushatta, LA 71019	Right of Mine and Use of Surface	Lignite Lease	3/27/2015		No	See Note 4	X	

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x3026-15(cont'd)		Linda Feazell 8169 Fleetwood Greenwood, LA 71033 William Crow P. O. Box 286 Hall Summit, LA 71034 Barbara Crow P. O. Box 43 Hall Summit, LA 71034	Right of Mine and Use of Surface	Lignite Lease	3/27/2015		No	See Note **4**	X	
x3027-15		Lola R. Boone 9106 Campfire Lane Shreveport, LA 71115 Cave Family Trust 3913 Lake LaRouge Drive Baton Rouge, LA 70816 Randa C. Durham 9086 Billiu Ridge Dr. Shreveport, LA 71118	Right of Mine and Use of Surface	Lignite Lease	4/22/2015		No	See Note **4**	X	X
Section 16, Township 11 North, Range 10 West										
x3021-16		DeSoto Parish School Board 201 Crosby Street Mansfield, LA 71019	Right of Mine and Use of Surface	Lignite Lease	1/13/2016		No	See Note **4**	X	X
Section 17, Township 11 North, Range 10 West										
17-1	FC-2238 RRC001 Tract #10	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No			X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3077		Risinger Properties, LLC 843 Delaware Str Shreveport, LA 71106	Not Established			No				X
x3098		Dusty Lee Litton 750 E Red Bayou Rd Pelican, LA 71063	Not Established				No			X
Parish Road Crow Land		DeSoto Parish Police Jury P. O. Box 898 Mansfield, LA 71052	Not Established			No				X
Beds and Bottoms of Dolet Bayou		State of Louisiana Office of Mineral Management P. O. Box 2827 Baton Rouge, LA 70821	Not Established			No				X
Powerline		SWEPCO 428 Travis Street Shreveport, LA 71156	Not Established			No				X
Section 18, Township 11 North, Range 10 West										
x3069		Jeffrey L. Evans P. O. Box 1636 Mansfield, LA 71052 John S. Evans P. O. Box 740 Mansfield, LA 71052	Not Established			No				X
x3070		John S. Evans P. O. Box 740 Mansfield, LA 71052	Not Established			No				X

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x3070(cont'd)		Gary Evans P. O. Box 740 Mansfield, LA 71052	Not Established			No				X
x3071		Mary Bucaro Rascoe 204 College Street Minden, LA 71055	Not Established			No				X
x3072		Mary Bucaro Rascoe 204 College Street Minden, LA 71055	Not Established			No				X
x3076		Mary Bucaro Rascoe 204 College Street Minden, LA 71055	Not Established			No				X
x3075		Mary Bucaro Rascoe 204 College Street Minden, LA 71055	Not Established			No				X
x3074		Mary Rives Gallaspy 535 University Pkwy Natchitoches, LA 71457	Not Established			No				X
x3073		Mary Rives Gallaspy 535 University Pkwy Natchitoches, LA 71457	Not Established			No				X
Interstate Highway 49		LA DOTD 1201 Capitol Access Road Baton Rouge, LA 70802	Not Established			No				X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
Beds and Bottoms of Dolet Bayou		State of Louisiana Office of Mineral Management P. O. Box 2827 Baton Rouge, LA 70821	Not Established			No				X
Section 20, Township 11 North, Range 10 West										
x3032		A. L. Litton Properties, LLC 750 E Red Bayou Road Pelican, LA 71063	Right to Mine and Use of Surface	Lignite Lease	1/20/2016		No			X
Section 21, Township 11 North, Range 10 West										
x3029		Viva Plantation, LLC 292 White Oak Ridge Coushatta, LA 71019 Pophope, LLC P.O. Box 118 Coushatta, LA 71019	Right of Mine and Use of Surface	Lignite Lease	8/31/2015		No		X	X
x3030		Amber Greer 1994 Bayou Derbonne Natchitoches, LA 71457 Peggy Danielson 641 Hooper Road Pineville, LA 71360 Matthew Friday 804 Creek St. Tarentum, A 15084 Randy Friday P. O. Box 432 Pleasant Hill, LA 71065	Right of Mine and Use of Surface	Lignite Lease	12/10/2015		No			X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3031		A. L. Litton Properties, LLC 750 E Red Bayou Road Pelican, LA 71063	Right to Mine and Use of Surface	Lignite Lease	12/10/2015					X
x3093		Buckneck, LLC 3225 Skyline Drive Pineville, LA 71360	Not Established				No			X
x3067		Lola R. Boone 9106 Campfire Lane Shreveport, LA 71115 Cave Family Trust No. 1 Stephanie F. Cave Trustee 3913 Lake La Rouge Drive Baton Rouge, LA 70816 Randa C. Durham 9086 Billiu Ridge Drive Shreveport, LA 71118	Right to Mine and Use of Surface	Lignite Lease	4/22/2015		No		X	X
x3068		Tilford McClure 101 Stonewall Frierson Road Frierson, LA 71027 Blackmon Trailers Sales LLC P. O. Box 979 Mansfield, LA 71052 A. L. Litton Properties LL 750 E Red Bayou Road Pelican, LA 71063	Not Established				No			X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
x3099		A. L. Litton Properties, LLC 750 E Red Bayou Road Pelican, LA 71063	Right to Mine and Use of Surface	Lignite Lease	1/20/2016		No			X
Section 22, Township 11 North, Range 10 West										
x3064		Northwestern State University of Louisiana 715 University Parkway Natchitoches, LA 71497	No Established				No		X	X
x3028		Robert E. Crow P. O. Box 482 Coushatta, LA 71019 Linda Feazell 8169 Fleetwood Greenwood, LA 71033 William Crow P. O. Box 286 Hall Summit, LA 71034 Barbara Crow P. O. Box 43 Hall Summit, LA 71034	Right to Mine and Use of Surface	Lignite Lease	3/27/2015		No		X	X
x3090		Buckneck, LLC 3225 Skyline Drive Pineville, LA 71360	Not Established				No			X
x3094		Marlan W. Anderson 2840 Highway 485 Robeline, LA 71469	Not Established				No			X

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
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x3095		Garland E. & Barbara R. Peterson 1050 Vandegaer Street Many, LA 71449	Not Established				No			X
x3096		Marlan W. Anderson 2840 Highway 485 Robeline, LA 71469	Not Established				No			X
x3097		Jordan Ferry Plantation, LLC 2840 Highway 485 Robeline, LA 71469	Not Established				No			X
Section 27, Township 11 North, Range 10 West										
x3091		Buckneck, LLC 3225 Skyline Drive Pineville, LA 71360	Not Established				No			X
Section 28, Township 11 North, Range 10 West										
x3092		Buckneck, LLC 3225 Skyline Drive Pineville, LA 71360	Not Established				No			X
Section 32, Township 12 North, Range 10 West										
x3023-32		NRG New Roads Holdings, LLC 112 Telly Street New Roads, LA 70760	Not Established				No			X
Section 33, Township 12 North, Range 10 West										
33-1.1	FC-2238 RRC001 Tract #2	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No	See Note **1**	X	

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
33-1.2	FC-2238 RRC001 Tract #5	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No	See Note **1**	X	
33-2	FC-5105	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	9/20/1996	No	No	See Note **1**	X	X
33-3	931610 Tract #3	Armistead Corporation Rt. 4, Box 54 Coushatta, LA 71019-8704	Right to mine and use surface	Lease	8/28/1991	No	No	See Note **1**	X	
x3023-33.1		NRG New Roads Holdings, LLC 112 Telly Street New Roads, LA 70760	Not Established				No	See Note **4**		X
x3023-33.2		NRG New Roads Holdings, LLC 112 Telly Street New Roads, LA 70760	Not Established				No	See Note **4**		X
Beds and Bottoms of Bayou Pierre		State of Louisiana Office of Mineral Management P.O.Box 2827 Baton Rouge, LA 70821-2827	Not Established					See Note **4**	X	X
Section 34, Township 12 North, Range 10 West										
34-1	FC-2245 RRC002 Tract #1	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	5/7/2001	No	No	See Note **1**	X	

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
34-2	FC-2238 RRC001 Tract #3	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	7/20/1976	No	No	See Note **1**	X	
Pipelines		Exxon Pipeline Company P. O. Box 220 Houston, TX 77001	Not Established					See Note **4**	X	
Pipelines		Louisiana Intrastate Gas Corporation P. O. Box 1352 Alexandria, LA 71301	Not Established					See Note **4**	X	
Section 35, Township 12 North, Range 10 West										
35-1	FC-2245 RRC002 Tract #4	Oxbow Lignite Company, LLC Pirkey Fuels Building 2396 FM Road 3251 Hallsville, TX 75650	Ownership of surface and coal	Fee	5/7/2001	No	No	See Note **1**	X	
35-2.1	931639 Tract #1	Ronald Perry Webb P. O. Box 362 Coushatta, LA 71019	Right to mine and use of surface	Lease	10/14/2010	No	No	See Note **2**	X	
35-2.2	931639 Tract #2	Ronald Perry Webb P. O. Box 362 Coushatta, LA 71019	Right to mine and use of surface	Lease	10/14/2010	No	No	See Note **2**	X	

TABLE 1.G.1-1 PROPERY OWNERS WITHIN THE PROPOSED 5 YEAR APPLICATION AREA										
Exhibit 1.G.1-1 ID	**Tract No./Name**	**Equitable Owner/Holder/Purchaser of Record and Address**	**Rights Granted to OXC**	**Type of Document**	**Date of Execution of Document**	**Surface and Mineral Estate Severed**	**Pending Litigation**	**Landowner's Consent to Post-mining Land Use**	**Tract Within LSM-1-A Expansion/ Revision Permit Area**	**Tract Contiguous to LSM-1-A Expansion/ Revision Permit Area**
Pipelines		Louisiana Intrastate Gas Corporation P. O. Box 1352 Alexandria, LA 71301	Not Established					See Note **4**	X	

Notes:

1 Found in Section 2723 of the 2006 FYPA. "Following mining of your land, RRMC intends to reclaim your property to pasture use by planting Bermuda grass in accordance with accepted farming practices. The pasture land will be interspersed with hardwood and other plant species along reconstructed drainage ways, ponds and /or fence lines to enhance the fish, wildlife, and related environmental values with the permit use."

2 Found in the 2006 Permit Revision Application Environmental/Operations Narrative. "…the majority of postmining acreage will be reclaimed and/or returned to pastureland and/or forestry. On the east side of T East there is a small area of cropland. Part of this area did not meet the LOC criteria for historic prime farmland soils; however, the area will be returned to cropland. Any of the undeveloped land located on the west side of TW that is disturbed by mining-related activity will be reclaimed to forestry... The owner of Lease 931639 has requested that a pond be constructed on this property after mining, not to exceed 8 acres...Also included in the landowner lease agreement is the landowner's request that this property be planted to common Bermuda grass and reclaimed to pastureland."

3 Found in the 2006 Permit Revision Application (Smith Tract) Environmental/Operations Narrative. "…the majority of postmining acreage will be reclaimed and/or returned to pastureland. The landowner has requested 40 acres of hardwoods be planted on the south end of his property. Any of the undeveloped land located on the west side of TW that is disturbed by mining-related activity will be reclaimed to forestry. The landowner has agreed to two ponds less than 10 acres each."

4 No disturbance during the 2015-2020 five year application term.

FIGURE 1.E.1.1
ORGANIZATION STRUCTURE OF APPLICANT

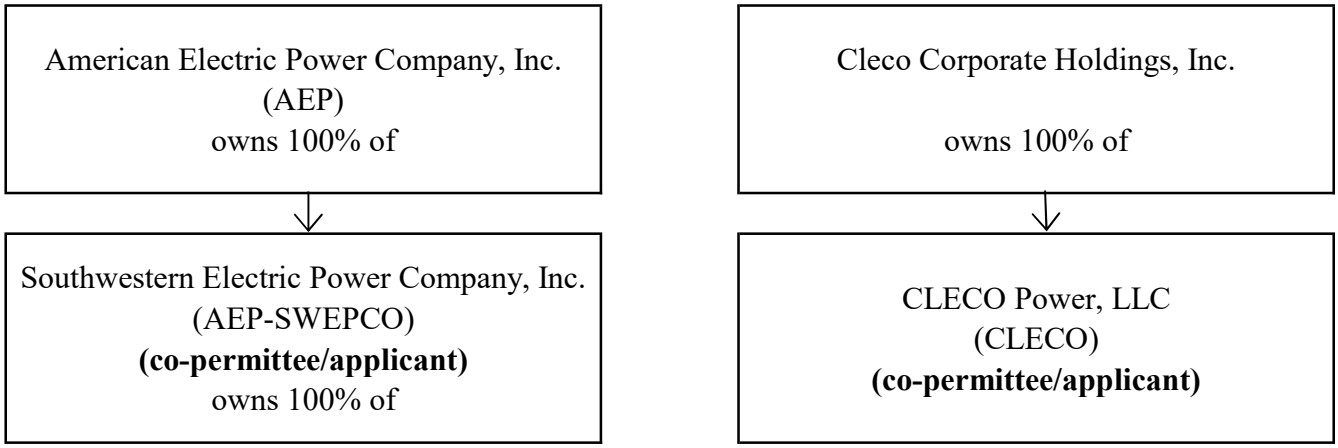
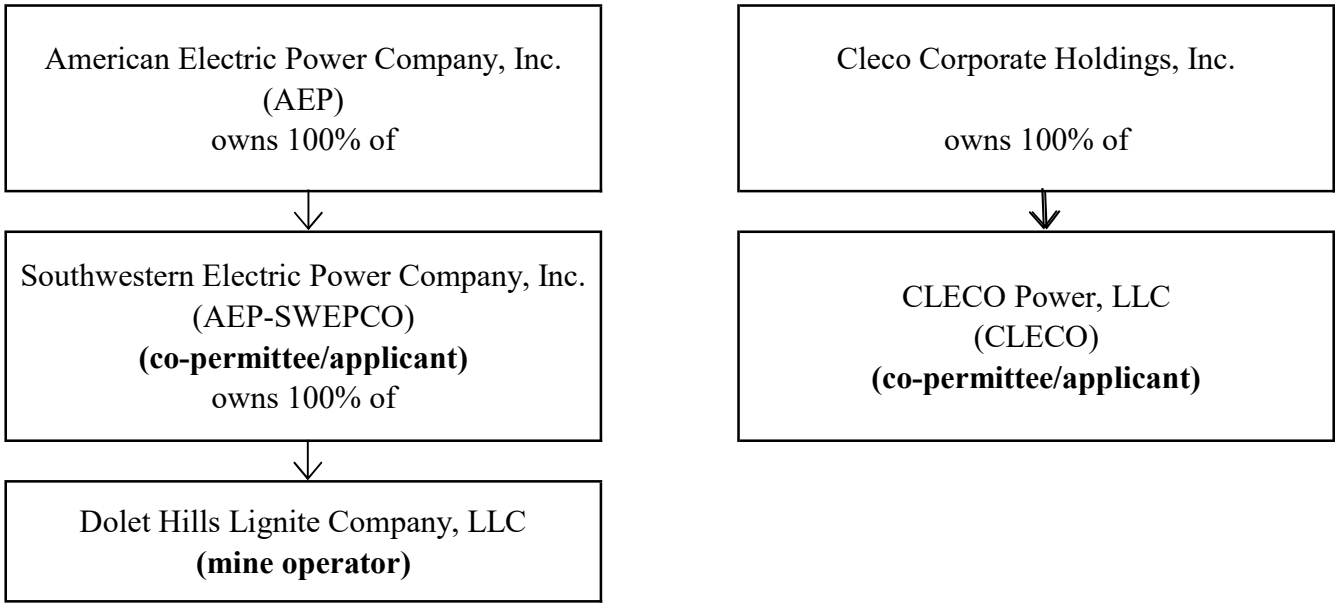


FIGURE 1.E.2.1
ORGANIZATION STRUCTURE OF OPERATOR



ATTACHMENT 1.F.4-1

CERTIFICATE OF INSURANCE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 06/27/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MCGRIFF, SEIBELS & WILLIAMS, INC. P.O. Box 10265 Birmingham, AL 35202	**CONTACT NAME:** **PHONE (A/C, No, Ext):** 800-476-2211 **FAX (A/C, No):** **E-MAIL ADDRESS:**
INSURED American Electric Power Company, Inc. and all Subsidiaries 1 Riverside Plaza Columbus, OH 43215	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** ACE American Insurance Company — 22667 **INSURER B :** Energy Insurance Services, Inc. **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** JDWMEVB2 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	X **COMMERCIAL GENERAL LIABILITY** X CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY ☐ PRO-JECT ☐ LOC ☐ OTHER:			HDO G71097055	07/01/2018	07/01/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	1,000,000 1,000,000 0 1,000,000 2,000,000 2,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS X HIRED AUTOS ONLY X NON-OWNED AUTOS ONLY			ISA H25159792	07/01/2018	07/01/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ $ $ $	1,000,000
B	☐ **UMBRELLA LIAB** ☐ OCCUR X **EXCESS LIAB** X CLAIMS-MADE ☐ DED ☐ RETENTION $			P003-190323	07/01/2019	07/01/2020	EACH OCCURRENCE AGGREGATE	$ $	9,000,000 9,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A					☐ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $	
								$ $ $ $ $	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: This insurance applies to ALL permits at Dolet Hills Lignite and Oxbox Mine.

CERTIFICATE HOLDER

Louisiana Department of Natural Resources Office of Conservation, Injection and Mining Division
PO Box 94275
Baton Rouge, LA 70804-9275

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

ATTACHMENT 1.G.1.b-1

GENERIC LIGNITE AND OTHER COAL LEASE

LIGNITE AND OTHER COAL LEASE

THIS AGREEMENT, entered into effective as of _____, by and between:

herein called "Lessor" (whether one or more); a n d

CLECO POWER, L.L.C., a Limited Liability Company, Post Office Box 5000, Pineville, Louisiana 71361-5000;

and;

SOUTHWESTERN ELECTRIC POWER COMPANY, a Delaware corporation, 428 Travis Street, Shreveport, Louisiana 71104;

acquiring in equal undivided interests, herein collectively called "Lessee";

W I T N E S S E T H :

I

Lessor, in consideration of the sum of One Hundred Dollars ($100.00) and Other Valuable Considerations ($100 and OVC), receipt of which is acknowledged, and the agreement and covenants herein contained, does hereby GRANT, LEASE and LET unto Lessee, its successors and assigns, the exclusive right to enter upon, investigate, explore, prospect by core drilling, excavating or otherwise, and to drill, mine, strip mine, operate, produce, treat, store and remove lignite and other coal and their respective constituent products (and other substances removed because of practical necessity or convenience prior to or in connection with surface mining and strip mining), all of which is hereinafter referred to as "Lignite", together with the right to construct such facilities and the right to ground or surface water and to such other accessory rights, privileges and rights of way which may be necessary, useful or convenient in connection with any such operations conducted by Lessee thereon, or on neighboring lands, the following described land in DeSoto Parish, Louisiana, to wit:

Township 12 North – Range 12 West

including, in addition to that above described, all other lands contiguous or adjacent to, forming a part of, or adjoining the land described or referred to above and owned or claimed by Lessor by limitation, prescription, possession, dereliction, accretion, avulsion, inheritance, reversion, unrecorded instrument or instruments, or any other means whatsoever. Whenever the term "neighboring lands" is used herein, it shall mean all lands other than the leased premises included within the mining plan referred to hereinbelow in Paragraph III.

Whether or not any reduction of Advance Royalty and royalties shall have previously been made, this lease, without further evidence thereof, shall immediately attach to and affect any and all rights, titles and interests in the above described land, including reversionary rights affecting or relating to Lignite, hereafter acquired by or enuring to Lessor and Lessor's successors and assigns.

For the purpose of calculating all payments based on acres of land covered hereby, said lands shall be treated as comprising _____ acres, whether there be more or less. Lessor reserves and excepts all oil, gas and other minerals, except Lignite, provided, however, that operations to recover such oil, gas and other minerals shall not unreasonably interfere with the exercise of Lessee's rights granted hereunder.

II

Subject to the other provisions herein contained, this lease shall be for a period of ten (10) years from the effective date of this lease (called "primary term") and as long thereafter as:

(a) Lignite is being drilled, or mining operations therefor are being conducted, or same are being produced in paying quantities from said land hereunder; or

(b) It is renewed, extended, or otherwise maintained in force in any other manner herein provided.

