

RAILROAD COMMISSION OF TEXAS
HEARINGS DIVISION

DOCKET NO. C13-0018-SC-48-C
LUMINANT MINING COMPANY LLC
APPLICATION FOR RENEWAL/REVISION OF PERMIT NO. 48B, THREE OAKS MINE
LEE AND BASTROP COUNTIES, TEXAS

**ORDER OF APPROVAL AND ISSUANCE OF APPLICATION FOR
RENEWAL/REVISION OF PERMIT NO. 48B**

Statement of the Case

Luminant Mining Company LLC (Luminant) 1601 Bryan Street, Dallas, Texas 75201 requests Railroad Commission of Texas approval of its application for renewal/revision of Permit No. 48B for its Three Oaks Mine in Lee and Bastrop Counties, Texas (Application). On September 22, 2002, the Commission issued the original Permit No. 48 to Alcoa Inc. (Alcoa). On March 23, 2007, Alcoa applied to the Commission Surface Mining and Reclamation Division (SMRD), for a renewal/revision of Permit No. 48, requesting an additional five-year permit term. On November 30, 2010, permit No. 48 became Permit No. 48A upon its transfer to Luminant. On March 20, 2012, the Commission approved the renewal/revision application, and the permit designation was changed from No. 48A to No. 48B. On July 15, 2013, Luminant submitted its Application to the Commission SMRD.

The Application was filed pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE CH.134 (Vernon 2011 & Supp. 2014) (Act) and the Commission's Coal Mining Regulations, 16 TEX. ADMIN. CODE CH. 12 (Thompson West 2014) (Tex. R.R. Comm'n) (Regulations). Luminant proposes to renew and revise Permit No. 48B to conduct surface mining and reclamation operations at the Three Oaks Mine for an additional five-year permit term (2014-2018). The mine is located in Bastrop and Lee Counties, Texas, about five miles east of Elgin, Texas and 11 miles west-southwest of Lexington, Texas. The lignite is used as fuel for the Sandow Electric Power Generation Station located near Rockdale.

Copies of the application were filed in required county and Commission offices and distributed to required local, state, and federal agencies for review and comment. Only Texas Parks and Wildlife Department requested and was provided a copy of the application and supplements. Notice of the application was published in newspapers of general circulation in Lee and Bastrop Counties. Written comments were made on the application following public notice and notice to agencies and landowners. Two complainants, Neighbors for Neighbors, Inc. (NFN), an organization of citizens living either in or near the mine permit area, and the Sierra Club, sought to intervene and requested a contested case hearing on the basis that Luminant's then-existing performance self-bond was insufficient under the Commission's bonding requirements. While a hearing request was made, that request was denied as being premature, since Luminant's then-existing bond had been approved by the Commission consistent with the Act and Regulations, and Luminant had not yet filed for a replacement performance bond to cover any additional reclamation obligations as proposed in the Application. Subsequent to the denial of a hearing on the performance self-bond for Three Oaks, in a separate docket Luminant sought to replace the self-bond for Three Oaks, and all of its other self-bonds for its Texas mining operations, with a single, blanket collateral bond covering all mine permit areas. The Commission approved Luminant's blanket collateral bond on June 17, 2014. NFN and the Sierra Club did not renew their request for a hearing.

Luminant has addressed all issues relating to the application in accordance with the Act and Regulations. The parties to the proceeding are the applicant, Luminant, and Staff of the Commission's SMRD (Staff). NFN and the Sierra Club sought party status, but their request for hearing was denied.

Luminant has accepted the Staff's Technical Analysis. Based upon the application, as supplemented, evidence presented, and the Staff Technical Analysis and Addenda, and considering comments filed, all factual issues have been addressed as required by the Act and Regulations, with the proposed permit provisions as set out in the Findings of Fact and Appendix I, and the Soil Testing Plan included as Appendix II.

Luminant proposes no changes to the accepted bond instrument in this proceeding. The existing blanket performance bond covers the Three Oaks Mine reclamation obligations and is sufficient to satisfy the bonding requirements of the Act and Regulations.

The examiner, after review of the application and supplements, exhibits, the Staff's Technical Analysis, and comments, recommends that the Commission approve the application, as supplemented, with the permit provisions contained in Appendix I, Permit Provisions and Appendix II, the Soil Testing Plan.

FINDINGS OF FACT

1. On July 15, 2013, Luminant applied to the Commission SMRD for a renewal/revision of Permit No. 48B, Three Oaks Mine, requesting an additional five-year permit term. The renewal/revision permit application is contained in 13 volumes, as amended by four supplemental filings. The area of the approved permit is 15,809 acres, and Luminant proposes no changes to the permit boundary. During the proposed five-year (2014-2018) permit renewal/revision term, three primary mine blocks are proposed to be mined. These blocks are designated as the A, B and C Areas, from which Luminant anticipates that it will mine a total of approximately 1,195 acres during the five-year permit term. Luminant anticipates that it will submit future renewal applications for mining and reclamation activities. The anticipated annual production for the Three Oaks Mine during the proposed five-year renewal term is approximately 7.5 million tons, with the total mine production for the proposed five-year renewal term projected to be about 37.7 million tons.
2. The application was filed pursuant to the Act and the Regulations. The 15,809-acre permit area is located about five miles east of Elgin, Texas, and 11 miles west-southwest of Lexington, Texas. The permit area lies in an area bordered to the south by U.S. Highway 290 and to the north by FM 112. Luminant operates the lignite mine. Permit No. 48 was originally issued to Alcoa on March 11, 2003. On November 30, 2010, Permit No. 48 became Permit No. 48A and was transferred to Luminant.
3. The Director, SMRD, determined the 13-volume application to be administratively complete on July 22, 2013. SMRD Staff filed its Technical Analysis (TA) with Hearings Division on September 26, 2014. Luminant filed four supplemental documents (hereinafter, SD1, SD2, SD3, and SD4): SD1 by letter dated March 4, 2014; SD2, by letter dated August 12, 2014; SD3, by letter dated August 27, 2014; and SD4, by letter dated September 22, 2014. Publication of notice occurred August 21, 28 and September 4 and 11, 2013 (*Elgin Courier*) and August 22, 29 and September 5 and 12, 2013 (*Lexington Leader*). All information contained in Luminant supplemental submittals was for the purpose of supplementation, clarification, limitation, or correction of data and information addressed in sections of the administratively complete application. The application and all supplements were appropriately placed on file for public inspection. The information contained in SD1, SD2, SD3, and SD4, filed after Luminant's publication of notice, does not constitute a material change to an application for which additional notice must be provided pursuant to §12.212(d) of the Regulations. The notice indicated that the application might be further supplemented. Supplemental Document Nos. 1 and 2 were filed by Luminant in response to application deficiencies noted in staff's comment letters dated October 22, 2013, and May 21, 2014. Supplemental Document No. 3 was filed by Luminant to address information that it inadvertently omitted in previous filings, and Supplemental Document No. 4 was filed to address updates to interests and compliance information as necessary for permit issuance. The supplements do not result in any material effects on landowners or the environment that are greater than those initially proposed or in a need for additional notice.

4. Staff notes no remaining substantive deficiencies; however, Staff recommends nine permit provisions be added and the previous permit provisions be removed. All recommended permit provisions are set out in Appendix I to this Order.
5. The application has met the requirements set out in §12.107 for format and content, with adoption of the Findings of Fact (including incorporated Appendices III-V) and permit provisions contained in Appendix I and the Soil Testing Plan contained in Appendix II. Form SMRD-1C was filed, and it contains information required by §§12.116-12.154 [§12.107(a)]. In the application, as supplemented, the information is current, presented clearly and concisely, and is supported by appropriate references [§12.107(b)]. Technical data has been submitted as required [§12.107(c) and (e)], and the data were prepared by or under the direction of professionals in the subjects analyzed [§12.107(d)]. A responsible official of the applicant verified the application, as supplemented, under oath that the information is true and correct to the best of the official's information and belief [§12.107(g)].
6. The application was filed at least 180 days prior to the projected commencement of operations as set out in §12.106(b)(1) of the Regulations. The required filing fee of \$3,000 has been paid.
7. Notice of application was published once each week for four consecutive weeks in a newspaper of general circulation in the locality of the surface mining and reclamation operations on August 21, 28 and September 4 and 11, 2013, in the *Elgin Courier*, and on (Elgin Courier) and August 22, 29 and September 5 and 12, in the *Lexington Leader*. The notices identified the location of the public offices where the application, as supplemented, was filed in accordance with §12.122 of the Regulations and Luminant submitted an original affidavit and news clippings showing publication in accordance with §12.123 of the Regulations. The notices of application as published contain all information required by the Act and the Regulations. The notices contained all required information concerning the applicant, the location and boundaries of the permit area, the availability of the application for public inspection and the address to which comments were to be sent.
8. A copy of the application was filed for public review in the offices of the Lee and Bastrop County Clerks; copies were also filed with the Railroad Commission of Texas in Austin, Texas.
9. In accordance with its policy, the Commission placed notices of application in first-class mail on September 9, 2013 to owners of interests in lands within the permit boundary and tracts adjacent to the permit boundary. Returned notices of this mailing for which updated or corrected addresses were available were re-mailed. Luminant was advised of notices that were returned with insufficient addresses, and Luminant updated addresses as available.
10. Also on September 9, 2013, the Commission placed notices of application and cover letters as first-class mail or interagency mail, as appropriate, to the required divisions of the Texas Commission on Environmental Quality (TCEQ); Texas Historical Commission (THC); University of Texas, Bureau of Economic Geology; Texas State Soil and Water Conservation Board; Texas Parks and Wildlife Department (TPWD); General Land Office; U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS); U.S. Department of Interior (USDI) Fish and Wildlife Service (USFWS); USDI Office of Surface Mining Reclamation and Enforcement; U.S. Department of the Army Corps of Engineers; and the Lee and Bastrop County Clerks and County Judges.
11. Two complainants, NFN, an organization of citizens living either in or near the mine permit area, and the Sierra Club, sought to intervene and requested a contested case hearing on the basis that Luminant's then-existing performance self-bond was insufficient under the Commission's bonding requirements.

- (a). NFN submitted a Request for Contested Case Hearing dated October 28, 2013, noting that at least one of its members, Russell Bostic, owned property located in the mine permit area and seeking to litigate the adequacy and amount of Luminant's then-existing performance self-bond.
 - (b). NFN, the Sierra Club, SMRD Staff, and Luminant participated in a prehearing conference held on December 11, 2013. At the prehearing conference, the examiner requested briefing on the jurisdictional issues implicated by the bonding concerns expressed by NFN and the Sierra Club. The Sierra Club did not file a request for hearing but submitted a notice of appearance on December 17, 2013, and joined in all of NFN's briefs and replies.
 - (c). A prehearing conference was held on December 11, 2013. NFN, the Sierra Club, SMRD Staff, and Luminant participated in the prehearing conference. At the prehearing conference, the examiner requested briefing on the jurisdictional issues raised by the bonding concerns expressed by NFN and joined in by the Sierra Club.
12. In Examiner's Order No. 1 issued March 10, 2014, NFN's request for hearing was denied as being premature because Luminant's then-existing performance self-bond had been previously approved by the Commission and SMRD Staff had not determined that a new or revised bond was necessary in connection with the application. On March 20, 2014, NFN and the Sierra Club filed an appeal of Examiner's Order No. 1, to which Luminant responded on March 31, 2014. The appeal was deemed denied on May 5, 2014, under §1.30 of the Commission's Practice and Procedure rules.
13. On May 16, 2014, in Docket No. C14-0015-SC-00-E, Luminant filed an application for authorization to substitute and replace its reclamation performance self-bonds and for approval of a single, blanket collateral bond covering all of Luminant's permitted mines, including the Three Oaks Mine.
- (a). In accordance with §§12.309(h) and (j)(7) of the Regulations, Luminant requested that the Commission approve a replacement blanket collateral bond for its statewide mining operations secured by a carve-out of up to \$1.1 billion from a super priority perfected first-lien security interest, in favor of the Commission, in substantially all of the assets of Texas Competitive Electric Holdings Company LLC, the indirect parent company of Luminant.
 - (b). The Commission found that the amount of the blanket collateral bond exceeded the total amount of Luminant's then-existing self-bonds.
14. The Commission approved Luminant's blanket collateral bond on June 17, 2014.
15. Section .116 of the application, as supplemented, includes all information required to show organizational information, ownership and control, current officers and directors, updated compliance information, and other mining permits and identifications. In addition, Section .117 of the application, as supplemented, contains right-of-entry documentation.
- (a). Luminant is a Texas limited liability company. Luminant provided its resident agent, CT Corporation, 350 N. St. Paul Street, Dallas, Texas 75201; Luminant is the payer of the abandoned mine reclamation fee. The following is the current ownership and control of Luminant. Energy Future Holdings Corp. is the parent corporation of Energy Future Competitive Holdings Company LLC. Energy Future Competitive Holdings Company LLC is the parent corporation of Texas Competitive Electric Holdings Company LLC. Texas Competitive Electric Holdings Company LLC is the corporate parent of Luminant Holding Company LLC, the corporate parent of Luminant Mining Company LLC. All officers and directors of these entities have been identified in the application, as supplemented. (SD4)

- (b). Luminant proposes to conduct mining operations on property it owns, on property owned by affiliates, and on property where a valid coal and lignite lease exists. Sandow Power Company LLC or Alcoa own certain tracts or are the lessee(s) of certain land tracts located within the proposed permit area (SD4). Luminant does not propose any surface mining operations on any property for which it does not have a valid right-of-entry. Information on the right-of-entry and property ownership is detailed in Section .117 of the permit application, as supplemented (SD1).
- (c). Section .116 of the application, includes identification of all tracts within and adjacent to the permit area and persons who own interests in those tracts. Section .116, as supplemented in SD1-SD4, contains required compliance information. Instances where the private mineral estate to be mined has been severed from the surface estate are identified in the Application as supplemented. Section .117, page 3; Table 116-E-1.
- (d). No tracts for which Luminant has right-of-entry are the subjects of pending litigation, and there are no interests in lands, options, or pending bids on interests held or made by Luminant on lands contiguous to the permit.
- (e). The information provided regarding violations and fee payment has been compared with the information contained in the AVS database and the AVS database has been updated as needed. The Office of Surface Mining Reclamation and Enforcement operates the AVS database to identify violators across the country. The AVS database has been queried to determine whether Luminant or any controller identified in the application, or found in the database, currently has any outstanding violations at coal mines owned or operated in the United States. The system also indicates whether Luminant or any controller is delinquent in the payment of abandoned mine land (AML) reclamation fees. A report of the findings resulting from a query of the AVS database is provided in Staff's TA, and all issues have been addressed by the Applicant in SD4. No pending violations or non-payment of AML fees were found to exist. Luminant provided a list of NOVs in section .116, Appendix D, as updated in SD1. This list indicates that beginning August 25, 2010, the following NOVs have been issued to Luminant for various permits: August 25, 2010, NOV No. 292T, Permit 46B (failure to design, construct, and maintain sediment control measures in accordance with approved designs); August 25, 2010, NOV No. 292T, Permit 46B (failure to design, construct, and maintain sediment control measures in accordance with approved designs); September 22, 2010, NOV No. 293T, Permit 46B (failure to mine in accordance with operation plan); January 31, 2010, NOV No. 294T, Permit 46B (conducting mining activities within road right-of-way); February 1, 2011, NOV 103A, Permit 50 (conducting surface mining activities outside bonded areas); April 11, 2011, NOV 295T, Permit 53 (failure to design and construct spillway consistent with design criteria); April 14, 2011, NOV 296T, Permit 46B (constructed a temporary diversion ditch without approved design plans); April 28, 2011, NOV 297T, Permit 5G (failure to utilize appropriate sediment control measures); August 1, 2011, NOV 298T, Permit 4K (failure to ensure soil quality in accordance with reclamation plan); August 18, 2011, NOV 299T, Permit 46B (conducting mining operations within 100 feet of active gas pipeline); January 30, 2012, NOV 301T, Permit 46B (failure to employ appropriate sediment control measures); May 2, 2012, NOV 106A, Mod. No. 1 (Alcoa) (failure to employ appropriate sediment control measures); May 2, 2012, NOV 107A, Mod. No. 1, Permit 48B (Alcoa) (deposition of sediment in an undisturbed area); May 22, 2012, NOV 109A, Permit 50A (failure to protect cultural resource sites); April 23, 2013, NOV 110A, Permit 3F (failure to cover acid forming and toxic forming materials); July 25, 2013, NOV 305T, Permit 46C (failure to construct embankment key trench as designed and approved); and February 3, 2014, NOV 306T, Permit 54 (discharge of water exceeding legal parameters).

