

RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION

RE: APPLICATION BY ALCOA INC.	§	DOCKET NO.
FOR SURFACE COAL MINING AND	§	C1-0004-SC-00-A
RECLAMATION PERMIT, THREE	§	
OAKS MINE, BASTROP AND LEE	§	
COUNTIES, TEXAS	§	

ORDER OF APPROVAL OF APPLICATION

STATEMENT OF THE CASE

Alcoa Inc. (“Alcoa”), P.O. Box 1491, Rockdale, Texas 76567, requests approval of its application for permit for its proposed Three Oaks mine, Bastrop and Lee Counties, Texas. Alcoa currently operates the Sandow Mine approximately 7 miles southwest of Rockdale, Texas in Milam, Lee, and Williamson Counties, pursuant to Permit No. 1E. The proposed permit area is located south and southwest of the currently permitted mine. The proposed mine would provide lignite fuel to generate electricity at facilities located adjacent to the Sandow Mine in Milam County. Over the next several years, the mining at Sandow would be phased out as fuel is provided by Three Oaks.

The application was filed and processed pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE Ch. 134 (Vernon Supp. 2001) (Act) and the “Coal Mining Regulations,” Tex. R.R. Comm’n. 16 TEX. ADMIN. CODE CH. 12 (West Group 2002) (Regulations), procedural rules of the Commission, “Practice and Procedure,” 16 TEX. ADMIN. CODE §1.1 *et seq.*, and rules allowed by TEX. GOV’T CODE §2001, *et seq.*

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. Notice of the application was published in newspapers with general circulation in Bastrop, Lee, Milam, and Williamson Counties in the vicinity of the existing and proposed mines.

An application for construction permit filed by Alcoa preparatory to the application for mining permit was subsequently withdrawn following the examiner’s ruling consolidating the

applications for processing purposes. All materials relevant to construction activities are contained in the application for mining permit. The Commission finds that it may dismiss the construction permit application as withdrawn.

A public hearing on the application was held beginning on March 6, 2002. The examiner received extensive public comment on that date at the SPJST Hall in Elgin, Texas and on March 7 and 8, 2002 at the American Legion Hall in Giddings, Texas. (A synopsis of public comment is contained in Appendix III to this Order). The hearing was continued, and the examiner scheduled discovery and a contested case hearing. The hearing on the merits began on July 22, 2002. All protesting parties to the proceeding, having filed statements of withdrawal of objections to the proposed permit as well as withdrawal as parties, and no other parties objecting, the examiner cancelled the remainder of the public hearing and determined to hear the matter based upon the application and supplements, the written pleadings, prefiled testimony, and other written evidence in the record. The application may be considered and acted on without a contested case hearing, in the same manner it would have been considered and acted on if no timely requests for contested case hearing had been received.

There are no outstanding issues between Staff, Alcoa, or any remaining parties to the proceeding, who support the application for permit. All parties have filed waivers of the preparation and circulation of a proposal for decision. The Commission approves the application, as supplemented, and as limited by the Findings of Fact and permit provisions (Appendix I) contained in this Order. Alcoa has accepted the proposed permit provisions.

FINDINGS OF FACT

1. On September 14, 2000, Alcoa submitted an application for surface mining and reclamation permit for its proposed Three Oaks Mine in Bastrop and Lee Counties, Texas to the Commission's Surface Mining and Reclamation Division. The application was made pursuant to the Act and the Regulations. A required fee of \$5,000.00 was submitted. The Director of the Commission's Surface Mining and Reclamation Division (Staff) determined the application to be administratively complete and filed the application with the Office of General Counsel on June 27, 2001, along with the Staff's Technical Analysis document (TA).

2. Alcoa had previously submitted an application for construction permit for the proposed permit area. Neighbors for Neighbors (NFN) requested a hearing on the application for construction permit, or in the alternative, that the application for construction permit be consolidated with the application for mining permit. The application was consolidated with the application for mining permit, but has been withdrawn by Alcoa and may now be dismissed.
 - (a). In its letter dated March 12, 2001 NFN stated that its members work or raise livestock adjacent or close to the proposed permit area and that some live in the Willow Creek subdivision near the western border of the site, such as Mark Wehner, or east of the site, such as Danna and Scott Rother, and alleged that their members would suffer economic, environmental, and social impacts, such as a decline in property values, alleged threat to economic diversification, effects on outdoor recreational activities, alleged effects on threatened and endangered species, such as the Houston Toad, timber rattlesnake, blue sucker fish, and threatened and endangered birds. By filing dated January 29, 2002, Billie Woods, President of NFN,

stated objections on public policy grounds that the Commission should not process the application while notices of violation of the Clean Air Act and equivalent Texas statutes are outstanding with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ), formerly the Texas Natural Resource Conservation Commission (TNRCC) (acronyms used interchangeably in this Order). NFN also objected that the permit application was incomplete, inaccurate regarding the relocation of roads, cumulative hydrologic impacts, lack of action by Bastrop County or the Texas Department of Transportation (TxDOT) on road relocation proposals, the treatment and management of water to be produced by mining activities, the degree of soil erosion, concerns regarding withdrawals of groundwater, and reduction of hydraulic head of the Simsboro aquifer. NFN also expressed concerns that the Staff analysis of groundwater effects was to be completed prior to the completion of the groundwater availability model (GAM) of the Central Carrizo-Wilcox Aquifer by the Texas Water Development Board (TWDB).

- (b). By letter dated March 22, 2001, the examiner consolidated the applications. Alcoa then filed a withdrawal of the construction permit application in that all matters related to the construction permit are included and addressed by the application for mining permit.
3. The permit area is located adjacent and south to southwest of Alcoa's existing Sandow Mine, permitted by the Commission as Permit No. 1E, located approximately 7 miles southwest of Rockdale, Texas. The application, as supplemented, proposes a permit area of 16,062 acres in Lee and Bastrop Counties and a five-year permit term. Alcoa has proposed two mine plans, a primary or "preferred" plan, and an alternate plan. The Commission approves the alternate mining plan filed in Supplement Nos. 4 and 5, with the permit provisions included in Appendix I to this Order.

- (a). In the primary mine plan, mining is proposed in three main areas, Mine Areas A, B, and C. The locations of these areas are: (1) Area A: This area extends from Lee County Road 304 southwest to the proposed relocated FM 619. The primary mine plan requires the temporary relocation of FM 619 in order to mine portions of Area A. In order to mine Area B (described below), the closure of a portion of Bastrop County Road CR 90 and construction of a new section to route traffic onto Bastrop County Road 89 to the relocated FM 619 is required; (2) Area B: this area extends from the relocated FM 619 to the southwest to Bastrop County Road 96; (3) Area C: this area is located southwest of Bastrop County Road 96 and east of FM 696. In the primary mine plan, Alcoa proposes conducting mining on 2,194 acres during the proposed permit term (including three contingency areas. Approximately 5,661 acres are proposed for mining during the life of the mine (Supplement Nos. 1 and 2) through the use of two draglines or mobile equipment fleets operating concurrently in Area A and Area B for Mine Years 1 through 5. FM 619 runs through the middle of Area A. The mine plan would require the completion of the FM 696 reroute, which would begin in Year 1, with traffic being rerouted in Year 3. One dragline or a mobile equipment fleet may be moved to Area C should coal quality problems, dragline outages, weather problems, or delays in the planned road reroutes occur. Plates 142-A1, 142-A2, and 142-B1-5 reflect the general operation plan. Alcoa anticipates an annual average lignite production of 6.2 million tons and a maximum production of 8 million tons; a total of approximately 180 million tons of lignite will be mined over the life-of-mine (Supplement No. 3). Lignite is proposed to be hauled to the blending facility then moved to the power plant via a conveyor/haulroad system. Alcoa has provided all required information on size, sequence and timing of mining for the permit term under the primary mine plan as required by §12.125(1).
- (b). In response to a Staff determination that mining was viable only for mine years 1-3 for the A Mine Area due to lack of adequate demonstration of right-of-entry for

State-owned tracts for which road closure/relocations are proposed and which require approval by TxDOT, Alcoa filed the alternate mine plan in Supplement No. 4. In the alternate mine plan and as approved by the Commission in this Order, Alcoa proposes mining in the A Area (Mine Years 1 - 3) and in the B Area west of FM 696. Mining will be subject to the permit provisions contained in Appendix I which prohibit mining in the rights-of-way of Bastrop County Roads proposed for closure/relocation and FM 619 and FM 696 [roads subject to the jurisdiction of the Texas Department of Transportation (TxDOT)] until approvals from those jurisdictions are obtained, documentation of such approval filed with the Commission, and approval by the Commission in accordance with Permit Provisions Nos. 1 and 2. Lee County road approvals have been obtained. The alternate mine plan was filed in Supplement No. 4 and supplemented in Supplement No. 5, due to lack of road approvals from the Bastrop County Commissioners' Court and the Texas Department of Transportation, which would provide Alcoa with the authority to close/relocate the roads necessary in the primary mine plan. This information includes narratives of how Alcoa will operate without the road relocations (Sections .139 of Supplements Nos. 4 and 5, and related information contained in the supplements regarding drainage structures and road crossings). The alternate mine plan includes the changes required from the primary or preferred plan to account for the lack of approvals by Bastrop County and TxDOT as set out in this Order. Based upon the information provided in the application, as supplemented, if none of the Bastrop County road relocations are approved, approximately 12 million tons of lignite would not be mined; this estimate includes coal under FM 696 (four million tons) and Bastrop County Roads (8 million tons)(Testimony of David Morris, p. 34, and Supplemental Testimony of Tommy Hodges, p. 3). In addition to the lignite which can be mined in the A Area according to the alternate mine plan, testimony reflects that there is a large quantity of reserves which are not impacted by unapproved road proposals (contingency areas and life-of-mine reserves located east

of FM 696). Testimony and Alcoa Exhibit, "Texas Lignite Mines" showing Acres Disturbed per 1,000,000 tons of Coal, reflects that there is a low stripping ratio for the resource in the proposed permit area; the proposed Three Oaks Mine only requires about 50 acres disturbed per million tons of lignite produced, which is somewhat less than half of the amount of acres disturbed at the Texas lignite mine currently having the lowest stripping ratio. Alcoa has provided all required information on size, sequence and timing of mining for the alternate plan for the proposed permit term as required by §12.125(1).

- (c) The alternate mine plan is technically and economically feasible as set out in the Findings of Fact and Conclusions of Law in this Order.
 - (d) The materials contained in Supplement Nos. 4 and 5 for the mine plan do not include any additional proposals which would constitute a material change in that the disturbances proposed in the alternate mine plan are less than those proposed in the primary mine plan.
4. The initial application consisted of 14 volumes. The Staff's Technical Analysis document (TA) noted 162 application deficiencies and recommended two permit provisions. Supplement Nos. 1-5 were filed by Alcoa on August 15, 2001, November 14, 2001, March 13, 2002, July 15, 2002, and August 26, 2002, respectively. All application volumes and supplements submitted were verified under oath, by an authorized official of the applicant. All requirements for format and contents required by § 12.107 have been met. Staff filed TA Addenda Nos. 1-4 in response to application supplements on October 8, 2001, (recommending five permit provisions), January 24, 2002, (recommending two permit provisions), April 18, 2002, (recommending one permit provision), and August 15, 2002, (recommending six permit provisions), respectively. Due to outstanding right-of-entry issues related to lack of Texas Department of Transportation (TxDOT) and Bastrop County road approvals, Supplement No. 4 included an alternate mining plan; the Staff TA

Addendum No. 4 found 13 remaining deficiencies, including those related to road proposals and related structures. Alcoa filed Supplement No. 5 in response to Staff and examiner review. Staff recommends seven permit provisions; four provisions relate to closure and relocation of roads, appropriate mining areas, and postmine land uses related to the road proposals and right-of-entry to one tract. Two proposed permit provisions relate to appropriate vegetative species, and one for notification regarding surface water control construction. The data and information contained within the supplements do not constitute a material change to an application for which additional notice must be provided pursuant to § 12.212(d). The data and information were filed to address Staff exceptions to compliance and proposed permit provisions presented by the Staff and to address requests made by the examiner. They do not include any material additional or greater disturbance than those disturbances included in notice provided to the public.

5. Copies of the application and all supplements were filed for public view in the offices of the Milam County Clerk in Cameron, Texas, the Lee County Clerk in Giddings, Texas, and the Bastrop County Clerk in Bastrop, Texas. A copy was also filed with the Railroad Commission of Texas in Austin, Texas.
6. Notices of application were also sent to owners of record of interests in lands within the permit boundary and tracts adjacent to the permit boundary and to all persons who had submitted written comments to the Commission regarding the construction permit application or the mining permit application.
7. Notice of application and notice of hearing required by the Act and Regulations were sent to all specified persons and agencies.
 - (a). Notice of application was published once each week for four consecutive weeks on December 6, 13, 20, and 27, 2001 in the *Giddings Times & News*, a newspaper regularly published and circulated in Lee County, and on the same dates in the

Bastrop Advertiser, a newspaper regularly published and circulated in Bastrop County, and on December 5, 12, 19, and 26, 2001 in the *Elgin Courier*, a newspaper regularly published and circulated in Bastrop, Williamson, Travis, and Lee Counties, and on December 6, 13, 20, and 27, 2001 in the *Rockdale Reporter*, a newspaper regularly published and circulated in Milam, Lee, and Burleson Counties. The notice, as published, contained all information required by the Act and the Regulations for a notice of application. The notice provided an opportunity for written comment, objections, requests for hearing, and informal conference. The notice included information that the application for construction permit had been withdrawn and that all matters related to construction activities within the proposed permit area would be included and considered in the application for mining and reclamation permit.

- (b). On December 7, 2001, the Commission mailed notice of application for the mining and reclamation permit to owners of record of interests in lands within the permit boundary and tracts adjacent to the permit boundary and to all persons who had submitted written comments to the Commission regarding the construction permit application or the mining permit application.