III

If operations for mining are not commenced on said land on or before one (1) year from the effective date of this lease, then this lease shall terminate, unless on or before one (1) year from the effective date of this lease, Lessee shall pay or tender to Lessor as Advance Royalty the sum of Thirty Five and no/100 Dollars ($35.00) per acre for any lands covered hereby at the time such payment is due, which payment(s) shall cover the privilege of deferring commencement of such mining operations for a period of twelve (12) months. In like manner and upon like payments or tenders, annually, the commencement of said operations may be further deferred for successive periods of twelve (12) months each during the primary term.

If within the primary term of this lease (1) lignite susceptible of being mined has been discovered as a result of acts committed on the leased land, or due to acts providing a reasonable basis of proof of the discovery of the mineral; (2) a mining plan for the ultimate production of lignite, together with a permit issued by the Commissioner of Conservation of Louisiana, is filed, along with the plat of all lands included in the mining plan, in the Conveyance Records of the Parish or Parishes in which all or part of the land herein leased is located; (3) the aforesaid mining plan, along with any amendments thereto, provides for the ultimate production of lignite from land herein leased; and (4) actual mining operations have begun on land included in the plan, although such operations are not being conducted on land herein leased, then so long as mining operations under the aforesaid plan continue with the diligence of a reasonably prudent operator without cessation for more than five (5) years, Lessee may extend this lease and continue same in force and effect after the primary term, without mining operations or production on the land herein leased, by paying to Lessor, on or before the last day of the primary term, an Advance Royalty in the sum of $35.00 per acre, which payment(s) shall maintain Lessee's rights in effect for a period of twelve (12) months from the last day of the primary term. In like manner and upon like payments or tenders annually, Lessee may continue to maintain its rights hereunder for successive periods of twelve (12) months each, provided, however, that Lessee may not continue this lease in force, as above provided, without actual mining operations or production on the land herein leased, for a period greater than thirty (30) years after the end of the primary term.

All sums paid as Advance Royalty hereunder shall be credited against future royalty attributable to production under the terms hereof. When mining commences on the premises leased herein, Lessee may cease all Advance Royalty payments, and all the Advance Royalty payments previously made may be deducted by the Lessee from one-half (1/2) of the amount due and owing to Lessor for lignite actually mined and removed from said land until such time as all amounts thus credited and deducted shall equal the total sum of all such Advance Royalty payments.

IV

Subject to the provisions of Paragraph IX hereof, the royalties to be paid by Lessee are:

(a) On lignite mined and removed from the leased premises, the sum of Forty Cents ($0.40) per ton of 2,000 pounds or five percent (5%) of the gross mining cost to Lessee F.O.B. the point of delivery for purpose of use by Lessee, whichever is greater; The term "gross mining cost to Lessee" as used in this Paragraph IV shall mean the cost per ton of Lignite mined and removed from all of the lands included in the mining plan referred to in Paragraph III hereof as reported by Lessee to governmental regulatory agencies as fuel costs in generating electricity at Lessee's plant(s) utilizing such Lignite (except production royalty and any costs incurred in transporting said Lignite to points beyond the mine mouth) for the month preceding the month in which royalties are to be paid.

(b) On Lignite mined and removed from the leased premises and sold to a third party, the sum of forty cents ($0.40) per ton of 2,000 pounds or five percent (5%) of the gross sales price F.O.B. the mine, whichever is greater; and

(c) On other substances removed prior to or in connection with the surface mining or strip mining of lignite, ten percent (10%) of the gross sales price F.O.B. mine or ten percent (10%) of market value if the substances are used or consumed by Lessee off the leased premises in any manner other than in mining operations or in reclamation of the leased premises or neighboring lands.

Lessee shall pay royalties on or before the 25th day of January, April, July and October in each year during the continuance of this lease for all merchantable lignite mined and removed from the leased lands during the three (3) months preceding the first day of the month in which payment is made. Lessor's royalty hereunder shall bear its proportionate part of any severance, production or similar taxes legally imposed, whether based on fixed cents or percentage of gross sales price or percentage of market value, and Lessee is authorized to deduct such prorata part of such taxes paid or to be paid by Lessee from royalty payments.

Lessee guarantees that the royalty payments (including Advance Royalty payments) made hereunder during the life of this lease shall aggregate an amount equal to at least Five Hundred & no/100 Dollars ($500.00) per acre for each acre of the leased premises from which lignite is actually mined and removed, which said sum shall be in compensation for all the rights herein granted, as well as for all damages, except as provided for in Paragraph V hereinbelow. In the event the aforesaid royalty and Advance Royalty payments do not amount to the minimum sum above provided for, Lessee shall pay the difference to the party or parties entitled to royalty payments hereunder at the termination of this lease.

V

If mining operations are conducted on the leased premises, Lessee shall pay to Lessor, or such other party as may be entitled thereto, as liquidated damages the sum of Five Hundred & no/100 Dollars ($500.00) per acre for each acre of the leased premises from which lignite is actually mined and removed. Lessor agrees that payment of this sum by Lessee to Lessor shall constitute full and complete compensation for all damages of whatever nature to each acre of the leased premises from which lignite is actually mined and removed. If Lessee, without actually mining and removing lignite from the leased premises, shall use the surface of all or any part of the leased premises in connection with Lessee's operations on neighboring lands or on any part of the leased premises so as to deny Lessor the use thereof (as, for example, for Lessee's roads, buildings, power lines and waste dumps and any other servitudes and rights of way which may aid Lessee in its mining operations), Lessee shall pay to the Lessor, or such other party or parties as may be entitled thereto, as liquidated damages the sum of Five Hundred & no/100 Dollars ($500.00) per acre for each acre so used. Lessor hereby acknowledges receipt of the sum of Five Hundred and no/100 Dollars ($500.00) per acre for each acre covered hereunder as liquidated damages and Lessor agrees that payment of this sum shall constitute full and complete compensation for all damages to each acre of land.

In the event that this lease is terminated, forfeited or released for any cause (including, without limitation, the expiration of its term), as to all or any portion of the lands originally leased hereunder, Lessee shall have the right to continue to use all or any part of the surface of such land in connection with its mining operations on lands remaining subject to this lease and/or on neighboring lands, provided Lessee makes or has made either of the payments set forth in the preceding sub-paragraph for each acre so used or to be used.

If Lessee enters upon the leased lands for the purpose of conducting geological, geophysical, core-drilling tests or other examinations, except mining operations, for the presence of lignite deposits, Lessee shall pay Lessor, or such other party as may be entitled thereto, for damages to timber and growing crops occasioned by such operations, restore substantially to their former condition any fences or other improvements moved or altered in the course of such operations, and restore as nearly as practicable the surface of the ground to its former condition.

Lessee shall give written notice to Lessor before conducting mining operations upon the leased premises, which notice shall be delivered to Lessor at least six (6) months prior to commencement of such mining operations. Unless the Lessor causes all timber to be cut and all agricultural produce to be harvested timely within said period, Lessee shall have the right to cause such timber and agricultural produce to be cut, harvested and sold, and Lessee shall pay to Lessor the proceeds from the sale thereof, less the costs of cutting, harvesting and selling, and as to any houses, barns or other buildings or improvements not removed or disposed of by Lessor, Lessee shall have the right to cause the removal or disposition of same, and Lessee shall pay to Lessor therefor the reasonable market value thereof, provided, however, that Lessee shall not be

obligated to compensate Lessor for any building or other improvement placed on the land after the effective date of this lease. Lessor shall have the right, at Lessor's sole risk, to enter upon the leased land at any time, for the purpose of inspection of Lessee's performance hereunder, provided Lessor does so in a manner which will not unnecessarily or unreasonably hinder or interrupt the operations of Lessee.

After termination of this lease, Lessee, in addition to making the payments herein provided, shall within three (3) years, fill all excavations and pits resulting from mining hereunder and shall grade all deposits of earth, rock and other materials resulting from mining hereunder so as to reasonably eliminate any surface irregularities caused by such mining, but in so doing Lessee shall not be required to bring in fill material from other land and shall not be required to restore the land to its original contour or elevation, and, in the performance thereof, Lessee shall fully comply with all applicable laws, rules and regulations, including those for the protection of the environment, prevention of water pollution, and reclamation of the mined land. Upon completion of such restoration operations, Lessee shall re-establish by survey the boundaries of the leased premises and replace all fences which existed thereon at the beginning of mining operations.

Lessor hereby authorizes Lessee, in connection with reclamation of disturbed land, to establish, at Lessee's option, fish and wildlife habitat, by planting with species that are beneficial to wildlife, as appropriate, (1) along roads, fence rows, pipeline and transmission corridors, (2) in lowland areas adjacent to permanent post-mining impoundments, diversions, ditches and streams, and (3) in post-mining forests. Any such habitats that are established in accordance with this authorization shall not exceed one acre for every twenty acres of intended post-mining forest without specific authorization of Lessor; except for the wildlife habitats recited above, the remainder of the reclaimed disturbed surfaces shall be planted in pine seedlings.

VI

All payments or tenders to Lessor hereunder may be made to the Lessor at the address shown above, or to Lessor's last known address, as shown by the files of Lessee, or by deposit to the Lessor's credit in the _____, depository for Advance Royalty and royalty, which bank or banks, or any successor thereof, shall be deemed agent for the Lessor and Lessor's successors, heirs and assigns. If such bank shall fail or for any reason refuse to accept payments, Lessee shall not be held in default for failure to make such payments until ninety (90) days after Lessor shall deliver to Lessee or its assigns a recordable instrument naming another bank as agent to receive such payments or tenders. Notwithstanding the death of any Lessor, or successor in interest, the payments or tenders in the manner provided above shall be binding on the heirs, executors and administrators of such person.

VII

Lessee may at any time or times execute and deliver to Lessor, or to the depository above named, or place of record, a release covering all or any portion or portions of the described lands and thereby surrender this lease in whole or in part and be relieved of all obligations thereafter accruing as to the lands surrendered. If the lease is partially surrendered, Advance Royalty shall be reduced in the proportion (reasonably estimated in the absence of survey information) that the lands covered hereby are reduced by said release or releases. Any Advance Royalty attributable to land so released shall nevertheless be deductible from and credited against any future royalty due for production from any land remaining leased hereunder after such release or releases.

VIII

If, during the primary term of this lease or any extension thereof, Lessee obtains production of lignite from or begins mining operations upon the leased premises or any portion thereof and if, during the life of this lease, either before or after the expiration of the primary term or extended term, all such production or mining operations cease for any reason other than the exceptions hereinafter provided and such cessation continues for any period of ninety (90) consecutive days, this lease shall not terminate if on or before the anniversary date of this lease next ensuing after the expiration of such 90-day period Lessee either restores production of or resumes mining operations for lignite or resumes Advance Royalty payments. The Right of Lessee to continue maintenance of this lease by such resumption of mining operations or restoration of production or Advance Royalty payments shall be recurring whenever such production or operations cease, provided, however, that this lease may not be maintained in force by Advance Royalty payments after expiration of the extended term for more than five (5)

consecutive years. Production of and/or mining operations for lignite shall not be deemed to have ceased, and it shall be deemed that lignite is being mined, if mining or mining operations are prevented or prohibited by law, ordinance or other governmental regulation, restraint or court order, by inability to obtain permits or licenses, by scarcity or inability to obtain equipment, material, power or fuel, by strike, lockout or other industrial disturbance, by failure of carriers to transport or furnish facilities for transportation, by operation of force majeure (including, without limitation, lightning, earthquake, fire, storm, flood, washouts), by breakage or accident to machinery or facilities, or by any cause reasonably beyond Lessee's control, provided that Lessee shall exercise due diligence to remedy the cause of disruption and resume mining operations as soon as practicable under all of the circumstances.

IX

If Lessor owns less than the entire undivided interest in all or any portion of the lands or lignite rights relating thereto (whether such interest is herein specified or not), Advance Royalties and royalties as to the land in which an interest is outstanding in others shall be reduced proportionately to the interest of the Lessor therein, but the failure of Lessee to reduce Advance Royalties shall not affect Lessee's rights to reduce royalties paid. Lessee shall have the right to purchase a lease or leases from others to protect its leasehold rights and shall not thereby be held to have disputed Lessor's title.

X

The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns of the parties, but no change or division in the ownership of the land or royalties, or change in the capacity or status of Lessor or any other owner of rights hereunder however accomplished, shall operate to enlarge the obligations or diminish the rights of Lessee. No such change or division in the ownership of the land or royalties, or change in the capacity or status of Lessor, or any other owner of rights hereunder, including that brought about by death, shall be binding upon Lessee for any purpose until ninety (90) days after such person acquiring any interest has furnished Lessee with the instrument or instruments or judgments of competent court (or certified copies thereof) constituting such person's chain of title from the original Lessor or change of capacity. Lessee shall have the right to withhold or suspend payments, without interest, upon receipt of information or claim of ownership change pending receipt of competent evidence disclosing the true status thereof.

XI

In case of suit, adverse claim, dispute or question as to the ownership of any payment (or some part thereof) payable under this lease, whether it be Advance Royalty, royalty, or otherwise, Lessee may withhold or suspend payment thereof (or the part thereof in doubt), without interest, and shall not be held in default in payment thereof (and this lease shall continue as if said payment had been timely and properly made) until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, dispute or question, or after being furnished with proof sufficient, in Lessee's opinion, to settle such question, within which to make payment. If Lessee's title be not challenged by the suit, claim, dispute or question and the parties to the controversy agree, Lessee may deposit the funds in question in an interest-bearing bank account to be paid in accord with the resolution of the dispute.

XII

There shall be no obligation of Lessee to begin or prosecute mining operations on the lands covered hereby, or to mine and remove all or any portion of the lignite situated therein or thereon; and there shall be no implied obligations so to do. The nature, manner and extent of operations, if any, of Lessee under this lease shall always be in Lessee's control and discretion, provided only that all of said operations shall be conducted in compliance with law and good mining practices.

XIII

This lease shall not terminate because of any default of Lessee, including default in the payment of Advance Royalties and royalties, unless Lessor shall have given Lessee written notice of the cause for complaint in sufficient detail to permit analysis and informed action by Lessee. Lessee shall have sixty (60) days after receipt of said notice to cure said default or to take such action, diligently continued, as may reasonably be expected to remedy the valid cause for complaint.

XIV

It is expressly understood and agreed that the leased lands shall be developed and operated as one lease, and there shall be no obligation on the part of Lessee to develop or operate the separate tracts into which the lands covered by this lease may be now or hereafter divided for lease maintenance purposes.

XV

Lessor hereby warrants and agrees to defend the title to the lands herein described and agrees that the Lessee, at its option, shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands in the event of default by Lessor and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any payments which become due Lessor hereunder and to repay itself therefrom, and the retention of such payments by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made. All outstanding royalty shall be deducted from the royalties herein provided according to its character and legal classification.

XVI

This lease shall be binding on all who execute it, whether or not named in the body hereof as Lessor, and without regard to whether this same instrument, or any copy thereof, shall be executed by any other Lessor named above.

XVII

The consideration paid by Lessee to Lessor at the inception of this lease is accepted as full and adequate consideration for all rights, options and privileges herein granted and not as a mere rental for a period.

XVIII

Within a reasonable time after Lessee's rights hereunder have terminated for any cause, including, without limitation, the termination of all operations by Lessee on the property leased hereunder, Lessee shall have the right to remove all of its machinery, buildings, equipment and other facilities located on the premises leased hereunder.

The provisions hereof shall be binding upon heirs, legal representatives, successors and assigns of Lessor.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written, in the presence of the witnesses signing opposite the respective signature witnessed.

WITNESSES:

_____

_____

_____

STATE OF _____

COUNTY OF _____

On this _____ day of _____, 2011, before me personally appeared _____, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____
NOTARY PUBLIC in and for

_____

My Commission Expires:

ATTACHMENT 1.G.1.b-2

GENERIC SURFACE LEASE

SURFACE LEASE

THIS AGREEMENT, made and entered into effective as of _____ by and between:

herein called "Lessor" (whether one or more);

a n d

CLECO Power LLC, a Louisiana corporation, Post Office Box 5000, Pineville, Louisiana 71361-5000; and

SOUTHWESTERN ELECTRIC POWER COMPANY, a Delaware corporation, 428 Travis Street, Shreveport, Louisiana 71104;

acquiring in equal undivided interests, herein collectively called "Lessee";

W I T N E S S E T H :

I

Lessor, in consideration of the sum of _____ and No/100 Dollars ($_____), receipt of which is acknowledged, and the agreement and covenants herein contained, does hereby exclusively GRANT, LEASE and LET unto Lessee, its successors and assigns, the following described land in _____ Parish, Louisiana, to wit:

including, in addition that above described, all other lands contiguous or adjacent to, forming a part of, or adjoining the land described or referred to above and owned or claimed by Lessor by limitation, prescription, possession, dereliction, accretion, avulsion, inheritance, reversion, unrecorded instrument or instruments, or any other means whatsoever (all of the lands subject hereto hereinafter referred to as the "Premises"). For the purpose of calculating all payments based on acres of land covered hereby, said lands shall be treated as comprising ____ acres, whether there be more or less.

II

Subject to the other provisions herein contained, the term of this lease shall commence on the effective date of this lease and end at midnight on _____.

III

Lessee agrees to pay or tender to Lessor as Rental, on or before each anniversary date of this lease, the sum of _____ ($) per acre for any lands covered hereby at the time such payment is due.

IV

Lessor and Lessee agree that during the existence of this lease, Lessee, without payment of any compensation other than as specified in this lease, shall have the following exclusive rights:

(a)the right to exclusively possess, occupy, use and utilize all or any portion of the Premises in connection with any of Lessee's operations for the mining of lignite and other coal (all of which is hereinafter referred to as "Lignite") from any of the lands included within the "Permit Area" established by lessee's approved application for a Surface Mining and Reclamation Operations Permit to the Louisiana Office of Conservation, as said "Permit Area" may be modified from time to time (all of said lands hereinafter collectively referred to as "Neighboring Lands");

(b)the right to construct, operate and use on the Premises all buildings, shops, warehouses, residences, offices, equipment, machinery, power lines, telephone and telegraph lines, roadways, dragline walkways, beltways, railways, pipelines, conveyors, tipples, water wells and all other facilities and equipment which may be necessary, useful or convenient in connection with Lessee's mining, treating, removing, storing, processing and transporting of lignite from Neighboring Lands;

(c)the right to make on the Premises all excavations, openings, shafts, ditches, drains, dams, ponds or other alterations and improvements necessary, useful or convenient in connection with Lessee's mining of Lignite from Neighboring Lands by stripping, augering or otherwise;

(d)the right to store, stockpile, remove, market, sell or otherwise dispose of upon the Premises, any overburden material, ore, waste material (including ash) and tailings from Neighboring Lands;

(e)the right to use in connection with Lessee's operations on Neighboring Lands any underground or surface water or timber located upon, in or under the Premises;

(f)the right to exercise any and all such rights and privileges hereinabove provided for, which are necessary, useful or convenient in conducting mining operations or constructing, erecting, maintaining or repairing electric transmission lines, roads, railways or conveyor lines for mining operations;

(g)the right to permanently divert the course of any stream, river, bayou, lake, pond or other waterbody located upon or across the Premises;

(h)the right to permanently establish upon the Premises the bed, bottom and banks of any stream, river, bayou, lake, pond or other waterbody, whether such waterbody is presently located upon or across the Premises;

(i)the right to construct and establish permanently upon the Premises any pile, bank, hill, stockpile, elevation, elevated area or other accumulation of overburden material, waste material (including ash) or tailings, notwithstanding that the elevation of the Premises may be materially and permanently increased thereby;

(j)the right to permanently alter, divert or modify natural drainage patterns as same presently exist on the Premises and to construct or create new permanent drainage patterns;

(k)the right to enter upon the Premises and use said lands for any of the purposes described herein; and

(l)the full right of ingress and egress upon or over the Premises necessary in order to conduct Lessee's mining operations on Neighboring Lands.