16. The requirements of §12.118(a), (b), and (c) of the Regulations have been met.
- (a). The permit area is not within an area designated as unsuitable for surface mining activities under §§12.75–.85 of the Regulations, and not within any area under study for designation in an administrative proceeding.
 - (b). Luminant does not claim an exemption under §12.118(b) provided for applicants having made substantial financial commitments prior to January 4, 1977.
 - (c). Luminant will not conduct surface mining activities within 300 feet of an occupied dwelling other than those owned by Luminant.
17. Luminant has included information in the application, as supplemented, in compliance with §12.119 for the life of mine, and §12.125(1) for the size, sequence, and timing of sub-areas of the mine.
- (a). Areas proposed for mining during the proposed permit term and for the life-of-mine area has been included in the application, as supplemented. The application, as supplemented, includes information that complies with the requirements of §12.119(a) of the Regulations for the anticipated starting and termination dates of each phase of mining and the anticipated number of acres of land to be affected for each phase of mining and over the total life of the permit. (SD2). Luminant proposes to recover an average of 7.5 million tons of lignite per year, and a total of 37,700,000 tons for the proposed five-year renewal term. The *Mined and Affected Acres for the Life of the Mine* are shown in the following table (Table 119-1 as supplemented):

Year	Mined Acres	Affected Acres
2013	441	507
2014	379	436
2015	253	291
2016	242	278
2017	201	231
2018	185	213
2014-2018*	46	53
2019-2023**	321	369
2019-2033**	1264	1454

* Auxiliary Area

** Out Year Blocks

- (b). The application includes information for the size, sequence, and timing of sub-areas of the permit and the life-of-mine anticipated permit terms required by §12.125(1) of the Regulations (SD1) and the *Life-of-Mine Map*, Plates 125(a)-1, 2, and 3 in the Application. Luminant proposes to recover an average of 7.5 million tons of lignite per year, and a total of 37,700,000 tons for the proposed five-year renewal term. Luminant proposes mining and other mining-related disturbances on the following approximate acreages as set out in Table 125(a)-1, Section .125, SD2, set out below. Blocks indicated as “Out Year Blocks” are not proposed during the proposed permit term.

Mining Area	Year	Mined Acres
A/B-Area	2013	441
A/B-Area	2014	183
A/B-Area	2014	109
A/B-Area	2015	174
A/B-Area	2016	166
A/B-Area	2017	128
A/B-Area	2018	116
A-Area Aux. No. 1*	2014-2018*	27
A/B-Area**	2019-2023**	321
C-Area	2014	87
C-Area	2015	79
C-Area	2016	76
C-Area	2017	73
C-Area	2018	69
C-Area Aux. No. 1*	2014-2018*	19
C-Area	2019-2033**	1264

* Auxiliary Area

** Out Year Blocks

18. Luminant has included information in compliance with §12.125(2) for a description and identification of cultural, historical, and archaeological resources listed on or eligible for listing on the National Register of Historic Places (NRHP) and known archaeological sites within the proposed permit area and adjacent areas. Luminant has provided information in accordance with §12.151 for measures to be used to prevent or minimize adverse impacts on such resources or on the interests of persons who have valid existing rights. In the Application, Luminant provided Tables I, II, and III (section .125, Appendix B) and Plates 125-(a)(1-3)1 A, which show the two sites listed in Table II as NRHP-eligible (41BP594 and 41LE306) and the twelve sites listed in Table III as being protected because additional data is required to determine eligibility for the NRHP or additional testing is required. Table I includes a list of approximately 178 ineligible cultural resource sites. The permittee commits to protect cultural resources in accordance with appropriate State and Federal guidelines. No cultural resource site will be disturbed by surface coal mining operations until written approval is obtained from the Commission. Section .151 contains a general procedural outline describing the measures to be taken to ensure the protection of cultural resources sites from impacts from surface coal mining operations.

19. Luminant has provided information that complies with §12.120 for personal injury and property damage insurance. Luminant has provided the required certificate of liability insurance as filed with the Commission by letter dated July 21, 2014, as included in the Application as SD3.
20. The application, page .121-1-4, as supplemented in SD2, includes identification of other licenses and permits obtained in accordance with §12.121 to address all areas proposed for inclusion in the proposed permit area. This listing includes the TCEQ Wastewater Discharge Permit, Solid Waste Registration Permit, and Air Quality Operating Permit, as well as the U.S. Environmental Protection Agency hazardous waste identification number, U.S. Army Corps of Engineers Section 404 Permit, Texas Department of Health Radioactive Material License, Mine Safety and Health Administration Federal Mine Identification Number, THC Texas Antiquities Archeology Permit, Railroad Commission of Texas Commission Coal Exploration Registration, TPWD scientific research permit, and U.S. Fish and Wildlife Service endangered species recovery permit.
 - (a). Texas Parks and Wildlife Department ("TPWD") provided comments concerning determinations of the applicability of aquatic-life protection permits necessary for disturbance of aquatic life and disturbance of State-owned streambeds. In an application deficiency noted by Staff in its May 21, 2014, comment letter, Luminant was apprised of a need to coordinate a site visit with TPWD Kills and Spills Team (KAST) program personnel and Commission Staff at its earliest convenience. In Supplemental Document No. 2, Luminant indicated that it will contact the Texas Parks and Wildlife Department (TPWD), KAST program to determine whether a permit is required for an aquatic-life relocation or related permit. In the May 15, 2014, letter, TPWD raised the issue of the potential for disturbance to State-navigable stream beds. Luminant has not yet coordinated a site visit. Staff noted that TPWD identified a new contact for the KAST program and also provided a contact for the Inland Fisheries program in the May 15th letter. Staff withdrew the noted application deficiency and sponsors **Permit Provision No. 1**, as follows:

If TPWD determines that an aquatic life or stream-bed protection permit is required, Luminant shall submit a revision application for administrative review and approval by the SMRD Director to update the information required in §12.121 and amend its fish and wildlife protection plan in section .144 to incorporate the aquatic relocation and protection plan developed for the TPWD permit.
 - (b). Luminant provided information on permits and/or licenses needed to conduct the proposed surface mining activities. Luminant is in the process of renewing some licenses and permits necessary for operations at the Three Oaks Mine and has committed to provide the Commission with copies of the permit and authorizations upon receipt from the issuing agency. Staff notes that, from a recent investigation via the TCEQ website search feature, Storm Water Construction General Permit Nos. TXR15MM03 and TXR15NH12 have expired. However, active Permit Nos. TXR05AM72 and TXR15XC77 were approved by TCEQ on November 3, 2011, and June 4, 2013, respectively. Luminant did not identify these permits in the application, and has not yet provided copies of the approved permits. Luminant also lists TCEQ Air Quality Permit No. 7084 for the operation of the lignite blending facility; however, this permit was withdrawn on October 31, 2011, well before the submittal of this renewal/ revision application.

The information provided in the application, as supplemented, is adequate to satisfy the requirements of §12.121 to identify those additional permits and licenses necessary to conduct mining and reclamation activities at the Three Oaks Mine, with adoption of the proposed permit provision.

21. All requirements have been met for §§12.122, 12.123, and 12.124 for identifying the location of the public office(s) for public availability of the application, newspaper identification and publication, description of existing environmental resources that could be impacted by the operations, respectively.
22. The application, as supplemented, provides an adequate description of the hydrology and geology of the proposed permit area and adjacent areas as required by §§12.126–12.127 of the Regulations.
 - (a). Hydrological characteristics of geology, groundwater, and surface water have been adequately described. Previously approved Permit No. 48B contains the descriptions of the geology, hydrology, and water quality and quantity for all lands in and around the permit area as prepared by R. W. Harden & Associates, Inc., (RWH). That information remains valid and forms the baseline for Applicant's submittal. The *Description of Hydrology & Geology*, as included in Section .126 of the Application and prepared by Pastor, Behling, & Wheeler, LLC, (PBW), certifies that the information contained in Sections .127 (Geology), .128 (Groundwater), and .129 (Surface Water), as prepared by RWH and supplemented by PBW, satisfies the Regulations. Updated information, prepared by PBW, including water well inventories, core and drilling data and structure maps, was included in the Application as supplemented (SD1).
 - (b). The application as supplemented contains detailed geologic information specific to the proposed renewal/revision area. PBW conducted a geologic investigation to update the baseline geology information for the permit area. PBW provided oversight for the drilling of three continuous cores (CC-12-K3262, CC-12-K3459, and CC-12-K3948, as well as previously drilled continuous cores, as shown on Plate 127-1. Continuous core descriptions and geophysical logs for the 2012 cores are provided in Appendix 127-A of the Application, as supplemented (SD1). Core summary diagrams are provided in Appendix 127-C of the Application. A licensed professional geoscientist certified Sections .126 and .127.
23. No modification or additions to the approved groundwater information contained in Sections .127 and .128 for approved Permit No. 48A are required in this renewal/revision application to comply with the requirements of §12.128 of the Coal Mining Regulations. Section .128 of the Application contains a description of the springs and identification of the respective owners of those springs. No modification or addition was provided or needed regarding the seasonal quality and quantity of groundwater or its usage, or recharge.
24. While baseline surface water hydrology for the permit area is adequately described in the approved Permit No. 48B, Section .129, as prepared by RHW, PBW consolidated certain information from previous submittals, made an update to Plate 129-4 to show additional surface features as reflected on Plate 135-1 (Land Use Map), and has provided updated landowner information corresponding to the additional surface water features (SD1). Additionally Luminant made revisions to Plate 129-3 to reflect the correct hydrological soil group for each sub-basin watershed. PBW signed and sealed the information provided in the Application and SD1.
25. The information included in this Application does not contain updated Section .130, Alternative Water Supply Information, because there are no proposed changes regarding the alternative water supply information that is provided in the approved Permit No. 48B. The previously approved plan is summarized as follows: Alternative water supplies are available from groundwater aquifers and from regional water supply companies. Regional suppliers of potable water to the area that can be contracted to furnish alternate water supplies, if necessary, include the City of Elgin and the Manville, Southwest Milam and Aqua water supply companies. Also, Luminant could provide water produced by the mining operation (from depressurization activities) to affected users. Other aquifers in the region that could serve as alternative water supply sources include the Carrizo and Hooper Formations of the Carrizo-Wilcox aquifer system, and also the Queen City and Sparta Formations to the southeast. In many areas, the Simsboro Formation, while affected by depressurization, will still contain ample

water supplies to meet the regional needs. PBW has consolidated certain information from the previous permit submittals and included the most recent versions of text, tables, appendices, and plates. The application as supplemented (SD1) contains satisfactory information to demonstrate compliance with the requirements of §12.130.

26. In Section .131 the climatological information contained in the Application provides information on area precipitation, wind speed, and direction, average air temperature and pan evaporation rates. The permit application as supplemented contains sufficient information to meet the requirement of §12.131.
27. All required vegetative resource information for the proposed permit area is included in Section .132 of the application, as supplemented (SD1 and SD2), and is sufficient to describe premine vegetation important for wildlife habitat, and sufficient to predict the potential for the re-establishment of vegetation during reclamation. Atkins North America Inc. (Atkins) completed a *Vegetation Baseline Report* (beginning at .132-1) for the purpose of satisfying section .132 of the Regulations and to create a “stand-alone” report that presents all prior data, updated for new data compiled in connection with the Application. Plate 132-1 (application and as supplemented in SD1) provides the vegetation and wildlife habitat of the Three Oaks Mine. The Application was supplemented to address certain outstanding issues, including documentation of additional field surveys conducted by Atkins and by Blanton & Associates, Inc. (Blanton) related to a federally endangered plant species, the Navasota ladies’-tresses (*Spiranthes parksii*). The survey identified no Navasota ladies’-tresses occurrences in the permit area and that it was unlikely that any such species occur within the permit area. The applicant also surveyed for the occurrence of several plant Species of Greatest Conservation Need (SGCN), identifying none. Luminant has agreed to search for these species during the appropriate time of year and in potentially suitable habitat in any future expansion areas of the Three Oaks Mine. (SD2)
28. As required by §12.133 of the Regulations, adequate fish and wildlife resource information is included in the application, as supplemented, with the current status of threatened and endangered species and with information to provide an accounting of premine wetlands and waters of the United States pursuant to Section 404 of the Clean Water Act. The application, as supplemented, contains sufficient information to demonstrate compliance with the requirements of §12.133.
 - (a). Acreages of pre-mine waters of the U.S. and anticipated impacts during the life of the mine, as represented in the USACE Permit No. 1999900331 and the Environmental Impact Statement (EIS) are shown in the table below as provided in SD2.

**WATERS OF THE US AND DIRECT IMPACTS BY TYPE
PER USACE PERMIT AND EIS**

<i>Waters of the US</i>	<i>Permit Area</i> (LF)* (AC)		<i>Disturbance Area</i> (LF) (AC)		<i>Avoidance</i> (LF) (AC)	
Streams	348,422	44.1	198,418	23.6	150,004	20.5
Wetland		8.7		5.3		3.4
Pond		108.7		38.5		70.2
Total	348,422	161.5	198,418	67.4	150,004	94.1

*linear feet

Following boundary revisions, including a revised disturbance boundary, the corrected acreages of waters were made as provided in SD2. The map, revised Figure 1, Jurisdictional *Waters of the U.S.* for Three Oaks Mine was also provided in the errata to SD2. The changes/corrections provided in SD2 are set out below.

**CORRECTED WATERS OF THE US AND DIRECT IMPACTS BY TYPE
FOLLOWING BOUNDARY REVISIONS**

<i>Waters of the US</i>	<i>Permit Area</i>		<i>Disturbance Area</i>		<i>Avoidance</i>	
	<i>(LF)</i>	<i>(AC)</i>	<i>(LF)</i>	<i>(AC)</i>	<i>(LF)</i>	<i>(AC)</i>
Streams	340,767	42.93	178,770	21.07	161,997	21.86
Wetland		8.54		4.74		3.8
Pond		108.48		38.36		70.12
Total	340,767	159.95	178,770	64.17	161,997	95.78

- (b). No state or federally listed threatened or endangered species has been sighted by mine staff since the inception of mine development activity in 2003. (SD1, SD2). Letters to the TPWD and USFWS note this point, and the letters are provided with SD2.
- (c). Appendix 133-D was provided to update the endangered and threatened species information for the Three Oaks Mine, specifically addressing the potential for occurrence of four threatened mollusk species in the permit area and to evaluate the need for a protection plan. (SD3) The Permit Area does not provide habitat for the state-listed species of mussels because the permit area streams are intermittent, the state-listed mussels are found in perennially flowing streams, and there appear to be few or no fish present in the intermittent streams to support the mussels.
29. The information required by §12.134 of the Regulations for soil resources information is included in the renewal/revision application. The information presented includes a map delineating different soils, soil identification, soil description, and present and potential productivity of existing soils. A report by Marston Environmental, Inc. updates information contained in the approved permit, including recalculated frequency distributions and weighted means tables, based on the revised permit boundary. Thirty-five map units consisting of 22 individual soil series and their taxonomic classification. The report includes a map of the permit area soils; map unit legend identifying the soils, acreage, and areal extent; soil interpretation tables; soil descriptions; and present and potential productivity of the native soils. The updated soils information does not substantively modify the soil resources information contained in the approved permit. The information contained in the application, as supplemented, adequately characterizes the soil resources of the permit area and satisfies the soil resource information requirements of §12.134.
30. A description of premine land use was included in the application in accordance with the requirements of §12.135 of the Regulations for the proposed permit area, using historical land-use data, previous studies, and information from the Natural Resources Conservation Service. Plate 135-1-A and 135-1-B, *Land Use Map*, depicting the premine land uses as revised by Luminant shows as follows:

Table 135-1

Land-Use Type	Approved Area (Acres)	Proposed Area (Acres)	Difference (Acres)
Pastureland	6,494.96	6,510.0	15.04
Undeveloped Land	5,771.54	5,795.2	23.66
Grazingland	2,929.02	2,988.9	59.88
Developed Water Resources	177.34	171.0	-6.34
Industrial/Commercial	224.83	149.8	-75.03
Cropland	97.54	97.5	-0.04
Residential	92.39	96.7	4.31
TOTAL	15,787.62	15,809.1	21.48

The approved premine land-use acres of 15,787.62 acres did not fully account for all of the acreage within the permit. The proposed premine land-use accounting of 15,809.1 acres brings the total accounting of acres into near agreement with other permit sections. The application contains satisfactory information to demonstrate compliance with the baseline land-use information requirements of §12.135.