- (c). On December 13, 2001, the Commission mailed a copy of the notice of application to the service list and hand-delivered copies to the Staff and its staff attorneys. On December 5, 2001, the Commission mailed notice of application to the appropriate divisions of the former TNRCC, now TCEQ; Texas Historical Commission (THC); University of Texas, Bureau of Economic Geology (BEG); Texas State Soil and Water Conservation Board; Texas Parks and Wildlife Department (TPWD); General Land Office; U.S.D.A., Natural Resources Conservation Service (NRCS); U.S. Department of the Interior, Fish and Wildlife Service (USFWS); and, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement

(OSM), and to local governmental bodies. Numerous comment letters were received, including objections to the proposed permit and requests for hearing. The applicant also requested a hearing.

- (d). Notice of public hearing was published once each week for three consecutive weeks in the following newspapers on the following dates: *Elgin Courier*, February 13, 20, and 27, 2002; *Bastrop Advertiser*, February 14, 21, and 28, 2002; *Rockdale Reporter* on February 14, 21, and 28, 2002; and *Giddings Times & News* on February 14, 21, and 28, 2002. The notice provided that a person having an interest which is or may be adversely affected by the application and who wishes to become a party to the proceeding must file a request for party status no later than five days prior to the hearing date. Notice of hearing was also mailed to all persons expressing by written notification an interest in the application as required by §12.212(c) of the Regulations.
8. The examiner convened the public hearing on March 6, 2002 in Elgin, Texas and received public comment into the record. The examiner continued the hearing to receive public comment in Giddings, Texas on March 7 and March 8, 2002. On March 8, 2002, the hearing was continued, and discovery proceedings commenced. Thirty-five parties were admitted as parties to the proceeding. These parties were the following: (1) Alcoa Inc.; (2) City Public Service of San Antonio; (3) International Brotherhood of Electrical Workers (IBEW) Local 2078; (4) United Steelworkers of America (USWA) Local 4895; (5) City of Lexington; (6) City of Rockdale; (7) City of Thorndale; (8) City of Cameron; (9) City of Milano; (10) Milam County; (11) Milam County Appraisal District; (12) Rockdale Independent School District; (13); Mark A. Wehner (14) Neighbors for Neighbors; (15) Robert O. Tinstman; (16) Danna and Scott Rother; (17) B.B. and Glenda M. Bentley; (18) Conference of Olympus; (19) Elgin Butler Brick; (20) Greg Barker; (21) John D. Hobbs; (22) Claude W. Vaughn and Jeanne T. Vaughn; (23) Wanda Hannah; (24) Kevin Smith; (25) Janet Manley; (26) Michele

Rene Weston; (27) Lloyd D. Clem; (28) Jorge Arroyo and Laura Stough; (29) Allen R. Buie; (30) Evelyn Wolf; (31) Monica Wolf Buie; (32) Neal Tuttrup; (33) Debbie and Terry Neidig; (34) Jacelin and David Colosky; and (35) Staff, Surface Mining and Reclamation Division.

9. Notice of the continuation of the proceeding for the hearing on the merits for the purpose of receiving evidence in the docket was published in the following newspapers on the following dates: *Giddings Times & News* and *Rockdale Reporter*, July 11, 2002; *Elgin Courier*, July 10, 2002, and *Bastrop Advertiser*, July 13, 2002. Prior to presentation of evidence, all protestants, including NFN, filed statements of withdrawal as parties and/or settlement of issues with Alcoa. In that no persons protesting the application remained as parties to the proceeding, the examiner determined to hear the application and prepare a proposed order based upon the application as supplemented, pre-filed testimony, and the Staff's technical analysis and addenda and other materials deemed necessary by the examiner, absent any issues between Alcoa and the Staff which could not be resolved. The examiner provided that Staff would be allowed a limited hearing between Staff and Alcoa on any issues which could not be resolved by additional materials from Alcoa. No remaining parties objected to this procedure. A notice of cancellation of the hearing on the merits was published in the following newspapers on the following dates: *Elgin Courier*, July 24, 2002; *Bastrop Advertiser*, July 27, 2002; *Rockdale Reporter*, July 25, 2002; and *Giddings Times & News*, July 25, 2002. No limited hearing between Alcoa and the Staff is required.

- (a). The following parties withdrew from the proceeding during the discovery process, but did not indicate any reason for withdrawal, nor did they indicate to the examiner whether their objections were withdrawn: Lloyd D. Clem, Conference of Olympus (Gymnosophical) Inc., Elgin-Butler Brick Company, Danna and Scott Rother, Glenda and B.B. Bentley, Robert O. Tinstman, Allen R. Buie, Evelyn Wolf, and Monica Wolf Buie. Their comments are set out in Appendix I to this Order. Protestant Kevin Smith, whose comments related to property rights issues over which the

Commission has no jurisdiction, was stricken as a party by the examiner after non-appearance at a deposition pursuant to order of the examiner and notice of hearing on Alcoa's Motion Relating to Mr. Kevin Smith's Non-Compliance with Discovery Requests. Such notice was sent by certified mail return receipt. The receipt was signed "Kevin Smith" as delivered and was returned to the Commission.

- (b). Several protestants withdrew as parties from the proceeding, but indicated objections in their withdrawal correspondence.
 - (1). Protestants Jorge Arroyo and Laura Stough withdrew by letter dated May 7, 2002 expressing dissatisfaction with the process and procedures required, the pace of the process, complexity of issues, need for and cost of counsel, and cost in time to them as a family.
 - (2). Protestant Michele Rene Weston withdrew by letter dated May 6, 2002, indicating personal realignment of family priorities, commenting that she maintained objections to the application, stating that she believes that Alcoa can afford to switch to natural gas, and expressing concerns regarding air and water pollution and the endangered Houston Toad.
 - (3). Protestants Terry and Debbie Neidig withdrew from the proceeding as parties by letter dated May 13, 2002, due to the volume of correspondence involved in participation.
 - (4). Protestant Greg Barker withdrew from the proceeding by letter dated May 2, 2002, indicating objection to discovery procedures and stating that (unspecified) thorough impact assessments were not being allowed to become part of the record.

- (5). Protestant Neal Tuttrup withdrew by letter dated April 25, 2002, indicating that his full-time work schedule does not leave him sufficient time to keep up with the volume of correspondence.
- (6). Protestant Wanda Hannah withdrew by letter dated April 25, 2002, expressing frustration with the proceedings, discovery schedule, volume of correspondence, time constraints, family responsibilities, lack of the availability of the Corps of Engineers' Environmental Impact Statement and the Texas Water Development Board's Groundwater Availability Model in process at this time and the processing of the application without them.
- (7). The examiner held a prehearing conference on July 12, 2002, at which protestant Neighbors for Neighbors withdrew from the proceeding by letter from its attorney and with a copy of a Board of Directors resolution dated July 11, 2002. The resolution indicated that NFN was prioritizing its efforts to oppose the alleged "environmental and lifestyle harms that would attend" Alcoa's proposed Three Oaks mine and "water-mining project" and that "NFN's efforts in Railroad Commission Docket No. C1-0004-SC-00-A must be accorded a much lower priority" in comparison to NFN's other opposition efforts." The hearing on the merits began on July 22, 2002 at the offices of the Commission in Austin, Texas.
- (8). The following parties withdrew their objections and withdrew as parties just prior to the hearing on the merits, and formal presentation of their written withdrawals was made when the hearing on the merits convened on July 22, 2002: Mark Wehner, Jacelin and David Colosky, Jeanne T. and Claude W. Vaughn, John D. Hobbs, and Janet Manley. Several outstanding motions

were rendered moot by these withdrawals and settlements. Although other parties remained in the proceeding, none had objections to the application.

10. Comments were filed regarding the application for construction permit and to the application for mining. Public comment, predominantly favorable, was made by approximately 1500 persons. These comments were submitted by approximately 35 elected officials, seven school districts, five chambers of commerce, three water supply corporations, one water district, approximately 131 businesses, approximately 12 private organizations, two environmental organizations, and the remainder individuals.
11. Certain protesting parties withdrew from the proceeding. Other protesting parties withdrew their objections and withdrew as parties from the proceeding. Comments filed by state and federal agencies have been addressed. Comments filed by persons not requesting party status relate to environmental concerns, including air emissions and air quality, the economy of affected counties, the merits of the fuel resource, compliance characteristics of the applicant as an organization and its employees, contributions to the community by the applicant, and property rights. The examiner prepared Appendix III to this Order which contains a synopsis of representative comments. The application, as supplemented, Staff review, and this Order adequately address all comments filed in the docket. All concerns have been adequately addressed and considered in the processing of the application consistent with environmental requirements of the Act and Regulations and the jurisdiction of the Commission.
 - (a). Many comments addressed general concerns regarding fugitive dust, air quality, lights, noise, road closure/relocation, water supply, protection of the water table, and protection of the Simsboro aquifer. Alcoa will meet the requirements of the Act and the Regulations that require proof of local road authority approval prior to road closure/relocation, and Alcoa must provide continued access to properties for landowners. The application contains a feasible mine plan should road approvals

requested from Bastrop County and TxDOT not be approved by road authorities (Finding of Fact No. 3). The application contains a fugitive dust control plan in compliance with the Act and Regulations (Finding of Fact No. 36). The Act and the Regulations do not specify limitations based upon light and noise. Prior to commencement of operations, Alcoa must obtain all required approvals, including those required by the TCEQ (TNRCC) and must meet federal Environmental Protection Agency requirements. Landowner claims regarding alleged nuisance effects from light and noise are not within the Commission's jurisdiction; however, highway construction projects are subject to average outdoor noise levels, 65 decibels (Testimony of David Morris, p. 53). The worst-case level modeled by Alcoa for Three Oaks Mine is 61 decibels; per mile, the level decreases rapidly by distance (Morris, pp. 54-55). In addition, although some nighttime glare is expected, mitigation measures are proposed by Alcoa including shields on portable light plants and lights mounted on the draglines (Morris, pp. 60-61). Regarding potential effects on water supplies, Alcoa has undertaken to replace the water supply of a water user if the water supply has been affected by contamination, diminution or interruption by mining activities as required by §134.110 of the Act and §12.352 of the Regulations. Alcoa has identified alternative sources of water as required by §12.130 of the Regulations (Finding of Fact No. 20) and has provided a detailed mitigation plan (pp. 146-20 and 21). The applicant has submitted the probable hydrologic consequences determination (PHC), and Staff has performed its cumulative hydrologic impact assessment (CHIA) required by §12.146 (Finding of Fact No.31).

- (b). Alcoa does not propose and will not conduct mining activities on land tracts for which no documented right-of-entry is included in the application, or provided to the Commission in accordance with the permit provisions.

- (c). The Commission received written comments on the application from the Bastrop County Soil and Water Conservation District No. 340, the TPWD and the USFWS. These comments are adequately addressed by the sections of the application addressing soil resources, surface water control, proposed revegetation, and the fish and wildlife plan, as supplemented. No state or federal agencies requested party status in the proceeding.
- (1) By letter dated January 30, 2002, the TPWD noted that baseline inventories for vegetation and fish and wildlife are thorough and adequate to meet the Regulations. TPWD also noted that the fish and wildlife plan is sufficient to meet the regulations. The agency indicated that the application included plans for the protection of the timber rattlesnake, a state-listed threatened species. TPWD recommended the omission of certain exotic and non-native plants from the species lists contained in the application. The TPWD indicated that the revegetation plan exhibits commitment toward restoration of fish and wildlife habitat. Alcoa has responded satisfactorily to all TPWD comments with the adoption of Permit Provision Nos. 3 and 4 recommended by Staff.
- (2) Alcoa submitted a letter from the USFWS indicating that there is a lack of suitable habitat for the endangered Houston toad in the areas reviewed and that no adverse impacts to Houston toads or any federally listed or proposed threatened or endangered species are anticipated to result from the proposed mine. This is consistent with the geological information presented in the application and site specific surveying conducted by Alcoa. The Commission has reviewed testimony from expert biologist David Hillis (who has conducted numerous studies over the last 23 years regarding the occurrence or non-occurrence of the federally listed endangered Houston Toad), soil

types in the proposed permit area, and area geology which includes insufficient sands of the required depth, and review by Staff and the USFWS. Surveys were conducted in 1999 and in 2000 on the Carrizo, Calvert Bluff and Simsboro formations. Surveys were again conducted in 2001, with more than 100 survey stations. Although evidence of hybrids, Houston Toad/Woodhouse Toads, have been reported, no Houston Toads have been found within the proposed permit area; the closest ones occur approximately one mile to the east of the boundary of the proposed permit area, the location of the nearest Carrizo Sands (Alcoa Exhibit 602, supplemented, Supplemental Testimony, Lee Sherrod, and Alcoa Exhibit 345, Supplemental Testimony, Kaiser). Based upon the information presented, it is unlikely that breeding populations exist or could be established. The proposed permit area does not contain designated critical habitat for any species.

- (3) The Bastrop County Soil and Water Conservation District No. 340 by letter dated January 15, 2002 expressed general concern that the mining operation will severely decrease the water table, well levels, and air quality, and voiced compliance issues, and concern that soil erosion would affect streams. These issues are adequately addressed in Finding of Fact Nos. 36 (air quality), Finding of Fact Nos. 30 and 31 (hydrologic impacts), and Finding of Fact Nos. 50 and 51(g)(compliance).

12. The parties remaining in the proceeding are Alcoa, Staff, City Public Service of San Antonio, International Brotherhood of Electrical Workers (IBEW) Local 2078, United Steelworkers of America (USWA) Local 4895, the Cities of Lexington, Rockdale, Thorndale, Cameron, Milano, Milam County, Milam County Appraisal District, and Rockdale Independent School District. No remaining parties are protesting the application. The application may now be considered without contested case hearing, in the same manner it would have been

considered and acted on if no timely request for contested case hearing had been received. There are no outstanding issues among the remaining parties. All remaining parties have filed a waiver of the preparation and circulation of a proposal for decision. A proposed order was circulated to all remaining parties.