The rights listed above may be exercised by Lessee in order to reach or conduct mining operation on Neighboring Lands and Lessee may use the Premises and exercise any of the rights granted hereunder by any mining methods now or heretofore known or hereafter developed. Activities conducted by Lessee in exercise of the rights granted hereunder will have permanent effects on

the premises that will extend beyond the term of this lease, it being expressly agreed by Lessor that such effects shall survive the release, expiration, recision or other termination of this lease for any cause, including judicial cancellation. Lessee's obligations or compensation for such effects, and of restorations, are limited to the provisions of Paragraph V and Paragraph VI hereof. If upon the release, surrender, expiration, recision or other termination of this lease for any cause, including judicial cancellation, Lessee shall be engaged in activities hereunder which, upon completion, will result in permanent effects of the nature herein permitted, Lessee may nonetheless continue such activities until completion as to that portion of the Premises affected thereby, all as if this lease were in full force and effect.

Lessee shall have a period of twelve (12) months following termination of this lease to remove all machinery, buildings, equipment, facilities and other property from the Premises. Lessor agrees to require any lessees holding mineral leases under Lessor covering the Premises that were entered into after the effective date of this lease to conduct their operations thereunder in a manner so as to not prejudice or unreasonably interfere with the rights and operations of Lessee under this lease. Lessee agrees to conduct its operations upon the Premises with due regard for the rights of any lessees holding mineral leases covering the Premises that were entered into and recorded in the Conveyance Records of DeSoto Parish, Louisiana, prior to the effective date of this lease.

Whenever the terms "mining," "mining operations" or "operations" are used in this lease, each shall mean and include, without limitation, (x) the production, extraction and removal of Lignite, (y) operations for opening, reworking, deepening, extending or repairing a mine and all other necessary, useful or convenient operations conducted in a good faith effort to obtain or re-establish the extraction and removal of Lignite from Neighboring Lands and (z) land reclamation or restoration activities required or permitted by this lease or by any applicable law or regulation conducted upon or in respect of the Premises and Neighboring Lands, it being understood that land reclamation operations or restoration activities shall be deemed to be ongoing during the entire term of any bond required of Lessee under any applicable law or regulation to insure completion of such reclamation or restoration activities.

V

If Lessee shall use all or any part of the Premises in connection with Lessee's operations on Neighboring Lands under the terms of this Lease (as, for example, for Lessee's roads, buildings, power lines, sedimentation ponds or waste dumps), Lessee shall pay to Lessor the sum of _____Dollars($) per acre for each acre so used. Lessor hereby acknowledges receipt of the sum of ($) per acre for each acre covered hereunder as liquidated damages and this payment constitutes full and complete compensation for all damages of whatever nature to the Premises. Lessor hereby acknowledges and agrees that no payments are due Lessor from Lessee, its officers, employees, agents, contractors or subcontractors for any damages or claims arising out of or as a result of the removal or disposition of any timber, agricultural produce, houses, barns or other buildings or improvements in connection with Lessee's mining operations, in, on, over or under the Premises. Lessor agrees that during the existence of this lease, it shall not construct or maintain or permit to be constructed or maintained any house, barn or other building or improvement, in, on, over or under the Premises. Lessor further agrees not to hunt or grant hunting rights to anyone on the leased premises during the term of this lease. Lessee is authorized by Lessor to commence operations on the Premises at any time hereafter without need of giving notice to Lessor.

VI

Lessee shall restore and reclaim lands subject to this lease in the manner prescribed by applicable laws, rules, regulations and orders of governmental authorities having jurisdiction thereof and shall restore affected lands to some beneficial use. Subject to Lessee's compliance with such applicable laws, rules, regulations and orders, and in recognition of the effects of Lessee's activities on the Premises in connection with mining on Neighboring Lands and the economic limits of practical and reasonable reclamation of such lands, the parties hereby agree that Lessee's reclamation plan may include the following:

(a)The permanent diversion or elimination of streams, bayous, lakes, ponds and other waterbodies found upon lands leased hereby or within the vicinity thereof. Lessor agrees that Lessee may return reclaimed lands at the expiration of this lease with the bed of any new stream, bayou, lake, pond or other waterbody located thereon, provided such beds are properly dammed, banked or channeled at the date of such return. In the event the permanent diversion of any stream, bayou, lake, pond or other waterbody removes the bed thereof from its former course or location across or upon the lands leased hereby, or lands in the vicinity thereof, Lessor does hereby expressly and permanently renounce (i) any natural or legal servitude or other right which the Premises or Lessor may possess under Articles 657 or 658 of the Louisiana Civil Code or other applicable law to receive running water from adjoining estates, or to use and enjoy waterbody formerly located on the Premises and (ii) any rights of action against Lessee for the loss of any such servitude(s) or other right(s), said renunciation to be effective if, as a result of Lessee's operations on the Premises or in the vicinity thereof, any stream, river, bayou, lake, pond or other waterbody should be permanently diverted or any flow of water across the Premises should be otherwise permanently diminished, provided that, at Lessor's request, and subject to the approval of any governmental authority having jurisdiction of reclamation of mined lands, Lessee will return such lands with an alternate water source in the form of a stock pond or water well to be constructed or drilled at Lessee's expense.

(b)The permanent alteration or elimination of natural drainage patterns affecting the Premises. Lessor hereby agrees that Lessee may return reclaimed lands at the termination of this lease with drainage patterns at variance with the natural drainage patterns which existed prior to mining. Lessor does hereby expressly and permanently renounce (i) any natural or legal servitudes or other rights or privileges which the Premises or Lessor may possess under Articles 655 or 656 of the Louisiana Civil Code, or other applicable law, which are based upon natural drainage patterns in effect prior to operations on the Premises and (ii) any rights of action against Lessee for the loss of any such servitude(s) or other right(s), said renunciation to be effective if, as a result of Lessee's operations on the Premises, or in the vicinity thereof, any natural drainage pattern should be permanently altered, diverted or modified; provided that, subject to the approval of any governmental authority having jurisdiction thereof, Lessee shall dredge or construct such ditches or other drainage works necessary to prevent unreasonable flooding of the reclaimed lands, as measured by the frequency and condition of flooding experienced by such lands prior to mining.
(c)The permanent alteration of ground elevations and contours. Lessor hereby agrees that Lessee may return reclaimed lands at the termination of this lease which possess different elevations or contours than such lands possessed prior to Lessee's operations, and, further, that Lessee may permanently locate on such lands any pile, bank, hill, stockpile, elevation, elevated area or other accumulation of overburden material, waste material (including ash) or tailings, notwithstanding that the elevation of the Premises may be materially and permanently increased thereby, provided that such area shall be contoured, reclaimed and replanted in accordance with all applicable laws and regulations of any governmental agency having jurisdiction over the reclamation of mined lands or the disposal of overburden material or other waste or spoil materials produced as a result of Lessee's operations.

(d)The permanent alteration, impairment or elimination of roads, access and passage. Lessor hereby agrees that Lessee may return reclaimed lands at the expiration of this lease with permanent alteration, impairment or elimination of pre-existing roads, access or passage. Lessor does hereby expressly and permanently renounce (i) any legal, natural or conventional servitudes, rights or privileges of passage, access or entry which may have existed in favor of the Premises or of Lessor prior to Lessee's operations and (ii) any rights of action against Lessee for the loss of any such servitude(s) or other right(s); said renunciation to be effective if, as a result of Lessee's operations on the Premises or in the vicinity thereof, any such servitude, right or privileges of passage, access or entry should be permanently altered, impaired or eliminated. Subject to the approval of governmental authorities having jurisdiction thereof, Lessee will return the reclaimed lands with roads, access or passage reasonably equivalent to that possessed by such lands prior to mining, provided, however, that the location of any such road, access or passage shall be selected by Lessee.

(e) Wildlife Habitat - Lessor hereby authorizes Lessee, in connection with reclamation of the land subject to this lease, to establish, at Lessee's option, fish and wildlife habitat, by planting

with species that are beneficial to wildlife, as appropriate, (1) along roads, fence rows, pipeline and transmission corridors, (2) in lowland areas adjacent to permanent post-mining impoundments, diversions, ditches and streams, and (3) in post-mining forests. Except for the wildlife habitats recited above, the remainder of the land subject to this lease shall be planted in pine seedlings.

VII

All payment or tenders to Lessor hereunder may be made to the Lessor at the address shown above, or to Lessor's last known address, as shown by the files of Lessee, or by deposit to the Lessor's credit in the Hibernia National Bank in Mansfield, Mansfield, Louisiana 71052, depository for Rental and all other payment(s) due Lessor hereunder, which bank or banks, or any successor thereof, shall be deemed agent for the Lessor and Lessor's successors, heirs and assigns. If such bank shall fail or for any reason refuse to accept payments, Lessee shall not be held in default for failure to make such payments until ninety (90) days after Lessor shall deliver to Lessee or its assigns a recordable instrument naming another bank as agent to receive such payments or tenders. Notwithstanding the death of any Lessor, or successor in interest, the payments or tenders in the manner provided above shall be binding on the heirs, executors and administrators of such person.

VIII

Lessee may at any time or times execute and deliver to Lessor, or to the depository above named, or place of record, a release covering all or any portion or portions of the described lands and thereby surrender this lease in whole or in part and be relieved of all obligations thereafter accruing as to the lands surrendered. If the lease is partially surrendered, Rental shall be reduced in the proportion (reasonably estimated in the absence of survey information) that the lands covered hereby are reduced by said release or releases.

IX

If Lessor owns less than the entire undivided interest in all or any portion of the Premises (whether such interest is herein specified or not), Rental as to the land in which an interest is outstanding in others shall be reduced proportionately to the interest of the Lessor therein. Lessee shall have the right to purchase lease or leases from others to protect its leasehold rights and shall not thereby be held to have disputed Lessor's title.

X

The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns of the parties, but no change or division in the ownership of the Premises, or change in the capacity or status of Lessor or any other owner of rights hereunder however accomplished, shall operate to enlarge the obligations or diminish the rights of Lessee. No such change or division in the ownership of the Premises, or change in the capacity or status of Lessor, or any other owner of rights hereunder, including that brought about by death, shall be binding upon Lessee for any purpose until ninety (90) days after such person acquiring any interest has furnished Lessee with the instrument or instruments or judgments of competent court (or certified copies thereof) constituting such person's chain of title from the original Lessor or change of capacity. Lessee shall have the right to withhold or suspend payments, without interest, upon receipt of information or claim of ownership change pending receipt of competent evidence disclosing the true status thereof.

XI

In case of suit, adverse claim, dispute or question as to the ownership of any payment (or some part thereof) payable under this lease, whether it be Rental or otherwise, Lessee may withhold or suspend payment thereof (or the part thereof in doubt), without interest, and shall not be held in default in payment thereof (and this lease shall continue as if said payment had been timely and properly made) until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, dispute or question, or after being furnished with proof

sufficient, in Lessee's opinion, to settle such question, within which to make payment. If Lessee's title be not challenged by the suit, claim, dispute or question and the parties to the controversy agree, Lessee may deposit the funds in question in an interest-bearing bank account to be paid in accordance with the resolution of the dispute.

XII

This lease shall not terminate because of any default of Lessee, including default in the payment of Rental, unless Lessor shall have given Lessee written notice of the cause for complaint in sufficient detail to permit analysis and informed action by Lessee. Lessee shall have sixty (60) days after receipt of said notice to cure said default or to take such action, diligently continued, as may reasonably be expected to remedy the valid cause for complaint.

XIII

Lessor hereby warrants and agrees to defend the title to the lands herein described and agrees that the Lessee, at its option, shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands in the event of default by Lessor and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any payments which become due Lessor hereunder and to repay itself therefrom, and the retention of such payments by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made.

XIV

If the whole or a substantial part of the Premises shall be taken by right of eminent domain by any legal entity vested with the power of eminent domain, then when possession shall be taken by or title shall vest in such legal entity, whichever shall first occur, of the Premises or any part thereof, the term hereof and all rights of Lessee hereunder shall immediately terminate and the Lessee shall have no claim against the Lessor for the value of the unexpired term and Lessee shall not be entitled to any part of the condemnation award or the consideration in lieu thereof received by lessor.

XV

This Surface Lease shall be binding on all who execute it, whether or not named in the body hereof as Lessor, and without regard to whether this same instrument, or any copy thereof, shall be executed by any other Lessor named above.

XVI

The consideration paid by Lessee to Lessor at the inception of this lease is accepted as full and adequate consideration for all rights, options and privileges herein granted and not as a mere rental for a period.

XVII

Lessee is authorized to pay or tender Rental or any other payment(s) due Lessor under the provisions hereof to the respective parties named below, or to the credit of any party named below either to the depository bank named in Paragraph VII hereof, or to the respective depository set out below opposite such party's name, and in the following percentages:

CREDIT TO	**PERCENTAGE**	**DEPOSITORY**

Lessor agrees that payment or tender of Rental or any other payment(s) due Lessor hereunder as above set forth will protect this lease and continue same in force as herein provided insofar as said lease covers Lessor's interest in said land. The provisions hereof shall be binding upon the heirs, legal representatives, successors and assigns of Lessor.

XVIII

This Surface Lease and all provisions hereof shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, assigns and/or sublessees. Reference herein to "Lessor" and "Lessee" shall include reference to their respective heirs, successors, assigns and sublessees.

XIX

This Surface Lease may be executed in any number of counterparts and each counterpart shall have the same force and effect as an original instrument and as if all of the parties to the aggregate counterparts had signed the same instrument, or may be ratified by a separate instrument in writing referring to this agreement. Each such ratification shall have the force and effect of an executed counterpart hereof and of adopting by reference all of the provisions hereof.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written, in the presence of the witnesses signing opposite the respective signature witnessed.

WITNESSES:

_____

_____

_____

NOTARY PUBLIC

My commission expires:

ATTACHMENT 1.I.2-1

PUBLIC NOTICE

ATTCHMENT 1.I.2-1

PUBLIC NOTICE

On behalf of CLECO Corporate Holdings, Inc and AEP/Southwestern Electric Power Company, Dolet Hills Lignite Company (DHL), 2002 Crow Lane, Pelican, Louisiana 71063, has filed a "Permit Renewal Application to LSM-1-A" describing the surface coal mining and reclamation operations to be conducted during the period of 2020 through 2025 for the Oxbow Lignite Surface Mine.

The areas identified during this revision's five year period consist of approximately 6,844.6 acres, which will include lignite removal, reclamation activities, and ancillary activities such as roads, diversions, impoundments, slurry walls and levees, dewatering wells, a shop and office facility, walkways, other transport facilities, a coal stockpile, a powerline, and other support facilities.

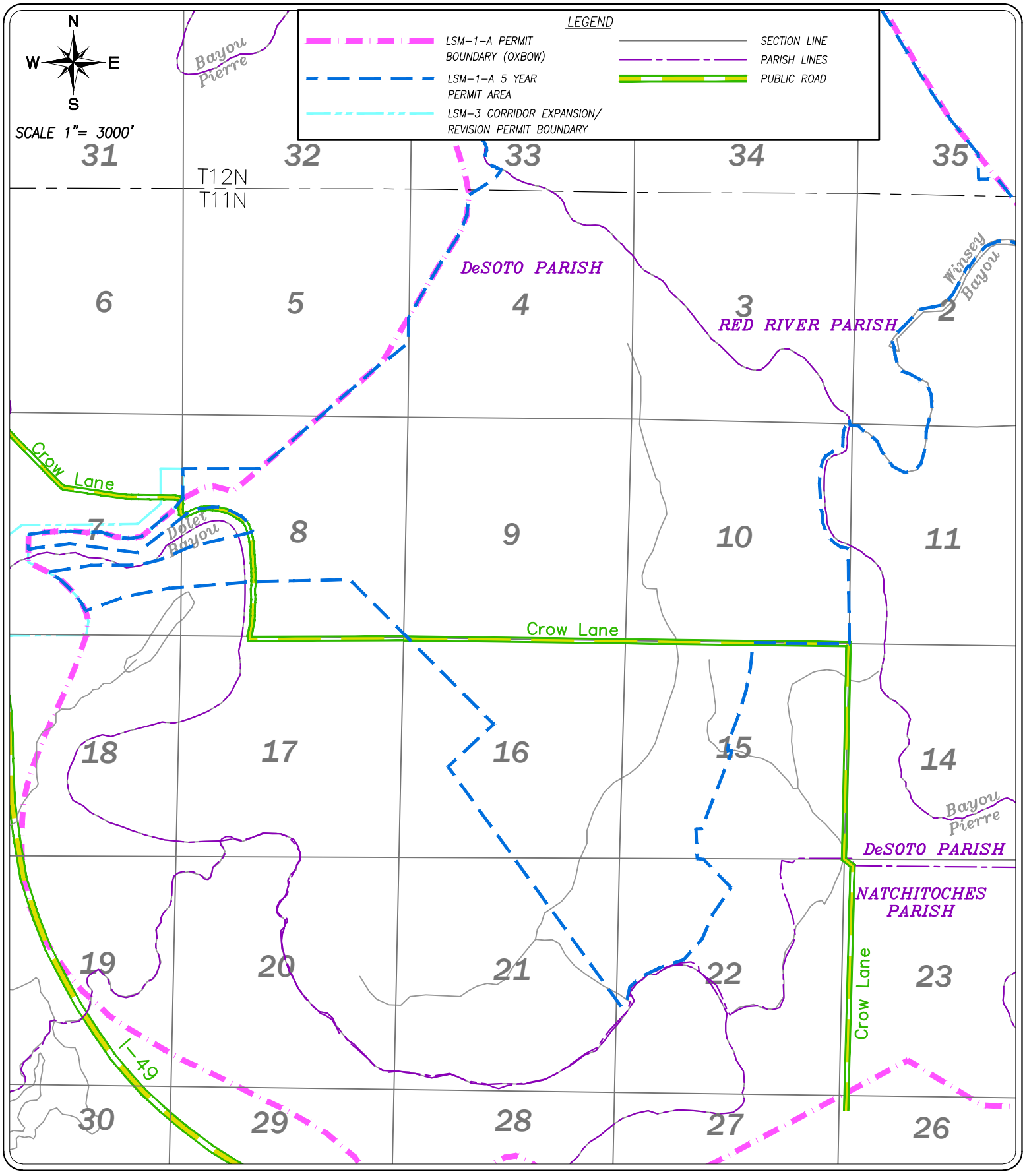
The mine area include portions of Section 33 of Township 12 North, Range 10 West and Sections 3, 4, 5, 9, 10, 15, 16, 21, and 22 of Township 11 North, Range 10 West in DeSoto Parish Louisiana. The above described land is either owned or will be owned in fee or leased by Oxbow Lignite Company, LLC, or will be leased as required.

Previously approved permits, revisions, and Environmental/Operational Narratives (EONs) that cover other areas within the LSM-1-A permit are available for public review upon request from LOC. Also available upon request from LOC is an oil and gas infrastructure map that is submitted under separate cover from this permit renewal application.

The subject areas are contained in the 7.5 minute U.S. Geological Survey Quadrangle maps of Hanna and Evelyn. A copy of the permit revision submittal may be inspected at the following locations: Clerk of Court Office of DeSoto Parish Courthouse, Mansfield, Louisiana, Clerk of Court Office of Red River Parish Courthouse, Coushatta, Louisiana, and Office of Conservation, LaSalle Building Room 817B 617 North 3rd Street, Baton Rouge, Louisiana.

Interested persons are invited to submit written comments on the submittal, said comments should be received no later than 4: 30 p.m., Monday, December 22, 2015.

Please address all comments or inquiries to:
Stephen H. Lee
Director of Injection and Mining Division
Office of Conservation
P.O. Box 94275
Baton Rouge, Louisiana 70804-9275
Attention: Dr. Abby Alkire
All those persons with an interest herein take notice.



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SOUTHWESTERN ELECTRIC POWER COMPANY
An AEP Company
DOLET HILLS LIGNITE™

2020-2025 LSM-1-A PERMIT RENEWAL PUBLIC NOTICE MAP

DRAWN BY:	PLB/MLP
CHECKED BY:	KJE
APPROVED BY:	
DATE:	3/02/20
SCALE:	1"=3000'
ER JOB NO.:	37033
REVISION NO.:	
SHEET NO.:	

7. BONDING

In order to insure that performance standards mandated under the Louisiana Surface Mining Regulations are achieved, reclamation performance bonds are required. The intent of the performance bond is to provide incentive for the mine operator to have adequate reclamation success in order to receive bond release. Also, it guarantees that money is available to reclaim disturbances due to mining in the event that the mine operator is unable to do so.