31. Section .136 of the application, as supplemented in SD2 includes a table entitled Rule 12.136-1 Maps: General Requirements that includes the locations of maps within the application containing certain required information. During the review of Supplemental Document No. 2, Staff also found that on the proposed property maps (Plates 116-1, 2 and 3), Luminant no longer depicts BCR 102 (former Tract 434) southwest of BCR 101, nor LCR 304A northwest of BCR 101. Staff notes, nevertheless, that Commission inspectors have indicated that these roads appear to still be open. The information provided by Luminant was adequate to satisfy the requirements. All requirements have been met for the submittal of maps as supplemented in SD2 in accordance with §12.136
32. The application contains a table on pages 137-1 through 3, Rule 12.137, Cross Sections, Maps and Plans, in which Luminant identifies the locations of cross sections, maps, and plans that represent its response to the requirements of §12.137. All referenced plates, figures and tables have been appropriately certified by a licensed professional engineer or geoscientist. Staff notes that, contrary to the footnote in the table on pages 137-1 through 3, only the surface expression (shaft) of the historic Mowatt's Mine has been destroyed via backfilling. As described in the cultural resources information for this mine area in application section .125(2) of the initial (Permit No. 48) application, substantial underground workings likely are present within the permit area. It is Staff's belief that the activities proposed for this renewal term will not affect these workings. The known shaft location (although there are some indications that at least two shafts existed) is approximately 2,200 ft southwest of the 2019-2033 C-Area mine block and approximately 6,200 ft from the closest proposed permit-term (2018) mine block); therefore, no additional information is required at this time to address requirements of §12.149. The information provided is adequate to satisfy the requirements of §12.137.
33. Three Oaks Mine prime-farmland soils information is provided in section .138 of the renewal/revision application, as revised in Supplemental Document No. 1 and 2. In the initial application, Luminant continued to use the tract identifiers used by Alcoa in Permit No. 48 in the text of this section of the renewal/revision application, but not on Plates 138-1 and 138-2. In Supplemental Document No. 1, Luminant appropriately revised page 138-3 to change the tract identifiers in the text such that they are consistent with those on Plates 138-1 and 2.

Also in the initial submittal, Luminant did not depict on Plate 138-1 the two subparcels on "Tract T2" that were identified in the approved permit as having been historically cropped. Luminant has indicated on Errata page 12 of Supplemental Document No. 1 that to be consistent with Luminant's preferred format, it had elected to depict prime farmland within the permit area by soil type without delineating historically cropped areas. In Supplemental Document No. 2, Luminant appropriately revised page 138-3, replacing the indicated 7.26 acres with the correct value of 7.58 acres.

Staff noted in its October 22, 2013, application deficiency letter that it could not recommend a negative determination for the entire permit area, as requested by Luminant, because only portions of prime-farmland soils on Tracts 357 and 231 have received a negative determination. Staff notes, however, that soils within these tracts have either already been reconstructed or have not been disturbed. Luminant revises page 138-4 in Supplemental Document No. 1 and again in Supplemental Document No. 2 to indicate that it has retracted its request for a negative determination for the entire proposed permit area and requests such determination only for those tracts or portions of tracts for which appropriate demonstration has been made. Most tracts containing prime farmland soils within the permit area have already received a negative determination for prime farmland. Staff concurs that a negative determination is justified for all tracts within the permit area except for portions of Tract 357 (0.78 acres) and Tract 231 (7.16 acres).

Since Luminant has identified those areas of prime farmland soils that may be designated as prime farmland in accordance with §12.138, Staff considers that the information contained in the application satisfactorily addresses the prime-farmland investigation requirements of §12.138.

34. Luminant has submitted all required materials to document its proposed operations plan for the proposed permit term, as revised in the application and SD1 through SD2, in accordance with §12.139 of the Regulations.
- (a). As discussed in detail in the renewal/revision application and as supplemented in SD1 and SD2, two draglines will be utilized in the Three Oaks Mine as the primary overburden removal equipment. The mine has been divided into three (A, B, and C) mine areas. Overburden will be removed by the draglines and mobile mining equipment. The seam will be removed and either hauled to the blending facility or to temporary stockpiles. Once the seam has been recovered, interburden will be removed by the draglines or with mobile equipment. Mining and reclamation disturbances will be kept within the mining limits line (MLL) depicted on the life of mine map and the mining operations maps. For dragline mining, the planned pit lengths of primary mine areas range from 500 to 16,500 feet, with widths ranging from 140 to 160 feet. The particular mining methods for different areas are described in selective handling diagrams.
 - (b). Typical diagrams for the handling of spoil material for mid-pit ramps and pit-end ramps is included as well as a description of selective handling of spoil when constructing mid-pit ramps and pit-end ramps. Special handling considerations are followed when leaving gaps in the spoil for mid-pit ramps and end-pit ramps. In these situations, suitable overburden materials are over-stacked on the sides of the gap. When the ramp is reclaimed, the over-stacked material is folded over the ramp.
 - (c). All drainage from mining in the A Area is routed to sedimentation pond SP-1 for treatment prior to leaving the permit area. All disturbed drainage in the B-Area is routed to Sedimentation Ponds SP-1, SP-2 or SP-3, or SP-6. All drainage in C Area is routed through Pond SP-6. (SD3)

- (d). Construction, modification, use, maintenance and eventual removal of dams, embankments and other impoundments will be in accordance with Section 12.347. Temporary sedimentation ponds will be removed when the disturbed area draining to the pond has been restored and the drainage entering the pond meets applicable State and Federal water quality requirements. Other operations are detailed in the application, including a description of the locations and types of sedimentation ponds and other structures in the surface water control plan, description of proposed dewatering activities, locations of lignite stockpiles, description of overburden, interburden, and topsoil handling, methods of identification of suitable overburden material for placement as a topsoil and subsoil substitute, regrading, stabilization of reclaimed areas, structures used in the mining operations, waste handling, mine facilities, and the measures Luminant will use to control dust and other emissions of particulate matter from non-stationary sources. Luminant has adequately provided a narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations to meet the requirements of §12.139(1).

The information provided in the application, as supplemented, is adequate to meet the operation-plan general requirements of §12.139.

- 35. No existing structures as defined by §12.3(63) of the Regulations (structures or facilities for which construction began prior to approval of the State program) will be used to facilitate surface mining and reclamation operations (§12.140, Regulations). Based on the definition of existing structures at §12.3(63), the information provided is sufficient to satisfy the requirements of §12.140 regarding existing structures. No blasting is proposed (§12.141, Regulations; therefore, the requirements of §12.141 are not applicable. Luminant's response is sufficient to satisfy the blasting-plan requirements of §12.141.).
- 36. Regulation §12.132 requires a description of premine vegetation that is sufficient to predict the potential for reestablishing postmine vegetation. Regulation §12.133 requires site-specific information about species and habitats that are protected by State and federal law as threatened or endangered species, as well as habitats of unusually high value such as important streams, wetlands, and riparian areas. Regulation §§12.144 and 12.380 require a description of how the operator will minimize adverse impacts on fish and wildlife and related environmental values to the extent possible using the best technology currently available, and how the operator, where practicable, will enhance fish and wildlife resources. Additional requirements apply to alternative postmine land uses under the criteria of §§12.147 and 12.399. Where agricultural, fish and wildlife habitat, and undeveloped land uses are the planned postmine land uses, or where a permittee plans to plant vegetation for any land use, appropriate vegetation is required. In this renewal/revision application, Luminant provided additional interpretation to previous vegetation mapping by combining aerial imagery in conjunction with soils and topographic maps. This additional analysis results in changes to the acreages of the various vegetation types, primarily affecting the grasslands and upland woody vegetation types, as shown in the table below. This proposed re-analysis intends to refine and improve the accuracy of the depictions of vegetation types included on Plates 132-1-A and 132-1-B.

Vegetation/Habitat Type	Approved Permit No. 48B Area Acres (Percent %)	Proposed Permit Area Acres (Percent %)	Difference Acres
Grassland	6,452.7 (40.8)	6,692.5 (42.3)	+239.8
Upland Woodland	6,357.0 (40.2)	6,121.0 (38.7)	-236.0
Mesquite Grassland	2,159.1 (13.7)	2,159.8 (13.7)	+0.7
Riparian Woodland	661.1 (4.2)	658.1 (4.2)	-3.0
Aquatic Habitat	172.3 (1.1)	170.9 (1.1)	-1.4
Hydric Habitat	6.95 (<0.1)	6.95 (<0.1)	0
TOTAL	15,809.2 (100)	15,809.3 (100)	+0.1

- (a) The Navasota ladies'-tresses (*Spiranthes parksii*) is the only plant species listed as endangered under the authorities of the federal and State fish and wildlife resource agencies that is known to occur in Bastrop County. In 2002, the U.S. Fish and Wildlife Service concurred that habitat for this species was not found in Lee County, the species was not known to occur in Bastrop County, and that if new information became available that could indicate that any of the federally listed species could be present, then USFWS should be recontacted. Since that time, NLT has been found in Bastrop County. In Supplemental Document No. 1, section .132, Appendix D, Luminant provides the results of a November 4 through 11, 2013, survey for the Navasota ladies'-tresses. Appendix D includes an Appendix A, Figures 1 through 3 containing depictions of Navasota ladies'-tresses survey locations. Luminant noted that no Navasota ladies'-tresses were found during the 2013 survey.
- (b) The survey was well presented, the only additional points of clarity to include in future surveys are:
- (1) the report indicated that adequate precipitation occurred during relevant periods of the spring growing season and late summer/fall pre-blooming season. Future surveys should include the documented amounts of precipitation reported at the site or, if not available, at the nearest NOAA weather station and the average normal for the area.
 - (2) A customary part of endangered plant survey protocols is to visually confirm that the nearest known extant populations of the species are in bloom to help focus the survey dates and calibrate surveyor's mental image of the species. Luminant confirmed that blooming conditions were suitable with Dr. Smeins; however, future surveys should also clarify that the nearest known extant populations of the species are in bloom to help confirm the suitability of the survey dates and provide photo documentation in the report of the endangered plant.
- (c) Staff agreed that the survey will support a presence/absence determination; however, as a single survey, it alone cannot justify the determination of absence for this species within the permit area. The species is known to inconsistently bloom on a year to year basis, such that one year many plants may bloom followed by a year or more where only a small percentage, if any, may bloom. Staff has sponsored a proposed permit provision in Section 12.144, *Fish and Wildlife Plan*, requiring Luminant to conduct additional surveys to ensure adequate protections for the species.

- (d). On October 30, 2013, TPWD commented that if suitable habitat for the TPWD species of greatest conservation need (SGCN) is present and found to support SGCN [green beebalm (*Monarda viridissima*), sandhill woollywhite (*Hymenopappus carrizoanus*), Shinner's sunflower (*Helianthus occidentalis* ssp. *plantagineus*), branched gay-feather (*Liatris cymosa*), bristle nailwort (*Paronychia setacea*)], then the habitat is an ecologically sensitive habitat. Improving habitat descriptions for section 3.3 in future permits will ensure that this section of the report is sufficiently detailed to identify whether ecologically sensitive habitats and habitats of unusually high value are present. In response to an application deficiency noted in Staff's initial review letter on October 22, 2013, Luminant revised report section 7.0, *Sensitive and Important Habitat*, in Supplemental Document No. 2 to indicate that it will survey for the five SGCN species during the appropriate time of year and in potentially suitable habitat in any future expansion areas of the Three Oaks Mine. Luminant noted that several of the species are associated with the Carrizo and Catahoula Formations and that the mine is underlain by these formations. This reference to Carrizo and Catahoula Formations for the Three Oaks Mine location is incorrect. The immediate subsurface at the Three Oaks Mine are Calvert Bluff and Simsboro Formation sediments. The Carrizo and Catahoula Formations consist of younger sediments and occur to the southeast of the permit area. Unless and until evidence to the contrary is discovered, Staff believes that no surveys would be warranted for these three species (Branched gay-feather, green beebalm, and sandhill woollywhite).
- (e). In contrast, the Bristle nailwort (blooming throughout the growing season) and Shinner's sunflower (blooming primarily July through Sept) do not appear to be closely associated with any geologic formation(s), but do occur in post oak woodland habitat. Post oak woodlands are one of the vegetation types described by Luminant for permit area. Staff agrees with Luminant that habitat is present for these two species and that surveys for these two species would be warranted. Luminant indicates that it will conduct surveys for the species in future permit expansions; however, no scientific basis is provided to merit delaying survey efforts to the next permit expansion because potential habitat is present in the proposed five-year term area for these two species. Staff sponsored **Permit Provision No. 2**, as follows:

Within 60 days of permit issuance, Luminant shall submit a plan for review and approval by the SMRD Director to survey for the Bristle nailwort and Shinner's sunflower. The survey shall be conducted during the next blooming period appropriate for each plant species during a non-drought year in all currently undisturbed areas that Luminant proposes to disturb in 2015 or later during the permit term.

The information contained in the application, as supplemented, is sufficient to predict the potential for reestablishing vegetation at the Three Oaks Mine, and is adequate to meet the requirements of §12.132(a).

37. The permit application contained information on pages 142-4 through 142-7 of section .142 to identify the maps, plans and cross sections submitted to satisfy the requirements of this section of the Regulations. In response to an application deficiency noted by Staff in its October 22, 2013, letter (in Section 12.144), regarding the need for a map depicting fish and wildlife protection and enhancement features [§12.142(l)], Luminant indicated that adding a fish and wildlife enhancement map to the application would not improve the on-the-ground results for Luminant's wildlife reclamation program. Luminant also provided a concise summary of the reclamation activities that restore and enhance fish and wildlife habitat. High-quality map information is necessary to help Staff evaluate the applicants' ability to comply with all of the performance standards in §12.144. Staff withdrew the noted application deficiency and instead sponsors proposed **Permit Provision No. 3**, as follows:

Within 60 days of permit issuance, Luminant shall submit a revision application for administrative review and approval by the SMRD Director, containing a map depicting planned fish and wildlife enhancement features within the permit area, including proposed temporary wildlife protection and enhancements and permanent reclamation protection and enhancement areas (such as the on-site wetland mitigation area). The map shall be updated annually and provided concurrently with the annually submitted postmine land-use management plan maps (application, page 147-4), unless no changes are proposed or necessary and Luminant so indicates in the submittal.

With adoption of the proposed permit provision described above, the information provided is adequate to satisfy the operation map and plan requirements of §12.142.