13. Section .116 of the application, as supplemented, includes all information required to show organizational information, ownership interests, and compliance information, including other mining permits and identifications.
14. The application, as supplemented by Supplement Nos. 1-4, lists the landowners within the proposed permit boundary and tracts adjacent to the proposed permit boundary. CPS intended to develop lignite resources acquired in the Bastrop and Lee County areas to diversify its energy sources. After obtaining contracts for western coal, CPS entered into a lease agreement with Alcoa for the lignite properties. CPS owns (and leases to Alcoa) or holds leases (now assigned to Alcoa) on almost all of the lands within the proposed Three Oaks mine permit area (Lignite Mining Lease and Assignment Agreement, December 28, 1998). Alcoa has also acquired by lease or fee all other tracts required for its mining plan for Three Oaks for the proposed permit term, except as otherwise set out in this Order. For three properties where the private mineral estate to be mined has been severed from the surface estate, Alcoa has provided a copy of the document of conveyance that expressly grants or reserves the right to extract coal by surface mining. (Appendix .117-G, Application, and Alcoa Prefiled Exhibit 208). Supplement No. 4 included information regarding litigation in process for Tract T037.
15. Rights to Tract T037 are in dispute; however, Alcoa has presented documentation of right-of-entry to the tract from one of three owners of undivided interests, and one of the three owners, Kevin Smith, although requesting party status and having been named a party to the proceeding, did not participate in the proceeding and was stricken as a party after notice of

hearing, at which he did not appear [Finding of Fact No. 9(a)]. If a dispute exists over the legitimacy of the right-of-entry, jurisdiction to resolve the dispute outside of settlement between and among the parties resides in district court. Alcoa has filed a suit for partition of this tract, in which Alcoa seeks title to that portion of Tract T037 proposed for disturbance (haulroad disturbance). Sufficient documentation of right-of-entry to the tract has been provided. Sufficient right-of-entry has not been shown for tracts on which road closures/relocations of FM 619 and FM 696 are proposed, and Bastrop County has not approved road proposals. Although Bastrop County and TxDOT, the entities with jurisdiction over the roads, have not approved the closures/relocations, requests for these road closures/relocations are pending before these entities. The application, as supplemented (Supplements No. 4 and No. 5), includes a feasible mine plan for mine years 1-3 which may be initiated prior to road closures/relocations of FM 619 and FM 696 and Bastrop County Roads.

16. No portion of the permit area is within an area designated as unsuitable for surface mining activities under Subchapter F of the Regulations, nor within any area under study for designation in an administrative proceeding. By Commission Order dated March 20, 2001 an unsuitability petition for an area including the proposed permit area was denied. Alcoa does not claim an exemption under §12.216(4)(B). Alcoa does propose to conduct surface mining on lands which currently have dwellings which are occupied, but Alcoa has documented that it has leased those lands and will cause them to be vacated prior to any operations within 300 feet of such dwellings. The requirements of §12.118 have been met.
17. The application includes identification of other licenses and permits required prior to the commencement of operations and/or construction of specific structures in accordance with §12.121 of the Regulations, some of which have not yet been approved and/or issued to Alcoa. Alcoa has applied for the following permits or authorizations: (1) a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act; (2) a

discharge permit from the Texas Commission on Environmental Quality (formerly, the Texas Natural Resource Conservation Commission); (3) approvals of proposed closures and relocations of Bastrop County roads from the Bastrop County Commissioners Court; and (4) approval of proposed closures and relocations of State Highways FM 619 and FM 696 from the Texas Department of Transportation (TxDOT). Approvals for closures/relocations of Lee County roads have been documented. No statute or regulation prohibits the Commission from approving and issuing a permit for the proposed mine to Alcoa, Inc. prior to Alcoa's having obtained all other permits or approvals required. Permit Provisions Nos. 1 and 2 are needed for certain activities proposed for areas where mining is prohibited or limited (§12.71-72) until all authorized approvals also required are obtained and copies of agency approvals for these activities have been provided to the Commission. Alcoa has provided required information and/or the procedures set out in §12.72(b) and (c) have occurred for activities on lands listed in §12.71(1), (6), and (7). The Regulations, at §12.72(b), contain references to specific activities, for which documentation of approval by the required authority [specific federally protected areas, cemeteries, and specific public buildings and public parks, §12.72(c), referencing §12.71(1)(6), and (7)] must occur prior to approval of the application. Approvals required have been received for these areas or they do not exist within the permit area, or in the case of cemeteries, the cemeteries have been moved. The Commission has delegated approval of road closures/relocations to local authorities and such prior approval regarding road closures/relocations is not required prior to approval of the application by the Commission, but is required by the delegated authority with documentation provided to the Commission prior to commencement of the road closures/relocations [§12.72(e)]. Permit Provisions Nos. 1 and 2 will ensure that appropriate approvals are received and documentation provided to the Commission for activities delegated to Bastrop County and TxDOT.

18. Alcoa has conducted cultural and historic resources investigations for the proposed permit area. Required information has been provided for the locations of identified sites. Two

family cemeteries and a grave site which were located within the proposed permit area have been relocated. Other cemeteries are located near the proposed permit area but outside the boundaries of the proposed permit area; Alcoa will avoid these areas and will maintain required buffers. Seven sites were found eligible for listing on the National Register of Historic Places (NRHP); these sites are historic houses or remnants of houses. Eighteen prehistoric and historic sites require mitigation and/or documentation to determine eligibility for listing prior to approval of any disturbance. Alcoa will protect these sites until a determination is made on eligibility for listing and approval for disturbance. All other sites have been determined not to be eligible for listing in the NRHP. Plate 125-1 (Supplement No. 3) sets out the locations of sites examined within the study area including the proposed permit area and additional adjacent lands. Locations of protected sites within the proposed permit area are set out on Plate 125-1A (Supplement No. 4) and are listed with details regarding protection and/or mitigation in Table 151-1 (Supplement No. 4). Alcoa has included a cultural resources management plan evidencing continued cooperation with the Texas Historical Commission (THC) for identified sites (Section .151 of the application, Supplement No. 4). Only two sites, one a house site and the other a campsite, may potentially be impacted by proposed operations during the proposed permit term, and Alcoa will complete additional testing and/or data recovery on these sites prior to disturbance (Table 151-1, Supplement No. 4). Alcoa will not disturb existing sites or discovered sites prior to written approval by the Commission. The information provided by Alcoa meets the requirements of §§ 12.151(b) and 12.125(2) of the Regulations.

19. Sufficient geologic and hydrologic information is included in the application, as supplemented. Sections .126-.128 of the application, as supplemented, meet the requirements of the Regulations for the proposed permit area.
 - (a). Sufficient information is contained within the application and through testimony by Ridge Kaiser, P.E., R.W. Harden and Associates, Inc. to describe the groundwater

resources within the proposed permit area. Mr. Kaiser, with over 25 years studying the Carrizo Wilcox Aquifer, presented testimony regarding the aquifer and its hydrological characteristics and the information contained in the application for groundwater resources. Section .128 of the application contains information regarding the depth and horizontal extent of the water table and aquifers, lithology, and thicknesses of the aquifers, location and ownership of wells and springs, seasonal quality of groundwater (Appendix .128-C), and groundwater usage. This information was used as baseline data for use in comparing active mining and postmine groundwater conditions. The application includes results of drilling test holes and coring to define lithology (Kevin Spencer, Testimony, and Alcoa Exhibits 372-376), 69 test wells and piezometers, 14 pump tests and slug tests to determine horizontal conductivity of materials which make up the formations (Table 128-2), over 100 water samples, and inventories or surveys for over 1,200 water wells (Table 128-4) and springs. Wells within the proposed permit area and in adjacent areas are used for domestic purposes, small-scale irrigation, stock, and as sources of water for the City of Elgin, and Aqua Water Supply Corporation. Alcoa identified approximately 72 water wells within the proposed permit area. Approximately 33 are overburden wells; most of these are not used due to poor water quality or low yield.

- (b). The application and testimony presented for the proceeding presents sufficient information to describe the geology of the proposed permit area and adjacent lands. The Carrizo-Wilcox aquifer is a 40-100 mile wide band across Texas and into neighboring states made up of four formations. These four, from shallowest to deepest are: the Carrizo, a primary aquifer system; the Calvert Bluff, made up of silts, clays, and generally discontinuous sands; the Simsboro, a prolific aquifer, generally made up of approximately 80% water-bearing sand but within the proposed permit area it tends to contain more silt and clay than in adjacent areas (Testimony of Kaiser, p. 7); and the Hooper. The latter three are present within the proposed

permit area (Alcoa Exhibit 342, Generalized Regional Geologic Cross Section). Mining is proposed only in the lower one-fourth of the Calvert Bluff. The areas of surface exposure of the formations within the proposed permit area are depicted on Alcoa Exhibit 343. Faults are present within the formations.

- (c). The estimate of storage of water within the Simsboro between the Colorado and Brazos Rivers is approximately 190 million acre-feet of water.
 - (d). Sufficient information is contained within the application and through testimony and Staff analysis to describe the surface water resources within the proposed permit area and adjacent areas. Alcoa has provided sufficient information to meet the requirements of the Regulations. Section .129 includes information for all required watersheds which may be impacted by proposed operations, including baseline data sufficient to plan surface water control, protection, and monitoring.
20. Alternative water supplies available to replace water supplies affected by the mining operations have been identified as required by §12.130 of the Regulations. Potential sources include the Southwest Milam County Water Supply Corporation, the Aqua Water Supply Corporation, and local aquifers. Sufficient amounts of water are available. There have been no enforcement orders issued by the Commission regarding any failure to mitigate water supplies affected by Sandow operations. Any pumping for other purposes which Alcoa may perform on lands Alcoa owns which are not done for mining purposes are performed under property rights of the landowner and groundwater district rules (TEX. WATER CODE Ch. 36 Groundwater Conservation Districts) rather than Commission jurisdiction. An agreement between Alcoa and San Antonio Water System (SAWS) that SAWS will also be responsible for mitigation of impacts due to pumping related to water supplies provided by the properties within the proposed permit area. This agreement is a contractual matter. SAWS is not a permittee with Alcoa for any proposed mining permit. Alcoa, as permittee, must meet

mitigation requirements required by the permit. Alcoa has included testimony (Supplemental Testimony, Hodges, p. 10) that Alcoa is responsible for mitigation and that its agreement with SAWS is a mechanism for being reimbursed by SAWS.

21. All required climatological information has been submitted in satisfaction of §12.131 of the Regulations. Alcoa provides precipitation data from the closest National Oceanic and Atmospheric Administration (NOAA) Climatological Data Annual Summary for Texas (1998) and NOAA 1998 Local Climatological Data Annual Summaries (Part II) Southern Region, and from the TNRCC. Information presented includes average seasonal precipitation, average direction and velocity of prevailing winds, based on Austin, and seasonal temperatures. Monthly total precipitation and monthly average temperatures for the period of record are included for 1998 which include various towns surrounding the proposed mine area. Prevailing winds are southerly, with frequent northerly winds in the winter months. The average annual wind speed was 5.2 miles per hour in July to 10.2 miles per hour in March, based on 1998 data.

22. Vegetative resource information is included in Section .132 of the application with related figures, plates, and appendices. Testimony regarding vegetative resource information was also presented by Dr. Robert Knight. Appendices .132-1 of the application (plant species observed in the proposed permit area), .132-2 (quantitative vegetative information from Alcoa's field samples of upland woodlands, riparian woodlands, fallow/overgrazed pasture, managed pasture, natural grassland, and mesquite grassland) and .132-3 (color infrared photograph of proposed permit and surrounding area) and related figures and plates adequately describe the vegetative community types and extent found within the proposed permit area, and meet the requirements of §12.132 of the Regulations and is sufficient to allow an evaluation of the importance of the vegetation to fish and wildlife. Alcoa's baseline vegetation study for the proposed permit area conducted between March 1999 and July 2000 reflects the following vegetation communities within the portion of the 8.5 million-acre Post

Oak Savannah vegetational region which makes up the 16,062-acre proposed permit area: upland woodland, 40.4%; riparian woodland, 4.1% (occurring in the floodplains of Big Sandy, Willow, and Middle Yegua Creeks and tributaries); grassland, 40.9%; mesquite grassland, 13.5%; aquatic habitat, 1.0%; and hydric habitat, < 0.1%. No threatened or endangered plant species have been located within Bastrop and Lee Counties.

23. Fish and wildlife resource information included in the application, as supplemented (Supplement No. 1-3), including information relating to state and federal threatened and endangered species and wetlands, meets the requirements of §12.133 of the Regulations.
- (a). Alcoa participated in meetings and consultation with Staff, the USFWS, TPWD, Corps of Engineers, EPA, TNRCC, SAWS, and Bastrop County Conservation Plan's Coordinator regarding the application and required information including protected species, surveys, jurisdictional waters and wetlands (p.133-4, Appendix .133-6, Supplement No. 1), and hydrology.
 - (b). Alcoa has identified 135.33 acres of jurisdictional waters and wetlands, made up of streams, 19.67 acres, on-channel ponds, 107.01 acres, and non-forested wetlands, 8.65 acres.
 - (c). The application, as supplemented, includes details regarding threatened and endangered species with the potential to occur within Bastrop and Lee Counties (Table .133-5, Supplement No. 1; and Supplement No. 2), protected migratory birds (p. 133-28, Supplement No. 1), the likelihood of threatened and endangered species occurring within or near the proposed permit area (Supplement Nos. 1 and 2), the results of a study of tadpole DNA in waters within the proposed permit area, a Houston Toad habitat assessment and breeding-season survey report and map (Revised Figure 2 in Supplement No. 3, for Appendix .133-5-3, located in

Supplement Nos. 1 and 2; and Revised Figure 7 in Supplement No. 3, for Appendix 133-5-4, located in Supplement Nos. 1 and 2), and appropriate soils information and outcrop boundaries for site-specific information to evaluate the potential for Houston Toad habitat within the proposed permit area. The bald eagle, a federally-listed threatened species and Bachman's sparrow, a State-listed threatened species, may occur in Bastrop and Lee Counties; and the federally-listed endangered interior least tern, whooping crane, and piping plover may occur as migrants in these counties. The state-listed endangered American peregrine falcon, and the State-listed threatened arctic peregrine falcon, blue sucker, white-faced ibis, and bald eagle may occur in Bastrop County; the state-listed endangered American peregrine falcon, the State-listed threatened arctic peregrine falcon, and interior least tern may occur in Lee County. The state-listed threatened wood stork could occur within the proposed permit area. All bird species listed as threatened or endangered are most likely to be only transient visitors during migration or when dispersing after breeding; the white-faced ibis is generally found near marshy areas which are limited within the proposed permit area. The blue sucker is found in large bodies of water and is unlikely to occur within the permit area. The state-listed threatened Texas horned toad lizard is unlikely to occur within the proposed permit area. The timber rattlesnake may occur within the proposed permit area and has been found within the adjacent Sandow Mine permit area. A protection plan for the timber rattlesnake is included in the application (Finding of Fact No. 37).