Bonding begins with calculating the cost to return areas disturbed by mining and mining related activities to their approved posti mining lamd use. The cost of returning the disturbed areas to their post mining land use comes from current estimated contractor prices to do the same at the Dolet Hills and Oxbow Mines. Cost required to remove structures and rplace topsoil and prime farmland is calculated by yardages and cost of equipment require to perform such tasks. Equipment costs are calculated using Dolet Hills Lignite's budgeted fuel and labor cost with an applied corrected equipment productivity rate. Equipment productivity and correction factors are pulled from the most current Caterpillar Performance Handbook. Earthwork volumes are estimated from preliminary designs and/or typical cross-sections of cut and fill.

As of this permit renewal application, DHL has the following approved bond amounts as shown on Exhibit 1.D.3.b-1:

Bond Increment	Acreage	Amount Bonded
01A0901	2,639.0	$3,371,852.64
01A1101	467.7	$5,308,713.27
01A1502	168.9	$9,693,598.87
01A1601	3,569.0	$58,737,840.68

No additional bonding is required for this permit renewal application and its activities.

8. OPERATION PLAN

8.A GENERAL OPERATION PLAN

Dolet Hills Lignite Company (DHLC) is requesting the approval of the 2020-2025 LSM-1-A Permit Renewal application. Currently the Oxbow Lignite Surface Mine, which operates under the LSM-1-A permit, has three draglines within its permit (DL1, DL2, and DL3). DL1 is operating in the T-West mining area and will finish mining around the middle of 2020. DL2 and DL3 are sitting idle in the U-North and T-West mining areas, respectively. At this time no further mining is anticipated after DL1 finishes T-West. The draglines present in the LSM-1-A permit may be used for reclamation activities during this renewal permit term. If Dolet Hills Lignite (DHL) plans to resume mining during this permit term it will not do so until all required permitting is approved. Exhibit 8.A-2, Life of Mine Plan, shows future mining plans throughout the life of the mine. Future lignite production through to the end of the permit term, by year and dragline responsible, is projected as follows for the LSM-1-A Permit Renewal:

Year	Dragline 1 Tonnage	Dragline 2 Tonnage	Total
2020	557,900	0	557,900
2021	0	0	0
2022	0	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0
Total	557,900	0	557,900

The Oxbow Lignite Surface Mine is located within the flood plain of the Red River. As discussed in Section 5, the Red River Alluvium allows for the flow of groundwater from recharge areas to discharge locations along Bayou Pierre (locally) and the Red River (regionally). The presence of groundwater within the LSM-1-A permit mining area presents many issues which must be addressed before mining can begin. The Oxbow Lignite Surface Mine has constructed slurry walls to block the groundwater from entering

the active mining pit in the T mining area east of Bayou Pierre. Through extensive studies of the groundwater flow west of Bayou Pierre in the U mining area, DHLC has determined that a slurry wall is only necessary to block groundwater from Bayou Pierre. Exhibit 8.A-3, Typical Slurry Wall Layout, shows the plan view of Cell 6 (T-West) and Cell 7 (U-North and U-West). Note where a slurry wall with levee, a slurry wall only, and a levee only are shown on Exhibit 8.A-3 for the U mining area, the T mining area utilizes a slurry wall with levee. A typical cross section of the levee with slurry wall is also shown on Exhibit 8.A-3. For the sections of slurry wall only, the typical cross section will hold true without the levee on top, and for the sections of levee only the typical cross section without the slurry wall beneath it, will hold true.

Exhibit 8.A-3 also demonstrates the relationship between alluvial sand and the typical depths of the slurry walls. The slurry wall is approximately three-feet thick and completed with a key into the underlying Wilcox clay or lignite. After the slurry wall with levee, slurry wall only, and levee only sections were constructed, dewatering wells were installed to remove the groundwater within the cell. Exhibit 8.A-4 shows the remaining existing dewatering wells in Cells 7.

All dewatering wells continue pumping/dewatering until they are mined through by prestrip or dragline operations. Exhibit 8.A-4 has been updated to reflect the installed wells within the U-West mining area and the removed wells in the U-North and T-West mining areas. The existing U-West wells will be properly removed as required since no mining activities will take place in the mining area during this permit term.

The mine blocks depicted on Exhibit 8.A-1 represent where the C-seam (blue seam) is present and proposed to be mined in the T-West mining area. The D-seam (yellow seam), when present within or adjacent to the C-seam mining blocks and at least eighteen inches thick, will be mined where present. Wherever the yellow seam is present within a mining area, it may be uncovered with either truck/shovel operations and/or the dragline.

Mining and lignite removal begins with the removal of the overburden overlying the lignite. The overburden will normally be prestripped to a depth approximately 70 to 100 feet above the roof of the C-seam using mobile equipment. The remaining overburden will be removed by utilizing two and/or one 85-cubic yard and/or one 50-cubic yard electric-powered walking dragline. The dragline will remove the remaining overburden using either simple side cast, side cast with chop down, extended bench and/or spoil side digging stripping method.

Simple sidecast is a method in which the dragline positions on the highwall above the lignite, removes the overburden above the lignite seam and places it into the adjacent, previously mined and empty pit. Side cast with chop down is similar to simple side cast except a small portion of the overburden excavated is above the elevation of the dragline. The extended bench is a method which material from the overburden is placed into the pit against the highwall which extends the dragline bench toward the spoil enabling better placement of the overburden. Spoil side digging is a method in which the dragline excavates all or a portion of the overburden from a bench built for the dragline in the spoil. The method used by the draglines will depend on practicality and total depth of overburden within their area. Figure 8.A-3, Typical Dragline C-Seam Pit Cross-Sections, illustrates the potential mining methods used for mining a single seam of coal.

The request from DHLC for a backfilling and grading variance from the standard 180 day time limit to 360 days from §5405.A.3 was previously approved by LOC.

The previously mentioned production numbers will be accomplished with the use of equipment listed on Table 8.A-1, Major Equipment List. Table 8.A-1 lists all equipment that will be present in LSM-1-A permit, in both the T-West and U mining areas. The equipment within the permit may also be used for reclamation activities in the U mining area as well as mining and reclamation activities within the T mining area.

Exhibit 8.A-1 shows existing prime farmland stockpiles from the in situ prime farmland that was present in the U-West mining area and existing prime farmland stockpiles. The

existing prime farmland stockpiles located east of TD-6 were salvaged from and prior to the construction of the ponds near the shop/office facility and the Cell 7 levee and diversion ditch. The prime farmland stockpiles locate in the southeast corner of the U-North mining area was originally present in the U-North dewatering field. All previously stockpiled prime farmland in the T mining area has been replaced according to §5507.

Pond 05-E6, a final pit pond, was previously mined and redisturbed by the box pit spoil from the initial pit in the T-West mining area. The redisturbance occurred in 2017 during the current five year permit term. This area is shown on Exhibit 1.D.4-1, Areas Previously Disturbed by Mining.

As discussed in the LSM-3 Corridor Expansion/Revision Permit, all mining operations and equipment from the Dolet Hills Lignite Mine were relocated to the Oxbow Lignite Mine using a temporary ancillary road. The temporary ancillary road design drawings are included in the LSM-3 Corridor Expansion/Revision Permit, which is available for public review at the LOC office in Baton Rouge, LA. A bridge over Bayou Pierre was constructed to connect the T-Area to the U-Area. The bridge over Bayou Pierre allows for all of Dolet Hills Lignite Company's equipment to be utilized anywhere within the LSM-1-A permit as shown on Exhibit 8.A-1.

A new office and maintenance shop was constructed and is located in Township 11 North, Range 10 West, Section 8 as shown on Exhibit 8.A-1. An overland conveyor system was constructed to connect TD-6, the location of which is shown on Exhibit 8.A-1, with TD-1 within the LSM-3 permit, the Dolet Hills Lignite Mine. The construction of TD-6 met with difficulties resulting in the need for a temporary TD-6 conveyor to bypass the TD-6 conveyor loading equipment. TD-6 was constructed so that dozers can push lignite into the hopper and onto the conveyor. Currently the temporary conveyor system is not being used and is available for sale by DHL. DHL is attempting to sell the temporary conveyor system. The conveyor is further discussed in the LSM-3

Corridor Expansion/Revision Permit which is available for public review at the LOC office in Baton Rouge, LA.

A section of Crow Lane that bisects the five year permit term area on the west side of Bayou Pierre has been closed. DHLC obtained a closure approval of this section of Crow Lane from the DeSoto Parish Police Jury, which was submitted to LOC upon receipt from the DeSoto Parish Police Jury. A section of Crow Lane located south of the five year permit term area will remain open to landowners with their access around the office and maintenance shop area.

8.B ENGINEERING PLAN

1. Existing Structures

   No existing structures will be used for mining or reclamation operations within the 2020-2025 LSM-1-A Perm Renewal.

2. Ponds, Impoundments, Banks, Dams, and Embankments

   Surface water control was established by the construction of the levee/slurry wall system in the U and T mining areas as previously discussed. The interior ditching system serves as the main collection ditch to direct runoff away from the active pit and into the sedimentation/final discharge ponds. In conjunction with the Cell 7's levee, interior ditches/diversions and sedimentation ponds 16-U1, 16-U2, 16-U3 and 16-U4 disturbed drainage from mining operations is contained. The surface water control of the T mining area is also contained by levees, interior ditches and sedimentation ponds. Most of the northern half of the T mining area flows into Pond 05-E6, Pond 05-E6's discharge drains by gravity to the E5 pond per the principal spillway. The interior ditch of Cell 5 and 6, Pond 15-E7.1, collects runoff from most of the southern half of the T mining area, which is collected in the southwest corner of Cell 6 and then pumped into final discharge pond, Pond 15-E7.

During reclamation in the U-North mining area a permanent reclamation pond, 19-U5, will be constructed as shown on Exhibit 8.A-2. Pond 19-U5 will have two phases during its development. Phase 1 will be in place during all of the reclamation stages of the U-North mining area and the pond will discharge into the inner ditch of Cell 7 (DIV 16-U2) and flow into the 16-U1 final discharge pond. Phase 2 will begin after sediment control is no longer required within its watershed and a spillway channel will be excavated through the levee of Cell 7 so that the pond will discharge directly towards Bayou Pierre.

Pond 05-E6, a final pit pond, was previously mined and redisturbed by the box pit spoil from the initial pit in the T-West mining area. The redisturbance occurred in 2017 during the current five year permit term. Pond 05-E6 Modification design was submitted and approved in 2015. The permanent as-built certification will be submitted to the LOC towards the middle of 2020 after the reclamation of the surrounding area of Pond 05-E6 is finished. Within the T-East mining area, a proposed permanent final pit pond (19-E8) is currently being constructed to collect the drainage from the southern area of Cell 5. Cell 6 will be reclaimed such that E9 collects the runoff from all of T-West through two series of ponds including E9.1, E9.2, E9.3, and E9.4. The proposed layout of the E9 series of ponds is shown on Exhibit 8.A-1 and 8.A-2. The proposed permanent pond 05-E6 may have its discharge directed towards E9.2 during its final design phase. E9.4 Pond will most likely capture the discharge of 14-E6.1 via the channel under the pipeline. These proposed plans for this series of ponds depends on converting several temporary impoundments to permanent impoundments. When the final decision is made this narrative and Table 8.B.2-1 will be updated as well as designs prepared and submitted to LOC for approval.

Table 8.B.2-1, Pond Design and Construction Schedule, contains a list of temporary and permanent sedimentation ponds and impoundments that have been previously approved, are currently proposed or are awaiting approval. For each pond, Table

8.B.2-1 includes the identification number of the pond, the sediment storage and the storage capacity in acre-feet of the sediment ponds, the date the initial design was submitted, the date the construction was approved, and the date the as-built construction certification was submitted or will be.

To maintain adequate capacity in sedimentation ponds, accumulated silt will be removed if it comes within an elevation of two feet of the invert of the spillway. Ponds submitted with this permit application and subsequent ponds will have a marker adjacent to the spillway that will delineate the elevation of two feet below the invert of the spillway. The silt level will be checked and recorded during the annual pond inspection. If lignite fines are present, they will be disposed of in a manner so the material will not be in the upper 4 feet of the reclaimed spoil. This will be accomplished by using dredges, draglines, scrapers, dozers, backhoes, and/or trucks to remove the material from the ponds.

Sedimentation ponds and roads will be built to comply with LAC 43XV.2725.C.1 and LAC 43 XV.2737.C, both of which allow for the establishment of engineering design standards in lieu of engineering tests to establish compliance with the minimum static safety of factor of 1.3. After researching other state programs with the same requirements, DHLC has found that the engineering design standards adopted by these other programs include the following design requirements:

1) The embankment foundation area shall be cleared of all organic material and the entire foundation surface shall be scarified;
2) If the natural slope of the foundation as measured at right angles to the roadway center line is steeper than 8H:1V, the embankment shall be benched into the existing slope beginning at the embankment toe and then filled with compacted level lifts;
3) The embankment fill material shall be free of sod, large roots and other large vegetative matter;
4) The fill shall be brought up in horizontal layers of such thickness as required to facilitate compaction in accordance with prudent construction standards;

5) The moisture content of the fill material shall be sufficient to secure proper compaction;
6) The side slopes of the embankment shall be no steeper than 2H:1V;
7) Maximum fill height shall be twenty-five (25) feet as measured from natural ground at the downstream toe to the top of the embankment;
8) Embankments shall have a minimum top width of (H + 35)/5, where "H" is the embankment height as measured from natural ground at the downstream toe to the top of the embankment, and shall be adequate for the intended use.

DHLC commits to adhere to these engineering design standards in order to comply with LAC 43: XV.5333.A.4.b and LAC 43: XV.5435.A.2 for roads and impoundments.

DHLC does not anticipate problems meeting applicable effluent limitations but in the event that DHLC does encounter problems with mine drainage, water treatment facilities will be installed to provide adequate water treatment prior to discharge from the permit area. These water treatment facilities may consist of a variety of chemical additives for iron removal and pH adjustment, a flocculent addition system for small particle sediment removal, or treatment cells. DHLC currently uses the following chemicals for water treatment:

- Cationic polymer,
- Sodium hydroxide (25 to 50%),
- Muriatic acid, and
- Aluminum sulfate.

DHLC may use these or similar chemicals in the future for water treatment. These water treatment systems will be maintained to assure proper operation and will be removed and the area reclaimed when the facility is no longer needed.

Treatment of mining waters is sometimes necessary in order to comply with LPDES permit effluent limitations. This typically includes the use of polymers for solids settling/metals removal, and caustic, aluminum sulfate and muriatic acid for pH adjustment or neutralization when determined necessary.

The selection of treatment chemicals depends on the characteristics of the wastewater at the time an abnormal pollutant level is identified. Understanding the pH and oxidation state of the wastewater is critical because these parameters largely determine the solubility and, hence, mobility of metal species. Heavy metals such as iron, aluminum and manganese are commonly found in Louisiana soils. The quantity and availability of these metals greatly depends on the organic matter content in the soil.

Chemical precipitation for removal of metals and solids involves the addition of a polymer to alter the physical state of dissolved and suspended solids and to facilitate their removal by sedimentation. Chemical precipitation is a two-step process in which soluble metals are first converted to an insoluble form (i.e., dissolved heavy metal ions may be chemically precipitated as insoluble hydroxides or sulfides), then agglomerated into large, heavy particles and removed by sedimentation. This technique provides a well-developed and effective treatment process for removing a wide range of heavy metals bound to the solids from wastewater.

The task of pH adjustment is to alter the pH of the wastewater stream into the permitted discharge range, 6.0 – 9.0 standard units. In the case of an acid neutralization, caustic (NaOH) is added to the effluent stream to pH neutralize the discharge. In the case of base neutralization, muriatic acid or aluminum sulfate is added to the effluent stream to pH neutralize the discharge.

Temporary treatment cells have been designed and will be constructed on an "as needed" basis, in addition to separately designed and constructed sedimentation ponds. The purpose of treatment cells is to provide adequate stilling time for pump water requiring chemical treatment for suspended solids prior to discharge to LPDES outfall locations. The typical treatment cell design diagram is provided in Figure 8.B.2-1, Typical Treatment Cell. The following typical criteria will be incorporated into the design of treatment cells where required:

- Approximately 100 ft. wide, 150 ft. long and 10-15 ft. deep
- Located out of the drainage pattern to reduce the quantity of water to be treated
- Pipes as the discharge structure.

Variations from the above typical treatment cell dimensions may be required based on field or other conditions.

The locations of the treatment cells will be dependent upon field conditions such as natural sump locations in the pit, accessibility to the cell, and mine-related activity in the area of the proposed cell locations. It is anticipated that most treatment cells, due to their small size, will be temporary and can be constructed in a short period of time. DHLC will notify LOC of the construction and location of all treatment cells within three months.

Additional sedimentation controls, used to augment the primary sedimentation controls listed above, will be the use of silt fencing, rock and hay check dams, straw logs, sumps, dry polymer, vegetative strips, and erosion control matting or other means as determined by DHLC.

Vegetative strip width is based upon the information presented in Appendix 8.B.2-1, Using Vegetative Filter Strips to Improve Water Quality. Table 1, Minimum filter strip widths to reduce sediment, particulate organics, and sediment adsorbed contaminants, of Appendix 8.B.2-1 shows the correlation of soil type and land slope of the contributing watershed area. Hydrologic Soil Group D was selected because the Oxbow Mine is primarily composed of clayey soils. The vegetative strips at the Oxbow Mine need to be a minimum of 24-48 feet wide. For a 0-1% land slope 24 feet is the minimum vegetative strip width, and a >8-10% land slope requires a minimum of 48 feet. All of the above listed primary sedimentation controls are best management practices (BMPs) used within the permit area. Dolet Hills Lignite Company will use these BMPs in a timely and efficient manner to meet the standards of §5325.

3. Diversions

In 1993 Red River Mining Company constructed a perennial stream diversion around the tributary to Pigpen Bayou. In 1997 diversion 97-D1 was constructed to extend the diversion constructed in 1993 and also divert Pigpen Bayou around the slurry wall of the West Dewatering cell (now called Cell 1) into Maguire Bayou. Through mining of Cell 2, 3, 4, and 6 the 97-D1 diversion was removed. Approximately eight hundred feet of diversion 97-D1 remained in the T-West/Cell 6 but was recently removed due to mining. In 2002, a modified Diversion 01-D2 was constructed to divert flow of Pigpen Bayou around a dewater cell (Cell 2 and 1 respectively). In the 2006 permit renewal, 01-D2 was extended to its original alignment as approved in the 2001 permit. With the approval of DHLC's Engineering/Operations Narratives for the Webb and Smith Tract, the outlet of 01-D2 diversion was rerouted to Bayou Winsey. As Cell 4 was constructed, the 01-D2 diversion was rerouted to flow along the outside of the eastern side of the slurry cell and then due south to Bayou Winsey. The 01-D2 diversion was rerouted again with the construction of Cell 5; it now flows along the outside of the eastern side of Cell 5 and before turning south to Bayou Winsey. Exhibit 8.A-1, Five Year Mine Plan, shows the general alignment of diversion 01-D2 as it currently exist and is named on the exhibits by each increment as the cell number diversion. Diversion 01-D2 was designed in accordance with the requirements of Section 5323.

The Oxbow Permit (LSM-1-A) is located in the flood plain of the Red River. Due to elevation constraints of the natural ground conditions of this area, mining in the Oxbow Permit requires construction of a containment levee which totally encompasses the mining operation. The purpose of this levee is to protect the mining operation from the flood events of Dolet Bayou and Bayou Pierre, tributaries of the Red River. The levee is constructed with a minimum top elevation of 134.0 which is above the 1 percent base flood elevation of this area. The area contained within the levee system for the U and W mining areas is designated as Cell 7. To facilitate

drainage within the levee, interior ditches are constructed parallel to the levee to route overland flow, ground water from the dewatering wells and surface water from the mining activities away from the active pit area to the sedimentation ponds. Dolet Hills Lignite Company constructed DIV 16-U1, DIV 16-U2, DIV 16-U3 and DIV 16-U4 as temporary surface water control diversions (levee inside ditches), as shown on Exhibit 8.A-1.

4. Excess Spoil

There is no excess spoil within the 2020-2025 LSM-1-A Permit Renewal Area.