38. Luminant will meet requirements for air pollution control. No air quality monitoring plan must be filed in that the permit area is not located west of the 100th meridian west longitude and no other factors exist which result in the need for monitoring. The plan for fugitive dust control practices as required by §§12.143(b)(2) and .389 of the Regulations will include use of water trucks and application of asphalt emulsions, among other things.
39. The renewal/revision application, as supplemented in SD1 and SD2, includes a protection and enhancement plan in as set forth in §12.144 of the Regulations to minimize disturbances and adverse effects on fish and wildlife and related environmental values during the proposed operations and reclamation.
 - (a). The renewal/revision application contains a fish and wildlife plan prepared by Atkins that will result in fish and wildlife enhancements, including development of fish and wildlife habitat, pond creation and pond enhancements to increase habitat value, and creation and/or restoration of various aquatic, stream, and wetland habitat.
 - (b). A copy of the final mitigation plan approved by USACE was provided in SD1.
 - (c). TPWD filed comments on October 30, 2013 and May 15, 2014.
 - (d). Luminant revised this section in Supplemental Document Nos. 1 and 2 to provide more detail regarding the protective measures it takes to safeguard fish and wildlife. In section 2.1.1, Impact Analysis and Mitigation, Luminant clarified the steps it takes during baseline studies and during ongoing operations to protect migratory bird species, particularly raptors and colonial nesting water birds. Luminant will incorporate natural stream channel and pool design principals when slope, soils, and topography allow. Luminant added two new subsections to describe its efforts to control invasive non-native species damage (SD1) and water quality controls that minimize and mitigate impacts to aquatic species (SD2).
 - (e). Luminant conducted a Navasota ladies'-tresses survey in 2013 and found habitat and congeners of this species, but no Navasota ladies'-tresses were detected. In Supplemental Document No. 2 on Errata page 22, Luminant responded to an application deficiency regarding the need to conduct additional surveys, but did not adequately address the issue. Instead, Luminant provided in the Errata a concise summary of the 2013 survey findings, the coordination with USFWS that was conducted in the 2013 survey, and a summary of coordination efforts conducted in 2002. The 2002 consultation is outdated because in 2004 Navasota ladies'-tresses were discovered in Bastrop and Fayette counties, which expanded the known range of this species. Luminant's survey results indicate that much of the potential habitat was found to be degraded during the field survey. Luminant did not label on the maps or photographs the few areas that were found to contain suitable habitat. Nonetheless, presuming that the few habitat areas that were found suitable were those that overlap with the

locations of the other *Spiranthes* species that Luminant mapped, habitat for the Navasota ladies'-tresses is present within the permit area in both Bastrop and Lee counties. For consistency with the process used on other mine sites in Texas and with other protected plants that bloom inconsistently, until a specific protocol is developed or approved by the USFWS, Luminant should conduct additional surveys in all undisturbed areas meeting the habitat characteristics and conditions for the Navasota ladies'-tresses. Luminant should also identify the areas that were found to provide suitable habitat on a map included in the survey results, and update the map to include the suitable habitat newly identified or confirmed during each survey year. Based on the issues described in the foregoing, Staff sponsored proposed **Permit Provision No. 4**, as follows:

Within 30 days of permit issuance, Luminant shall submit a revision application for administrative review and approval by the SMRD Director, to modify Section 2.1.2 of the fish and wildlife plan in application section .144 to include a plan for additional surveys for the endangered Navasota ladies'-tresses to be conducted during the first two years that provide optimal weather conditions for the species in all undisturbed areas found to have suitable potential habitat under appropriate field conditions. The revision should incorporate recommended corrections regarding missing text associated with pages 8a, 8b, and 13b.

- (f). Luminant indicates that it does not propose to impact any forested wetland acres; however, Luminant has impacted a small forested wetland in the northwest portion of A Area, has indirectly impacted another small forested wetland in the same area, and on the life-of-mine map, Plate 125(a)-1, Luminant indicates that it will impact forested wetlands in Area C in a future permit term (2019 through 2033). These impacts and planned impacts are not consistent with the information provided for authorized wetland impacts under its USACE permit. With adoption of the proposed permit provision described above, the fish and wildlife protection plan contained in the application, as supplemented, is satisfactory to address the requirements of §12.144.
40. The application, as revised and supplemented, contains a reclamation plan for the permit area that includes all required information in accordance with §12.145 of the Regulations, including a detailed reclamation timetable, a detailed estimate of the costs of reclamation, a plan showing the final surface configuration of the permit area, a selective handling plan for reclamation of the top four feet of the surface, and a plan for revegetation.
- (a). A detailed timetable for the completion of each major step remaining in the reclamation plan for the permit area is included in the application, as supplemented in SD1 and SD2, in accordance with §12.145(b)(1). This timetable is contained on page 145-10 and includes the following:
 - Coal removal – The timeline for reclamation is initiated by final coal removal from the pit.
 - Backfilling and grading – Following coal removal, backfilling and grading will be completed within the timeframe and distances described in Section .139 of the application.
 - Temporary vegetation – Will be planted when seasonal conditions prevent planting permanent cover. Temporary cover is typically planted from September through November.
 - Permanent vegetation – Warm season grasses are typically planted during March through June. Trees and shrubs are typically planted from January through April.
 - Extended responsibility period - Will be initiated when augmentation of the permanent vegetation has ceased and management units have been established.

Phase I bond release - application for Phase I bond release will be submitted within one year of the initiation of the ERP, with the exception of approved temporary structures that are needed for drainage control and facilities that support mine operations.

Phase II and Phase III bond release – A combined Phase II and Phase III bond-release application will be submitted within one year of the end of the ERP.

- (b). A detailed estimate of the cost of reclamation required to be covered by the performance bond is contained in the application, as supplemented in SD2, in accordance with §12.145(b)(2).
- (1). Luminant provided a revised reclamation cost estimate in Appendix H of SD2. The information in Luminant's reclamation cost estimate is shown below:

LUMINANT'S SUMMARY OF ESTIMATED RECLAMATION COSTS

	Acres*	Rate	Cost
Mined Rate	4,041.6	\$10,273.1	\$41,519,760.96
Disturbed Rate	<u>11,244.8</u>	\$2,205.0	<u>\$24,794,784.00</u>
	15,286.4		\$66,314,544.96
10% Administrative Fee			<u>\$6,631,454.50</u>
Total Area Bonding Cost			\$72,945,999.46

* See Plates 142-1, 142-2, and 142-3 and Table 142-1 for bond category delineations

- (c) Staff's revised reclamation cost analysis is included in Appendix II of Staff's TA. The proposed bond maps, Plates 142-1 (dated July 2014), 142-2 (dated July 2014) and 142-3 (dated August 2014), provided in Supplemental Document No. 2, were used to prepare this cost estimate. Staff's reclamation cost estimate is summarized as follows:

STAFF'S SUMMARY OF ESTIMATED RECLAMATION COSTS

Disturbance Category ¹	Cost per Acre	Acres ²	Estimated Cost
Mined Rate	\$8,724	4,042	\$35,258,578
Disturbed Rate	\$2,203	11,245	\$24,772,357
		SUBTOTAL	\$60,030,935
	ADMINISTRATIVE COST (10%)		\$6,003,094
	TOTAL RECOMMENDED RECLAMATION BOND		\$66,034,029

¹ Mined Areas: Includes any area where spoil is deposited, the active pit, and any highwall reduction areas.

Disturbed Areas: Includes reclamation activities (such as clearing and grubbing, topsoil removal, etc.) associated with construction of sediment ponds, diversions, access roads, haul roads, and facilities where the area is not mined.

Ancillary Areas: Includes disturbance areas on which soil preparation and seeding are the only required reclamation activity.

² All acreage figures were taken from revised Plates 142-1 (dated July 2014), 142-2 (dated July 2014) and 142-3 (dated August 2014), Bond Map, provided in Supplemental Document No. 2 of the renewal/revision application.

- (d). Staff's reclamation cost estimate of \$66,034,029 is less than Luminant's revised estimate of \$72,945,999. The difference between Staff's and Luminant cost estimate is based mostly on dozer push distances and unit costs. Staff's reclamation cost estimate increased over its previous estimate (\$59,552,108 in Revision No. 26) primarily because Staff is now using the 30% buffer volume for future structures to be consistent with Luminant's reclamation cost estimate. Luminant's estimate of \$72,945,999 is recommended to be used as the minimum required bond amount. Luminant's current approved blanket collateral bond instrument in the amount of \$1,100,000,000 (approved by Order dated June 17, 2014), is sufficient to cover the cost of reclamation of all of the Luminant mines.
- (e). The application, as supplemented addresses the requirements of §12.145(b)(3). It contains a Backfilling and Grading Plan that describes Luminant's plan for backfilling and grading. Luminant requests additional time for certain backfilling and grading activities as detailed in Table 139(T)-4. The application includes the postmine contour maps, Plates 139-2-1, 139-2-2 and 139-2-3 in SD1, and the postmine slope maps, Plates 139-3-1, 139-3-2 and 139-3-3. Final slope area calculations are found in Table 137-1.

- (1). Luminant provides a proposed reclamation timetable in Figure 145-1 on page 145-10.

The timetable indicates the following:

- Reclamation timing begins upon final coal removal from the pit;
- Rough backfilling and grading will be completed as described above; and
- Temporary and permanent planting will be completed two years from completion of rough backfilling and grading.

- (2) Luminant proposes temporary sediment control measures that include drop structures of constructed of pipe, concrete, rock and/or other material, to be applied at the company's discretion. Structures such as these must have detailed design plans submitted for approval; therefore, The Examiner proposes **Permit Provision No. 5**, as follows:

Detailed design plans for any drop structure constructed of pipe, concrete, rock and/or other like material used for temporary sediment control shall be submitted as a revision for review. Approval must be obtained from the SMRD Director prior to construction. Appropriate and common methods of immediate erosion control for small areas to ensure that protective measures may be employed as soon as possible to prevent and control erosion as otherwise allowed by the Regulations are not to be considered drop structures requiring detailed design plans.

Luminant proposes additional time and distance to complete rough backfilling and grading operations. With adoption of the proposed permit provision described above, the information provided is satisfactory to meet the requirements of §12.145(b)(3) and the applicable portions of §12.139.

- (f). Luminant has included information to meet the requirement of §12.145(b)(4) for a plan for the removal, storage, and redistribution of topsoil, subsoil, and other material that will meet the requirements of §§12.334 - .338 of the Regulations as required by §12.145(b)(4). Luminant has provided a soil-handling plan that is acceptable as a method to prevent the presence of acid- and/or toxic-forming materials in the top four feet of reclaimed soils with the permit provisions. In SD1 and SD2, Luminant provided an original and revised *Evaluation of Overburden Suitability for Use as Topsoil Substitute and for Use in the Top Four Feet of Regraded Spoil*. Approval of the use of topsoil substitute material is based on the determination that the resulting soil medium is equal to or more suitable for sustaining revegetation than is the available native topsoil and that the substitute is the best available to support revegetation.
- (1). Luminant indicates (p.145-A-9) that the information presented in revised Appendix 145-A, as supplemented in SD1 and SD2, demonstrates that the suitable replacement material is a viable option for use within the top four feet of leveled minesoil. Key findings of Luminant's study are: Statistical analyses of the key parameters of concern—pH, ABA, sand, and clay—indicate that the oxidized overburden meets RCT suitability criteria for these parameters. The reduced overburden is conservatively assumed to be unsuitable. Other potential parameters of concern, such as electrical conductivity, sodium adsorption ratio, and trace elements are within acceptable limits for use as a plant growth medium with only minor exceptions. The pH, ABA, sand, and clay values of the suitable overburden material are generally as good as or better than the same parameters for native soils. Average values for these parameters indicate that use of the suitable overburden to create the upper four feet of post-mine soils will be an improvement over native soils. The data show that the oxidized overburden will yield postmine soils that are at least as good as native soils in this area. Using mixed, selectively-handled overburden as a native soil substitute will result in the advantageous replacement of droughty topsoil layers and claypan subsoil layers with a more homogenous, moderately-textured soil that results from mixing the selected overburden material during the mining and reclamation process.
- (2). Mobile/auxiliary equipment will be used for placement of the suitable material on previously leveled areas in all areas.
- (g). As set out in §12.145(b)(5), the application, as supplemented, includes a plan for revegetation as required by §§12.390–.393 and 12.395 of the Regulations. Luminant proposes a plan for revegetation in the application addressing the elements contained in §12.145(b)(5)(A)–(F). These include, as set out below: (1) a schedule for revegetation, species and amounts per acre of seeds and seedlings to be used, and methods to be used in planting and seeding, mulching techniques, irrigation and pest and disease control, (2) measures to be used to determine the success of revegetation, and (3) a soil-testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation.
- (1). The schedule for revegetation (Figure 145-1) includes Luminant's plan to temporary and permanent vegetation, including warm season grasses, trees and shrubs. Appendix 145-C (as supplemented in SD1) contains lists of grasses, forbs, legumes and asters, including planting rates and dates. Luminant proposes to reclaim disturbed areas to postmine pastureland use by primarily planting forage grasses for livestock and/or for hay production, including Bermuda grass. Annual species, such as wheat, rye, oats, sorghum, and millet will be used as needed for temporary vegetative cover when immediate establishment of permanent vegetation is impractical. Luminant describes planting and seeding methods on page 145-17, and mulching techniques on pages 145-18 and 145-19. Luminant indicates that it does

not anticipate the need to irrigate beyond the amount necessary to extend the season to initially establish vegetation. Luminant will adhere to the Texas Pesticide Control Law and Texas Herbicide Regulations when chemically suppressing or killing pests that are in competition with ground cover.

- (2). To determine the success of revegetation, Luminant will follow standards set out in the Commission's *Procedures and Standards for Determining Revegetation Success on Surface-Mined Lands in Texas* (April 1999). For pastureland, ground cover will meet at least 90% of the 95% technical standard for sod-forming grasses and the 90% technical standard for bunch grasses. Additionally for fish and wildlife habitat ground cover will meet at least 90% of the 78% technical standard. Luminant proposes to count as ground cover the permit-approved revegetation species (as shown in Table 145-3) and up to 25 percent volunteer (desirable invader) species. Reclaimed pastureland productivity will equal or exceed 90% of the technical standard developed by the NRCS that is contained in Appendix 145-D. Productivity will be measured through a combination of hay-harvest records, field clippings of standing forage and/or grazing-use records.
- (3). Luminant includes a soil-testing plan in the application for evaluation of the results of soil handling and reclamation procedures related to revegetation. Appropriate select material placement and soil testing, in accordance with the Soil Testing Plan included as Appendix II to this Order (taken from the TA, Appendix VII), will ensure that the reclamation of the top four feet of reclaimed soils results in the required soil medium. The Commission approves the postmine soil performance standards as set out in Appendix II to this Order.
- (4). In its reviews of both the initial application and Supplemental Document No. 1, Staff noted Application Deficiency No. 145(b)(5)(B)-1 in which it expressed concerns regarding the limited number of species listed in the proposed planting-rate table--specifically that the species proposed were significantly less diverse than the premine, a condition that is less than optimal for fish and wildlife. Although Luminant expressed its belief that the species proposed for planting were better for livestock and fish and wildlife than those in the premine condition, and that its history of obtaining bond release is sufficient to validate the success of the planting list proposed in Appendix 145-C, Staff continues to hold these concerns because the list in Appendix 145-C does not contain a sufficiently diverse list of species to support a diverse postmine fish and wildlife community. Increased diversity of species within fish and wildlife habitat is directly linked to improved stability of habitats. In Supplemental Document No. 2, Luminant notes that Appendix 145-C contains the approved list for pasture, whereas Appendix 144-D contains the approved list for fish and wildlife species. This response does not address the requirement of §12.145(b)(5)(B) for fish-and-wildlife habitat land-use vegetation planting rates. In Supplemental Document No. 1, section 145(b)(5)(B), page 145-17, Luminant indicates that the seeding rates are specified in Appendix 145-C; however, it does not provide in this list the seeding rates except for pastureland. Thus, Staff infers that Luminant intended Appendix 145-C to also provide representative rates for fish and wildlife habitat plant species. The application still lacks a satisfactory seeding-rate/planting-rate table for fish and wildlife habitat. This list would not need to be inclusive of all species listed in Appendix 144-D; however, Luminant should identify rates for several species listed in Appendix 144-D that are commercially available. In Appendix 144-D, Luminant lists species that it proposes to plant but does not include the rates and seasons for planting. Therefore, Staff withdrew Application Deficiency No. 145(b)(5)(B)-1 and instead sponsored proposed **Permit Provision No. 6**, as follows:

Luminant shall submit a revision application, within 30 days of permit issuance, for administrative review and approval by the SMRD Director, to provide a table containing the proposed seeding or planting rates and the planting seasons for a representative list of plant species from Appendix 144-D that Luminant will use for fish and wildlife habitat reclamation. Luminant shall use the rates for native plant species contained in the list in approved Permit No. 48B, Supplemental Document No. 3, Volume 2, Table .145-3, for the reclamation to fish and wildlife habitat until the revised list is submitted and approved.