24. The application, as supplemented, includes soil survey information that meets the requirements of §12.134. The distribution of soils within the proposed permit area is depicted in the application on a map identified as Plate .134-1, Appendix .134-A; and Table .134-A-1 contains information regarding the extent of each soil map unit. There are 20 soil series existing within the proposed permit area; five are prime farmland soil units (1,061 acres, or 6.6% of the proposed permit area). Soil units within the proposed permit are

described in Appendix .134-A(3) of the application. Present and potential productivity information is included in the application presented in the application and Supplement No. 1. The application includes a request for topsoil substitution. Testimony reflects that a selectively handled overburden would result in soils with a sandy loam to clay loam texture with a pH of between 6.3 and 8.1 and that it will have superior properties compared to the native soil (Testimony, Lloyd Hossner, p. 5). Alcoa has presented in Table .134-A-14 through Table .134-A-17 the information required for baseline information to be used as postmine-soil performance standards for the parameters, pH, ABA, clay, and sand in Supplement No. 1 and, for the parameter ABA for the interval base of topsoil to 48 inches in Supplement No. 2, for the zero inches to base of topsoil and the base of topsoil to 48 inch intervals.

25. The description of premine land uses contained in the application and summaries of land capabilities and productivities, Supplement No. 1, meets the substantive requirements of §12.135. Premine land uses of the 16,062-acre permit area are pastureland, 41.3% (6,629.73 acres); grazingland, 18.2% (2,929.02 acres); cropland, 0.6 % (97.54 acres); undeveloped, 36.8% (5,907.04 acres); industrial/commercial, 1.4% (224.83 acres); developed water resources, 1.1% (178.56 acres); and residential 0.6% (95.28 acres). Mining has occurred previously in the proposed permit area in the form of shallow pits from which lignite was obtained for domestic heating, and in the form of clay pits. None of the lands within the proposed permit area are within any municipal jurisdiction.
26. The application, as supplemented, contains all cross-sections, maps and plans as required by §§12.136 and 12.137; tables listing the locations of the maps and plans are included in Supplement Nos. 3, 4, and 5. The application, as supplemented, also includes all operation maps as required by §12.142 of the Regulations (Table .142-1, Supplement No. 2), and Supplement No. 4.

27. The application, as supplemented, includes maps identifying all tracts of land containing prime farmland soils within the permit area as required by §12.138 of the Regulations. Alcoa requests a negative prime farmland determination for all tracts proposed for mining or disturbance within the proposed permit term, with the exception of areas denoted on Plate 139-A1 as prime farmland areas G (within land Tract T021), R3, R4, R5 (within land Tract T076), T2 (within land Tract T090), and U2 (within land Tract T083), with identified prime farmland soils based upon affidavits from landowners, copies of which are contained in the application, as supplemented. The Commission finds a negative determination of prime farmland for the areas as set out in the application, as supplemented, with the exception of areas G, R3, R4, R5, T2, and U2 . Affidavits negating historical cropland use for tracts for which a negative determination is found have been provided. Alcoa has satisfactorily addressed the requirements of §12.201, with the exceptions noted. Alcoa will reclaim an equivalent number of acres of disturbed lands as cropland in the locations shown as cropland on Plate 147-1, Supplement No. 2, and has included in these locations a greater number of acres to be reclaimed as cropland than prime farmland to be disturbed by mining. Alcoa has depicted all tracts containing prime farmland soils (Plates 134-1, 138-A1 and A2) and has provided all materials required by §12.201(b) for mining and restoration of prime farmland.
- (a). A soil survey including these areas has been provided which includes a description of soil mapping units and a representative soil profile including soil horizon depths, pH, and the range of soil densities for each prime farmland soil unit within the permit area.
- (b). Alcoa has provided documentation regarding historical cropland use on tracts containing prime farmland soils. Alcoa has provided adequate documentation that all areas proposed for disturbance during the proposed permit term other than areas G, R3, R4, R5, T2, and U2, which contain prime farmland soils, have not been cropped for five or more years in the ten years prior to acquisition of the tract or do

not contain prime farmland soils. A negative determination is appropriate for all areas proposed for disturbance and for which affidavits have been included in the application other than areas G, R3, R4, R5, T2, and U2, which contain prime farmland soils. Alcoa has provided affidavits and/or acquisition information (or information that it owns or leases tracts from CPS) showing that all tracts which contain prime farmland soils do not meet the definition of prime farmland, or they are not proposed for disturbance during the proposed permit term, or sufficient acreages will be reclaimed as cropland.

- (c). Alcoa has provided required productivity information for areas proposed for cropland use and has developed a plan for soil reconstruction, replacement, and stabilization in accordance with the requirements of § 12.201(b)(2) of the Regulations. Mining and reclamation of areas as cropland as set out in the application as supplemented is approved with the specific provision that the content of the plan submitted for reconstruction is a condition of disturbance, the prime farmland acreage will not be reduced, and the requirements of §§ 12.620-622, 12.624, and 12.625 will be met.
- (d). The State Conservationist, Natural Resources Conservation Service, has been consulted and has reviewed and commented on the proposed method of reconstruction of the prime farmland soils for the postmine land use of cropland.
- (e). Alcoa has the technological capability to restore lands to cropland within a reasonable time, to equivalent or higher levels of yield as non-mined prime farmland in the surrounding area under equivalent levels of management. Alcoa has presented information showing that the soil materials to be used in reconstruction of the prime farmland soil shall be removed before drilling or mining in a manner to prevent mixing or contaminating these materials with undesirable material. Prime farmland soils will be removed, stockpiled, and replaced by genetic horizon to a depth of 48."

The top four feet of prime farmland soils will be segregated by topsoil and subsoil and will be selectively handled. The topsoil and subsoil materials will be redistributed on the backfilled and graded mined areas. Topsoil and subsoil storage requirements will be met. Soils will be replaced after final grading and scarification with proper compaction. This thickness will equal or exceed the thickness of the original surface layer. The surface layer will be protected from wind and water erosion and will be stabilized with a vegetative cover or other means to effectively control soil loss. Provisions for revegetative timing and mulching shall be met. Measurement of soil productivity shall be initiated within 10 years after completion of soil replacement and shall be for a minimum of three crop years prior to release of the bond with the same level of management applied as the level of management used on non-mined prime farmland in the surrounding area. The reference crop will be grain sorghum for one year followed by two years of bermudagrass (Tifton 85 variety), and the restoration of soil productivity shall be considered achieved when the average yield during the measurement period equals or exceeds the average yield of the reference crop for the same period for non-mined soils of the same or similar texture or slope phase of the soil series in the surrounding area under equivalent management practices. The reference crop yield will be determined from the NRCS mine area specific production standards.

28. The application, as supplemented, contains a reclamation plan which shows how Alcoa will meet requirements of the Act and Regulations in accordance with §12.145 of the Regulations.
 - (a). The application (Supplement No. 3, and included in the Staff TA, Addendum No. 4, p. 19) provides a reclamation timetable which includes estimated dates from final coal removal to Phase III bond release (Table .145-1, Reclamation Timetable for Three Oaks Mine) in accordance with the requirements for a detailed reclamation

timetable of the major steps in reclamation, § 12.139(b)(1). A time period of approximately 11-12 years is evidenced in the timetable.

- (b). The application includes a detailed estimate of the costs of reclamation of proposed operations required to be covered by a performance bond (Finding of Fact No. 39).
- (c). A backfilling and grading plan, with required maps and cross sections, is included to show that backfilling and grading will meet approximate original contour (Plate 137-4 [Post-Mine Slope Map (Conceptual) Supp. 4] and Plate 145-4 Post-Mine Topography (Conceptual) Supp.4], Supplement No. 4, and Table 137-2, Staff TA Addendum No. 3. Staff review and comparison between premine slope categories with acreages and postmine slope categories with acreages reflects that there will be the following changes from premine to postmine in the slope categories: 0-1% slope category, 13.0% increase; 1-2% slope category, 0.4 % decrease; 2-4% category, 11.1% decrease, 4-6% category, 2.5% decrease, 6-10% category, 1.0% increase, 10-15% category, 0.1% increase, and greater than 15% category, 0.0%. The only notable increases are in the lesser slope categories.
- (d). Alcoa has included a plan in accordance with the requirements of §12.139(4) of the Regulations for backfilling and grading, topsoil substitution, and a plan for topsoil storage and redistribution for prime farmland soils addressed in Finding of Fact No. 27. Alcoa will use topsoil-substitute materials to reconstruct suitable postmine soils from overburden. Staff has evaluated the physicochemical characteristics of the continuous overburden cores used by Alcoa to determine the suitability of the overburden for use in the construction of postmine soils, and has concluded that, with the implementation of the soil-handling plan contained in the application, as supplemented, is sufficient to meet the requirements of §12.145(b)(4). The application shows that sufficient amounts of suitable overburden are available for

topsoil substitution. Alcoa identified suitable materials for the proposed permit term from 16 overburden cores. Clayey layers adjacent to lignite seams have not been shown to be suitable for use in reclaiming the postmine top four feet. Alcoa will not use materials occurring five feet above and five feet below the lignite seams for reconstructing the top four feet of reclaimed soils. Alcoa's request for up to 25 months following lignite removal to complete rough backfilling and grading operations for long pits is approved. Alcoa has provided operational justifications based on the distance needed for carrying overburden either toward or away from the pit to achieve approximate original contour, safety, and surface water control, the distances and time needed for the working area around the active pit, the distances for the adjacent peak, and rough leveling area, the equipment proposed to be used to level peaks (dozers and scrapers), and proposed time periods required. This plan is described on pages 145-5 and 145-6, and illustration on page 145-5, Supplement No. 3. The application as supplemented indicates that a temporary cessation of operations (TCO) and backfilling and grading variances may be needed should road closure/relocations not be approved. Alcoa has presented information sufficient to demonstrate that adequate safety measures will exist should a TCO and backfilling and grading variances be requested.

- (e). Groundwater quality will be protected during mining through the use of procedures to control deleterious groundwater seepage. Groundwater in the pit will be removed by pumping to sedimentation ponds, lined as necessary. Selective handling procedures will be used in mining and reclamation to prevent contamination of groundwater, as well as construction of above-ground fuel storage tanks, the use of a compacted clay pad and berms around lignite stockpiles, and use of an appropriately constructed and permitted septic system.

- (f). The operations plan includes quarterly monitoring for the first two years of pumpage and annual reporting of monitoring results for a full suite of chemical constituents (Table .146-5) from proposed long-term groundwater monitoring wells. Appropriate baseline sampling and reporting of the chemical constituents for newly installed wells is included in the operations plan.
 - (g). All requirements have been met for a description of measures to be used to maximize the use and conservation of the coal resource, measures to ensure that all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of as required. The application, as supplemented, contains a description of the measures to be taken to dispose of all debris, AFM, TFM, and material constituting a fire hazard, and a contingency plan adequate to preclude sustained combustion of these materials, measures to be used to seal, plug, case, or manage exploration holes, bore holes, wells, and other openings within the proposed permit area, and steps to be taken to comply with air and water quality laws. The information provided by Alcoa is sufficient to meet the requirements of §12.145(b)(7-9) of the Regulations.
29. Alcoa requests use of bottom ash from the power plant for road construction within the mine as a road surfacing material for haul roads, ramps and service roads. Alcoa has provided required information for use of the material and for reclamation of temporary roads. Alcoa proposes to use crushed stone and up to six inches of bottom ash. The use of bottom ash produced at the Sandow Electric Power Plant for construction of roads within the permit area is approved.
30. In the Calvert Bluff, Alcoa proposes dewatering, or managing water in the overburden sands to provide for stability of the highwall, spoil piles, and inflow to the pit. Alcoa 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. Alcoa has included all needed information in its determination of probable hydrologic consequences (PHC). By using a groundwater flow model calibrated to historical data, Alcoa 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, in accordance with this Order is sufficient to meet the requirements of §12.139 of the Regulations and the protection requirements of §12.146 of the Regulations.

- (a). 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. Information presented by Alcoa (Testimony of Lee Wilson and Ridge Kaiser) and review by Staff shows that relatively small overburden aquifers will be disrupted in mined areas; this will generally only affect a small area of low yielding water zones because of the types of materials present and because the water is found in discontinuous sands. Effects may result on some water wells by dewatering and by mining through areas. The application includes the required undertaking that affected water supplies will be mitigated (§12.130, Regulations, Application .130). The 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 proposed permit area's geological characteristics and the areal extent of the regional aquifer.

- (b). 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. Based upon expert testimony (Kaiser, Supplemental Testimony, and accompanying Exhibit No. 345), maximum pumpage for depressurization is anticipated to be approximately 7,500 acre-feet per year during the proposed permit term. Depressurization pumpage at Sandow is approximately 47,500 acre-feet per year at this time, and peak depressurization estimated at Sandow is approximately 51,000 acre-feet per year (Exhibit 345). Current pumpage in the Simsboro from all sources is approximately 82,000 ac-ft/yr. Section .146 of the application, as supplemented, provides estimated pumpage predictions and impacts for the proposed permit term and for the life of mine. During the proposed five-year permit term and for the life of mine, Alcoa estimates that 300-1,200 acre-feet of water will be pumped per year for dewatering [Plate .139- 1 (locations of wells) and Table 139A-1 (number of operating wells by year with annual production estimates for the five-year term).] Proposed depressurization pumpage is estimated to be between zero and 6,291 ac-ft/yr during the proposed permit term (Table .139A-2 and Plate .139A-1) and between zero to 10,889 ac-ft/yr for the life-of-mine, the latter amount during the final years of mining (Table 146-6, Supplement No. 2). For the period of time during which Sandow is depressurizing and Three Oaks is depressurizing (approximately four years), the maximum amount of depressurization from those two sources is approximately 55,000 ac-ft/yr (Alcoa Exhibit 345, Supplemental Testimony, Kaiser). 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.
- (c). Alcoa 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). No springs were located in the Calvert Bluff streamflow inventory based on observations at 200 locations in portions of Bastrop, Lee, Milam, and Williamson Counties (Alcoa Exhibit 349). No seeps, springs, or creeks gaining water due to natural discharges were located within the area to be mined. There are groundwater contributions to streamflow in areas of Little Sandy Creek, Middle Yegua Creek tributaries crossing the Simsboro outcrop, and West Middle Yegua Creek crossing the Carrizo outcrop. The streamflow contributions are small and portions are rapidly lost to evapotranspiration. Alcoa studies predict that some discharges at seeps and springs may, as the water table declines, move to other areas to discharge and this water may have been used for stock purposes which could be required to be mitigated (Alcoa Exhibit 349, Plate .129-2, Kaiser, p. 37).