5. Road Systems

A general layout of existing and proposed roads is shown on Exhibit 8.B.5-1, Road Systems for the U and T mining areas. As mining progressed and the grading of spoil and backfilling of pit ramps began, the length of the original haulroads increased. The new sections of haulroads were built according to the standard design plans included as Figure 8.B.5-1, Oxbow Typical Haulroad & Access Road Cross-Sections, and their as-built plan and profile was certified and submitted to LOC twice a year on or about June 1 and December 1. Haulroads were in use as long as the mining area was active and until the road was no longer needed for haulage and/or reclamation. The period of time varied based on the size of the mining area. Road grades will vary from a range of 0% to 5%.

Drainage pipes and culverts will be installed where the road crosses drainage ways or ditches to allow trapped drainage to cross the roadways. The pipes or culverts will be steel pipe, corrugated metal pipe or polyethylene pipe of sufficient strength to support the weight of the heaviest type of vehicle that will use the road. The pipes will be sized to handle a 10-year, 6-hour precipitation event. Drainage ditches will be constructed along the road in the cut sections and will typically be three feet in depth. This will handle normal flows and depending on the length of the ditch, in

most cases, will handle a 10-year, 6-hour precipitation event. In areas where safety berms are required, the safety berms will be gapped a few feet to allow water to flow off the road and into roadside ditches. The slopes below these safety berm gaps will be lined to protect them from erosion, and this lining will be temporary as are the haulroads.

Surfacing material will be either a thin layer of rock, a layer of fire clay or Wilcox clay, or the existing material depending on the location of the road, the intended use, and the length of time the road will be in existence.

Those sections of road that have suitable compaction will be surfaced with stone. After the road is no longer in use, any hard surface material will be removed and placed onto another road base section, ramp area, stockpile or low in the spoil for disposal. After the road section is removed, the area will be seeded and mulched as soon as possible to minimize soil erosion and water pollution. Table 8.B.5-1, Road Removal Schedule, lists all existing and proposed haulroads and access roads to be constructed within this revision permit term and for the life of mine plan as well as their scheduled removal dates.

HR-12 is part of the main haul route into the U mining areas, and connects the mining and other related activities operations east and west of Bayou Pierre via the bridge over Bayou Pierre. HR-13 is the coal haulage route from the U-North mining area to TD-6.

HR-6 was reestablished from its intersection of HR- 4 south to the Bayou Pierre Bridge of HR-12, and into T-West as ramp. HR-11 is also a ramp into the T-West mining area. Exhibit 8.B.5-1, Road Systems, shows all proposed roads and ramps within the 2020-2025 permit term as well as the appropriate design used to construct. Exhibit 8.B.5-1 also shows which roads have been built since the previous revision was approved.

Access road, AR-16, was built atop of Cell 7's levee around the U and W mining areas and AR-9 was built atop Cell 6's levee for access to the ponds and the dewatering well fields. Exhibit 8.A-2 shows the haulroads that have been constructed. HR-6 to T-West, sections of HR-12 and HR-13 have been certified since their construction.

6. Facilities

A new office and maintenance shop was constructed in Township 11 North, Range 10 West, Section 8 as shown on Exhibit 8.A-1. The existing office and maintenance shop and TD-5 facility site located north of Starlight Baptist Church will be used as an alternate warehouse, and TD-5 will be used as needed when shipments and deliveries to and from TD-6 are interrupted.

There is a pond located in the northwest corner of the newly constructed shop and office facility area, north of the employee parking lot that will be used for fire protection for the parish and other municipality requirements. This fire protection pond is an upstream pond of Pond 16-U4. Pond 16-U4.1 collects a small amount of runoff from the office and shop facility area as well as future contribution from an adjacent water well. The water well contributes to Pond 16-U4.1 on an as needed basis for firefighting requirements.

A lignite conveyor system was constructed to connect TD-6, the location of which is shown on Exhibit 8.A-1, with TD-1 in LSM-3, the Dolet Hills Lignite Mine. The conveyor is further discussed in the LSM-3 Corridor Expansion/Revision Permit which is available for public review at the LOC office in Baton Rouge, LA. Within the LSM-1-A permit boundary, the proposed conveyor alignment crosses Dolet Bayou and parish road Crow Lane. Both of these crossings are detailed in the LSM-3 Corridor Expansion/Revision Permit.

A lignite stockpile and 250 ton hopper feeding an overland conveyor was constructed to the south east of the new office and maintenance shop within the LSM-1-A Permit Renewal Area. Due to geotechnical considerations the ability to support trucks driving and dumping directly into the hopper could not occur. While an alternate hopper/ belt assembly was in design and construction phases a portable hopper/ belt assembly was utilized to enable shipments of lignite onto the new overland conveyor section. The alternate hopper /belt assembly has been commissioned and now allows dozer push of coal into the alternate hopper, onto a 72" belt and into the original 250 ton hopper which in turn feeds the new overland conveyor section. The temporary hopper and belt assembly has been disabled and will be removed from the property upon its sale or removal as scrap metal.

The runoff from TD-6 is primarily collected in Pond 16-U3 and discharged off of the permit and into Dolet Bayou. Haulroads shown on Exhibit 8.B.5-1, Road Systems, connect TD-6 with the U-West mining area. The bridge over Bayou Pierre was constructed to connect the T-Area to the U mining areas and allow lignite from the T-Area to be transported to and stockpiled on TD-6. With TD-6 and the Bayou Pierre Bridge constructed, DHLC ceased coal shipments and deliveries from TD-5 in February of 2018. A temporary lignite stockpile TD 7 was constructed south east of Pond 97-E5 as shown on Exhibit 8.A-1 and 8.A-2.

There are several powerlines shown on Exhibits 8.A-1 and 8.A-2. These powerlines provide electrical power for the facilities (i.e. shop, pump stations, dewatering fields, etc.) and the draglines required for mining. Some equipment requires a substation to transform the voltage provided from the powerline to the equipment. Substation locations are also shown on the previously mentioned exhibits. The second and third dragline voltage requirements are different which required a new powerline and substation to be constructed from across Bayou Pierre and into T-West for dragline number two (DL2). Exhibit 8.A-1 shows approximately 6,900 feet of newly constructed powerline to support the dewatering well system in U-West and a wireless mesh network required by DHLC. Also shown is the newly constructed

powerline to support the new equipment staging area located in the U-North mining area and the proposed powerline around the equipment staging area in T-East. The lights of the T-East equipment staging area will run off of a generator.

7. Public Roads

A section of Crow Lane that bisects the five year permit term area on the west side of Bayou Pierre has been closed. DHLC obtained a closure approval of this section of Crow Lane from the DeSoto Parish Police Jury, which was submitted to LOC upon receipt from the DeSoto Parish Police Jury. A section of Crow Lane located south of the five year renewal permit term area will remain open to landowners with their access around the office and maintenance shop area.

8. Protection of Public Parks and Historic Places

There are no public parks or historic places located within 2020-2025 LSM-1-A Permit Renewal Area.

9. Air Pollution Control Plan

The LSM-1-A air pollution control plan has been updated to include all additional equipment that was moved into the LSM-1-A permit from the LSM-3 permit.

10. Blasting and Underground Mining

No blasting and underground mining will be done within the 2020-2025 LSM-1-A Permit Renewal Area.

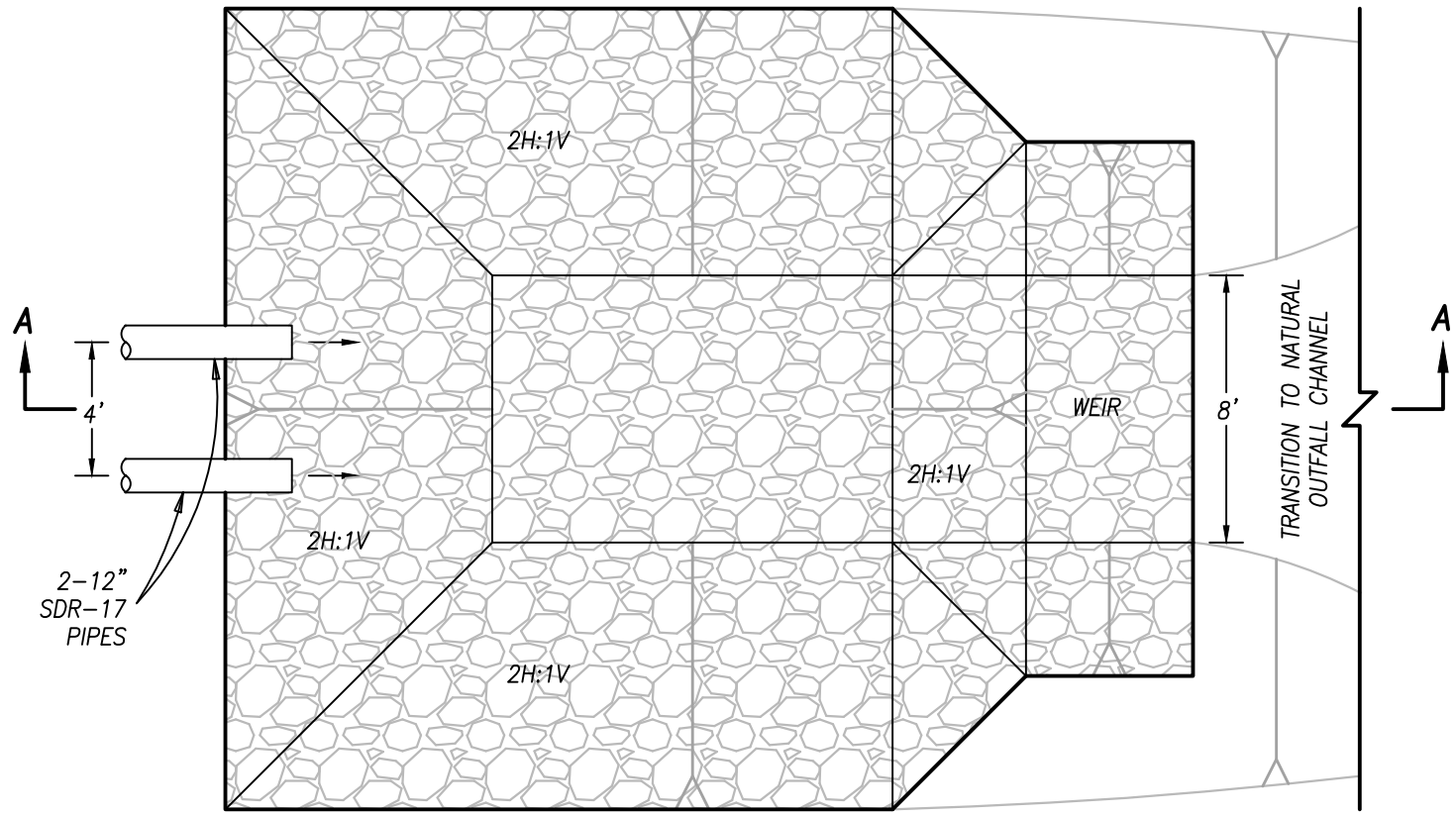
TABLE 8.A-1			
Major Equipment List			
FUNCTION	**DESCRIPTION**	**CLASS TYPE**	**NUMBER REQUIRED**
OB Removal	Walking Dragline	50 CY	1
OB Removal	Walking Dragline	85 CY	1 - 2
Stripping	Rear Dump Truck	30 Ton	3 - 5
Stripping	Scraper	36 - 42 CY	2 - 4
Stripping & Spoil Grading	Crawler Bulldozer	150 - 300 HP	2
Stripping & Lignite Hauling	Rear Dump Truck	40 - 60 CY and Tons	3
Lignite Stockpile	Wheel Loader	9 Tons	1
Lignite Loading & Stripping	Crawler Bulldozer	450 - 600 HP	1
Lignite Loading & Stripping	Backhoe Loader	14 - 16 CY	1
Lignite Loading & Miscellaneous Work	Backhoe Loader	10 - 16 CY	1
Road Maintenance	Farm Tractor	75 HP	1
Road Maintenance	Water Truck	5,000 - 10,000 Gallons	2
Road Maintenance & Spoil Grading	Motor Grader	250 HP	3
Road Maintenance & Spoil Grading	Scraper	18 CY	2
Spoil Grading & Miscellaneous Work	Crawler Bulldozer	300 - 450 HP	3
Spoil Grading & Miscellaneous Work	Farm Tractor	410 HP	1
Miscellaneous Work	Backhoe Loader	1 - 3 CY	2
Personnel Transport	Various Trucks	1/2 - 1 1/2 Ton	7
Supply & Service	Various Trucks	1/2 - 10 Ton	5
Lignite Hauling	Bottom Dump Trucks	85 - 100 Tons	5
Lignite Loading	Crawler Bulldozer	450 - 600 HP	3
Lignite Loading	Backhoe Loader	17 CY	1
Lignite Loading	Front End Loader	14 - 16 Tons	1
Lignite Hauling & Stripping	Rear Dump Trucks	100 Tons	3
Stripping	Crawler Bulldozer	150 - 300 HP	2
Stripping	Crawler Bulldozer	450 - 600 HP	2
Stripping	Backhoe Loader	14 - 16 CY	2
Stripping	Farm Tractor	120 HP	2
Road Maintenance & Spoil Grading	Motor Grader	300 HP	1
Road Maintenance	Water Truck	5,000 - 10,000 Gallons	1
Road Maintenance	Scraper	34 CY	2
Personnel Transport	Various Trucks	1/2 - 1 1/2 Tons	28
Supply & Service	Various Trucks	1/2 - 10 Tons	8 - 10

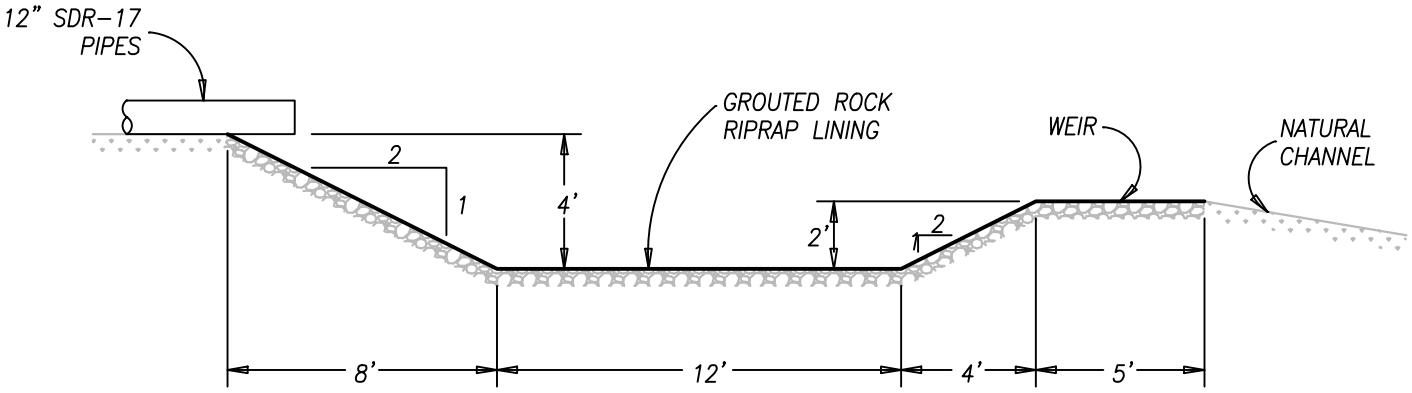
TABLE 8.B.2-1					
POND DESIGN AND CONSTRUCTION SCHEDULE					
SEDIMENTATION PONDS					
Identification	**Sediment Storage (acft)**	**Storage Capacity (acft)**	**Initial Design Submittal**	**Construction Approval**	**As-built Construction Certification**
Permanent Sediment Pond					
91-W2	16.9	82.1	4/27/2009	7/31/2009	1/10/2011
	**Modification will be submitted during 2020				
Temporary Sediment Pond					
88-E1	10.2	43.8	5/1/1988	8/1/1988	5/1/1990
12-10-28 2.1-3.6 (ADA Pond)	1.1	3.9	9/21/2010	10/12/2010	2/17/2011
96-W3	4.4	7.3	3/28/1996	4/19/1996	8/6/1999
97-E5	8.9	667.5	12/19/1995	3/4/1997	7/20/1998
15-E7	0.4	28.0	2/28/2014	9/18/2015	7/1/2016
11-10-10 3.3-0.8 (16-U1)	3.3	561.5	7/28/2014	6/14/2016	1/3/2017
11-10-8 2.4-2.1 (16-U2)	1.7	476.3	7/28/2014	6/14/2016	4/17/2018
11-10-8 1.4-1.1 (16-U3)	5.4	8.8	7/28/2014	6/14/2016	10/18/2017
11-10-8 1.2-2.1 (16-U4)	3.3	39.6	7/28/2014	6/14/2016	7/11/2017

IMPOUNDMENTS				
Identification	**Storage Capacity (acft)**	**Initial Design Submittal**	**Construction Approval**	**As-built Construction Certification**
Permanent Impoundment				
P-1	3.99	10/5/1994	1/4/1995	5/4/1999
P-2	12.67	12/17/1996	1/21/1997	11/9/1998
P-3	98.9	10/29/1998	11/10/1998	7/17/2001
15-E5.1 (DeBose Landowner Pond)	17.59	8/31/2015	*TBD	
19-U5	2,228.0	3/6/2019	5/24/2019	
19-E8	57.0	6/1/2019	7/1/2019	
21-E9	176.6	*to be submitted in 2021		
21-E9.1	114.5	*to be submitted in 2021		
22-E9.2	583.7	*to be submitted in 2022		
22-E9.3	151.3	*to be submitted in 2022		

Identification	Sediment Storage (acft)	Storage Capacity (acft)	Initial Design Submittal	Construction Approval	As-built Construction Certification
22-E9.4		165.9	*to be submitted in 2022		
Temporary Impoundment					
05-E6		1,793.0	5/10/2005	6/22/2005	10/19/2006
05-E6 Modification		439.8	7/2/2015	9/18/2015	**to be submitted in 2020
15-E7.1		614.1	2/28/2014	9/18/2015	7/1/2016
14-E6.1		108.8	10/17/2014	9/18/2015	3/8/2016
11-10-8 0.2-2.9 (16-U4.1)		1.1	6/1/2016	6/14/2016	11/17/2017

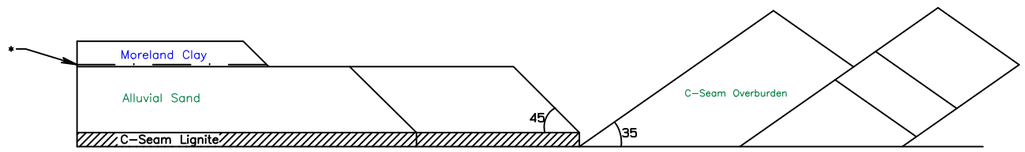
TABLE 8.B.5-1		
ROAD REMOVAL SCHEDULE		
ROAD	**PROJECTED REMOVAL**	**COMMENTS**
EAST SIDE OF BAYOU PIERRE		
HR-4	2025	
HR-6	2030	Portion left for landowner access; Remaining section may be given to DeSoto Parish to access the Bayou Pierre Bridge
HR-8	2025	
HR-11	2022	
AR1	2025	
AR2	2022	
AR5	Complete	Left for landowner access.
AR7	2022	
AR9	2030	Portion left for landowner access.
AR11	2025	
AR12	2025	Portion left for landowner access.
The following are levee roads.		
AR-E1	2022	
AR-W2	Complete	Permanent Pond
AR-W3	2020	
AR-E5	2030	
WEST SIDE OF BAYOU PIERRE		
HR-12	2030	Haulroad and Bayou Pierre Bridge may be given to DeSoto and Red River Parish for area access
HR-13	2023	
HR-13A	2021	
AR-16	2030	