With adoption of the proposed permit provision described above, Luminant's application, as supplemented, meets the requirements of §12.145(b)(A) through (F).

- (h). Measures are included to maximize the use and conservation of the coal resource as required in §12.356 in accordance with §12.145(b)(6). Luminant will conduct surface mining so that the best technology currently available is used to minimize future re-disturbance and to recover all economically mineable seams.
- (i). The application, as supplemented, includes a plan to ensure that all debris is covered or adequately disposed of, and that all acid-forming and toxic-forming materials and other materials required to be covered are covered with a minimum of four feet of non-toxic and non-acid-forming materials in accordance with §12.145(b)(7).
- (j). As required by §12.145(b)(8), Luminant will seal all bore holes, abandoned water wells, monitoring wells, dewatering wells, and oil and gas wells in accordance with the following, as applicable: Coal Exploration Regulations, §§12.331–.333; 16 TEX. ADMIN. CODE Part 4, § 76.1004, *et seq.*; 16 TEX. ADMIN. CODE Part 1, § 3.14 (Tex. Dep't of Licensing and Regulations) (as approved by the Commission). The plan, as supplemented, is sufficient and complies with §§12.331–.333 of the Regulations.
- (k). Luminant has included in the application, as supplemented (SD 3, p. 145-34), its plan to comply with the Clean Air Act and other applicable air laws, regulations and health and safety standards. Compliance is to be accomplished by means of appropriate dust suppression, burning techniques, and other applicable emission controls subject to approval by the TCEQ. Luminant's compliance with the Clean Water Act and other applicable water-quality laws, regulations and health and safety standards will be ensured by construction of sediment-control structures, systematic water-discharge monitoring and reporting approved by the Commission, its Section 404 permit, and its Texas Pollutant Discharge Elimination system wastewater discharge permit. The information provided is sufficient to indicate that Luminant will comply with the Clean Air Act (42 U.S.C. § 7401 *et seq.*) and the Clean Water Act (33 U.S.C. §1251 *et seq.*) Application section .121 contains a list of permits under which Luminant will operate in accordance with applicable water-quality laws and regulations and health and safety standards. Luminant's application, as supplemented, meets the requirements of §12.145(b)(9).

41. The existing permit has three permit provisions. These three provisions (existing Permit Provisions Nos. 1-3) have been deleted. Staff recommends that these three are no longer needed in that the issues addressed by the provisions have been addressed during the existing permit term or have been obviated by ongoing operations and required filings. Staff does recommend nine new permit provisions (Staff recommended Permit Provisions Nos. 4-12 in its Appendix V to the TA). These are contained in Appendix I to this Order and have been renumbered as Permit Provisions Nos. 1-9. Five of these permit provisions (new Permit Provisions Nos. 1, 2, 3, 4, 6, and 12) relate to the permit's fish and wildlife plan or to fish and wildlife requirements or related requirements for the permit. All provisions adopted for Appendix I are needed for coordination with the Texas Parks and Wildlife Department, for clarification in compliance with the Regulations, or are adopted as consistent with the requirements of the Regulations.
- (a). New Permit Provision No. 1 provides that If TPWD determines that an aquatic life or stream-bed protection permit is required, Luminant shall submit a revision application for administrative review and approval by the SMRD Director to update the information required in §12.121 and amend its fish and wildlife protection plan in section .144 to incorporate the aquatic relocation and protection plan developed for the TPWD permit. Because TPWD has commented regarding the need for determinations on the applicability of aquatic-life protection permits necessary for disturbance of aquatic life and disturbance of State-owned streambeds (letters dated October 30, 2013 and May 15, 2014), Luminant is in the process of coordinating a site visit with TPWD Kills and Spills Team (KAST) program to determine whether a permit is required for an aquatic-life relocation or related permit. New contacts have been identified for the KAST program and for the Inland Fisheries program. Staff recommends the permit provision to accommodate coordination with the TPWD. This permit provision is adopted as Permit Provision No. 1 as set out in Appendix I to this Order.
- (b). New permit Provision No. 2 is adopted to address a comment made by TPWD that if suitable habitat for TPWD species of greatest conservation need (SGCN) is present and found to support the species, then the habitat is an ecologically sensitive habitat. Such habitats and habitats of unusually high value must be identified within the permit area. Three species noted by TPWD are likely not present within the permit area; however, Shinner's sunflower (*Helianthus occidentalis* ssp. *Plantagineus*) and the bristle nailwort (*Paronychia setacea*) occur in the post oak woodland that is contained within portions of the permit area. Although Luminant revised its report in Section 7.0, Sensitive and Important Habitat, in Supplemental Document No. 2 to indicate that it will survey for the five SGCN species during the appropriate time of year and in potentially suitable habitat in any future expansion areas of the Three Oaks Mine (the three species above are not needed for this permit term), Staff has noted that for the permit term requested, there is habitat, post oak woodland, that must be surveyed for the Shinner's sunflower and the bristle nailwort. Staff has therefore recommended that within 60 days of permit issuance, Luminant shall submit a plan for review and approval by the SMRD Director to survey for the Bristle nailwort and Shinner's sunflower. The survey shall be conducted during the next blooming period appropriate for each plant species during a non-drought year in all currently undisturbed areas that Luminant proposes to disturb in 2015 or later during the permit term. This permit provision is adopted as Permit Provision No. 2 in Appendix I to this Order.

- (c). Staff had noted a deficiency in the application that a map depicting planned fish and wildlife enhancement features within the permit area had not been provided. Luminant had provided a concise summary of the reclamation activities that restore and enhance fish and wildlife habitat. Luminant indicated that adding a fish and wildlife enhancement map to the application would not improve the on-the-ground results for Luminant's wildlife reclamation program. Staff indicated that high-quality map information is necessary to help Staff evaluate the applicants' ability to comply with all of the performance standards in §12.144. Staff withdrew the application deficiency and instead sponsors a proposed permit provision (Permit Provision No. 3 in Appendix I to this Order). This permit provision is adopted as supportive of the fish and wildlife plan as follows:

Within 60 days of permit issuance, Luminant shall submit a revision application for administrative review and approval by the SMRD Director, containing a map depicting planned fish and wildlife enhancement features within the permit area, including proposed temporary wildlife protection and enhancements and permanent reclamation protection and enhancement areas (such as the on-site wetland mitigation area). The map shall be updated annually and provided concurrently with the annually submitted postmine land-use management plan maps (application, page .147-4), unless no changes are proposed or necessary and Luminant so indicates in the submittal.

- (d). Staff recommends that a permit provision be adopted requiring the submittal of a revision application for administrative review and approval by the SMRD Director that would modify Section 2.1.2 of the fish and wildlife plan in application section .144 to include a plan for additional surveys for the endangered Navasota Ladies' Tresses (orchid) to be conducted during the first two years that provide optimal weather conditions for the species in all undisturbed areas found to have suitable potential habitat under appropriate field conditions. The revision would incorporate recommended corrections regarding missing text associated with pages 8a, 8b, and 13b of the section. Staff recommended that the application be submitted within 30 days of approval of the application. Navasota Ladies' Tresses plants have been located within Bastrop County. Although Luminant did submit results of a survey during November 4 – 11, 2013 that noted no specimens found during the survey, Staff analysis indicated that amounts of precipitation were not documented for the site or for the nearest National Oceanic and Atmospheric Administration (NOAA) weather station or the average normal for the area and also that the survey did not include information whether the nearest known extant populations of the species were in bloom with photographs to help confirm the suitability of the survey dates. The species is known to inconsistently bloom on a year to year basis, such that one year many plants may bloom followed by a year or more where only a small percentage, if any, may bloom. In order to have a survey that will adequately represent absence from the permit area, Staff recommends Permit Provision No. 4 as set out in Appendix I to this Order. This provision will serve to ensure the inclusion of a complete survey sufficient to make a determination whether the plants are present within the permit area.
- (e). Luminant proposes temporary sediment control measures that include drop structures of constructed of pipe, concrete, rock and/or other material, to be applied at the company's discretion. Staff review indicates that structures such as these must have detailed design plans submitted for approval. Staff recommends a proposed permit provision as follows: "Detailed design plans for any drop structure used for temporary sediment control shall be submitted as a revision for review. Approval must be obtained from the SMRD Director prior to construction." In order that Luminant may continue to use certain allowable practices without submitting detailed design plans, the examiner recommends the addition of limiting language in the permit provision to clarify that appropriate and common methods of immediate erosion control for small areas to ensure that protective measures may be employed as soon as

possible to prevent and control erosion as otherwise allowed by the Regulations are not to be considered drop structures requiring detailed design plans. The examiner has added the language included in the application and the word “like” as a modifier to “other material” in the recommended permit provision to clarify the provision. Permit Provision No. 5 in Appendix I to this Order is adopted as follows: “Detailed design plans for any drop structure constructed of pipe, concrete, rock and/or other like material used for temporary sediment control shall be submitted as a revision for review. Approval must be obtained from the SMRD Director prior to construction. Appropriate and common methods of immediate erosion control for small areas to ensure that protective measures may be employed as soon as possible to prevent and control erosion as otherwise allowed by the Regulations are not to be considered drop structures requiring detailed design plans.”

- (f). The application, as supplemented, lacks a satisfactory seeding-rate/planting-rate table for fish and wildlife habitat. In order to complete the reclamation plan for fish and wildlife habitat, the following provision, recommended by Staff, is approved as Permit Provision No. 6:

Luminant shall submit a revision application, within 30 days of permit issuance, for administrative review and approval by the SMRD Director, to provide a table containing the proposed seeding or planting rates and the planting seasons for a representative list of plant species from Appendix 144-D that Luminant will use for fish and wildlife habitat reclamation. Luminant shall use the rates for native plant species contained in the list in approved Permit No. 48B, Supplemental Document No. 3, Volume 2, Table .145-3, for the reclamation to fish and wildlife habitat until the revised list is submitted and approved.

- (g). Luminant has not provided a correct depiction of postmine land use, leased tracts, and non-right-of-entry tracts. Staff and landowners must be provided a way to readily identify the locations of these tracts as they occur in relation to the postmine land-use plan to ensure that postmine land uses for non-right-of-entry tracts are premine land uses. Staff recommends a permit provision to require Luminant to provide a correct depiction of postmine land uses, leased tracts, and non-right-of-entry tracts. Permit Provision No. 7 is adopted as follows to ensure that the requirements for right-of-entry and postmine land uses are met:

Luminant shall submit a revision within 60 days of permit issuance, for administrative review and approval by the SMRD Director, to update Plates 147-1 through 147-3, on which it will:

- a) superimpose the leased property-tract boundaries over the proposed postmine land uses, in a manner that clearly depicts the proposed postmine land uses on a tract-by-tract basis; and
 - b) remove all tracts from within the disturbance boundary for which Luminant does not have right-of-entry.
- (h). Because of incomplete and/or inconsistent depictions of proposed postmine land use for Tract 146 in the application and supplements, prior to beginning operations to disturb this tract, Luminant must provide revised or clarifying information. Staff proposes a permit provision as follows: “Before beginning any operations that would disturb or cause disturbance to Tract 146, Luminant shall provide, for administrative review and approval by the SMRD Director, a copy of an updated landowner consultation for that tract. The consultation must be consistent with the approved postmine land-use map. If not consistent with the approved postmine land-use map, Luminant shall, at the same time, submit a proposed revised postmine land-use map consistent with the consultation, as a revision for review and approval by the SMRD Director.” This provision is approved and is adopted as Permit Provision No. 8 in Appendix I to this Order.

- (i). Permit Provision No. 9 in Appendix I is approved to provide, “Luminant shall manage mesquite (*Prosopis glandulosa*) on Tracts 114, 115 and 116 to ensure that it is eradicated on these tracts as a weedy species.” The plant is not an approved species for the tracts, and, although Luminant has indicated that it will not plant this species on the tracts, this provision is consistent with the postmine land use plan.
42. A depiction of the proposed postmine land uses is included on Plates 147-1, 147-2 and 147-3. A summary is included in Table 147-1 of the application, as supplemented in SD1 and SD2, indicating that Luminant will reclaim 7,285 acres of disturbed and mined lands as follows: pastureland, 56% of disturbed and mined lands (4,112 acres); fish and wildlife habitat, 38% of disturbed and mined lands (2,765 acres); cropland, less than 1% of disturbed and mined lands (1 acre); industrial/commercial, less than 1% of disturbed and mined lands (22 acres); developed water resources, 5% of disturbed and mined lands (341 acres); grazingland, less than 1% of disturbed and mined lands (12 acres); and undeveloped, less than 1% of disturbed and mined lands (32 acres). In the application, as supplemented, Luminant describes the proposed postmine land uses, the plan for reclamation, a timetable, and information regarding bonding for performance.
- (a) In Supplemental Document No. 1, Luminant provides replacement pages 147-1, 147-2, and 147-8. In Supplemental Document No. 2, Luminant provides replacement page for 147-3 through 7, including revised Table 147-1, *Postmine Land Uses Three Oaks Mine, Permit 48B Renewal Supplemental Document No. 1*, Table 147-2, *Pre-Mine Land Use on Leased Tracts*, and Plates 147-1 through 147-3. Luminant proposes to increase the acreage to be disturbed and reclaimed by the following extents.

Table 147-1 Land-Uses	Pre-Permit Term and Disturbance in Support of Mining, Acres (%)	Proposed Permit-Term Mining Disturbance, Acres (%)	Composite, Acres (%)
Pastureland	3,628 (60)	484 (38)	4,112 (56)
Fish and Wildlife Habitat	1,994 (33)	771 (60)	2,765 (38)
Developed Water Resources	316 (5)	25 (2)	341 (5)
Industrial/Commercial	22 (<1)	0 (0)	22 (<1)
Undeveloped	32 (1)	0 (0)	32 (<1)
Grazing	12 (<1)	0 (0)	12 (<1)
Cropland	1 (<1)	0 (0)	1 (<1)
Total	6,005 (100)	1,280 (100)	7,285 (100)

In Supplemental Document No. 2, Table 147-2, Luminant identifies the following leased tracts that will be reclaimed to their premine land-use categories.

Tract Number	Undeveloped	Water	Pasture	Grazing	Industrial/ Commercial
271	1.72	0.10	3.86		4.87
74	30.30			12.50	0.06

- (b) Based on a comparison between postmine land-use information in Revision No. 19, approved administratively on August 27, 2013, and Supplemental Document No. 2, Luminant proposes a revised framework for presenting the cumulative approved disturbance acres for this mine. Although Luminant indicates in its Table 147-1 that it is increasing the total acreage to be affected during the permit term, the 7,285 acres of postmine land use were approved administratively in Revision No. 19. The 7,285 acres of postmine land use are approved with the distribution between land uses shown in the table below under *Approved Postmine Land Use*. Luminant proposes no additional total disturbance acres than are currently approved, but proposes to change the proportion of acres in each land-use category, as follows.