- (d). For the life of mine, the PHC reflects a less than five-foot drawdown contour (the threshold amount for measurable effects) of the water table or artesian pressure in the upper $\frac{3}{4}$ of the Calvert Bluff; in the lower $\frac{1}{4}$ or northwest portion of the Calvert Bluff and in the Simsboro outcrop area to the northwest of the proposed mine area (Alcoa Exhibit 348), drawdown of the water table and artesian pressure are predicted of five feet or more, the threshold for measurable effects (Alcoa Exhibits 347-350 and Plate 146-2 of the application). Wells completed in the portions of the formations depicted on Exhibits 347 and 348 and on Plates .146-1 and .146-2 may be impacted by the proposed operations based on these projections. Seeps and springs may also be impacted by water table declines.
- (e). Two pertinent studies which included groundwater modeling of effects from existing and proposed pumpage for areas including the proposed mine area have been conducted. These studies included existing pumpage, proposed pumpage, and all other projected demands for their study areas. A study by the Region G Water

Planning Group performed groundwater modeling for a study area of the Carrizo-Wilcox Aquifer from the Trinity River to the Colorado River, which included the Sandow Mine and the portion of the proposed permit area which includes Lee County. Another study performed by the BEG, under contract with the TWDB, included modeling of groundwater availability up to a maximum of 300,000 ac-ft/yr from the Carrizo-Wilcox of Sandow, Three Oaks, pumpage for the City of San Antonio, and all other known regional users (257,718 ac-ft/yr, Bastrop, Lee, Burleson, and Milam Counties - this included Sandow, Three Oaks, and Bastrop County). Both studies indicate that pumpage in excess of 250,000 ac-ft/yr are available in the Simsboro through and past the life-of-mine to the year 2050 (Testimony of Ridge Kaiser, and Supplement Nos. 3 and 4). Current pumpage from all sources [subparagraph (c), above] total approximately 82,000 ac-ft/yr. Combined maximum pumping by Alcoa at Sandow and the proposed mine will be approximately 55,000 ac-ft/yr. Testimony by Mr. Kaiser, based upon modeling efforts, shows that groundwater will remain available to meet the withdrawal needs of the area through the year 2050 and additional demands after 2050, including pumpage from the Three Oaks mine and maximum pumpage which could occur due to Alcoa/SAWS and SAWS/CPS water contracts.

- (f). In this application, Alcoa proposes only pumping for dewatering and depressurization purposes (mining purposes). Pursuant to contract with CPS, Alcoa has the right to pump water for depressurization and dewatering required at the proposed mine, but does not have rights from CPS for other uses. (Hodges, p. 16). 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 is the supply has been affected by contamination, diminution, or interruption

proximately resulting from the surface coal mining operations. Alcoa states that it does not have rights to pump water from CPS-owned lands under contract with San Antonio Water System (SAWS) for any purposes other than mining.

- (g). Appropriate amounts of pumpage by persons other than Alcoa were considered by Alcoa in projecting the amount of depressurization needed for mining purposes: historic pumpage at Sandow and projected pumpage by Alcoa during the proposed permit term were considered. Alcoa appropriately excluded consideration of future pumpage of the Simsboro by other persons in the determination of probable hydrological consequences of the proposed operations as speculative, in that a five-year permit term is required, and in that limiting analysis to impacts from the proposed mining operations in the prediction results in a somewhat greater predicted impact, because consideration of additional withdrawal of water by others would result in a reduction of the pressure in the aquifer to some extent, resulting in less required depressurization for operations, and thereby would render the estimate less conservative (Kaiser, p. 20). Alcoa must incorporate any known changes in pumpage by others in any depressurization plans contained in future applications for renewal and/or revision, and has included this requirement as part of the application, as supplemented.

- (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. The Calvert Bluff is predominantly of low permeability. In addition, over the life of mine, end lakes could provide sources of recharge to offset any potential losses.

- (i). The proposed dewatering and depressurization operations are limited to those which are necessary for safe mining. Water levels will be monitored in depressurization wells, overburden wells, and underburden wells. Alcoa has undertaken to provide monitoring results on a quarterly basis to the Commission [within 30 days after the end of each quarter (Supplement No. 2)] for water levels, water quality, and summary underburden pumpage. The underburden pumpage information will include pumping rates by well, periods of pumping, and well locations. Alcoa has also included as part of its groundwater control plan that it will obtain written Commission approval of any change in pumping rate exceeding that which has been estimated in its groundwater modeling.
- (j). Water quality impacts to the Calvert Bluff will be slight increases in total dissolved solids. No impact to the water quality of the Simsboro is predicted.
- (k). The Houston Toad is found in the Carrizo outcrop areas two miles to the southeast of the proposed permit area. Groundwater dewatering and depressurization will have no impact on the Carrizo (Kaiser, p. 43) due to the poor hydraulic connection between the Carrizo, Calvert Bluff, and Simsboro based on results of wells drilled at the “DTH site” and based on extensive geophysical logs. No significant changes in water quality have been reflected in the waters produced from these formations in areas of large pumpage.
- (l). 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. 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 as set out in Alcoa's application and the Staff evaluation in its Cumulative Hydrologic Impact Assessment (CHIA) (Technical Analysis, Addendum No. 1, Appendix I, pages 23-24) and Finding of Fact No. 31.

31. Pursuant to §12.146(e) of the Regulations, Staff must assess the cumulative hydrologic impacts for a defined cumulative impact area (CIA) (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. Aggregate effects of existing and proposed mining must be considered. 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. To evaluate the effects on surface water resources, two Cumulative Impact Drainage Areas (CIDA's) were considered: within the Colorado River Basin and the Brazos River Basin. The Brazos River Basin contains the Sandow Mine and the northern part of the proposed mine, and encompasses specifically, the drainage area of Lake Somerville in the Yegua Creek watershed (drainage area approximately 1,000 square miles) and impacts on the Middle and East Yegua Creek CIAs. The East Yegua Creek CIA is 244 square miles, constitutes the watershed of East Yegua Creek, and includes the northern portion of the Sandow Mine. The Middle Yegua CIA is 236 square miles and is made up of the southern part of Sandow and the northern portion of the Three Oaks proposed mine area. The southern part of the Three Oaks mine area and LCRA's Powell Bend Mine are located in the Colorado River Basin, Big Sandy Creek watershed (112 square miles). Although mining effects have previously been considered by the Commission for these river basins, these previous assessments did not include the effects from the proposed Three Oaks Mine.

Measurable changes on specified parameters are 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 proposed operations have been designed to prevent material damage outside the proposed permit area.

- (a). Baseline hydrologic conditions for the Brazos River Basin were identified from records for 1925 - 1965, using the USGS gaging station No. 08109900, located at the dam at Lake Somerville, to determine unregulated water discharge (210,000 ac-ft/yr) and water quality records from 1969 – 1991 for average annual total dissolved solids, (TDS)(158 mg/L). For the East Yegua Creek CIDA, the USGS gaging station No. 08109800 (East Yegua Creek near Dimebox) was used, with an average discharge for 1962 – 2000 of more than 46,000 ac-ft/yr, and average annual TDS of 175 mg/L (baseline data, Sandow). For the Middle Yegua Creek CIA, the USGS gaging station No. 08109700 was used, with an average discharge for 1962-2000 of 38,000 ac-ft/yr, and average annual TDS of 288 mg/L. For the Colorado River Basin, (Big Sandy Creek CIDA), four USGS gaging stations were used, two on Big Sandy Creek [No. 08159170, Big Sandy Creek near Elgin (63.8 square miles), 151 mg/L for 1979-1980 (period of record) and No. 08159165, Big Sandy Creek near McDade (38.7 square miles), 168 mg/L, for 1979-1980] and two on its tributary, Dogwood Creek, Dogwood Creek near McDade, No. 08159080 (.53 square miles), 39 mg/L, for 1979-1980, and Dogwood Creek at Highway 95 near McDade, No. 08159185 (5.03 square miles), 84 mg/L, 1979-1980.
- (b). Baseline water quality information is included in the application and is comprised of information from 3600 test holes for geophysical logs, more than 85 continuous cores, approximately 150 monitoring wells, approximately 40 aquifer tests, and an

inventory of approximately 1300 private water wells. Data are included for water levels, chemical quality (TDS and pH), and iron and manganese (with levels generally higher in overburden wells and in underburden wells in the Three Oaks area and higher than approved drinking water standards).

- (c). In determining material damage criteria for surface water, Staff reviewed chemical and physical changes in receiving streamflow, geomorphic changes, which could include changes to flow and availability of water, aquifer head drawdown and decline, changes in the reclaimed spoils area, and chemical changes in spoils groundwater. These changes were then compared to TCEQ stream segment standards to determine whether or not material damage was indicated. Staff also reviewed baseline information, public water supply standards, and state and federal wastewater discharge permits. The discharge permits contain effluent limitation requirements for total suspended solids, settleable solids, pH, and total iron. Stream segments within the CIDAs are Lake Somerville (Segment 1212), Yegua Creek (Segment 1211), and the Colorado River upstream of Bastrop (Segment 1428). Staff compared segment criteria for sulfates, chlorides, and pH, as well as wastewater discharge permit effluent limitations for total iron, to results of mass balance analyses from the data compiled.

- (d). In determining material damage criteria for groundwater, Staff reviewed aquifer head drawdown and decline using permanent drawdown versus normal fluctuations as a material damage criterion. Historically, drawdown in areas of shallow aquifers near the mining occur over a small area despite the larger distances predicted by modeling. Staff used the threshold value of permanent decline of water level of five feet or more, within the applicable CIA as an indicator of material damage to the water quantity of the overburden aquifer. Extensions of the current drawdown effects from the Sandow mine will occur, and drawdown of five feet or more will occur in areas

surrounding the proposed permit area, but the effects will be temporary and/or will be mitigated. Existing Sandow depressurization pumping was considered in the preparation of the PHC as well as proposed depressurization pumping. Increases in Sandow pumpage or other additional pumpage will result in a decrease in pumping at the proposed Three Oaks mine because of the use of ongoing proposed monitoring and annual calibration of the groundwater model. Results of monitoring and the recalibrated modeling of the following year's projections for pumping will be provided to the Commission so that evaluation of the model and results will be ongoing. Mine-related pumping is estimated to cease at Sandow in 2005-2006.

- (1). Overburden five-foot drawdown from dewatering for the proposed Three Oaks mine area is expected to extend approximately 15 miles north, 18 miles south, and 6.5 miles east of the life-of-mine area. Overburden five-foot drawdown effects for the Sandow Mine from dewatering are projected to extend approximately three miles east and south of the life-of-mine area in the north and south of the Sandow mine. Effects are not predicted to occur for many additional overburden wells in Sandow.
- (2). Effects will occur to underburden wells from depressurization, and, as with overburden effects, will be required to be mitigated. Approximately 250 wells have been mitigated by Alcoa from Sandow activities, the majority of them located in the Simsboro. Drawdown of five feet or more from underburden depressurization is projected to extend to approximately 12 miles northeast of the northern portion of the Sandow mine area, to approximately 12 miles south of the southern mine area, and 2-4 miles west-northwest and east-southeast from the Sandow permit boundary. For the proposed Three Oaks permit area, the five-foot drawdown contour is projected to extend 17 miles north, 21 miles south, and 7.5 miles east of the

life-of-mine area. The water level drawdown will be temporary (TA Addendum No. 2, Appendix I, pp. I-9-10). Resaturation is occurring in the Sandow mine area.

- (3). Alcoa identified approximately 1300 private water wells which are within the combined five-year drawdown areas, 840 in the Three Oaks area and 460 in the Sandow area. Approximately 40% of these wells are completed in the Simsboro. Effects on aquifer drawdown and declines were modeled by Alcoa and results are included in the PHC. The majority of the overburden wells are not expected to be affected because they are not completed in stratigraphic areas which would likely be affected. Most declines for the Three Oaks area will occur within and immediately adjacent to the proposed permit area.
- (e). Staff used TDS as the threshold value in evaluating material damage to water quality of the overburden and underburden aquifers. Levels of iron and manganese are not important in that levels currently present do not meet drinking water standards. To evaluate water quality effects from contributions to stream flow, the specific criteria in the stream segments were used. For surface waters, chemical changes in receiving streamflow will be negligible. Water from disturbed areas and from dewatering will be routed to sedimentation ponds and will be treated in accordance with effluent discharge permits as required. Additional groundwater may be obtained from the Simsboro, as needed, for dust control as set out in Section 12.139A of the application, as supplemented. Produced overburden and underburden water being utilized for dust control and truck washing will be routed to sedimentation ponds for temporary storage prior to use. Increase in TDS values in aquifers are predicted to be minor. A mass balance analysis, with TDS as the indicator parameter, was used to project any effects on domestic and livestock uses (Tables 4 and 5, TA Addendum

No. 2, Appendix I). The mass balance analysis utilized appropriate data. The potential effects on Lake Somerville (Segment 1212) for TDS is projected to be an increase in TDS of 47 mg/L up to 230 mg/L; the stream segment criteria, an average of 400 mg/L, will be met. Effects on TDS levels for stream segment 1211 are projected to be an increase of 192 mg/L resulting in an increased average of 480 mg/L; the stream segment criteria of 640 mg/L will be met. Effects on the confluence of Big Sandy Creek with the Colorado River (Segment 1428) are projected to be an increase of 157 mg/L and would raise the projected TDS level to 369 mg/L; the stream segment criteria of 500 mg/L will be met. Based upon the indicator parameter of TDS, stream segment criteria will be met.