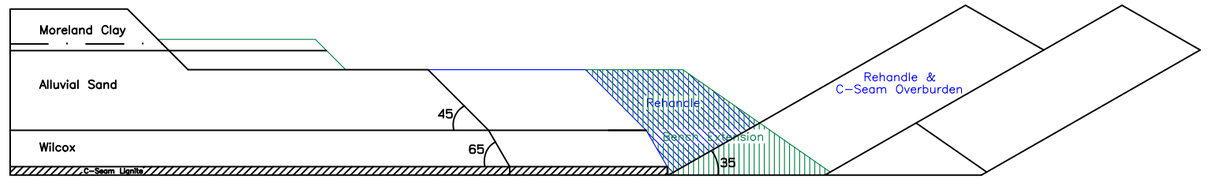
SECTION A-A

	FIGURE 8.A-2 DEWATERING ENERGY DISSIPATOR	DHLC SCALE: NONE SHEET NO.: 2/28/14

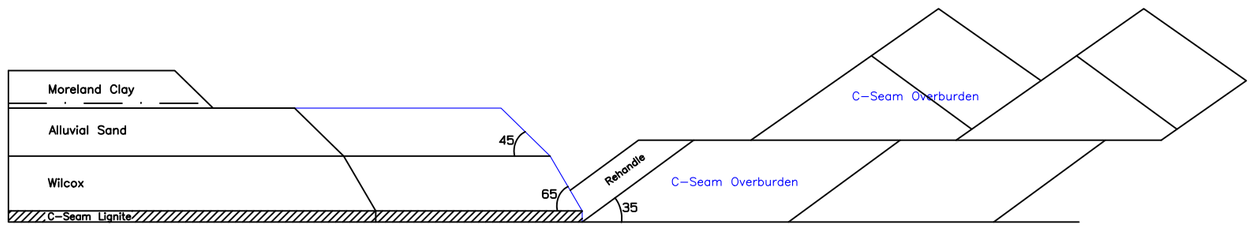


Simple Side Cast Method

*** Denotes the yellow seam or C-seam rider seam which will be mined with truck/shovel and/or dragline operations.**



Extended Bench Method



Typical Two-Pass Method

Engineering Resources LLC
Civil • Mining • Environmental
TBPE No. 12403 (TX) LAPELS No. 4568 (LA)
PEPLS No. 2355 (MS)
415 N. Center St., Longview, Texas 75601
(903) 234-4570 Web: www.engr-res.com

AEP DOLET HILLS LIGNITE COMPANY℠

REVISIONS			
NO.	DESCRIPTION	BY	DATE

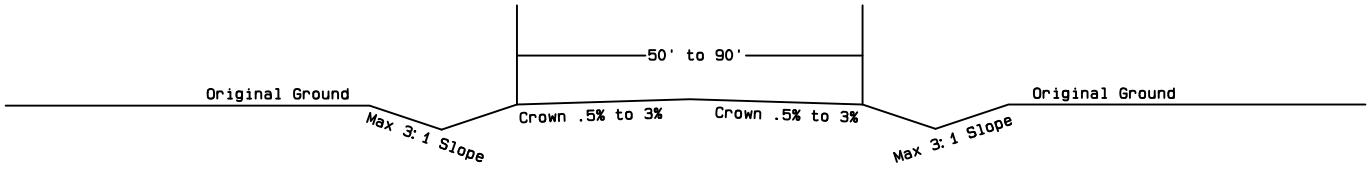
FIGURE 8.A-3
TYPICAL DRAGLINE C-SEAM PIT CROSS-SECTIONS

DRAWN BY:	DMH & KJE
CHECKED BY:	DMH
APPROVED BY:	DHM
DATE:	11-13-13
SCALE:	NOT TO SCALE
ER JOB NO.:	37006
REVISION NO.:	
SHEET NO.:	FIGURE 8.A-3

OXBOW TYPICAL HAULROAD & ACCESS ROAD CROSS-SECTIONS

OXBOW TYPICAL HAULROAD CROSS-SECTION

(not to scale)



OXBOW TYPICAL LEVEE ACCESS ROAD CROSS-SECTION

(not to scale)

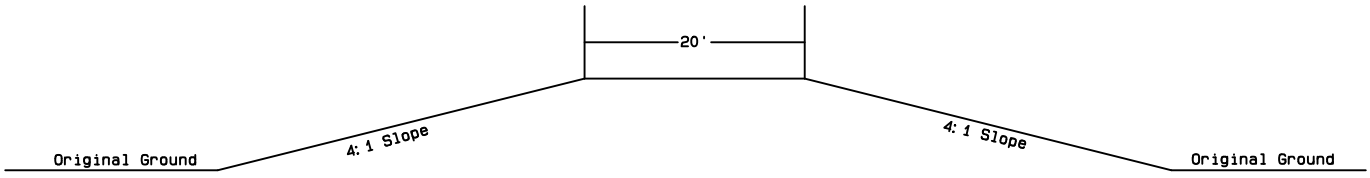


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FIGURE 8.B.5-1
TYPICAL HAULROAD
& ACCESS ROAD
CROSS-SECTIONS

DRAWN BY:	KJE
CHECKED BY:	KJE
APPROVED BY:	PAC
DATE:	4/28/14
SCALE:	NOT TO SCALE
ER JOB NO.:	37006
REVISION NO.:	
SHEET NO.:	

FIGURE 8.B.5-1

APPENDIX 8.B.2-1

USING VEGETATIVE FILTER STRIPS TO IMPROVE WATER QUALITY

B-6246
10/11

AgriLIFE EXTENSION
Texas A&M System

Using Vegetative Filter Strips to Improve Water Quality

Fouad Jaber
Assistant Professor and Extension Specialist, Texas AgriLife Extension

Peter A.Y. Ampim
Post-Doctoral Research Associate, Texas AgriLife Research

What is a vegetative filter strip?

Vegetative filter strips are areas of existing or planted vegetation along croplands, drainage channels, streams, or other bodies of water. They are usually used to reduce water pollution from point or non-point sources.

These strips usually consist of perennial grasses or timber. They remove nutrients such nitrogen and phosphorus as well as sediments, pesticides, organic matter, pathogens, and other contaminants from water.

Though vegetative filter strips can be effective as a stand-alone best management practice (BMP), they benefit most when used as part of a conservation plan that includes soil testing, fertilizing, terracing, and water and pest management.

How do vegetative filter strips work?

Vegetative filter strips should be designed to disperse runoff across them as uniform sheet flow. This dispersion allows the filter strip to remove pollution from runoff before it reaches nearby bodies of water. These pollutants are removed from runoff water by **deposition, infiltration,** and **biological and chemical processes.**

Deposition

The filter strip slows the runoff as it enters, allowing sediments to settle. The first few feet of the strip usually captures large and medium-size particles such as sand, silt, and soil aggregates. Finer particles such as clay settle more slowly and are deposited farther into the strip. The distance depends on the amount and speed of the runoff as it enters the filter strip.

The filter strip also removes pollutants attached to the sediment, such as phosphorus, ammonium and some pesticides.

Figure 1: Vegetative filter strip. Source: Tulsa County Conservation District

Infiltration

Infiltration is the process by which water enters the soil from the surface. As the water slows, more of it filters into the vegetative filter strip.

The rate at which water enters the soil depends primarily on the soil texture. Water seeps into clay more slowly than into gravel or sand. Soils can accept more water if they contain organic matter, plant residues, and a developed root system.

As water moves vertically, sediment is deposited. When soil has a high infiltration rate, dissolved pollutants can be carried through it into underground aquifers or nearby streams by a process called interflow.

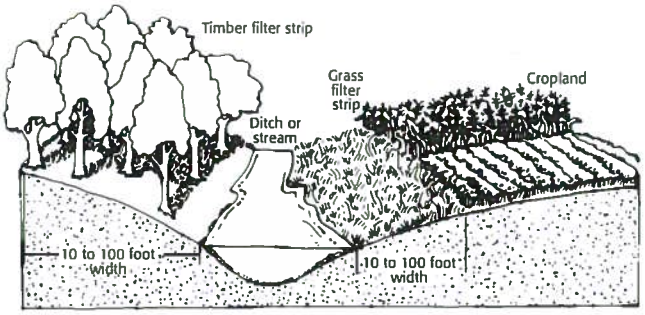

Figure 2: Filter strip design. Source: The Ohio State University Extension Service

Biological and chemical processes

As nutrients and pesticides enter the soil, biological and chemical processes break down or transform these compounds. The new compounds can be taken up by plants, evaporate into the air, or be immobilized in the soil. In some cases, they can become more soluble in the water and end up in streams.

What makes vegetative filter strips effective?

Factors that influence the effectiveness of vegetative filter strips are soil texture, filter strip width, field slope length, type of flow, rainfall intensity, and vegetation management practices.

Soil Texture

The soil texture of the field that drains into the filter strip influences how effectively the strip will cleanse the runoff. Smaller soil particles and other materials suspended in runoff are not as easily captured as larger ones.

As the vegetative filter strip slows the runoff, the larger soil and organic particles filter out first. The smaller clay particles usually remain suspended and move down with infiltrating and percolating water into the soil. Vegetative filter strips installed on soils with very low infiltration rates may be limited in their ability to filter suspended clay in runoff flowing through them.

Filter strip width

The most important factor affecting a filter strip's efficiency is its width. The US Department of Agriculture (USDA) Natural Resources and Conservation Service (NRCS) recommends a minimum ratio of 70:1 of field slope length to filter strip width. The filter strip should be as wide as possible, but avoid removing any more land from production than necessary.

NRCS recommends various widths based on the field slope, soil type, and target pollutants. The minimum filter strip widths for sediments and sediment-bound contaminants are listed in Table 1.

Table 1. Minimum filter strip widths to reduce sediment, particulate organics, and sediment adsorbed contaminants

	Length of Flow (ft)			
Land slope of contributing area	Hydrologic Group A	Hydrologic Group B	Hydrologic Group C	Hydrologic Group D
0–1 %	20	20	22	24
>1–3 %	20	25	28	30
>3–5 %	24	30	33	36
>5–8 %	28	35	40	42
>8–10 %	32	40	44	48

Hydrologic soil groups:
A: Well-drained sand and gravel; high permeability
B: Moderate to well-drained; moderately fine to moderately coarse texture; moderate permeability
C: Poor to moderately well-drained; moderately fine to fine texture; slow permeability
D: Poorly drained, clay soils with high swelling potential, permanent high water table, claypan, or shallow soils over nearly impervious layers

Source: NRCS, USDA

Because removing water-soluble chemicals such as nitrate or pesticides requires more infiltration, the filter strips for these contaminants will need to be wider (Table 2).

To remove disease-causing microorganisms (pathogens), the filter strip must provide enough trapping time for biological and chemical processes to kill the microbes (Table 3).

Tables 4 and 5 list the recommended filter strip widths for treating runoff from concentrated animal feeding operations (CAFO) and from an animal waste management system.

Field slope length

The field slope length is the total area that contributes runoff to the filter strip. As the field slope length increases, so do the volume and speed of the runoff. Areas with longer slopes will require wider filter strips to effectively retain sediments and soluble nutrients.

Table 2. Minimum filter strip flow widths to reduce dissolved contaminants in runoff

	Length of Flow (ft)			
Land slope of contributing area	Hydrologic Group A	Hydrologic Group B	Hydrologic Group C	Hydrologic Group D
0–1 %	30	30	33	36
>1–3 %	40	50	55	60
>3–5 %	56	70	77	84
>5–8 %	72	90	100	108
>8–10%	96	120	132	144

Source: NRCS, USDA

Table 3. Minimum filter strip flow widths to reduce pathogens in runoff

	Length of Flow (ft)			
Land slope of contributing area	Hydrologic Group A	Hydrologic Group B	Hydrologic Group C	Hydrologic Group D
0–1 %	20	25	28	30
>1–3 %	24	30	33	36
>3–5 %	32	40	44	48
>5–8 %	48	60	66	72
> 8–10%	100	125	137	150

Source: NRCS, USDA

Table 4. Minimum filter strip widths to reduce dissolved contaminant and particulate loading from a CAFO

	Length of Flow (ft)			
Land slope of contributing area	Hydrologic Group A	Hydrologic Group B	Hydrologic Group C	Hydrologic Group D
<2 %*	48	60	66	72
>2–4 %	72	90	100	108
>4–6 %	96	120	132	144
>6 %	Not recommended; too steep	Not recommended; too steep	Not recommended; too steep	Not recommended; too steep

* Slopes <2 % are recommended only if a solid-removal system such as a sediment basin is functioning above the filter strip area, the discharge is designed to spread the effluent evenly over the filter strip, and the cross slope area is nearly flat. Source: NRCS, USDA

Table 5. Minimum filter strip widths for treating of wastewater as part of an animal waste management system

	Length of Flow (ft)			
Land slope of contributing area	Hydrologic Group A	Hydrologic Group B	Hydrologic Group C	Hydrologic Group D
<2 %*	60	75	83	90
>2–3 %	80	100	110	120
>3–4 %	120	150	165	180
>4–5 %	160	200	220	240
>5–6 %	240	300	330	360
>6 %	Not recommended; too steep	Not recommended; too steep	Not recommended; too steep	Not recommended; too steep

* Slopes <2 % are recommended only if a solid-removal system, such as a sediment basin, is functioning above the filter strip area, the discharge is designed to spread the effluent evenly over the top of the filter strip, and the cross slope area is nearly flat. Source: NRCS, USDA

Field slope

As the field slope increases, so does the speed of the runoff flowing into the vegetative filter strip. Fast flow increases erosion and carries more sediment into the filter strip. This fast moving water does not deposit sediment as quickly nor does it soak in as well as slower moving runoff. Therefore steeper fields require wider vegetative filter strips.

For slopes greater than 10 percent, filter strips are not recommended for any use. When used to treat water from concentrated animal feeding operations (CAFO) or from an animal waste management system, filter strips are not effective for field slopes greater than 6 percent.

Type of flow

Vegetative filter strips work best when runoff water flows through them as a sheet. However sediment deposited on the edges of the field often narrows and speeds up the flow, which reduces the efficiency of the filter strip. For a filter strip to be efficient, you must occasionally remove sediment buildup or install water spreaders to ensure that the water enters as sheet flow.

Rainfall intensity

Rainfall intensity and existing soil moisture influence how well a vegetative buffer strip will capture runoff. Frequent rainfalls will saturate filter strips and reduce their ability to infiltrate water. Once saturated, the filter strip becomes unable to efficiently trap contaminants.

Field cover or vegetation management practices

Field management practices that leave a good residue cover can make vegetative filter strips more effective by reducing the particulate content of the runoff. A corn-corn or a corn-grain sorghum rotation using disk plow tillage and a beans-corn rotation using chisel tillage can leave less residue cover than a corn-corn rotation using chisel tillage or no tillage.

The height of the vegetation on the filter strip also affects its efficiency. When runoff is higher than the vegetation on the filter strip, it will bend the vegetation down parallel to the flow of the runoff. This bending allows the water to flow more quickly across the filter strip and decreases its ability to capture pollutants.

Researchers have compared the quality of runoff from areas with and without filter strips. They found that filter strips reduced the amount of sediment by 61 percent to 97 percent. They reduced nitrogen by as much as 72 percent, phosphorus by as much as 79 percent and pesticides by as much as 97 percent (Table 6).

Where and what should you plant?

Plant vegetative filter strips along lakes, ponds, streams, sinkholes, and drainage diches and canals. Filter strips need to be situated such that the runoff that enters them is slow and shallow.

To prevent runoff from forming channels along the field, have the filter strip follow the contour line of the field. If the flow is already concentrated, use terracing and grassed waterways instead. (See *Improving Water Quality with Grassed Waterways*, Extension publication L-5532)

Vegetation selection

Vegetation for filter strips should be native or adapted to local conditions. It should provide uniform cover and have a fibrous root system to help stabilize the soil. The planting could consist of a single species or a mixture of grasses, legumes, and other non-woody plants. They should have stems that are stiff and spaced no more than 1 inch apart.

Table 7 lists vegetation, seeding rates, planting dates, and suitable soils for filter strips in Texas. Local plant species may also be suitable for your specific region. The local USDA-NRCS office can provide an exhaustive list of plants for your area.

Establishment

A vegetative filter strip is like a pasture or meadow, and establishing one requires most of the same considerations. However, for the filter strip to function properly, you may need to perform additional grading and surface preparation before planting.

Once you have chosen the vegetation, have the soil tested and decide on a seeding method. Follow the soil analysis recommendations with regard to fertilizer or lime. Then seed using either conventional or no-till practices. With either method, the seeds must be spaced properly and have good seed-to-soil contact.

Table 6. Results of several research experiments evaluating the effectiveness of vegetative filter strips in capturing sediments, nitrogen, phosphorus, and pesticides

Location	Soil texture	Slope (%)	Filter strip width (ft)	Pollutant	% Reduction
Virginia	Silt loam	11–16	15	Sediment	70
			30		84
			15	Total nitrogen	54
			30		73
			45	Total phosphorus	61
			60		79
Maryland	Sandy loam	3–4	15	Sediment	66
			30		83
			15	Total Nitrogen	0
			30		48
			15	Total phosphorus	27
			30		46
Iowa	Silt loam	7	10	Sediments	72
			20		83
			30		97
		12	10		88
			20		90
			30		96
Virginia	Silt loam	4–12	13		65
			26		65
Iowa	Silt loam	3–6	15		72
			30		76
Italy	Silt loam	2	10	Terbuthylazine	74
			20		99
			10	Metolachlor	81
			20		99
Texas	Clay	2	10	Atrazine	22
				Metolachlor	25

If you choose a conventional seeding method:

- Follow soil test recommendations with regard to liming and fertilization.
- Broadcast lime and fertilizer and incorporate them into the soil.
- Establish firm seed beds.
- Plant seeds to about ¼ inch deep with a drill or other appropriate equipment followed by cultipacking.

Seeds can also be broadcast then cultipacked to ensure good seed-to-soil contact.

The no-till method requires only that you broadcast fertilizer and plant the seeds with a no-till drill. You may need to irrigate to help establish the filter strip. If the plant species establishes slowly, you may plant a companion crop such as spring oats, wheat, or rye to help control erosion and weeds until the primary vegetation establishes fully.

Table 7. Vegetation, seeding rates, planting dates and suitable soils for filter strips in Texas

Name	Seeding rate	Planting dates	Soil				
	lb/ac		Coarse	Moderately coarse	Medium	Moderately fine	Fine
Perennial grasses							
Bermuda	3.0	12/1–6/1	x	x	x	x	x
Bluestem, yellow	1.2–2.0	12/1–6/1		x	x	x	x
Bristlegrass	3.0	12/1–6/1	x	x	x	x	x
Buffalograss	8.0	12/1–6/1	x	x	x	x	x
Dropseed	1.0	12/1–6/1	x	x	x	x	
Eastern gamagrass	10.0–15.0	12/1–6/1		x	x	x	
Grama	1.5–4.5	12/1–6/1	x	x	x	x	x
Indiangrass	4.5	12/1–6/1	x	x	x	x	x
Kleingrass	1.5	12/1–6/1		x	x	x	x
Lovegrass	1.5	12/1–6/1	x	x	x		
Panicum	2.0	12/1–6/1	x	x	x	x	x
Sacaton	1.0	12/1–6/1			x	x	x
Sorghum	12.0	12/1–6/1	x	x	x	x	x
Switchgrass	2.0–3.5	12/1–6/1	x	x	x	x	x
Perennial forbs, legumes, shrubs							
Alfalfa	20.0	8/15–11/1	x	x	x	x	
Awnless bush sunflower	2.6	12/1–6/1		x	x		
Engelmann daisy	15.0	8/15–11/1			x	x	x
Illinois bundleflower	13.6	12/1–6/1	x	x	x	x	x
Maximilian sunflower	3.0	12/1–6/1		x	x	x	x
Prairieclover	3.0	12/1–6/1		x	x	x	x
Annual grasses							
Forage sorghum	10.0–15.0	3/15–8/15	x	x	x	x	x
Grain Sorghum	15.0	3/15–8/15	x	x	x	x	x
Millet	15.0	3/15–8/15		x	x	x	x
Oats	40.0	8/15–11/1	x	x	x	x	x
Rye	40.0	8/15–11/1	x	x	x	x	x
Triticale	40.0	8/15–11/1	x	x	x	x	x
Wheat	40.0	8/15–11/1	x	x	x	x	x
Annual forbs, legumes, shrubs							
Clover	3.0–20.0	8/15–11/1		x	x	x	x
Partridge pea	13.4	12/1–6/1	x	x	x	x	
Sunflower	5.0–15.0	12/1–6/1	x	x	x	x	x
Sweetclover	10	8/15–11/1		x	x	x	x

Source: NRCS, USDA

Maintenance

Though vegetative filter strips usually require little maintenance, they must be cared for to work properly. Limit traffic on the filter strip to avoid soil compaction. If flow spreaders are used, keep them level to ensure that they function effectively. Monitor the filter strips to measure their effectiveness and/or determine if they need further maintenance. Table 8 summarizes maintenance needs and solutions.