Land-Use Category	Premine, Acres (%)	Approved Postmine Land Use, Acres (%)	Proposed Postmine Land Use, Acres (%)	Difference, Acres
Pastureland	6,510.0 (41.2)	6,394 (88)	4,122 (56)	-2,282
Fish and Wildlife Habitat	0 (0)	10 (<1)	2,765 (38)	+2,755
Developed Water Resources	171.0 (1.1)	863 (12)	341 (5)	-522
Industrial/Commercial	149.8 (0.9)	17 (<1)	22 (<1)	+5
Undeveloped	5,795.2 (36.7)	0 (0)	32 (<1)	+32
Grazing	2,998.9 (18.9)	0 (0)	12 (<1)	+12
Cropland	97.5 (0.6)	1 (<1)	1 (<1)	0
Residential	96.7 (0.6)	0 (0)	0 (0)	0
Total	15,809.1	7,285 (100)	7,285 (100)	0

- (c) The approved postmine land-use plan includes a fish and wildlife enhancement map (Plate 147-2) on which Luminant superimposes fish and wildlife enhancement areas over pastureland land use, but only as enhancements and not as an alternative postmine land use. In this application, Luminant proposes a 2,755-acre increase in fish and wildlife habitat land use, which acknowledges the different reclamation standards needed to appropriately develop a land use suitable for fish and wildlife. Luminant's changes demonstrate a commitment to improving the diversity in its reclamation plan. The largest decrease will be in pastureland land-use acreage.
- (d) In the supplemented renewal/revision application, Luminant proposes alternative postmine land-use changes for 94 properties within the disturbance boundary. Except for the reclamation of two tracts as noted above, Luminant proposes (Supplemental Document No. 2) to modify the alternative postmine land uses on all remaining tracts that are or will be disturbed by mining-related activities.
- (e) Properties affected by the changes include those owned by Sandow, Alcoa, Bastrop and Lee Counties, and two private landowners. Luminant is not identified as the owner on any of the tract sheets listing the surface owners within the permit area. Luminant has documented in section .116, as supplemented in Supplemental Document No. 1 and Supplemental Document No. 2, right-of-entry to the tracts contained within the postmine land-use disturbance area except for Tracts 271, 272, 622, and 623. Tracts 622 and 623 are part of the rerouted SH 696. Tract 271 (CR 101), CR 102, and Tract 272 (CR 304) are Bastrop or Lee County roads. These three tracts are discussed below.

- (f) In the initial application, Luminant did not superimpose the property tract boundaries over the postmine land uses; therefore, Staff and landowners could not determine the proposed postmine land use on a tract-by-tract basis. In Supplemental Document No. 1, Luminant indicated that it had identified the leased tracts and provided revised Plates 147-1 through 147-3 and that it would not superimpose all property boundary tracts because it was not its custom to do so. Contrary to this assertion that it had identified all leased tracts, Staff found that the plates still appear to be lacking a depiction of all leased tracts within the disturbance boundary and the legend does not include (to confirm) the symbol identifying leased tracts. Staff is agreeable to Luminant's continued format providing that the customary format is to depict the boundaries of all leased tracts within the disturbance boundary. Staff notes that on revised Plates 147-1 through 147-3 in Supplemental Document No. 1, Luminant did not depict all leased tracts, including, for example, Tract 74.
- (g) In Supplemental Document No. 1, Luminant addressed an identified need for demonstration of right-of-entry and consultation for Tract 271 by proposing that the tract be reclaimed to its premine land use. Reclamation to its premine land use resolves the need for consultation for Tract 271, but only if Luminant demonstrates that it has right-of-entry. In Supplemental Document No. 2, Luminant made no changes to the depiction (or to Table 147-2) to resolve the presence of the tract within the disturbance boundary (and listing the tract as leased in Table 147-2), nor did Luminant provide documentation demonstrating right-of-entry for Tract 271 (County Road 101) in section .117. Luminant notes that it made changes to section .139, Plates 139-1-7 and 139-1-8 to identify the year (2018) that it proposes closure and added text to section 152, page 152-3 that identifies the year it proposes closure or relocation (2018). Neither of these changes satisfactorily addresses the issue regarding the depiction of this tract within the disturbance boundary. During review of Supplemental Document No. 2, Staff became aware that in the approved permit, Luminant was erroneously allowed to depict Tracts 271, 272, and former Tract 434 within the disturbance boundary without documentation of right-of-entry. This is not consistent with SMRD policy of disallowing the depiction of non-right-of-entry tracts within the proposed disturbance boundary on the postmine land-use map.
- (h) In Supplemental Document No. 2, Staff finds that Luminant made additional changes that result in errors. For example, Luminant no longer depicts the boundary for leased Tract 146 on Plate 147-1 and appears to identify Tract 271 as a leased tract. Also, Luminant infers on Errata page 26 that Staff was requesting leased tract boundaries only in areas affected by proposed changes, which is incorrect. Luminant correctly adds a boundary identifying leased Tract 74. Luminant outlines Tracts 74 and 271 and proposes these two tracts to be reclaimed to their premine land uses, and revises Table 147-2 to include only these two tracts. Except for the identifying boundary for Tract 74, Staff finds these changes to be in error and do not address the concerns raised by Staff in its May 21, 2014, letter. Tract 271 is a non-right-of-entry tract, and it and any other non-right-of-entry tracts must be excluded from the disturbance boundary [Tract 272 (CR 304A), CR 102 east of its intersection with CR 101]. Consequently, due to the unresolved issues described in the foregoing, Staff sponsored proposed **Permit Provision No. 7** to require Luminant to provide a correct depiction of postmine land use, leased tracts and non-right-of-entry tracts so that Staff and landowners can readily identify the locations of these tracts as they occur in relation to the postmine land-use plan, as follows:

Luminant shall submit a revision within 60 days of permit issuance, for administrative review and approval by the SMRD Director, to update Plates 147-1 through 147-3, on which it will:

- a. superimpose the leased property-tract boundaries over the proposed postmine land uses, in a manner that clearly depicts the proposed postmine land uses on a tract-by-tract basis; and
 - b. remove all tracts from within the disturbance boundary for which Luminant does not have right-of-entry.
- (i) In Staff's May 21, 2014, comment letter on this application, Luminant was notified that it had depicted numerous areas as proposed changes on Plates 147-1 through 147-3 (in Supplemental Document No. 1) that were already approved for the depicted land use, and that those areas should be depicted as approved and not proposed. Luminant responded in Supplemental Document No. 2, indicating that the changes were pending in the previous revision of the plates (Revision No. 19) and that the sets of plates were submitted at about the same time, thus the changes were pending when the plates were submitted. This is not accurate. Revision No. 19 depicts the areas in question as approved pastureland, not as proposed pastureland. Furthermore, in Non-Substantive Comment No. 147-3, Staff noted that the topic of review was a comparison of revised Plates 147-1 through 147-3 (certified by Luminant on February 28, 2014) in Supplemental Document No. 1 to the same plates (approved on August 27, 2013) in Revision No. 19. Staff reminds Luminant that in its response to the proposed permit provision, the status of all approved areas should be properly depicted.
- (j) Luminant proposes to modify the alternative postmine land-use plan on nine tracts owned by Alcoa. In the initial application for this renewal/revision, Luminant provided an example of a lease agreement in which Luminant, as Lessee, has sole discretion as to the reclamation plan on Alcoa-owned tracts, providing it is in accordance with State and federal regulations. In Supplemental Document No. 1 on Errata page 2, Luminant described the lease agreements between itself and Alcoa. In Supplemental Document No. 2 on Errata page 2, Luminant indicates that on May 14, 2014 (Revision No. 25), the Commission provided to Luminant an approval based on Luminant providing pertinent information from several documents executed between Alcoa and Luminant. Also, in Supplemental Document No. 2, Luminant lists Alcoa on page 116-9 as part "owner or controller of applicant." No consultation is required from Alcoa for changes to the alternative postmine land-use plan on Alcoa-owned tracts.
- (k) Luminant proposes to modify the alternative postmine land-use plan on 81 tracts owned by Sandow Power Company LLC (Sandow). The Luminant/Alcoa/Sandow consultation documentation identifies a proposed postmine land use plan based on various percentages of the different postmine land use types. Providing that Luminant reclaims the Sandow properties consistent with the identified proportions by the end of the life-of-mine reclamation, no further consultation appears necessary at this time. Furthermore, in Supplemental Document No. 2, on page 116-9, Luminant identifies Sandow as a limited liability corporation and a wholly-owned subsidiary of Luminant. Any proposed changes to the land uses on Sandow-owned tracts would be the plans of the landowner (Luminant/Sandow). This corporate relationship negates the need for further consultation.
- (l) In Supplemental Document No. 1 of approved Permit No. 48B, Luminant/Alcoa had previously provided a postmine land-use map (signed by the landowners, Leonard and Darrel Kastner), in which the fish and wildlife enhancement areas were superimposed on portions of areas proposed as pastureland for Tract 146. In the initial comment letter for this Permit No. 48B renewal/revision application, Staff indicated that Luminant had provided two different depictions of the plate that includes the area of Tract 146; and that, if the correct depiction was the plate that differed from the approved plate, then Luminant would need to update its landowner consultation for the changes proposed that affect the tract. In Supplemental

Document No. 1, Luminant revised the plate to depict no alternative postmine land-use changes for Tract 146, which resulted in an impractical proposed postmine land-use plan for the adjacent tracts. In Supplemental Document No. 2, Luminant indicates that it has revised the postmine land-use depiction for Tract 146 to that which was proposed in the initial application for this permit term. Luminant notes that, while the depiction is not consistent with its standard format, Luminant was attempting to maintain consistency with the approved permit. Luminant further indicates that it will consult with the landowner for Tract 146 before reclamation activities begin on the tract. Staff cannot recommend approval of the proposed alternative postmine land-use changes on Tract 146 without an updated consultation from the landowner that demonstrates compliance with §12.147(b) for the postmine land-use changes shown on Plate 147-3 in Supplemental Document No. 2. Although mining and reclamation on the tract is not scheduled to commence in the proposed permit, disturbance will begin on the tract in 2018 with the construction of DD-8 Diversion. Consequently, Staff sponsored **Permit Provision No. 8**, as follows:

Before beginning any operations that would disturb or cause disturbance to Tract 146, Luminant shall provide, for administrative review and approval by the SMRD Director, a copy of an updated landowner consultation for that tract. The consultation must be consistent with the approved postmine land-use map. If not consistent with the approved postmine land-use map, Luminant shall, at the same time, submit a proposed revised postmine land-use map consistent with the consultation, as a revision for review and approval by the SMRD Director.

- (m) In the current consultation for Tracts 114, 115 and 116, the landowner indicates that the properties should be returned to him at the time of postmine bond release with no mesquite. In Supplemental Document No. 1, Luminant considers this landowner's request for the postmine alternative land-use plan by noting in Table 145-B-1 that mesquite will not be considered an approved invader species for Tract 146. However, in addition to not counting the species toward its ground-cover performance standards, Luminant will need to manage this species for these tracts. (Note: In Application Deficiency 12.145(b)(5)(F)-1, Staff inadvertently identified the subject tract as Tract 146; the applicable properties for this consultation are actually Tracts 114, 115 and 116.) In addition to not including the species as an approved invader species, Luminant also must control the species in accordance with the landowner's plans. Accordingly, Staff sponsored proposed **Permit Provision No. 9**, as follows:

Luminant shall manage mesquite (*Prosopis glandulosa*) on Tracts 114, 115 and 116 to ensure that it is eradicated on these tracts as a weedy species.

- (n). Luminant proposes a significant decrease in its postmine developed water resources land use from 863 acres to 341 acres. Luminant does not exceed the 1,000 acres of permanent surface-water acreage considered in the current PHC determination for the Three Oaks Mine permit area [section .146(d)].

With adoption of the proposed permit provisions described above, Luminant's application, as supplemented, meets the requirements of §12.147 and §12.399.

- 43. The application, as supplemented in SD1, contains required information for ponds, impoundments, embankments, and dams as required by §12.148 of the Regulations. Page 148-5 contains a list of general design plans submitted in this renewal/revision application, including general design plans for Sedimentation Pond SP-7 and Diversions DD-8, DD-16, and DD-17. Tables 139(T)-6 through 8 contain schedules for the submittal of detailed design plans not included with this application. Table 139(T)-7 [on page 139(T)-7] contains an updated list of diversions. No MSHA structures are proposed during the permit term. Permanent drop structures are proposed in areas where excessive velocities from runoff have caused or will potentially cause erosion. No road or drop structures have

been submitted in the permit application, but other detail design plans will be submitted to the Commission for approval prior to construction. No proposals for sedimentation ponds and mine water diversions have been submitted with the application, but detailed plans for sedimentation ponds and mine water diversions will be submitted to the Commission for approval prior to construction. Temporary miscellaneous flow diversions are detailed on pages 148-7 through 148-8 and Appendix 148-A. No permanent or temporary impoundments are proposed with the permit application, but will be submitted at a later date. No dewatering wells, coal processing waste banks, or coal processing waste dams and embankments are proposed.

44. The application includes a description, as required by §12.150 of the Regulations, of proposed perennial and intermittent stream channel diversions. No perennial or intermittent stream channel diversions are proposed in this permit term.
45. The application, as supplemented by SD1 and SD2, includes a description as required by §12.146 of measures to be taken to protect the hydrologic balance of the surface water and groundwater systems within the permit area and adjacent areas and to prevent damage outside the permit area, to meet water quality laws and to protect groundwater and surface water users as set out below and in these Findings of Fact. The application includes a plan for protection of the hydrologic balance that satisfactorily addresses the requirements of Section .146 and contains the necessary elements for successful reclamation of the subsurface. The application contains a report, *Protection of Hydrologic Balance*, prepared by R.W. Harden and Associates, Inc. Plates .146-1 through .146-5 provide further information on and description of proposed groundwater protection methods.
 - (a). In the Calvert Bluff, Luminant proposes dewatering, or managing water in the overburden sands to provide for stability of the highwall, spoil piles, and inflow to the pit. Luminant proposes depressurization in the underlying Simsboro, managing water in the underburden sands under pressure to provide stability to the pit floor. An assessment of water quality impacts has also been provided. Luminant has included all needed information in its determination of probable hydrologic consequences (PHC). By using a groundwater flow model calibrated to historical data, Luminant identified aquifer pressure declines and water table declines as the probable hydrologic impacts and has predicted the extent of the projected five-foot drawdown of water wells located within the impact area(s) for the proposed permit term and for the life of mine. Staff has determined that the operations are designed to prevent material damage to the hydrologic balance. Mitigation of supplies in accordance with §134.110 is required as set out in this Order for wells affected due to dewatering and depressurization. The mine plan, including the dewatering and depressurization plans, in accordance with this Order is sufficient to meet the groundwater control requirements of §12.139 of the Regulations and the groundwater resource protection requirements of §12.146 of the Regulations.
 - (b). Confined aquifer pressure occurs when a sand zone is saturated and has an upward water pressure to the overlying layer. Depressurization by pumping from the aquifer is performed to lower the pressure to ensure that the water pressure does not cause flooding in the mine or disruption of the mine floor. The water table in the Calvert Bluff will change due to dewatering of the Calvert Bluff. The application includes the required undertaking that affected water supplies will be mitigated (§12.130, Regulations, application .130). The Simsboro Formation underburden aquifer will be affected by water table decline and aquifer head drawdown. The record reflects that these effects will not be material due to the proposed permit area's geological characteristics and the areal extent of the regional aquifer.