- (f). Based on the PHC, net evaporative losses are projected to be minimal. Shorter duration peak flows are expected, and longer sustained flows are expected due to controlled discharges from impoundments. These effects are due to the small area controlled by impoundments (3.7 – 6.3%) in comparison to the size of the watersheds.
- (g). Premine original contour will be established which will reduce geomorphic changes within the CIA. The areas proposed to be disturbed constitute 4 – 7% of the cumulative impact drainage areas.
- (h). Only minor effects isolated within watershed divides are expected due to physical changes in the spoils areas. Adjacent overburden aquifers will not be materially affected due to the nature of sediments in the areas adjacent to the mined areas.
- (i). The projected aquifer drawdown effects will be minor and/or temporary and will be required to be mitigated. Physical changes will not result in material damage due to

the isolation of effects throughout small local watershed areas. Water quality impacts will not be material due to the large dilution effect of surrounding aquifers for underburden aquifers and from the large dilution effect of the runoff within the large drainage areas in which the CIDAs are located.

32. A request was made by the Lost Pines Groundwater Conservation District, not a party to the proceeding and not yet a permanent water district in that no confirmation election has been held, that the Commission consider pumpage by the SAWS/CPS/Alcoa contracts in making determinations required by the Staff-prepared Cumulative Hydrologic Impact Assessment (CHIA) and in determining appropriate pumpage in this proceeding in addition to the pumpage for mining purposes. Alcoa's modeling results contained in this application, as supplemented, did not include pumpage under these contracts, and it is not required that Alcoa consider the additional pumpage which may occur by Alcoa for other purposes and may be provided to the City of San Antonio. Alcoa and SAWS/CPS do not plan this pumpage and delivery until approximately 2013, and such pumpage will be subject to groundwater district rules. Water produced because of dewatering or depressurization for mining purposes, if used for an additional purpose and no longer used for mining purposes, or pumped in excess of the amount necessary for mining activities specified in the permit, would also be subject to groundwater district rules [TEX. WATER CODE, § 36.117(d)(2)]. The district also requested that the Commission consider a Carrizo-Wilcox groundwater availability model (GAM) in the process of development by the TWDB in its evaluation of impacts. Although the results of completed modeling regarding projected impacts on planning regions were provided by Alcoa and reviewed by the Staff and the Commission as instructive regarding pumpage for all purposes in the region in which the proposed permit is located, it is inappropriate to use the requested groundwater availability model, which is not complete, in the evaluation of the application's proposals for mining purposes. The model is being designed for a different purpose than the modeling performed by Alcoa to predict impacts. No surface mining regulation or other law provides that the Commission

may regulate pumpage other than for mining purposes. The GAM is intended as a tool for planning agencies for future water development and, because it will be developed to model a large portion of the aquifer, uses a one-square mile size cell (the unit for the grid system of the model which determines the input data (pumpage and aquifer characteristics) and a five-cell area would cover the permit area. By comparison, the predictive model used to provide the PHC has a finer grid cell spacing, 382 cells at 500 by 500 feet to utilize data from 1400 test holes. A five-cell area would not be capable of determining depressurization amounts for the mine because it does not include the geohydrologic detail required for the five-year proposed permit term (Testimony, Ridge Kaiser, pp. 56-58).

33. No blasting is requested for the proposed permit area.

34. Alcoa examined socioeconomic and fiscal impacts to Milam, Lee, and Bastrop Counties based upon approval of the proposed permit. Based upon Alcoa Exhibit 402, Annual Economic Impacts, measured by output (average annual expenditures), income, and employment [categorized by type as (1) direct and indirect, and (2) induced], and testimony by consultant Lonnie Jones, the total economic impact on output is approximately \$82.5 million. In addition, approximately \$8.2 million of sales induced into the economy as Alcoa employees and other indirect employees spend earnings. The study also reflects that Lee and Bastrop Counties will receive tax payments as well as the associated school districts, Lexington, Elgin, and McDade. Total estimates for taxes to these jurisdictions over the life of the mine are: Bastrop County, \$7,511,753; Lee County, \$8,527,520; Lexington ISD, \$24,465,028; Elgin ISD, \$13,473,879; and McDade ISD, \$4,696,896. There will be changes in taxing for Milam County. Exhibit 405 represents the average annual changes in taxes for the taxing jurisdictions in Milam County: Milam County, a decrease of \$98,102; Rockdale ISD, a decrease of \$406,700; and Thorndale ISD, and increase of \$82,929.

35. Alcoa does not propose the use of existing structures within the proposed permit area (§12.140). No blasting is requested or approved within the proposed permit area. No blasting plan is required pursuant to the requirements of §12.141 of the Regulations.

36. Because the proposed mine is east of the 100th meridian west longitude, an air pollution control plan is not required under §12.143 of the Regulations. However, a fugitive dust control plan is required, and the application, as supplemented, contains a plan for fugitive dust control which meets the requirements of §12.143 of the Regulations. Although the mine itself is not required to have an air quality permit, certain operating facilities are subject to air quality permitting pursuant to the jurisdiction of the Texas Commission on Environmental Quality. Jess McAngus, P.E., an air quality expert presented testimony and exhibits (Alcoa Exhibits 492-495, and McAngus, Supplemental Testimony) quantifying ambient air quality and air emissions which should occur from construction and operation of the proposed mine. The exhibits and Mr. McAngus' testimony reflect the acquisition of data acquired from air monitoring results for particulate matter from monitors at four locations within and near the Sandow Mine and one monitor located within the permit area of the proposed mine and the results of modeling for annual and 24-hour averages for specific sources of particulate matter emissions. Mr. McAngus reviewed Alcoa's dust control plan and determined that it will minimize air emissions and result in ambient air concentrations meeting state and federal ambient air standards for the particulates modeled. The dust control plan includes measures to control dust from operations, including the use of crushed rock for long-term haulroads, personnel awareness of excessive dust and appropriate action, minimizing the area of disturbed lands and stabilizing disturbed lands, limiting travel on roads based on road conditions and use of posted speed limits, rerouting traffic when conditions warrant, maintaining roads properly, use of inspection and control procedures for coal stockpiles, use of water and chemical sprays on roads to control dust, and use of such sprays or other appropriate measures at coal loading and transfer points.

37. The application, as supplemented in Supplements 1, 2, and 3, contains a fish and wildlife plan in Section .144 with measures to minimize, to the extent possible using the best technology currently available, disturbances and adverse impacts to fish and wildlife and related environmental values, including compliance with the Endangered Species Act, 16 U.S.C. 1531 *et seq.*, from proposed operations and to enhance fish and wildlife habitat where practicable. The fish and wildlife plan includes a protection plan for the timber rattlesnake which includes surveying and relocation, a protection plan for migratory threatened or endangered birds such as the bald eagle, whooping crane, wood stork, mountain plover, piping plover, interior least tern, reddish egret, and Bachman's sparrow, and other migratory birds, a general wetland restoration plan for various types of wetlands for the first five-year disturbance area (Plate 144-1). Alcoa has identified impacts to wetlands or waters of the U.S. as a result of mining and mining related activities as 11.5 acres for the first five year mine block classified as the following: ephemeral stream channels, 3.84 acres; intermittent stream channels, 0.28 acres; ponds, 5.18 acres, and non-forested wetlands, 2.20 acres. Alcoa will use the following ratios in mitigation of these acreages: a minimum ratio of 1:1 for ephemeral and intermittent stream channels; a minimum ratio of 1.5:1 for ponds, and a minimum ratio of 2:1 for non-forested wetlands. Watercourses with riparian woodland corridors will be mitigated by replanting riparian trees along reclaimed stream channels and ponds. Because of the additional acreage which will be reclaimed as fish and wildlife habitat for the proposed permit area, mitigation of waters of the U.S. and wetlands will occur for 314.97 acres (9.24 acres of stream channels, 301.28 acres of ponds, and 4.45 acres of herbaceous wetlands) and for an additional 378.62 acres of riparian corridor which will be created by planting bottomland trees along restored channels and pond edges. Potential plant species for wildlife habitat development are included in Section .144 of the application (Supplement No. 3). The fish and wildlife plan is sufficient to meet the requirements of §12.144 of the Regulations.

38. The application, as supplemented (Supplement No. 1), includes a detailed reclamation cost estimate which totals \$ 51,025,459.00. Staff's reclamation cost estimate, provided in TA Addendum No. 1, totals \$ 50,735,762.00. Alcoa's estimate uses the worst-case costs for all facilities, structures, and pits, and divides the total costs for the affected areas by the acreage to arrive at unit rates for mined and disturbed properties. There is no inclusion in the estimate for ancillary acreage (that for which only soil preparation, revegetation and maintenance are required). Alcoa's estimate includes a 10% factor for administrative costs. Alcoa's unit costs are \$3,498 per mined acre and \$2,903 per disturbed acre. Staff's estimate included \$3,459 as the mined rate and \$2,891 as the disturbed rate and included the 10% factor for administrative costs. No acreage was included in Staff's estimate as ancillary acreage; however, Staff indicated a cost per ancillary acre of \$624 per acre. Staff recommends that Alcoa's estimate be accepted by the Commission. In that this estimate is a more conservative total for reclamation, the Commission accepts the total as the amount required for a reclamation performance bond in this docket. The Commission accepts the method of calculation by Alcoa as a reasonable method in this docket based upon the acreages used as mined and disturbed for the proposed permit term. The cost estimate is sufficient to meet the requirements of §12.145(b)(2) and the Commission finds that a bond from Alcoa in the amount of \$ 51,025,459.00 is required prior to issuance of the permit.
39. The application, as supplemented, includes a plan for revegetation of lands proposed to be reclaimed as fish and wildlife habitat, undeveloped land, pastureland, and cropland. No postmine land use of grazingland is proposed. The plan meets the requirements of §12.145(b)(5)(F) of the Regulations.
- (a). The revegetation plan includes a description of the species and planting rates per land-use area, planting and seeding methods, mulching techniques, irrigation practices, and method for determining revegetation success. Alcoa proposes hybrid bermudagrass as the dominant species for land reclaimed as pastureland. Other annual species will be used for temporary cover, and native and introduced species

[Section .132, and Table 145-3a (Supplement No. 4)] may occur as volunteer species or due to seed and rootstock in postmine soil materials; however, no species will be allowed to constitute an infestation to the area or adjacent land uses.

- (b). Alcoa has not presented sufficient information to demonstrate that the species set out in Staff-recommended and approved Permit Provision No. 3 are appropriate for pastureland use within the proposed permit area, and these species are not approved for use in reclamation of disturbed lands as pastureland, subject to the permit provision.

- (c). Alcoa will reclaim fish and wildlife habitat by planting native trees, shrubs, and herbaceous species. Alcoa's proposed vegetation list of Potential Plant Species for Wildlife Habitat Development on the Three Oaks Mine (Table .144-1, Supplement No. 3) was amended to incorporate the TPWD's suggestions in the TPWD comment letter dated January 30, 2002 for deletions of non-native plants, except for water oak, which Staff determined was included in the vegetation inventory (Section .132 of the application) for the proposed permit area. Alcoa will revegetate undeveloped land and fish and wildlife habitat with native species selected from Table .144-1 (Supplement No. 3) and Table .145-3, Supplement No. 4. In areas reclaimed as fish and wildlife habitat or as undeveloped, Alcoa also proposes that in critical areas such as drainage ways and slopes, bermudagrass will be planted for erosion control with native species overseeded, and that native and introduced species [Section .132, and Table 145-3b (Supplement No. 4)] may constitute up to 25% of the species composition. The USDA-NRCS concurs with this proposal in that it may take as much as three years for native grasses to become established. Because bermudagrass is non-native, Staff recommends Permit Provision No. 4 in that TPWD has not agreed to planting bermudagrass fro fish and wildlife habitat or undeveloped land

uses. Adoption of this permit provision will ensure appropriate vegetation for the proposed mine.

- (d). The tree stocking rate for wildlife habitat will be a minimum of 30 trees per acre and may be at a higher density depending on characteristics of the site and plant availability.
 - (e). Alcoa will reclaim sufficient land as cropland using appropriate vegetation species [Finding of Fact No. 31(c)(2)]. Alcoa will use the USDA-NRCS forage production standards (Application, Volume 9, Appendix .145-C) for grasses on lands reclaimed as pastureland.
40. Alcoa has provided a soil testing plan which is adequate to detect acid-forming and toxic-forming materials (AFM/TFM) and to ensure that no AFM/TFM are present in the top four feet of reclaimed minesoils or that such materials are adequately treated or removed. The application, as supplemented, is satisfactory to meet the soil-testing plan requirements of §12.145(b)(5)(G). The Commission approves the proposed soil testing plan as set out in Appendix II to this Order.
41. The application, as supplemented, includes a plan for active-mining surface-water control. The plan includes a description of the ponds, diversions, and berms which will be used to control and treat surface water runoff from disturbed areas. The surface-water control plan is sufficient to meet the requirements of §12.146 of the Regulations.
- (a). The application, Section .148, as supplemented in Supplement Nos. 1 and 2, with an entire replacement section .148 included in Supplement No. 3 to provide pagination, and Supplement 4 (Pond SP-3, Table 148-9) contains detailed design plans required for each proposed pond to be constructed during the proposed permit term (Plate

148-1 and Plate 147-1): sedimentation ponds SP-1, SP-2, SP-3, and SP-5, which will control runoff from the mine area, and diversion ponds DP-1, DP-2, and DP-3, to be located on a tributary channel to Mine Creek to attenuate the flows into Diversion CD-1, and (Facilities Pond) FP-1, near the proposed FM 696/FM 619 reroute, which will control runoff from the facilities area. The detailed design plans are approved for Ponds SP-1, SP-2, SP-3, SP-5, DP-1, DP-2, and DP-3. Additional design plans intended as general plans for proposed permanent structures have also been provided for SP-1, SP-2, and DP-2. General design plans for Ponds SP-6, to be constructed prior to mining through Pond SP-3, and RPC-1, and for several reclamation ponds have been submitted. The general design plans for permanent ponds SP-1, SP-2, and DP-2, temporary sediment pond SP-6, and for the reclamation ponds provided in Table 148-15 are approved. Due to the storage capacity and underdrain design of sedimentation ponds, Alcoa will have the ability to regulate flows from the ponds to assist in controlling discharges. All required design certifications have been submitted. None of the proposed ponds meet size or other criteria requiring approval pursuant to § 12.148(a)(2) and Mine Safety and Health Administration regulations. The information submitted meets applicable requirements of § 12.148 (a)(1) and (3), (b), (c), and (f). The requirements of §12.148(d) and (e) are inapplicable in that no structures are proposed for which these requirements apply. The Commission approves ponds SP-1, SP-2, SP-3, SP-5, DP-1, DP-2, and DP-3 as temporary structures. Detailed design plans for diversions proposed for the proposed permit term are included in the supplemented application. The general and detailed design plans for these structures are sufficient to meet the requirements of the Regulations. Proposed Diversions CD-4, DD-1, DD-2, DD-3, DD-4, DD-6, DD-7, AND DD-9B (application and Supplements 1 and 2, and Staff TA and Addenda 1- 2) and CD-1, DD-9A (application and Supplement Nos.1-3 and Staff Addendum No. 3) are approved as temporary structures.