Table 8. Filter strip maintenance

Activity	Frequency	Problem	Corrective Measure
Inspection	Regularly	Signs of erosion channeling, rills	Level bare areas and reseed, interseed, or sod.
		Sediment accumulation	Remove sediment. If accumulation is more than 6 inches deep, cultivate and reseed affected areas to maintain sheet-like flow of water across the vegetative filter strip.
		Water-stressed vegetation	Irrigate as needed.
		Vegetation that is more than 10 inches tall Presence of noxious weeds	Mow often to occasionally at 4- to 10-inch height when dry. Remove clippings to avoid nutrient buildup. Use appropriate herbicides to kill weeds.
Soil test	Periodically	To determine soil fertility status	Apply nutrients according to soil test recommendations.

Why use filter strips?

Vegetative filter strips benefit people and the environment. They control erosion, stabilize stream banks and ditches, improve water quality and wildlife habitats, and beautify waterways.

They also provide economic benefits that include the sale of hay or timber grown on them. Other revenue opportunities include incentive programs like the Conservation Reserve Program (CRP) and the Environmental Quality Incentive Program (EQUIP).

What are their limitations?

Though vegetative filter strips can improve water quality of runoff from urban, agricultural and industrial areas, they do have limitations:

- Land and establishment costs can be high.
- They are effective only if runoff water flows through them as a uniform sheet.
- They probably cannot treat highly contaminated discharges from storm sewers, swales, and channels.
- The irrigation costs to keep them alive may surpass their water-quality benefits.
- They do not directly improve water quality in areas where the soil type does not become suspended in runoff.

Cost

The major costs associated with vegetative filter strips are land, seed or sod, fertilizers, equipment, and labor. Though seed or sod and fertilizer are a one-time expense at installation, the expense of land, equipment and labor recur throughout the life of the filter strip.

Though one research study estimates a cost of $62.4 per acre per year, the overall cost of vegetative filter strips will vary according to the land cost, soil fertility, planting and management practices, and the use of the filter strip vegetation.

For further reading

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9. RECLAMATION PLAN

9.A Schedule

A reclamation schedule for single seam mining is included below.

TABLE 9.A-1

RECLAMATION SCHEDULE FOR SINGLE SEAM MINING

Mining of Pit			**Grading and Leveling**			**Final Grading and Soil Stabilization**			**Establish Permanent Vegetative Cover**		**Reclaim Sedimentation Control Structures**	**Construction of Landowner Requirements**	**Topsoil and Prime Farmland Replacement**	**Manage and Maintain Vegetative Cover**
Removal of Overburden	Lignite Removal	Spoiling of Next Pit into Previous Pit	Closure of Pit	Removal of Rock and Surfacing	Removal of Haulroads	Final Grading	Seeding and Mulching	Erosion Control Measure and Best Management Practices	Reseeding and Vegetation Maintenance	Establishment of Post Mine Land Use Ground Cover				
0-2			**3-5**			**6-9**								
MONTHS														
0-1									**1-5**		**5-20**			
YEARS														

9.B Grading and Backfilling

The sequence and timing of each major step in the reclamation plan is presented in Table 9.A-1, Reclamation Schedule. Adequate bonding is currently in place for mining and reclamation activities within the T and U mining areas. A reassessment of the reclamation activity cost estimate will be done to ensure additional bonding monies are not in place for the five year permit term area. DL1 will finish mining in T-West in the middle of 2020 and then all three draglines will cease mining operations within the permit. DHL may use these idle draglines for reclamation activities.

Rough backfilling and grading will be accomplished using primarily large crawler bull dozers. To maintain the mine's projected annual tonnage rate, DL1 is scheduled to operate 24 hours per day. Annual advancement is expected to be slow in the T-West area as advancement depends on overburden depth, length of pit. To assist in stabilizing the spoil, it is preferred to wait on rough grading until three peaks are in place. This prevents rough grading right to the active spoil peak and the request and approval of a grading variance from the standard 180 day backfilling and grading time limit to 360 days.

The rough backfilling and grading operations are used to eliminate all highwalls and spoil piles in accordance with the performance standard requirements of §5405.B.1. All grading will be to 6(h) to 1(v) or flatter slopes. In general, spoil grading operations are designed to return areas that have been disturbed by mining to as near as practical the approximate original contours of the area mined. DHLC will conduct surface mining activities so as to maximize the utilization and conservation of the lignite reserve while doing its best to achieve approximate original contours in final grading. The mining methods used to safely and efficiently mine the resource vary depending on a multitude of factors. Some, but not all of these factors are: the area itself, the number of seams available for recovery, and the limits of space available for placement of the overburden required to be moved.

The entire mining area is surrounded by a levee system as shown on Exhibit 8.A-1, which is utilized to support all surface water control as discussed in Section 8.B.2. The interior

ditching system must remain in place throughout all mining activities for surface water control within the levee. The U-North Area, along Bayou Pierre, will be graded fairly flat with small depressions and revegetated as wetlands as shown in Exhibit 2.B-1. These wetlands will create and enhance the area's wildlife habitat while promoting revegetation in the surrounding areas. DHLC strives to maximize the resource recovery for the landowners' benefit while determining the best mining methods, surface water control structures, and backfilling and grading plans.

Approved topsoil substitute materials will be redistributed in a manner that prevents excess compaction and achieves an approximate uniform, stable thickness consistent with the designated post-mining land use, contours, and drainage patterns. If distances prohibit the use of dozers for final post-mining contour work a front-end loader and trucks, or scrapers will be utilized. The final grading operations will be conducted along the contour using heavy equipment. Regraded areas will be scarified or otherwise treated to minimize erosion, eliminate slippage surfaces, and promote root penetration. The projected final surface configuration of regraded areas is shown on Exhibit 9.B-1, Post-mining Topography. The post-mining topography shown in Exhibits 9.B-1 and 9.B-2 are representative of the five year renewal permit term. Life of mine post-mining topography will be to Approximate Original Contours once mining is completed.

Rills and gullies deeper than nine inches that form in final graded areas will be filled, graded, or otherwise stabilized, and the area reseeded or replanted during the first normal period for favorable planting conditions.

The vegetative cover will be cleared ahead of the mining operations. Disturbance of the natural vegetation will be avoided, to the extent possible, to minimize erosion and maximize the amount of undisturbed wildlife habitat.

Existing topsoil and prime farmland stockpiles are identified on Exhibit 8.A-1, Five-Year Mine Plan. Side slopes are shaped at 3:1 or 4:1 grades and benched to minimize erosion losses. The stockpiles are rapidly revegetated with annual ryegrass, millet, or a suitable substitute to promote surface stabilization. After revegetation, fencing was installed if

needed to restrict unauthorized access. These precautions were taken to ensure accordance with Section §5313 and §5505 of the regulations.

Rough backfilling and grading operations are designed to result in a minimum cover of four feet of non-acid forming, nontoxic-forming, and noncombustible materials. In the event an insufficient thickness of suitable materials are present on the surface, mobile equipment will be used to bring in additional suitable material from other mining areas containing sufficient suitable material to compensate for the deficit from other mining areas. Stabilization of the final surface material will involve mulching when required and seeding a rapid-growing annual or perennial cover as soon as conditions permit following final placement, preferably within one month.

9.C Revegetation

Upon completion of final grading operations, the appropriate revegetation stage (temporary or permanent) will be designated, based on specific site and seasonal conditions, as well as the approved postmine land use(s). Revegetation activities will begin during the first favorable planting period after final grading, normally not longer than 90 days.

Species selection for vegetative cover is directly related to the reclamation stage, site specific conditions and proven success capabilities of the plant species selected. Table 9.C-1 lists the proposed plant species that can be selected individually or in combination for each reclamation stage. Small grains or cool-season annual grasses and/or legumes will be seeded during late summer, fall, and/or winter months to provide a stabilizing cover during periods that are unfavorable for permanent revegetation. Millet, sesbania, or a sorghum-sudangrass hybrid will be seeded during the spring and summer months when planting conditions are not conducive to revegetation with approved perennial species.

A combination of wildflower species may be interseeded into the permanent vegetative cover established along access roads and haul roads, and around the facility site.

Wildflower seedlings adjacent to selected portions of the roads and facility site are intended to improve the aesthetics of these high-visibility areas during operations. The species planned for this use are listed in Table 9.C-1. Wildflower plantings are anticipated during late fall or early spring to optimize seeding success.

Table 9.C-1 lists species to be established where wildlife habitat enhancement is the reclamation objective. The species, seeding rates and woody plant stocking rates proposed for wildlife habitat improvement were selected after a review of appropriate publications, and after discussions with personnel from the Louisiana Department of Wildlife and Fisheries and the U.S. Fish and Wildlife Service.

Table 9.C-1 also lists common invader species expected to appear in disturbed or reclaimed areas. All practical efforts will be made to control these invaders, particularly those identified as noxious.

Cool- and warm-season grasses and legumes will be used to establish permanent vegetative cover in areas returned to pastureland. Species selection will be based on existing vegetative cover and approved postmine land use plans.

The planting rates presented in Table 9.C-2 represent the quantity of seed, sprigs or seedlings required to establish a pure stand of a particular species. In areas where multiple species are to be used in combination, the planting rates listed in Table 9.C-2 will be weighted and adjusted according to the percentage of the seed mixture each species represents. Mixtures of herbaceous species will be seeded at rates designed to provide a minimum of 40 pure live seeds (PLS) per square foot. Tree and shrub species will be planted at rates designed to meet the woody plant density or to ensure that a recommended minimum stocking rate is achieved on areas being reclaimed to fish and wildlife features. The spacing of planted trees and shrubs will vary with locality, purpose of planting, species and regulatory requirements.

Seedbed preparation for vegetation establishment will include application and incorporation of appropriate amounts of nutrients and soil amendments based on results of standard soil testing procedures.

Conventional tillage implements will be used for seedbed preparation operations. The physical condition of the land surface and the size of the area to be planted are the principal factors which govern the size and type of implements that will be used. Chisel plows and disc harrow combinations are expected to be the primary tillage equipment, with spring-tooth harrows, spike-tooth harrows, flexible harrows or other similar implements used as appropriate.

Offset discs and/or bog harrows or other specially designed implements may be used to break up compaction, incorporate fertilizer and lime, and prepare seedbeds. These implements will not be used to break up subsurface compaction at depths greater than 18 inches. Ripper attachments or subsoiling implements may be used as needed to alleviate compaction detected below 18 inches. A list of general reclamation and revegetation equipment is presented in Table 9.C-3.

Selection of planting techniques will be based on seed type, season and site conditions. Broadcast spreaders, grain drills, hydromulchers, and spriggers will be used for the majority of the seeding or planting operations. All legume seeds will be properly inoculated prior to planting.

Tree and shrub seedlings usually will be planted mechanically. However, hand planting (e.g., dibble bar or mattock) may be used for planting small or inaccessible areas. Seedling handling and planting operations will be conducted in a manner that minimizes root damage and maximizes survival. Late winter and early spring is normally the best time for planting woody species, and dormant planting operations will begin in late winter as soon as viable seedlings can be obtained from the nursery.

Individual trees and shrubs or clumps of woody plants that will be disturbed by mining activities may be transplanted to regraded areas with a tree spade or front-end loader. Preference will be given to mast- and fruit-producing species. The transplanting operations will be conducted in a manner that maximizes survival. Site selection for these plantings will be based on approved postmine land use, as well as topographic position, slope, aspect and other habitat elements.

Following seeding or planting, contour furrows may be installed as a temporary surface stabilization and erosion control measures. Contour furrows will be designed to impede runoff, trap sediment and promote infiltration on reconstructed slopes. The physical configuration and approved postmine land use of an area will dictate whether and where contour furrows are placed. The longevity of the furrows will depend on vegetative cover and the sedimentation characteristics of an area.

Contour furrows typically will be installed on 50- to 100-foot intervals, with grades that normally deviate less than two percent from the contour. A schematic diagram of a typical contour furrow is presented on Figure 9.C-1. Redistributed approved soil materials are expected to provide a stable substrate for the installation of contour furrows. The condition of the contour furrows will be monitored periodically and modified as needed.

The annual grasses and grains designated in Table 9.C-1 for use as temporary cover were selected based on their ability to effectively stabilize disturbed areas until conditions are favorable for planting permanent vegetation. Where practical, perennials will be planted directly into temporary cover; the stubble produced by the temporary species will serve as mulch and control erosion until the permanent vegetation becomes established. In areas with higher slopes and without a temporary cover, mulch will be distributed over the site following planting or contour furrowing operations. Generally, straw or hay will be blown onto the site at a rate of one to two tons per acre, then secured to the surface by either a mechanical crimper or chemical tack.

Where conditions warrant, a portable irrigation system may be used to assist initial vegetative establishment. Herbicides and pesticides will be used as needed to control undesirable plant growth and insect damage. Restricted use or state limited use pesticides will be applied under the direct supervision of a certified applicator. The use and application of pesticides will be conducted in accordance with all applicable federal and state regulations, and application rates will follow product label instructions.

Revegetation success will be demonstrated in accordance with Section 5423 of the Regulations. Postmine soil performance success will be demonstrated in accordance with the "Minesoil Monitoring" section of the Louisiana Department of Natural Resources Office of Conservation, Technical Guidelines for Surface Mining Application.

TABLE 9.B-1
SLOPE DETERMINATIONS

SLOPE DETERMINATIONS FOR PRE-MINE TOPOGRAPHY IN THE U-NORTH AND U-WEST AREA Pre-Mine Study Area		
SLOPE CATEGORIES%	Area (Ac)	% of Total Area
0-5%	2354.7	98.2%
5-10%	36.4	1.5%
10-15%	4.5	0.2%
Over 15%	3.4	0.1%
	2399.1	100.0%

SLOPE DETERMINATIONS FOR POST-MINE TOPOGRAPHY IN THE U-NORTH AND U-WEST AREA Post-Mine Study Area		
SLOPE CATEGORIES%	Area (Ac)	% of Total Area
0-5%	2190.0	91.3%
5-10%	138.5	5.8%
10-15%	48.9	2.0%
Over 15%	21.6	0.9%
	2399.1	100.0%

DIFFERENCES SUMMARY TABLE		
SLOPE CATEGORIES%	Area (Ac)	% of Total Area
0-5%	-164.7	-6.9%
5-10%	102.1	4.3%
10-15%	44.5	1.9%
Over 15%	18.1	0.8%

TABLE 9.B-1

SLOPE DETERMINATIONS

SLOPE DETERMINATIONS FOR PRE-MINE TOPOGRAPHY IN THE T AREA Pre-Mine Study Area		
SLOPE CATEGORIES%	Area (Ac)	% of Total Area
0-5%	1846.3	97.7%
5-10%	32.4	1.7%
10-15%	4.4	0.2%
Over 15%	6.1	0.3%
	1889.1	100.0%

SLOPE DETERMINATIONS FOR POST-MINE TOPOGRAPHY IN THE T AREA Post-Mine Study Area		
SLOPE CATEGORIES%	Area (Ac)	% of Total Area
0-5%	1755.2	92.4%
5-10%	100.2	5.3%
10-15%	28.0	1.5%
Over 15%	16.7	0.9%
	1900.1	100.0%

DIFFERENCES SUMMARY TABLE		
SLOPE CATEGORIES%	Area (Ac)	% of Total Area
0-5%	-91.0	-5.4%
5-10%	67.8	3.6%
10-15%	23.6	1.2%
Over 15%	10.6	0.6%

Table 9.C-1
Plant Selection List for Reclamation

Temporary Cover	Preferred	Drainageways, Ponds, Roads & Fencelines
Rye (Secale cereale)	X	X
Wheat (Triticum vulgare)	X	X
Oats (Avena sativa)	X	
Annual ryegrass (Lolium multiflorum)		
Japanese millet (Echinochloa crusgalli)	X	X
Millet - Star, Common, Pearl, browntop	X	
(Perrisetum sp.)	X	
Sorghum sudangrass hybrids (Sorghum sp.)	X	
Arrowleaf clover (Trifolium incarnatum L.)		
Hairy vetch (Vicia villosa Roth)		
Subterranean clover (Trifolium subterraneum)		
Sweetclover (Melilotus spp.)		
Sesbania (Sesbania macrocarpa [exaltata])	X	
Kobe Lespedeza (Lespedeza striata)		
Korean Lespedeza (Lespedeza stipulacea)		
Sericea Lespedeza (Lespedeza cuneata)		
Cowpeas (Vigna sinesis)		
Grain sorghum (Sorghum vulgare)		
Soybeans (Glycine max)		
Permanent Cover		
Bermudagrass (Cynodon dactylon)	X	
Bahiagrass (Paspaium notatum)		
Little bluestem (Schizachyrium scoparium)	X	
Side oats grama (Bouteloua curtipendula)	X	
Eastern gamagrass (Tripsacum dactyloides)	X	
Wilman lovegrass (Eragrostis superba)		
Bristlegrass (Setaria spp.)	X	
Wildrye (Elymus spp.)		
Purpletop (Tridens flavus)	X	
Big blustem (Andropogon gerardii)*		
Bluestem mixture (Andropogon, Bothriochioa,		
and Schizachyrium spp.)*		
Kleingrass 75 (Panicum coloratum L.)*		
Weeping lovegrass (Eragrostis curvula)*		
Switchgrass (Panicum virgatum)*		
Deertongue (Panicum clandestinum)*		
Indiangrass (Sorghastrum nutans)*		
Green sprangletop (Leptochioa dubia)*		
Arrowleaf clover (Trifolium vesiculosum Savi)		
Crimson clover (Trifolium incarnatum L.)	X	
Hairy vetch (Vicia villosa Roth)	X	
Subterranean clover (Trifolium subterraneum)		
Sweetclover (Meillotus spp.)	X	
Amur honeysuckle (Lonicera maackii)		
Bicolor lespedeza (Lespedeza bicolor)		

American elm (Ulmus americana)		
Cedar elm (Ulmus crassifolia)		
Swamp chestnut oak (Quercus michauxii)	X	X
Shumard oak (Quercus shumardii)	X	
Nuttall oak (Quercus nuttallii)	X	
Green ash (Fraxinus pennsylvanica Marsh)	X	X
Loblolly pine (Pinus taeda)	X	X
Slash pine (Pinus elliottii)		
Southern red oak (Quercus falcata)	X	
Sweetgum (Liquidambar styracilflua)		
Red clover (Trifolium pratense)		
Ball clover (Trifolium nigrescens)		
Partridge pea (Cassia fasiculata, Michx.)	X	
White clover (Trifolium repens)		

Permanent Cover (Wildlife Habitat))	Preferred	Drainageways, Ponds, Roads & Fencelines
Grasses:		
Bahiagrass (Paspalum notatum)		
Little bluestem (Schizachyrium scoparium)	X	
Side oats grama (Bouteloua curtipendula)	X	
Eastern gamagrass (Tripsacum dactyloides)	X	
Wilman lovegrass (Eragrostis superba)		
Bristlegrass (Setaria spp.)	X	
Wildrye (Elymus spp.)	X	
Big Bluestem (Andropogon gerardii)		
Common reedgrass (Phragmites communis)		X
Giant reed (Arundo donax)		
Deertongue (Panicum clandestinum)*		
Kleingrass 75 (Panicum coloratum L.)*		
Reed canarygrass (Phlaris arundinacea)*		
Rescuegrass, bromegrass (Bromus unioloides)*		
Tall fescue (Festuca arundinacea)*		
Switchgrass (Panicum virgatum)*		
Weeping lovegrass (Eragrostis curvula)*		
Forbs:		
Arrowleaf clover (Trifolium vesiculosum Savi)		
Cattail (Typha latifolia)		X
Sunflowers (Helianthus spp)	X	
Crimson clover (Trifolium incarnatum L.)		
Hairy vetch (Vicia villosa)	X	
Kobe Lespedeza (Lespedeza striata)		
Korean Lespedeza (Lespedeza stipuiacea)		
Partridge pea (Cassia fasciculata)	X	
Sericea Lespedeza (Lespedeza cuneata)		
Subterranean clover (Trifolium subterraneum)	X	
Sweetclover (Melilotus spp.)	X	
Bundleflowers (Desmanthus spp.)	X	
Sedges (Carex spp.)	X	
Rushes (Juncus spp.)	X	
Spike rush (Eleocharis spp.)	X	