- (c). The need to depressurize throughout the mining operations in the proposed permit area is indicative of the vast amounts of water stored in the Simsboro. Section .146 of the application, as supplemented, provides estimated pumpage predictions and impacts for the proposed permit term.
- (d). During the proposed five-year permit term, Luminant estimates that 1,130-2,535 acre-feet of water will be pumped per year for dewatering [Plate .139A- 1 (locations of wells) and Table 139A-1 (number of operating wells by year with annual production estimates for the five-year term).] The simulated Calvert Bluff drawdown due to dewatering during the permit term is provided on Plate .146-2. No significant changes to the life-of-mine plan have occurred that would materially change the Calvert Bluff life-of-mine simulated drawdown resulting from the Three Oaks mining operations. These Calvert Bluff life-of-mine impacts have been described in approved Permit No. 48, Section .146 and Plate .146-3.
- (e). Proposed depressurization pumpage rates are estimated to range from 4,295-4,685 gallons/minute during the proposed permit term [Plate .139A-1 (locations of wells) and Table 139A-2 (number of operating wells by year with annual production estimates for the five-year term).] The simulated underburden drawdown due to depressurization during the permit term is shown on Plate .146-4. No significant changes to the LOM plan have occurred that would materially change the Simsboro LOM simulated drawdown resulting from the Three Oaks mining operations. These Simsboro LOM impacts have been described in Approved Permit No. 48, Section .146 and Plate .146-7. The exact amounts of pumpage are dependent upon the mine plan, schedule, depth, area, artesian pressure in the underburden, weight and thickness of materials underlying the lignite, aquifer hydraulic characteristics, and equipment factors.
- (f). Luminant performed a survey of water wells, seeps, springs, and creeks (which can gain water by groundwater seeping into the creek) in order to determine impacts to the Calvert Bluff and Simsboro (Plate .128-2, well and spring locations).
- (g). In this application, Luminant proposes pumping for dewatering and depressurization purposes (mining purposes). Pumpage for mining activities is subject to §134.110 of the Act and §12.352 of the Regulations requiring that the operator shall replace the water supply of an owner of an interest in real property who obtains all or part of the owner's supply of water for domestic agricultural, industrial, or other legitimate use from an underground or surface source if the supply has been affected by contamination, diminution, or interruption proximately resulting from the surface coal mining operations.
- (h). Proposed dewatering of the overburden will not significantly affect groundwater recharge in the Calvert Bluff, and will not affect recharge to the Simsboro, and will not affect the Carrizo aquifer, which will not be mined. The lower Calvert Bluff in which mining will occur receives little recharge due to its composition, primarily silts and clays, with some minor discontinuous sands. Silts and clays act as confining layers or barriers to water movement within the formation. For significant recharge to occur, through rainfall into outcrop areas, for example, or by surface water drainage where water will soak into the formation, there must be sands to accept the recharge and continuity of the sands to transmit the water through formations.

- (i) The proposed dewatering and depressurization operations are limited to those necessary for safe mining. Water levels will be monitored in depressurization wells, overburden wells, and underburden wells. Luminant has undertaken to provide monitoring results on a quarterly basis to the Commission within 30 days after the end of each quarter for water levels and water quality. Summary underburden pumpage information will include pumping rates by well, periods of pumping, and well locations and will be provided to the Commission on an annual basis. Luminant has also included as part of its groundwater control plan that it will obtain written Commission approval of any change in pumping rate exceeding the estimates in its groundwater modeling.
- (j). Water quality impacts to the Calvert Bluff are primarily expected to be increased sediment yield during mining, which is expected to decrease as previously mined areas are revegetated, as well as potential slight increases in total dissolved solids and suspended solids in runoff. These impacts are attenuated through the use of flow control and sedimentation ponds. No impact to the water quality of the Simsboro is predicted. No significant changes in water quality have been reflected in the waters produced from these formations in areas of large pumpage.
- (k). The application includes a surface water monitoring plan which includes quarterly sampling of stream monitoring points and sampling various outfalls under applicable wastewater discharge permit requirements. Monitoring results will be submitted to the Commission on a quarterly basis. Quarterly and annual sampling data for the long-term surface water monitoring plan will be provided to the Commission within 30 days after the end of each calendar quarter, and copies of laboratory analysis sheets will be provided with this data in digital (spreadsheet) format in addition to hard copies. The monitoring plan is sufficient to meet the requirements of § 12.146 of the Regulations. No appreciable impacts to surface water are expected based on the probable hydrologic consequences determination.
- (l) In SD1 Luminant added pages 146-1 through 6 and pages 146(a)-1 and 2 that describe the surface-water hydrologic reclamation plan. Luminant will conduct surface mining activities in a manner that will minimize changes to the prevailing hydrologic balance. Mining and reclamation will use acceptable practices to control water pollution. The location of sedimentation ponds individually or in a series, as approved by the Commission will be in a manner that will allow all surface-water runoff from disturbed areas to pass through a detention pond prior to discharge from the permit area. The best practical technology will be utilized in the design and construction of ponds to optimize sediment removal. Discharge structures will be designed according to standard engineering design procedures. Drainage from acid-forming and toxic-forming spoil into ground and surface water will be avoided by identifying, burying and treating where necessary, spoil which may adversely affect water quality. Luminant proposed to monitor the final discharge ponds in accordance with applicable State and federal water-quality permits. The water supply of an owner of interest in real property who obtains all or part of his or her supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source where the water supply has been significantly affected by activities of the mining operation will be replaced
- (1) The renewal/revision application a surface-water monitoring plan that identifies the surface-water quality and quantity parameters that will be monitored, sampling frequency, site locations, and reporting frequency of monitoring data. Luminant provided pages 146(d)-17 through 21, Tables 146(d)-5 through 7, Plates 146(d)-1 and 2 address the protection of the LTSM plan, as described in § 12.146(c). The LTSM plan for ponds and surface-water monitoring stations was summarized in Tables 146(d)-5 and 6 of the application and any supplements.

- (2) Luminant indicated in Table 146(d)-5, that the monitoring requirements for final discharge ponds are those of individual pond sampling. In SD1, Luminant provided Note No. 3 for Table 146(d)-5 and revised Table 146(d)-6 entitled *TPDES Point Source Monitoring Program*. Table 146(d)-6 described the sampling requirements of the TPDES permit for Three Oaks Mine. Under the heading, *Active Mining Final Discharge Ponds*, that, as per 40 CFR Part 434.11, it will treat “any mine drainage” or water that is pumped or siphoned from the active mine area. Luminant will provide reporting data in paper and electronic formats. Luminant will report pond discharge violations to SMRD within 24 hours of becoming aware of the violation by email or facsimile.
- (3) Stream-flow measurements will be conducted using permanently installed v-notch weirs at existing LTSM stations with the exception of station LMY, where a staff gauge is installed, and if gauges are contemplated for other stream monitoring stations, the Commission will be notified and acknowledgement received prior to installation. The cross-section and rating curve submitted in section .146(d), Appendix G, for monitoring station LMY are identical to the cross-section and rating curve submitted in Revision No. 10 on October 18, 2012. According to the approved LTSM plan, cross-sections at long-term monitoring stations will be resurveyed annually if a 10-yr/24-hr storm event did not occur during the previous year and updated rating curves will be submitted to the Commission with the first quarter monitoring data. Discharge rates for other LTSM Stations are taken from published weir discharge tables for the v-notched weirs being used.

The information provided in this renewal/revision application is adequate to address the surface-water hydrologic reclamation plan and monitoring requirements of §12.146(a) and (c).

46. Pursuant to §12.146(e) of the Regulations, Staff must assess the cumulative hydrologic impacts for a defined cumulative impact area (CHIA) (the area in which combined impacts from mining may occur) to determine whether proposed operations are designed to prevent material damage to the hydrologic balance outside the permit area. Staff made this assessment in conjunction with the approved Permit No. 48B, and that CHIA remains applicable to this renewal/revision. No additional CHIA is necessary. Staff considered effects on groundwater resources through the use of the PHC prepared by Alcoa, effects due to groundwater contributions to streamflow from all proposed and existing mining, and effects on surface water resources. This CHIA considered all proposed mining in the Three Oaks life-of-mine area, including the renewal/revision area in this application. Measurable changes on specified parameters were examined in the CHIA. Staff determined, based on the data and information presented in the application and other available information, including data available from the TWDB, TCEQ, and USGS, as well as baseline and monitoring data contained in the Sandow Mine and Powell Bend Mine applications, and the Commission’s files, that the Three Oaks Mine operations have been designed to prevent material damage outside the proposed permit area.
47. The Commission approves the requested road buffer variances in the application, as supplemented in SD2, for the requested renewal term. The following road buffer variances were requested for the proposed permit term. (Previously-approved closures and relocation are requested to continue for the proposed permit term and are approved):
 - (a). The following public road buffer zone variances are requested for the proposed permit term. They are depicted in Plates 152-1, 152-2 and 152-3.
 - (1). Lee County Road 303 – Both sides from its intersection with Lee County Road 304 to a point approximately 0.7 miles west of the aforementioned intersection.
 - (2). Lee County Road 304 – Both sides from its intersection with Lee County Road 304 to a point approximately 1.1 miles west of the aforementioned intersection.

- (3). Lee County Road 304A – Both sides from its intersection with Lee County Road 305 to a point approximately 4.1 miles north of the aforementioned intersection.
 - (4). Lee County Road 305 – Both sides approximately 0.2 miles from its intersection with Lee County Road 311 to a point approximately 1.3 miles west from the aforementioned intersection.
 - (5). Lee County Road 306 – Both sides approximately 0.4 miles from its intersection with FM 696 to a point approximately 3.1 miles from the aforementioned intersection.
 - (6). Lee County Road 309 – Both sides from its intersection with Lee County Road 306 to a point 1.2 miles east of the aforementioned intersection.
 - (7). Lee County Road 312 – Both sides from its intersection with Lee County Road 309 to a point approximately 0.9 miles from the aforementioned intersection.
 - (8). Lee County Road 313 – Both sides approximately 2.2 miles south from its intersection with FM 112 to a point approximately 3.2 miles from the aforementioned intersection.
 - (9). Bastrop County Road 89 – Both sides from its intersection with FM 696 to a point approximately 0.2 miles west of the aforementioned intersection.
 - (10). Bastrop County Road 96 – Both sides from its intersection with FM 696 to a point approximately 0.5 miles west of the aforementioned intersection.
 - (11). Bastrop County Road 99 – Both sides approximately 0.1 miles north from its intersection with Bastrop County Road 333 to a point approximately 1.0 miles north of the aforementioned intersection.
 - (12). Bastrop County Road 101 – Both sides from its intersection with Bastrop County Road 102 to a point approximately 2.3 miles north of the aforementioned intersection.
 - (13). Bastrop County Road 102 – Both sides from its intersection with Bastrop County Road 101 to a point approximately 1.0 miles south of the aforementioned intersection.
 - (14). Bastrop County Road 104 – Both sides approximately 0.7 miles snorth from its intersection with Bastrop County Road 103 to a point approximately 0.8 miles north of the aforementioned intersection.
 - (15). Bastrop County Road 129 – Both sides from its intersection with Lee County Road 305 to a point approximately 0.1 miles south of the aforementioned intersection and again approximately 0.2 miles south of the intersection with Lee County Road 305 to a point approximately 0.9 miles south.
 - (16). FM 696 – Both sides approximately 0.4 miles from its intersection with Lee County Road 306 to a point approximately 8.4 miles west of the aforementioned intersection.
- (a). One road closure is requested during the permit term, as shown on Plates 139-1-7 & 8: Bastrop County Road 101 in January 2018.

- (b). Luminant requested the public road buffer variances for mining, pre-stripping activities, pond construction, diversion construction, road construction, dewatering activities, regarding, reseeding, erosion repair, and other such activities associated with normal mining, construction, and reclamation procedures.
48. The requirements of §12.216 of the Regulations have been met.
- (a). The application, as supplemented, is accurate and complete and all requirements of the Act and Regulations have been met in the application as supplemented, the Findings of Fact (including incorporated Appendices III-V) with the inclusion of the permit provisions contained in Appendix I, the Soil Testing Plan contained in Appendix II, and as approved by the Commission. All required application fees have been paid, and Luminant has provided all substantive information requested by Staff.
 - (b). The operations may be feasibly accomplished under the mining and reclamation operations contained in the application, as supplemented.
 - (c). A CHIA was previously completed that includes the life-of-mine area, and the operations proposed by the application, as supplemented, and as approved by the Commission, have been designed to prevent material damage to the hydrologic balance outside the proposed permit area.
 - (d). The approved permit area is not included in an area designated unsuitable for surface coal mining operations, is not under study for designation, will not adversely affect any publicly-owned parks or places included in or eligible for listing in the National Register of Historic Places. The application, as supplemented, does not propose activities within a National Park, is not within 100 feet of a cemetery or of any public road (except for access roads as allowed in the Regulations and other roads addressed in this Order), and proposed operations will not come within 300 feet of an occupied dwelling, public building, school, church, community, or institutional building.
 - (e). The proposed operations will not affect any properties listed on or eligible for listing on the NRHP except as approved in accordance with §12.71(a)(3) as set out in this Order.
 - (f). All right-of-entry documentation has been provided.
 - (g). All compliance information has been provided. Luminant updated its compliance history in SD4. Luminant has no notices of violation that are currently in the process of abatement. The Applicant-Violator System (AVS) report shows that Luminant has paid all reclamation fees and has no violations that have not been corrected or are in the process of being corrected in accordance with §2.215 of the Regulations. Luminant does not control and has not controlled mining operations with a demonstrated pattern of willful violations or intent not to comply with the Act and Regulations.
 - (h). Operations will not be inconsistent with any other surface mining operations in adjacent areas.
 - (i). Luminant has a Commission approved bond for performance that is sufficient to satisfy its reclamation performance bond for the Three Oaks Mine.
 - (j). There are no alluvial valley floors to be considered pursuant to §12.202 of the Regulations. Luminant has, with respect to prime farmland, satisfied the requirements of §12.201 of the Regulations.
 - (k). The proposed postmining land uses are approved in accordance with this Order.

- (l). All specific approvals required for this application for revision pursuant to Subchapter K of the Regulations have been made.
 - (m). Approval of the Application, as supplemented, will not affect the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat.
49. Luminant's Renewal/Revision Application indicates that there will be no disposal of excess spoil. Therefore, since Luminant does not propose to produce any excess spoil and Staff agrees that the requirements of §12.153 are not applicable. The information provided is adequate to meet the requirements of §12.153.
50. Luminant provides in its response to this section on pages 154-1 through 10 in the renewal/revision application that mining operations will continue in the A and B Areas during the proposed five-year permit renewal term. Mining in the C Area will begin in 2014 and continue through the permit term. Lignite is transported from the pits to the Three Oaks Loading Station or approved stockpile areas using the existing haul-road system.

Luminant indicates that the depictions of haul roads, service roads, access roads, and equipment relocations are located on Plates 139-1-1 through 12 of the renewal/revision application. All existing roads with reclamation dates within the proposed permit area are listed in Table 154-1 of the renewal/revision application. Luminant indicates that this table will be updated in the future with the approval of other roads. Luminant does not propose to alter or relocate any natural drainageway. All temporary roads that are no longer needed will be reclaimed Luminant provided a description of the road system and support facilities to be constructed, used, or maintained within the permit area during the proposed five-year permit term.

Luminant plans to use the existing transportation system and facilities to support mining and reclamation during the proposed five-year permit term. No detailed design plans are included in this renewal/revision application. The information provided is adequate to meet the requirements of §12.154.

51. Official notice has been taken of the current certificate of account status from the Comptroller of Public Accounts that evidences current payment of franchise taxes. Luminant and Luminant Holdings Company LLC, Luminant Mining Company LLC's corporate parent, have paid all franchise taxes due through October 7, 2014.
52. The required public posting of the consideration of this application by the Commission has occurred.

Based on the above Findings of Fact, the following Conclusions of Law are made:

CONCLUSIONS OF LAW

1. The Commission has jurisdiction under §§134.051 and 134.075 of the Act and §12.216 of the Regulations to approve this application for permit renewal/revision as contained in this Order, and as set out in Appendices I and II to this Order.
2. Proper notice of the application was provided in accordance with the requirements of the Act, §§134.058 and 134.059, the Regulations, §12.207, the Commission's *Practice and Procedure*, 16 TEX. ADMIN. CODE §1.1 *et seq.* and the Administrative Procedure Act (APA), TEX. GOV'T CODE ANN. §2001 *et seq.* (Vernon 2011 & Supp. 2014).
3. No public hearing is warranted.
4. Based upon the Findings of Fact, the application was submitted to the Commission by Luminant, and processed, circulated, and reviewed in accordance with requirements that ensure public participation and that comply with the Act, Regulations, the Commission's *Practice and Procedure*, and the APA.
5. The application, as supplemented, with the permit provisions, and soil-testing plan set out in this Order, complies with the reclamation standards set out in the Act and Regulations.
6. Commission acceptance of a reclamation bond in a minimum amount of \$72,945,999.46 is required prior to issuance of the permit. Luminant's current approved blanket collateral bond instrument in the amount of \$1,100,000,000 (approved by Order dated June 17, 2014), is sufficient to cover the cost of reclamation of all of the Luminant.
7. Based upon the updated compliance history filed by Luminant in accordance with §§12.116(14) and 12.215(g) of the Regulations, upon approval of the application, as supplemented, with the permit provisions and soil-testing plan, and with acceptance of the existing blanket, collateral reclamation performance bond, a renewed and revised permit may be issued for the Three Oaks Mine.