- (b). In Supplement No. 4, Alcoa included three proposed 4' x8' concrete box culverts to be installed in Diversion CD-1 under existing FM 619 related to its proposed alternate mine plan. Staff noted that no hydraulic design information was included for review in the supplement. By materials filed in Supplement No. 5, Alcoa provided adequate design information (Staff review by filing dated September 3, 2002).
- (c). Diversions CD-1 and CD-4 (freshwater diversions carrying water around disturbed areas), and DD-1, DD-3, DD-6, and DD-7 (diversions directing disturbed runoff to sedimentation ponds) require stream buffer zone variances in that they are diversions of intermittent streams. Alcoa has provided information required by §12.355, and Staff analysis shows that the impacts from these structures will be negligible; requirements of this section are met. Diversion CD-1 also requires approval by the Floodplain Administrator; for CD-1, Lee County. Based upon the design of the structures, and information concerning revegetation and environmental resources of the areas, Commission requirements have been met, and these stream buffer zone variances are approved.
42. Alcoa proposes to disturb 6,351.8 acres within the proposed permit area during the proposed permit term. During the life-of-mine approximately 8,634 acres will be disturbed by mining and other activities (Prefiled Testimony, David Morris, p. 30); the remaining 7,428 acres of the permit area will not be disturbed. Alcoa has provided postmine land use types, acreages, and percentages proposed for the areas proposed for disturbance during the proposed permit term as follows: 3,451.2 acres, fish and wildlife habitat (54.3%); 2,428.9 acres, pastureland (38.3%); 293.6 acres, developed water resources (4.6%); 79 acres, industrial/commercial (1.2%); 70 acres, cropland (1.1%); 28.1 acres, undeveloped (0.5%); and 1 acre, residential less than 0.1%)(Alcoa Exhibit 620). Although the disturbance area is a smaller area of land within the proposed permit area, the postmine land uses will be comparable to the proposed

permit area as a whole; the primary changes from the premine land uses are the elimination of grazingland, slightly decreased pastureland, decreased undeveloped land and residential land, and reclamation of lands to fish and wildlife land use. The proposed postmine land uses in the application, as supplemented, meet the requirements of §12.147 of the Regulations, and are approved, with the following exceptions: the industrial/commercial land use proposed for public roads [Tract TO35 (FM 619) and TO97 (FM 696)] is subject to Permit Provision Nos. 1 and 2, and Tract T037 (subject to litigation) is subject to Permit Provision No. 7.

43. A locally termed “Borum Mine Shaft” exists within the proposed permit area (cultural resource site 41LE213). Staff review indicates that this area does not contain evidence of underground mine workings or lateral shafts or evidence of any surface activities connected with the shaft. Evidence indicates that the shaft occurred as a result of prospecting and/or obtaining the lignite from the bottom of the shaft for domestic use. Based upon the available information filed by the applicant and the Staff review (Application Supplement No. 2) and Staff TA Addendum No. 2, p. 46), the area does not meet the definition of “underground mining activities” set out in §12.3(184) for which additional requirements for a buffer zone and ground control plan set out in §12.149 of the Regulations would apply.
44. The application includes a list of public roads for which closure or relocation is proposed during the 5-year permit term, as described in the application, as supplemented, and for which approval must be obtained from the local road authority with jurisdiction over each road, in accordance with the requirements of §12.72(e) of the Regulations, as well as proposed haulroads and service roads, and road-related structures, as required by §12.152 and 12.154. The application as supplemented also includes a list of buffer zone variances for activities within the 100-foot buffer zone of the rights-of-way of public roads and of proposed relocated road segments. Alcoa has not yet obtained the necessary approvals for the closures/relocations of Bastrop County roads or TxDOT approvals for closure/relocation

of FM 696 and FM 619, as proposed in the preferred mine plan. These entities are the road authorities with jurisdiction over these roads. Alcoa also has not obtained approval from TxDOT for the crossing of FM 619, as proposed in both the preferred and alternate mine plans. Crossing of FM 619 has been approved by Lee County (Supplemental Testimony, David Morris, p. 2). All required approvals from Lee County have been obtained. Section 12.72(e) of the Regulations requires that Alcoa must obtain such approvals from the local road authority with jurisdiction over each of these roads before the closure/relocation activities proposed in the primary mine plan, or the activities for which variances are requested in the alternate mine plan, may commence. Alcoa has adequately identified all road approvals needed for the alternate mine plan. The Commission approves Alcoa's buffer zone variance proposals for portions of Lee County Roads CR 101, CR 303, CR 304, CR 306, CR 309, and CR 312, construction of new Lee County roads (reroutes), and superspans to cross Lee County Roads 304, CR 306, and CR 312. Documentation of approval by Bastrop County and/or by TxDOT, as required, along with documentation that the closures/relocations are consistent with the approved mine plan relevant to the road proposals, must be submitted by Alcoa and approved by the Director in accordance with the permit provision (or the Commission in accordance with Finding of Fact No. 17) prior to commencement of the respective activities for the areas for which the closure/relocation/variance is required. The following road structures and road-related structures within the proposed permit boundary are approved as temporary structures: (1) Main Haulroad with grade separators at existing FM 696, existing Lee CR 306, existing Bastrop CR 90, existing Lee CR 312, relocated Lee CR 102, relocated FM 696, relocated Lee CR 304, relocated FM 619 and a bridge at Middle Yegua Creek, subject to information and approvals as set forth in proposed Permit Provision Nos. 1 and 2; (2) Equipment walk-arounds at relocated Lee CR 304, existing Lee CR 306, existing Lee CR 312, relocated FM 619 and Middle Yegua Creek crossing, subject to information and approvals as set forth in Permit Provision Nos. 1 and 2; (3) Service Roads SR-1, SR-2, SR-2A, SR-2B, SR-3, SR-4, and SR-5; (4) Dragline crossing of existing FM 619 in the A Mine Area, subject to

information and approvals as set forth in proposed Permit Provision Nos. 1 and 2; and (5) Middle Yegua Creek channel modification.

- (a). To facilitate mining within the proposed permit area, Alcoa proposed in the application to relocate sections of State Farm-to-Market Roads (FM) FM 619 and FM 696, Bastrop County Road CR 96, and Lee County Road CR 303, to upgrade a section of Lee County Road CR 304, to relocate a portion of the upgraded section of Lee County Road 304, to extend a section of Bastrop County Road 89, and to close a segment of Bastrop County Roads CR 90 and CR 96. In Year 1, Alcoa proposed to close a section of FM 619 currently intersecting with FM 696 and to relocate this section further south to a new intersection with FM 696. A section of CR 303 that now intersects with FM 619 was proposed to be closed; and, in order to provide shorter access to FM 696 for northbound traffic on FM 619, a new section of CR 303 was proposed to be built to the west of its existing location, providing a connection between FM 619 and CR 304. A segment of CR 304, between the new CR 303 and FM 696, was proposed to be upgraded and/or relocated. The segment of CR 90 (Old Lexington Road) that now intersects with FM 696 was proposed to be closed. The segment of CR 96 intersecting FM 696 was proposed for closure possibly as early as Permit Year 1, and relocated to a new intersection with FM 696.
- (b). In preparation for mining the Year 3 mine block, a section of FM 696 is proposed to be rerouted, with construction including a grade separator for a haul road. When the reroute is completed, the section of FM 619 located between the newly relocated FM 696 and the old FM 696 will be closed. Also, CR 102 will be extended from its current intersection of FM 696 to intersect with the rerouted FM 696. In addition, a segment of CR 101 will be upgraded/extended to provide public access to the relocated FM 696 via the upgraded CR 304. Alcoa also proposes closure of a

portion of CR 96 in Mine Year 3 when its new intersection with the relocated FM 696 is constructed.

- (c). Alcoa also requests buffer zone variances for most of the existing and proposed state and county roads within the proposed permit area. The roads for which these variances are requested include FM 619 and FM 696, Lee County Roads CR 303, CR 304, CR 306, CR 309, and CR 312, and Bastrop County Roads CR 90, CR 96, CR 101, and CR 102. The proposed future road relocations for which buffer zone variances are requested include FM 619 and FM 696, Lee County Roads CR 303, CR 304, CR 101 [proposed reroute of Bastrop County Road 102 (101)] after it crosses the county line into Lee County), and Bastrop County Road 89. Alcoa requests approval of these variance requests to conduct mining, reclamation, and construction activities within the 100-foot buffer zones to public road rights-of-way. All proposed activities occurring within the 100-foot buffer zones will be located on land that is within the proposed permit boundary and owned or controlled by Alcoa. Mining activities will consist of the removal of overburden, the removal of lignite, and the placement of overburden material. Reclamation activities will consist of any mining-related reclamation activity such as regrading, reseeding, erosion repair and other such activities associated with the normal reclamation program. Construction activities will consist of any mining-related construction activity such as the placement of rock riprap for erosion control, modification of existing drainage structures, construction and use of mine roads, construction of wells, and the construction of new ponds and drainage structures. Alcoa requests variances for conducting mining activities only within specific buffer-zone locations where an approved mine block is immediately adjacent to the right-of-way of an existing or relocated public road. The proposed buffer-zone variance areas where mining is proposed are: existing FM 619 and FM 696 (portion to be rerouted, both sections), proposed Lee County Road 101, existing Lee County Roads 303 and 304,

portions to be rerouted, both sections, existing Bastrop County Roads 90 and 96, proposed Bastrop County Road 101, and existing Bastrop County Road 102, mining indicated within buffer zone of each portion. Alcoa will not remove overburden for the recovery of lignite within the 50 feet closest to the public road right-of-way. For any open pit located within the 100-foot buffer zone, as limited, safety barriers will be constructed to obstruct, restrain, and prevent the normal passage of persons or vehicular traffic if sufficient natural barriers do not exist. Additionally, a number of buffer-zone variance requests are for reclamation and construction activities only, and do not include mining activities. These buffer-zone variance areas are identified on Plate 152-1 (Supplement No. 2) as buffer zone variances where mining is not included.

- (d). Appendix 152-A, Lee County Road Relocations/Closures Documentation, Supplement No. 2 of the application, contains the Lee County Commissioners Court resolution dated September 10, 2001, approving the relocation of portions of Lee County Roads CR 303 and CR 304 and State of Texas FM 696 and FM 619, and construction of new Lee County roads (reroutes). In Supplement No. 3, Alcoa provided required authorization from Lee County Judge Robert B. Lee dated November 12, 2001 for temporary equipment (dragline) crossings of CR 304, CR 306, and CR 312. Sufficient documentation of approval of TxDOT for relocations of FM 696 and FM 619, of appropriate authorities for equipment crossings for FM 619 and CR 90, and documentation for surface water drainage control for at-grade separators for CR 96 and CR 102, and for the proposed haulroad reroute and grade separator on rerouted FM 696 in the A Mine Area have not been submitted and surface water control structures must exist prior to disturbance for these purposes. Alcoa has submitted a letter of intent from TxDOT dated February 28, 2002 regarding the relocation of FM 696 and FM 619. This letter of intent contains four contingencies for approval of the relocations which have not yet occurred: approval

by Bastrop County, preparation of a Minute Order to relocate the roads for adoption by the Transportation Commission, TxDOT Administration approval to enter into an advance funding agreement with Alcoa, and TxDOT Administration approval to allow for incremental payments within the project. The temporary equipment crossings are subject to Permit Provision Nos. 1 and 2.

45. The application includes information indicating that excess spoil will not be created. The requirements of §12.153 are not applicable.

46. In Section .154 of the application, as supplemented, Alcoa proposes that a haulroad corridor be constructed within the proposed Three Oaks Mine permit area. The Three Oaks Mine haulroad corridor will connect to the Sandow Mine (Permit No. 1E) haulroad corridor at the common boundary between the two mines. This haulroad corridor extending through the Sandow Mine and the Three Oaks Mine will be utilized for haulage needs generated by both mines, and also for access to the Three Oaks Mine area by draglines and other equipment from the Sandow Mine. In addition to haul roads, a conveyor system and service roads may also be constructed within the haulroad corridor. Additional features that may be constructed within the haulroad corridor include power lines, water lines and lighting systems. The haulroad is proposed to cross Middle Yegua Creek. The proposed crossing bridge is proposed with a 275-ft span and a 91-foot deck width, and approximately 2,660 feet of the existing Middle Yegua Creek channel will be modified at the proposed haulroad bridge. A temporary equipment crossing (dragline walk-around) is also proposed for Middle Yegua Creek. All required design and related information has been submitted for the channel modification related to the haulroad crossing of Middle Yegua Creek. The application for the Three Oaks Mine requests authorization to construct, operate and maintain haul roads, conveyor system and ancillary facilities within the haulroad corridor in the proposed Three Oaks Mine permit area. Authorization to operate and maintain the existing haul roads, conveyor system and ancillary facilities within the haulroad corridor located in the Sandow

permit area and proposed for location in Alcoa's revision application for the Sandow Mine currently in process before the Commission as an uncontested proceeding are subject to Commission determinations for Permit No. 1E. Alcoa proposes a haulroad and conveyor segment crossing the A and B mine areas. This conveyor segment will not be constructed until FM 696, FM 619, and County Road 90 have been closed and/or relocated (Supplement No. 5). At-grade crossings of FM 619 and County Road 90 by the haulroad are proposed in the alternate mine plan; these crossings are at the discretion of the public road authority [§12.71(4)(A).]