Bulrush (Scirpus spp.)	X	
Shrubs and Vines:		
American beautyberry (Callicarpa americana)	X	
Bayberry, Waxmyrtle (Myrica cerifera)		X
Dewberry, blackberry (Rubus spp.)	X	
Flowering Dogwood (Cornus florida)		
Hawthorn (Crataegus spp.)		
Muscadine grape (Vitis rotundifolia)	X	X
Silky dogwood (Cornus amomum)		
Wild Cherry, Chokecherry (Prunus virginiana)		
Wild grape (Vitis spp.)		
Wild plum (Prunus americana)	X	
Service-berry, Shadblow (Amelanchier arbovea (Michx.f.))		
Sumac (Rhus spp.)		
Pyracantha (Pyracantha angustifolia)		
Blueberry (Vaccinium spp.)		
Blackberry (Rubus spp.)		
Possumhaw (Ilex decidua)		
Farkleberry (Vaccinium arboreum)		
Common buttonbush (Cephalanthus occidentalis)		

	Preferred	Drainageways, Ponds, Roads & Fencelines
Trees:		
American holly (Ilex opaca)		
American elm (Ulmus americana)		
Cedar elm (Ulmus crassifolia)		
Black cherry (Prunus serotina)		
Blackgum (Nyssa sylvatica)		X
Blackjack oak (Quercus marilandica)		
Black walnut (Juglans nigra)		
Black willow (Salix nigra)		X
Boxelder (Acer negundo)		
Bur oak (Quercus macrocarpa)	X	
Cottonwood (Populus deltoides)		
Baldcypress (Taxodium distichium)	X	
Eastern red cedar (Juniperus virginiana)		
Green ash (Fraxinus pennsylvanica)	X	
Hickory (Carya spp.)	X	
Loblolly pine (Pinus taeda)	X	X
Longleaf pine (Pinus palustris)		
Redbud (Cercis canadensis)		
Red maple (Acer rubrum)		
Red mulberry (Morus rubra)	X	
River birch (Betula nigra)		X
Sassafras (Sassafras albidum)		
Sawtooth oak (Quercus shumardii)	X	
Shortleaf pine (Pinus echinata)	X	
Silver maple (Acer saccharium)		

Southern red oak (Quercus falcata)	X	
Sweetgum (Liguidambar styracilflua)		
Sycamore (Platanus occidentalis)		
Water oak (Quercus nigra)	X	X
Willow oak (Quercus phellos)	X	
Sugarberry (Celtis laevigata)	X	X
White Ash (Fraxinus americana L.)		
White oak (Quercus alba L.)	X	X
Arrow-wood (Euonymus autropurpureus Jacq.)		
Osage orange (Maclura pomifera (Raf.)		
Sourwood (Oxyoendrum arboreum)		
Pecan (Carya illinoensis)	X	X
Black walnut (Juglans microcarpa)	X	
Swamp chestnut oak (Quercus michauxii)	X	X
Shumard oak (Quercus shumardii)	X	X
Nuttall oak (Quercus nuttallii)	X	

Wildflower Seed Mixture

Bluebonnets (Lupinus texensis)	X
Black-Eyed Susan (Rudbeckia hirtaz)	X
Clasping coneflower (Rudbeckia amplexicaulis)	
Lance-leaved coreopsis (Coreoposis lanceoiata)	
Plains coreopsis (Coreopsis tinctoria)	
Prairie verbena (Verbena bipinnatifida)	
Moss verbena (Verbena tenuisecta)	
Wine cup (Callirhoe digitate)	
Butterfly weed (Asciepias tuberosa)	
Red gilla or Standing cypress (Ipomopsis rubra)	
Lemon-mint or lemon beehalm (Monarda citriodora)	
Common sunflower (Helianthus annuus)	X
Thickspike gayfeather (Liatris pyscnostachya)	
Red Mexican hat (Ratibida columnaris)	
Annual phlox (Phlox drummondii)	

Common Invader Species *

Carpetweed (Mollugo verticillata)
Redroot pigweed (Amaranthus retroflexus)
Spiny amaranth (Amaranthus spinosus)
Poison Ivy (Rhus radicans)
Dogband family (Apocynaceae spp.)
Milkweed family (Asciepiadaceau spp.)
Trumpetcreeper (Campsis radicans)
Japanese honeysuckle (Lonicera japonica)
Corn cockie (Agrostemma githago)
Heartleaf drymary (Drymaria cordata)
Mouseear chickweed (Cerastium vulgatum)
Chickweed (Stellaria media)
Common lambsquarters (Chenopodium album)
Dayflower (Commelina communis)
Bristly starbur (Acanthospermum hispidum)
Common yarrow (Achillea millefolium)

Common ragweed (Armbrosia artemisiifolia)
Giant ragweed (Ambrosia trifida)
Mayweed (Anthemis cotula)
Whiteheath aster (Aster pilosus)
Spanish needles (Bidens bipinnata)
Coneflower (Centaurea cyanus)
Blessed thistle (Cnicus benedictus)
Yerba-de-tago (Eclipta alba)
Annual fleabane (Erigeron annuus)
Horseweed (Erigeron canadensis)
Dogfennel (Eupatorium capillifolium)
Hairy galinsoga (Galinsoga ciliata)
Cudweed (Gnaphalium spp.)
Bitter sneezeweed (Helemiun amarum)
Camphorweed (Heterotheca subaxillaris)
Wild lettuce (Lactuca scariola)
Carolina falsedandelion (Pyrrhopappus carolinianus)
Grounsel (Senecio spp.)
Goldenrod (Solidago spp.)
Sowthistle (Sonchus spp.)
Dandelion (Taraxacum officinale)
Common cocklebur (Xanthium pensylvanicum)
Dichondra (Dichondra repens)
Field bindweed (Convolvulus arvensis)
Dodder (Cuscuta spp.)
Bigroot morninglory (Ipomoea pandurata)
Tall morningglory (Ipomoea purpurea)
Cypressvine morninglory (Ipomoea quamoclit)
Smallflower morningglory (Jaquemontia tamnifolia)
Wild mustard (Brassica kaber)
Shepherdspurse (Capsella bursa-pastoris)
Swinecress (Coronopus didymus)
Virginia pepperweed (Lepidium virginicum)
Wild watermelon (Citrullus vulgaris)
Wild cucumber (Echinocystis lobata)
Burcucumber (Sicyos angulatus)
Nutsedge (Cyperus spp)
Virginia copperleaf (Acalypha virinica)
Wooly croton (Croton capitatus)
Spotted spurge (Euphorbia maculata)
Carolina geranium (Geranium carolinianum)
Broomsedge bluestem (Andropogon virginicus)
Broadleaf signalgrass (Bracchiaria platyphylia)
Crowfootgrass (Dactyloctenium aegyptium)
Large crabgrass (Digitaria sanguinalis)
Barnyardgrass (Echinochioa crusgalli)
Goosegrass (Eleiusine indica)
Little barley (Hordeum pusillum)
Field sandbur (Panicum pauciflorus)
Torpedograss (Panicum repens)
Texas panicum (Panicum texanum)
Vaseygrass (Paspaium urvillei)
Annual bluegrass (Poa annua)

Foxtail (Setaria spp.)
Johnsongrass (Sorghum halepense)
Smutgrass (Sporobolus poiretti)
Henbit (lamium amplexicaula)
Florida betony (Stachys floridana)
Partridge pea (Cassia fasciculata)
Sicklepod (Cassia obtusifolia)
Showy crotalaria (Crotalaria spectabilis)
Florida beggarweed (Desmodium tortuosum)
Kudzu (Pueraria lobata)
Hemp sesbania (Sesbania exaltata)
Vetch (Vicia spp)
Wild garlic (Allium vineale)
Greenbriar (Smilax spp.)
Prickly sida (Sida spinosa)
Cutleaf eveningprimrose (Oenothera laciniata)
Prickly pear (Opuntia spp.)
Common yellow woodsorrel (Oxalis stricta)
Maypop passionflower (Passiflora incarnata)
Pokeberry (Phytolacca americana)
Plantains (Plantago spp.)
Smartweeds (Polygonum spp.)
Pennsylvania smartweed (Polygonum pensylvanicum)
Red sorrel (Rumex acetosella)
Redvine (Brunnichia cirrhosa)
Curly dock (Rumex crispus)
Broadleaf dock (Rumex obrusifolius)
Eastern bracken (Pteridium aquilinum)
Common pursiane (Portulaca oleracea)
Buttercup (Ranunculus spp)
Poorjoe (Diodia teres)
Florida pursiane (pusley) (Richardia scabra)
Witchweed (Striga lutea)
Common mullein (Verbascum thapsus)
Jimsonweed (Dtura stramonium)
Smooth groundcherry (Physalis suglabrata)
Horsenettle (Solanum carolinense)
Silverleaf nightshade (Solanum elaeagnifolium)
Black nightshade (Solanum nigrum)
Wild carrot (Daucus carota)
Prostrate vervain (Verbena rigida)
Blue vervain (Verbena hastata)
Peppervine (Ampelopsis arborea)
Brazilian vervain (Verbena brasiliensis)
Baccharis (Baccharis spp.)
Thistles (Circium spp.)
Woolgrass (Scirpus cyperinus)
Rose mallows (Hibiscus spp.)
Yaupon (Ilex vomitoria)

* Efforts will be made to control bunch grasses and common invader species, particularly noxious species.

Table 9.C-2
Seeding Rates and Establishment Dates for Selected Plant Species 1/

Species 2/	Planting Rate (Per Acre)	Establishment Dates
TEMPORARY COVER		
Cowpeas	75 - 120 lbs. PLS 3/	5-1 to 6-30
Oats	90 - 120 lbs. PLS 3/	9-1 to 11-15
Rye	90 - 120 lbs. PLS 3/	9-1 to 11-15
Wheat	90 - 120 lbs. PLS 3/	9-1 to 12-31
Annual Ryegrass	20 - 30 lbs. PLS 3/	8-15 to 10-15
Millet	25 lbs. PLS 3/	3-15 to 8-1
Sesbania	20 lbs. PLS 4/	4-15 to 5-15
Sorghum/Sudangrass	25 lbs. PLS 3/	3-15 to 8-1
Grain Sorghum	Dependent on Variety	Late winter to early spring
Soybeans	Dependent on variety	Late winter to early spring
PERMANENT COVER		
Grasses:		
Coastal bermudagrass	20 - 60 bu.	1-1 to 6-1 & 9-1 to 9-30
Common bermudagrass	6 -10 lbs. PLS 3/	1-1 to 6-30 & 9-1 to 10-30
Weeping lovegrass	4-6 lbs. PLS 3/	3-1 to 5-15
Switchgrass	4-8 lbs. PLS 3/	2-15 to 5-15
Deertongue	12-15 lbs. PLS 3/	3-1 to 5-31
Indiangrass	9 lbs. PLS 3/	2-15 to 5-15
Bahiagrass	15-30 lbs. PLS 3/	10-1 to 5-15
Kleingrass	4 lbs. PLS 3/	2-15 to 5-31
Big Bluestem	7 lbs. PLS 3/	2-1 to 5-15
Bluestem mixture	7 lbs. PLS 3/	2-1 to 5-15
Green sprangletop	4 lbs. PLS 3/	2-15 to 5-15
Rescuegrass	25-30 lbs. PLS 3/	9-15 to 11-30
Tall fescue	12 lbs. PLS 3/	9-15 to 11-30
Reed canarygrass	5-10 lbs. PLS 3/	9-15 to 11-30
Giant reed	3-6 buds/ft. 5/	1-15 to 4-30
Common reedgrass	3-6 buds/ft. 5/	1-15 to 4-30
Forbs:		
Arrowleaf clover	10-20 lbs. 4/	9-1 to 3-1
Ball clover	45-60 lbs. 4/	8-1 to 11-15
Cattail	3 - 6 buds/ft. 5/	1 - 15 to 4 - 30
Common sunflower	3 lbs. 4/	3 - 15 to 6 - 1
Crimson clover	20 - 40 lbs. 4/	9 - 1 to 3 - 1
Hairy vetch	20 - 40 lbs. 4/	9 - 1 to 3 - 1
Partridge pea	20 lbs. 4/	3 - 1 to 4 - 30
Red clover	8 - 10 lbs. 4/	9 - 1 to 11 - 15
Subterranean clover	20 - 40 lbs. 4/	9 - 1 to 3 - 1
Sweet clover	10 - 12 lbs. 4/	1 - 15 to 3 - 15
Sericea lespedeza	20 - 40 lbs. 4/	2 - 15 to 5 - 1
White clover	2 - 6 lbs. 4/	8 - 1 to 10 - 15

Species 2/	Planting Rate (Per Acre)	Establishment Dates			
Shrubs and vines					
American beautyberry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Amur honeysuckle	225 - 450 seedlings	6/	12 - 1	to	3 - 1
Bayberry, Waxmyrtle	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Blackberry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Bicolor lespedeza	225 - 450 seedlings	6/	3 - 15	to	5 - 31
Crab apple	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Dewberry, Blackberry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Flowering dogwood	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Grape, Muscadine	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Greenbriar	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Hawthorn	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Hydrangea	225 - 450 seedlings	6/	12 - 1	to	3 – 31
Pyracantha	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Service-berry, Shadblow	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Silky dogwood	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Smooth sumac	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Wildcherry, Chokecherry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Wild grape	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Wild Plum	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Winterberry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Yaupon	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Trees					
American holly	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Arrow-wood	225 - 450 seedlings	6/	12 - 1	to	3 – 31
Baldcypress	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Black cherry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Blackgum	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Blackjack oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Black walnut	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Black willow	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Boxelder	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Bur oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Catalpa	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Cottonwood	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Crabapple	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Eastern red cedar	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Green ash	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Hickory	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Loblolly pine	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Longleaf pine	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Osage orange	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Pecan	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Pin oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Redbud	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Red maple	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Red mulberry	225 - 450 seedlings	6/	12 - 1	to	3 – 31
River birch	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Sassafras	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Sawtooth oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Shumard oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31

Species 2/	Planting Rate (Per Acre)	Establishment Dates			
Shortleaf pine	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Slash pine	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Sourwood	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Southern red oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Sugarberry	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Sweetgum	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Sycamore	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Water oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
White ash	225 - 450 seedlings	6/	12 - 1	to	3 - 31
White oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Willow oak	225 - 450 seedlings	6/	12 - 1	to	3 - 31
Yellow poplar	225 - 450 seedlings	6/	12 - 1	to	3 - 31

1/ When two or more plant species are used in a mixture, the planting rate will be adjusted to reflect the percent contributed by each species.

2/ Use of these species will depend on their availability.

3/ PLS (pure live seed).

4/ Commercial rates and ranges subject to site conditions.

5/ Live rhizomes approximately 12 to 18 inches long, planted in rows on 40” centers.

6/ When two or more woody species are used in an area, the planting rates will be adjusted to reflect the percent contributed by each species and to ensure that the recommended minimum stocking rate of 250 stems per acre is achieved on at least 25 percent of areas reclaimed as wildlife habitat or to meet the woody plant density on an approved reference area.

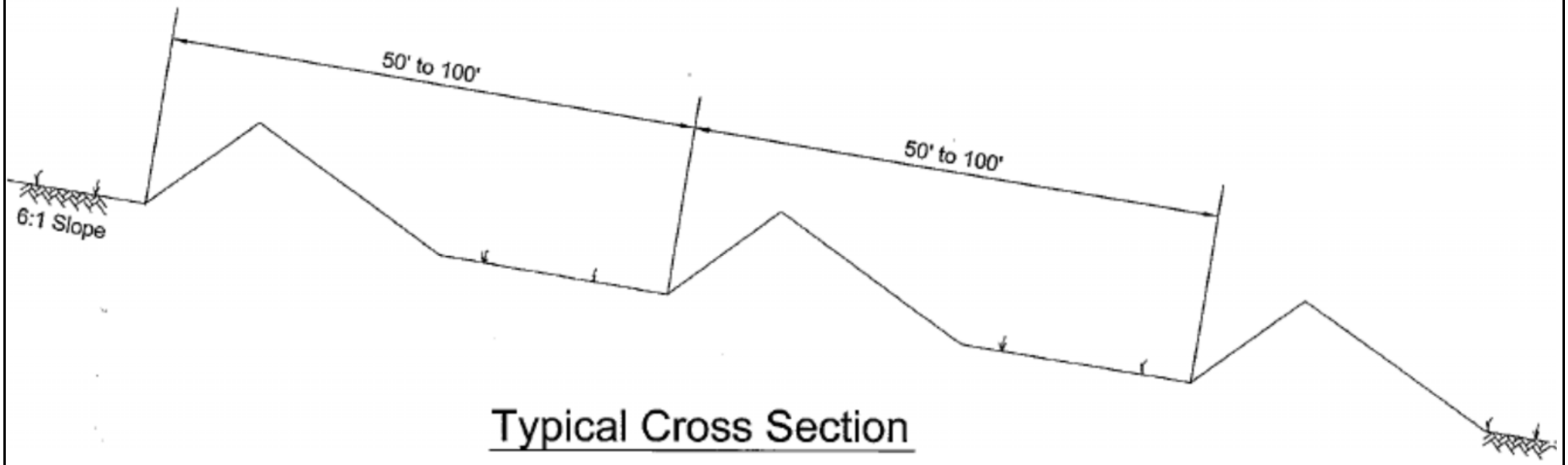
NOTE: If bunch grasses are used in reclamation, they will be planted in conjunction with other grasses selected for their ability to produce a successful ground cover and control erosion.

TABLE 9.C-3
General Reclamation and Revegetation Equipment

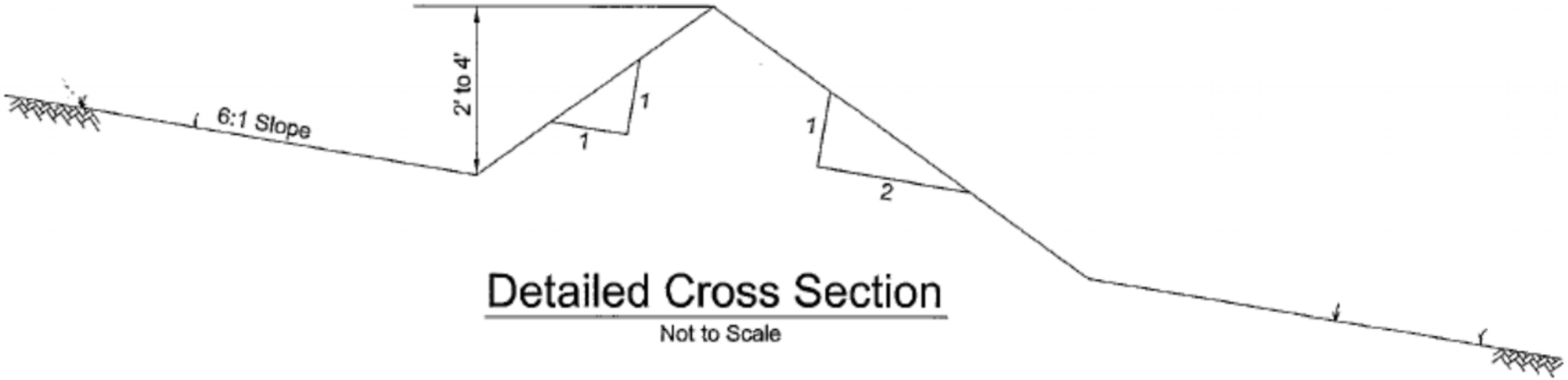
1. Bulldozer
2. Chisel Plow
3. Roller compactor
4. Scraper
5. Front-End Loader
6. Motorgrader
7. Rear-Dump Truck
8. Bulk Spreader
9. Farm Tractors
10. Portable Irrigation System
11. Sprayer & Boom
12. Heavy Duty Disc
13. Hydro Seeder
14. Subsoiler and/or Ripper
15. Spring Tooth Harrow
16. Grain Drill
17. Box Planter
18. Sprigging Machine
19. Straw & hay blower
20. Crimper
21. Broadcast Spreader
22. Brush Hog
23. Hay Baler
24. Mechanical Seedling Planter
25. Tree Spade

Figure 9.C-1

Typical Contour Furrow



Typical Cross Section



Detailed Cross Section

Not to Scale