IT IS THEREFORE ORDERED BY THE RAILROAD COMMISSION OF TEXAS that the Findings of Fact and Conclusions of Law, permit provisions, and Soil Testing Plan contained in this Order are hereby adopted; and

IT IS FURTHER ORDERED that this application for a renewed and revised permit for surface coal mining and reclamation operations is approved as set out in this Order; and

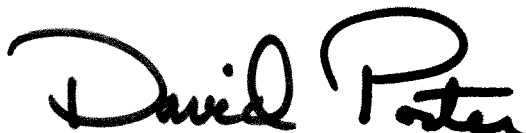
IT IS FURTHER ORDERED that the permit is hereby issued and renumbered as Permit No. 48C; and


IT IS FURTHER ORDERED that this order shall not be final and effective until 20 days after a party is notified of the Commission's order. A party is presumed to have been notified of the Commission's order three days after the date on which the notice is mailed. If a timely motion for rehearing is filed by any party of interest, this order shall not become final and effective until such motion is overruled, or if such motion is granted, this order shall be subject to further action by the Commission. Pursuant to TEX. GOV'T CODE §2001.146(e), the time allotted for Commission action on a motion for rehearing in this case prior to its being overruled by operation of law, is hereby extended until 90 days from the date the parties are notified of the order.

DONE AT AUSTIN, TEXAS this 14th day of October, 2014.

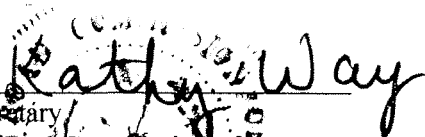
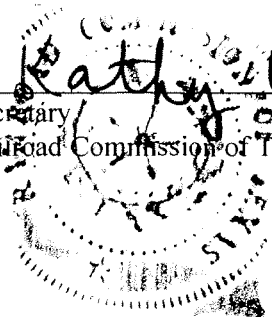
RAILROAD COMMISSION OF TEXAS


CHAIRMAN CHRISTI CRADDICK


COMMISSIONER DAVID PORTER


COMMISSIONER BARRY SMITHERMAN

ATTEST:


Secretary
Railroad Commission of Texas


APPENDIX I

PERMIT PROVISIONS

1. If TPWD determines that an aquatic life or stream-bed protection permit is required, Luminant shall submit a revision application for administrative review and approval by the SMRD Director to update the information required in §12.121 and amend its fish and wildlife protection plan in section .144 to incorporate the aquatic relocation and protection plan developed for the TPWD permit.
2. Within 60 days of permit issuance, Luminant shall submit a plan for review and approval by the SMRD Director to survey for the Bristle nailwort and Shinner's sunflower. The survey shall be conducted during the next blooming period appropriate for each plant species during a non-drought year in all currently undisturbed areas that Luminant proposes to disturb in 2015 or later during the permit term.
3. Within 60 days of permit issuance, Luminant shall submit a revision application for administrative review and approval by the SMRD Director, containing a map depicting planned fish and wildlife enhancement features within the permit area, including proposed temporary wildlife protection and enhancements and permanent reclamation protection and enhancement areas (such as the on-site wetland mitigation area). The map shall be updated annually and provided concurrently with the annually submitted postmine land-use management plan maps (application, page 147-4), unless no changes are proposed or necessary and Luminant so indicates in the submittal.
4. Within 30 days of permit issuance, Luminant shall submit a revision application for administrative review and approval by the SMRD Director, to modify Section 2.1.2 of the fish and wildlife plan in application section .144 to include a plan for additional surveys for the endangered Navasota ladies'-tresses to be conducted during the first two years that provide optimal weather conditions for the species in all undisturbed areas found to have suitable potential habitat under appropriate field conditions. The revision should incorporate recommended corrections regarding missing text associated with pages 8a, 8b, and 13b.
5. Detailed design plans for any drop structure constructed of pipe, concrete, rock and/or other like material used for temporary sediment control shall be submitted as a revision for review. Approval must be obtained from the SMRD Director prior to construction. Appropriate and common methods of immediate erosion control for small areas to ensure that protective measures may be employed as soon as possible to prevent and control erosion as otherwise allowed by the Regulations are not to be considered drop structures requiring detailed design plans.
6. Luminant shall submit a revision application, within 30 days of permit issuance, for administrative review and approval by the SMRD Director, to provide a table containing the proposed seeding or planting rates and the planting seasons for a representative list of plant species from Appendix 144-D that Luminant will use for fish and wildlife habitat reclamation. Luminant shall use the rates for native plant species contained in the list in approved Permit No. 48B, Supplemental Document No. 3, Volume 2, Table 145-3, for the reclamation to fish and wildlife habitat until the revised list is submitted and approved.
7. Luminant shall submit a revision within 60 days of permit issuance, for administrative review and approval by the SMRD Director, to update Plates 147-1 through 147-3, on which it will:
 - a) superimpose the leased property-tract boundaries over the proposed postmine land uses, in a manner that clearly depicts the proposed postmine land uses on a tract-by-tract basis; and

- b) remove all tracts from within the disturbance boundary for which Luminant does not have right-of-entry.
- 8. Before beginning any operations that would disturb or cause disturbance to Tract 146, Luminant shall provide, for administrative review and approval by the SMRD Director, a copy of an updated landowner consultation for that tract. The consultation must be consistent with the approved postmine land-use map. If not consistent with the approved postmine land-use map, Luminant shall, at the same time, submit a proposed revised postmine land-use map consistent with the consultation, as a revision for review and approval by the SMRD Director.
- 9. Luminant shall manage mesquite (*Prosopis glandulosa*) on Tracts 114, 115 and 116 to ensure that it is eradicated on these tracts as a weedy species.

**APPENDIX II - SOIL-TESTING PLAN AND POSTMINE PERFORMANCE STANDARDS
(APPENDIX VII IN STAFF'S TA)**

After final grading, permanent markers will be placed on 1,000-ft centers in regraded areas to delineate a 5.7-acre grid system (see Plate 145-1) for monitoring postmine soil quality and nutrient requirements. These markers will be maintained until land is released from all reclamation obligations.

Initial Soil Sampling

Initial soil sampling will consist of composite samples from each 5.7-acre grid as may be delineated by the advance of spoil leveling. The samples will be collected, analyzed, and the results reported to the Commission within two years following rough backfilling and grading of each complete grid, prior to the placement of land into the ERP, and prior to approval of Phase I, II, or III bond release. This period allows sufficient time for additional reclamation efforts if the soil suitability criteria are not immediately met.

Adjacent samples will be collected no less than 200 ft apart. Six soil samples per grid will be mixed to make one composite sample per depth increment. If a grid is less than two acres in size, it will be combined with an adjacent grid. If a partial grid is >0.5 acre but <2.0 acres in size, additional sampling will be conducted on 200-ft centers. No more than two grids will be combined for initial sampling purposes. Composite samples will be made to represent the following depth increments: 0-1 ft and 1-4 ft in topsoil substitute scenarios. The samples will be collected using standard soil sampling techniques.

The composite soil samples representing the 0-1 ft increment will be analyzed for the following parameters:

1. pH
2. Potential acidity
3. Exchangeable acidity
4. Neutralization potential
5. Acid/base accounting = Neutralization potential - (Potential acidity + Exchangeable acidity)
6. Texture - sand, silt and clay: USDA-NRCS
7. Nitrate-nitrogen
8. Plant available phosphorus, potassium, calcium, and magnesium
9. Cation Exchange Capacity
10. Sulfur forms (pyritic, organic, total, sulfate)

The composite samples representing the 1-4 ft increment will be analyzed for the following parameters:

1. pH
2. Potential acidity
3. Exchangeable acidity
4. Neutralization potential

5. Acid/base accounting = Neutralization potential - (Potential acidity + Exchangeable acidity)
6. Texture - sand, silt and clay: USDA-NRCS
7. Cation Exchange Capacity
8. Sulfur forms (pyritic, organic, total, sulfate)

In addition to the above analyses, a random 10 percent of the samples (0-1' and 1'-4') will also be analyzed for:

1. Electrical Conductivity
2. Sodium Adsorption Ratio
3. Total Cd, Mo, Se and hot water extractable B

Procedures for the above analyses will be as contained in *RCT Overburden Parameters and Procedures* (May 16, 1989) with *Soil Testing Procedures* (March 1980, Texas Agricultural Extension Service) used for plant available nutrients.

The analytical results, an updated postmine soil bank, and a map showing all grids reported will be submitted to the Commission in both hard copy and digital formats. The map will display the grids sampled and reported plus the Texas State Plane coordinates.

Luminant Mining Company will provide an updated bank with each initial report submitted, showing acres for each grid. Maps provided will clearly delineate the configuration of each grid represented by the data contained in the report. In addition to the above analyses, a random 10 percent of the samples (entire top four feet) will also be analyzed for hot-water B, Cd, and Se.

Sampling to the Extent of Leveling

Grid centers will be surveyed and marked every 1000 feet to delineate 23-acre grids. The 5.7-acre (¼ of a 23-acre grid) grids will serve as the basis for all initial sampling. If a grid is sampled to its full extent of 5.7 acres, it will be reported as a complete grid (e.g., grid 1234A). However, if a grid is not completely leveled (5.7 acres), and the leveled portion needs to be placed into the ERP, the portion that has been leveled and will be proposed for placement into the ERA will be sampled and reported. The portion of a grid that has been sampled will be marked using the ERA line. The ERAs are marked in the field, with markers being placed so they are visible from one to the next. Markers are placed at each turn in an ERA line. So if anyone in the field needs to determine the extent of soil sampling for a portion of a grid, it would be as simple as locating the grid (from a map and/or the grid center post) and then observing which side of the ERA they are on.

Grid identification for reporting purposes will continue to be clear so that there is no question about whether grids have been reported. Portions of grids that are sampled to facilitate placement into ERP will be labeled in such a way that it is clear there will be further sampling and reporting as the remainder of that grid is leveled

and proposed for ERP. For example, a complete 5.7-acre grid will be labeled as 2345A whereas the first portion of an adjacent grid would be labeled as 2346A-1 with subsequent samples being labeled as 2346A-2, etc. until the entire disturbance within that grid has been sampled and reported.

Initial samples will be collected at the approved density (one per acre). There will be no combinations of grids proposed for any advancing interior grids. Any portion of a grid that will be proposed for placement into the ERA will have the appropriate number of samples collected from it based on its acreage.

The native soil baseline will serve as the basis for determining postmine soil quality pertaining to the presence of acid- or toxic-forming materials compared to the premine soil as discussed in Section 12.386 of the regulations. Luminant Mining Company proposes to use a banking method to establish postmine soil suitability by comparison of premine and postmine acreage exceeding baseline soil quality criteria. For parameters not listed in the statistical baseline, the statewide criteria as shown in Advisory Notice ER-BA-127(b) will be used to determine postmine soil success.

The proposed substitute material in the 1-4 ft increment is of the same origin as the proposed topsoil substitute material. Therefore, it is projected to have comparable qualities for root development as the topsoil substitute material. Final demonstration of quality will be based on postmine productivity.

Maintenance Soil Sampling

Composite soil samples will be taken at the end of the growing season (October 1st through December 31st) from the 0-1 ft depth and analyzed for

1. pH
2. Nitrate-nitrogen
3. Plant available phosphorus, potassium, calcium, and magnesium

The samples will be collected from each management unit. For sampling and reporting purposes, a management unit will not exceed 100 acres in size. Any management unit greater than 100 acres in size will be subdivided during sampling to reflect areas of approximately equal size less than 100 acres. The divisions will generally be made along existing soil grid lines using either northings or eastings; whichever is appropriate for the management unit configuration. Each management unit will be identified by number and shown on the map accompanying the report.

Subsamples will be obtained to represent approximately ten acres per subsample. These subsamples will be composited to represent the management unit for analysis and reporting purposes. The soil samples will be obtained in the year immediately prior to the first year of productivity assessment, during the first year of productivity assessment, and during the second year of productivity assessment for pastureland management units. In the event that years of productivity assessment are not concurrent, Luminant plans to collect maintenance samples in the year prior to the second year of productivity assessment for pastureland

management units.

Analysis results and a map showing the units sampled will be submitted to the RCT during the first quarter of the year following each reporting period. In the event that maintenance liming has been conducted, the liming rates will be provided in the maintenance soil report. The purpose of this sampling program is to provide documentation on soil conditions for management purposes. Luminant will not obtain maintenance samples from areas where trees are planted because fertilizer is not applied regularly to trees.

Ten Percent Random Sampling in Fourth Year of ERP

During the fourth year of ERP, a random 10 percent of the 5.7-acre grids will be sampled and analyzed in the same manner as the initial sampling requirements. The analytical results and a map showing the grids sampled will be provided to the Commission no later than February of the fifth year of the ERP. In the event that chemical and physical properties of the postmine soils warrant further investigation, the Commission may require additional testing.

Alternate Soil Testing Plan

An alternative soil monitoring program would be initiated based on AFT/TFM problems identified either during planned postmine soil monitoring or following postmine soil monitoring. Soil samples will be collected from the 0 to 1-ft, 1 to 2-ft, 2 to 3-ft, and 3 to 4-ft increments at a density of one sample per acre for each affected grid and will be analyzed for those parameters identified by the SMRD and/or Luminant in the postmine monitoring program as a potential problem. This intensified sampling scheme will assist in identifying the extent of the soil problem.

Luminant will notify the Commission of its sampling schedule to allow members of the Commission staff to be present during this sampling. Upon request, splits of each sample taken during the sampling effort will be procured upon sample processing (after drying and grinding) and provided to the Commission. Samples will be analyzed for the same parameters as those in the initial soil sampling, unless submittal of a more limited suite of parameters as approved by the Commission. The results of these analyses and a remediation plan will be submitted to the Commission.

Once Luminant conducts remediation, Luminant will again collect soil samples from the 0 to 1-ft, 1 to 2-ft, 2 to 3-ft, and 3 to 4-ft intervals at a density of one sample per acre for each remediated grid and the samples will be analyzed for the identified problem parameter. The affected area will also be sampled using the initial soil sampling protocol to ensure remediated acreage is accurately reflected in the postmine soil bank and to replace any previously submitted data for the grid(s). Luminant will submit results and a map showing the impacted areas to the Commission to verify the successful correction of any soil problems previously identified in the postmine-soil monitoring program.

**Areally-Weighted Frequency Distributions
Postmine Soil Performance Standards**

<u>SOIL DEPTH</u>	pH	
	s.u.	
	<u>4.0 - 4.4</u>	<u>4.5 - 4.9</u>
	-----% of area-----	
0-12"	—	9
12-48"	2	7

Acid-Base Accounting (ABA)						
Tons/1000 Tons (t/kt)						
<u>SOIL DEPTH</u>	<u>-6</u>	<u>-5</u>	<u>-4</u>	<u>-3</u>	<u>-2</u>	<u>-1</u>
	-----% of area-----					
0-12"	—	1	3	2	12	19
12-48"	1	—	9	8	17	21

<u>SOIL DEPTH</u>	% Clay			
	<u>41-45</u>	<u>46-50</u>	<u>51-55</u>	<u>56-60</u>
		-----% of area-----		
0-12"	5	4	2	—

<u>SOIL DEPTH</u>	% Sand		
	<u>81 - 85</u>	<u>86-90</u>	<u>91-95</u>
		-----% of area-----	
0-12"	6	9	1

100 % OF THE POSTMINE 0-12" AND 12-48" INCREMENTS
WILL MEET THE FOLLOWING STANDARDS:

Electrical Conductivity (EC)	≤	4.0 mmhos/cm
Sodium Adsorption Ratio (SAR)	≤	13
Boron (B)	≤	5 ppm
Cadmium (Cd)	≤	0.7 ppm
Selenium (Se)	≤	2 ppm
Molybdenum (Mo)	≤	5 ppm