47. Alcoa has provided a Form No. SMRD-41C demonstrating that Alcoa has a certificate of public liability insurance in force expiring July 1, 2003 from Pacific Employers Insurance Company meeting the requirements of § 12.311 of the Commission's Regulations.

48. Alcoa's Rockdale Operations located southwest of Rockdale include an aluminum smelter, an aluminum casting plant, an aluminum atomizing plant, the lignite mine, and an electrical generating plant with three steam boilers fueled by lignite. A fourth unit, Unit 4, also fueled by lignite, is located on the plant site, but is owned by TXU Electric. Tommy Hodges, Mining Manager for Alcoa at its Sandow Mine and for the proposed Three Oaks Mine, indicated that the lignite supply for Alcoa's Rockdale plant obtained from the Sandow Mine permit area would be sufficient for use through 2005. (Testimony, Hodges). The majority of the coal proposed to be mined at Three Oaks will be sold to TXU for use in Unit 4, the more modern unit and the largest unit (Testimony of David Morris, p. 15). Employment at the Rockdale Operations is approximately 1440 persons, plus approximately 500 contract employees, and the annual payroll is approximately \$100 million. TXU's electric generating Unit 4, which produces power for the smelter pursuant to contract with Alcoa, and for the TXU grid, employs approximately 100 persons. The lignite mine employs approximately 210 full-time employees and 100 employees of contractors. Approximately one-third of the Sandow lignite is used to supply the Alcoa boilers used for the smelter, and two-thirds supply the TXU boilers. Upon depletion of the economically feasible lignite resources at Sandow,

Alcoa proposes to mine within the proposed permit area. The Three Oaks proposed permit area is the least expensive fuel source for the smelter. Although deeper reserves of lignite are present within the Sandow area, recovery of these reserves is neither cost-effective nor as safe as mining at Three Oaks due to questionable stability of mine pit slopes at increased depths. Another reserve close to Rockdale, the "Milam Reserve" between U.S. Highway 77 and U.S. Highway 79 in Milam County would also result in higher operation costs and is infeasible due to the presence of a public airport, major railroad line, and number of property owners. The ratio of lignite per cubic yard of overburden at the proposed mine is more than at Sandow, so that less land will be disturbed on an annual basis than at Sandow and fewer equipment-hours will be required. In addition, because of the angle the several faults at Three Oaks make with the horizontal lignite seams, mining can proceed farther down into the seam due to the upward heave caused by the faulting. Costs of other potential fuels were considered by Alcoa, such as purchased electricity, natural gas, and western coal (which would require conversion of the generating units and construction of rail unloading facilities). All other potential fuels are not as cost-effective [Testimony, Morris, pp. 8-12, and Testimony, Hodges, pp.11-12, Alcoa Exhibit No. 215, reflecting average costs of fuel: Three Oaks lignite, less than \$1.00/MM BTU - with maximum costs approximately \$1.20 - \$1.30/MM BTU; western coal, \$1.40/MM BTU; NATURAL GAS, \$2.30/MM BTU; and purchased power from the Energy Reliability Council of Texas (ERCOT) grid, \$2.70/MM BTU). All energy sources named are also subject to price fluctuations, with natural gas exhibiting larger fluctuations.

49. Alcoa has paid all required fees, including abandoned mine land fees payable by all permittees.
50. Alcoa has been issued two notices of violation (NOVs) within the last three years by the Railroad Commission, NOV No. 025 and No. 030. NOV No. 025, issued November 16, 2000, has been terminated as abated in accordance with requirements. NOV No. 030, issued on June 6, 2002, was terminated on August 29, 2002. Testimony by Tommy Hodges reflects that in January of 2002, the TNRCC (now Texas Commission on Environmental Quality,

issued a notice of enforcement and the EPA issued a notice of violation alleging that Alcoa's 1980s' maintenance/repair activities constituted a major modification, and that, as such, Alcoa should have obtained a Prevention of Significant Deterioration, or PSD permit under the Clean Air Act prior to implementing the program. Alcoa has been involved in settlement negotiations with the TNRCC and the EPA in federal district court regarding this matter and have indicated that they have orally reached an agreement in principle and are reducing it to writing. Neither Alcoa Inc. nor any subsidiary, affiliate, or person controlled by Alcoa or under common control with Alcoa has ever had a federal or state coal mining permit suspended or revoked within the five years preceding the submission of the application or ever forfeited a performance bond or similar deposit in lieu of a bond. After approval of the application, when the performance bond is submitted for approval, the Commission, if it finds that the bond should be approved, shall conditionally issue the permit. Updated compliance information, if any, shall be submitted prior to conditional issuance of the permit.

51. The application, supplements to the application, written testimony, and the Staff's Technical Analysis and Addenda demonstrate:
- (a) The application, as supplemented, is accurate and complete and complies with the Act and Regulations.
 - (b) The surface mining and reclamation operations required by the Act and Regulations can be feasibly accomplished under the operations and reclamation plans contained in the supplemented application.
 - (c) Pursuant to § 134.066(a)(3) of the Act, the Commission has assessed the probable cumulative impact that all anticipated surface coal mining in the area will have on the hydrologic balance, and finds that the operations within the permit area have been designed to prevent material damage to the hydrologic balance outside the permit

area (Findings of Fact, application, as supplemented by Supplement Nos 1-3, and Technical Analysis document, Appendix I of Addendum No. 2).

- (d) No portion of the permit area is within an area designated as unsuitable for surface mining under the Act nor under study for such designation in an administrative proceeding begun under the Act. The operations will not take place on any prohibited federal lands, within the boundaries of national forests, or on prohibited lands contained within national parks, refuges, trails, wilderness preservation areas, or wild and scenic rivers, and will not be conducted within prohibited buffer zones of roads or dwellings, public buildings, or school, church, community, or institutional buildings.
- (e) The proposed operations will not adversely affect any publicly owned parks or places included in the National Register of Historic Places.
- (f) The right-of-entry documentation required by §12.117 of the Regulations has been provided for those areas authorized to be disturbed by mining operations within the proposed permit area as set out in these Findings of Fact and in Permit Provision Nos. 1 and 2.
- (g) The Applicant-Violator System (AVS) report indicates that Alcoa has paid all abandoned mine land fees and has no violations which have not been corrected or are in the process of being corrected in accordance with §12.215 of the Regulations (Addendum No. 4, Technical Analysis, Appendix VI). Information provided in the application, as supplemented, indicates that alleged violations issued by the EPA and TNRCC are in the process of being corrected to the satisfaction of those agencies and/or are in the process of litigation.

- (h) All required fees have been paid.
- (i) The applicant has not demonstrated a pattern of willful violations so as to indicate intent not to comply with the Act.
- (j) The operations will not be inconsistent with other operations anticipated in the area.
- (k) Alcoa has undertaken in the application to supply a reclamation performance bond in the required amount. The proposed permit may be approved, but issuance must await approval of a bond in a form acceptable to the Commission and in the required amount of \$ 51,025,459.00.
- (l) The permit area is located east of the 100th meridian West Longitude and contains no alluvial valley floors. Alcoa requested negative prime farmland determinations for a number of tracts containing prime farmland soils. Alcoa submitted information to show a lack of historical cropland use for these tracts through affidavits from landowners and other persons sufficiently familiar with the tracts. The Commission finds a negative determination of prime farmland for all tracts/portions of tracts requested in this permit application for which acceptable affidavits have been filed. For all prime farmland disturbed by mining, a sufficient number of acres will be reconstructed as prime farmland and reclaimed to cropland use [Finding of Fact No. 27(b)]. Alcoa has satisfactorily addressed the requirements of §12.201 of the Regulations for this approved permit term.
- (m) The alternative postmine land uses, except as set out in Finding of Fact No. 42, are approved. Documentation has been presented which demonstrates landowner consultation for alternative postmine land uses which are approved as set out in

Finding of Fact No. 42, and other applicable requirements of § 12.399 of the Regulations are met for approved alternative postmine land uses.

- (n) All specific approvals required under Subchapter K have been made with the limitations contained in the permit provisions set out in Appendix I to this Order.
- (o) The proposed activities will not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of designated critical habitat.
- (p) Requirements for prime farmland have been met in accordance with §§12.201 and 12.390 of the Regulations. All tracts anticipated to be disturbed during the permit term have received negative determinations for prime farmland or a sufficient number of acres will be reconstructed as cropland and reclaimed as cropland.

CONCLUSIONS OF LAW

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

1. The Commission has jurisdiction pursuant to the Act and the Regulations to approve the application, as supplemented, and as limited by the Findings of Fact and permit provisions contained in Appendix I. The application was filed and processed pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE Ch. 134 (Vernon Supp. 2001) (Act) and the “Coal Mining Regulations,” Tex. R.R. Comm’n. 16 TEX. ADMIN. CODE CH. 12 (West Group 2002) (Regulations), procedural rules of the Commission, “Practice and

Procedure,” 16 TEX. ADMIN. CODE §1.1 *et seq.*, and rules allowed by TEX. GOV’T CODE §2001, *et seq.*

2. Proper notice of application and proper notice of hearing were provided in accordance with the requirements of the Act, the Regulations, the Administrative Procedure Act, and the Commission’s procedural rules. The Commission has considered all required information. The proposed order was circulated to the parties as required. The application was properly posted for consideration by the Commission.
3. All protesting parties to the proceeding have withdrawn their protests or have withdrawn from the proceeding. The application is unopposed and may proceed to a decision by the Commission without the preparation of a proposal for decision.
4. Alcoa and CPS, as landowners of tracts within the proposed permit area, pursuant to the rule of capture in state law, may also pump water from tracts for non-mining purposes; this pumpage, for non-mining related purposes, is not subject to Commission jurisdiction, but is subject to regulation from other laws. Although the Railroad Commission may limit the amount of water pumped for depressurization related to mining activities in its consideration of the pending application for a mine permit for the Three Oaks Mine [§ 134.041(17)(A)-(C) of the Act, and § 12.339 of the Regulations], the Commission does not have jurisdiction over water supply contracts between Alcoa and City Public Service of San Antonio and/or San Antonio Water System.
5. Documentation of Bastrop County road approvals, required to be provided to the Commission for activities proposed involving Bastrop County roads, has not been provided. No proposals for Bastrop County roads are included in the alternate mine plan.

6. Documentation of Lee County approvals required for the primary mine plan and the alternate mine plan has been provided.
7. Alcoa is subject to a review by the Director of documentation submitted pursuant to the permit provisions contained in Appendix I following approval of the application to ensure that no additional activities not contemplated and included in the application as supplemented which would require additional notice.
8. The Commission may approve the application, as supplemented, for the “alternate mine plan,” for Mine Years 1-3, as termed in the application, as supplemented in Supplement No. 4 and Supplement No. 5, subject to the findings of fact and the permit provisions contained in this Order. The material elements of the alternate mine plan are contained as a portion of the primary mine plan, and no additional notice will be required for commencement of additional activities already proposed within the primary mine plan for which all requirements of the Act and Regulations have been met, other than those included within these Findings of Fact and in the Permit Provisions contained in Appendix I. The Commission may approve the proposed surface mining and reclamation operations proposed in the alternate mine plan for all tracts for which Alcoa has documented right-of-entry for the activities proposed in accordance with the Findings of Fact and permit provisions.
9. The application, as supplemented, meets all the requirements for approval set out in the Act, the Regulations, and the Administrative Procedure Act, with the permit provisions contained in this Order and as limited by the Findings of Fact and Conclusions of Law. Approval of the application, as supplemented, will further the purposes of the Act as set out in §134.003 of the Act:

(1) to prevent adverse effects to society and the environment from unregulated surface coal mining operations as defined by this Chapter;

(2) to assure that the rights of surface landowners and other persons with a legal interest in the land or appurtenances to the land are protected from unregulated surface coal mining operations;

(3) to assure that surface coal mining operations are conducted in a manner that will prevent unreasonable degradation of land and water resources;

(4) to assure that reclamation of all land on which surface coal mining takes place occurs as contemporaneously as practicable with the surface coal mining, recognizing that extracting coal by responsible mining operations is an essential and beneficial economic activity;

(5) to assure that the coal supply essential to this State's energy requirements and to its economic and social well-being is provided and to strike a balance between environmental protection and agricultural productivity and this State's need for coal as an essential source of energy; and

(6) to promote the reclamation of mined areas left without adequate reclamation before enactment of the federal act and that continue in their unreclaimed condition substantially to degrade the quality of the environment, prevent or damage the beneficial use of land or water resources, or endanger the health or safety of the public.

10. Based on the application, as supplemented, and Staff review of the application, a reclamation performance bond in the amount of \$ 51,025,459.00 is required prior to issuance of the permit.

11. The Commission may dismiss the construction permit application as withdrawn.

BE IT THEREFORE ORDERED BY THE RAILROAD COMMISSION OF TEXAS that the above Findings of Fact and Conclusions of Law are adopted; and,

BE IT FURTHER ORDERED that the permit provisions contained in Appendix I to this Order are hereby approved; and

BE IT FURTHER ORDERED that the application for construction permit is dismissed as withdrawn; and

BE IT FURTHER ORDERED that the application for surface mining and reclamation permit for the Three Oaks Mine in Bastrop and Lee Counties, Texas is hereby approved in accordance with the above Findings of Fact and Conclusions of Law and permit provisions set out in Appendix I to this Order; and

BE IT FURTHER ORDERED that Alcoa Inc. shall provide a reclamation performance bond in the amount of \$ 51,025,459.00; and

BE IT FURTHER ORDERED that the permit for the Three Oaks Mine is numbered Permit No. 48, and that issuance of Permit No. 48 will await Commission approval of a reclamation performance bond meeting the requirements of the Act and Regulations.



DONE AT AUSTIN, TEXAS, this 20th day of September, 2002.

RAILROAD COMMISSION OF TEXAS


CHAIRMAN MICHAEL L. WILLIAMS


COMMISSIONER CHARLES R. MATTHEWS


COMMISSIONER TONY GARZA

ATTEST:


Secretary
Railroad Commission of Texas