20.2.72 NMAC
AIR QUALITY
PERMIT # PSD-NM-2450-M2-R4
MODIFICATION APPLICATION

For

PUBLIC SERVICE COMPANY
OF
NEW MEXICO

LUNA ENERGY CENTER
Deming, NM

PREPARED BY
MONTROSE ENVIRONMENTAL SOLUTIONS, INC.
ALBUQUERQUE, NM
AUGUST 2023

Mail Application To:		**For Department use only:**
New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb		

Universal Air Quality Permit Application

Use this application for NOI, NSR, or Title V sources.

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well.

This application is submitted as (check all that apply)**:** ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed **X** Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ a NOI 20.2.73 NMAC ☐ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application
Title V Source: ☐ Title V (new) ☐ Title V renewal ☐ TV minor mod. ☐ TV significant mod. TV Acid Rain: ☐ New ☐ Renewal
PSD Major Source: ☐ PSD major source (new) **X** minor modification to a PSD source ☐ a PSD major modification

Acknowledgements:

X I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.

X $500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).

X Check No.: 261244 in the amount of $500.00

X I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.

X I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.

☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.72.200.A.2 NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1st 3 to 5 #s of permit IDEA ID No.): 878	Updating Permit/NOI #: 2450-M2R4
1	Facility Name: Luna Energy Center	Plant primary SIC Code (4 digits): 4911	
		Plant NAIC code (6 digits): 221112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): 1895 Arrowhead Drive, Deming, NM, 88030		
2	Plant Operator Company Name: Public Service Company of New Mexico	Phone/Fax: (505) 241-2025 / (505) 241-2384	
a	Plant Operator Address: 2401 Aztec Road, NE, MS Z100 87107		
b	Plant Operator's New Mexico Corporate ID or Tax ID: 85-0019030		

3	Plant Owner(s) name(s): Public Service Company of New Mexico (PNM), Tucson Public Service, Samchully Power and Utilities 1, LLC	Phone/Fax: **PNM:** (505) 241-2025 / (505) 241-2384
a	Plant Owner(s) Mailing Address(s): **PNM** - 2401 Aztec Road, NE, MS Z100 87107 **Tucson Electric Power Company** - 3950 East Irvington Road, Mail Stop ER101, Tucson, AZ 85714 **Samchully Power and Utilities 1, LLC** - 123 Marcy St., Suite 101, Santa Fe, NM 87501	
4	Bill To (Company): Public Service Company of New Mexico	Phone/Fax: (505) 241-2025 / (505) 241-2384
a	Mailing Address: 2401 Aztec Road, NE, MS Z100 87107	E-mail: Gregory.Little@pnmresources.com
5	☐ Preparer: **X** Consultant: Paul Wade, Montrose Environmental Solutions, Inc.	Phone/Fax: (505) 830-9680 x6 / (505) 830-9678
a	Mailing Address: 3500 G, Comanche Rd NE, Albuquerque, NM 87107	E-mail: pwade@montrose-env.com
6	Plant Operator Contact: Gregory Cain	Phone/Fax: (575) 233-5152
a	Address: 10100 W Afton Rd, La Mesa, NM 88044	E-mail: Greg.Cain@pnm.com
7	Air Permit Contact: Gregory Little	Title: Technical Project Manager
a	E-mail: Gregory.Little@pnmresources.com	Phone/Fax: (505) 241-2025 / (505) 241-2384
b	Mailing Address: 2401 Aztec Road, NE, MS Z100 87107	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? **X** Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? **X** Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes **X** No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? **X** Yes ☐ No
3	Is the facility currently shut down? ☐ Yes **X** No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☐ Yes **X** No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐ Yes ☐ No **X** N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? **X** Yes ☐ No	If yes, the permit No. is: P-209-R2
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes **X** No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes **X** No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? **X** Yes ☐ No	If yes, the permit No. is: 2450-M2-R4
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes **X** No	If yes, the register No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: CTG + HRSG (total of 2) 4.1 x 10^9 BTU LHV AUX 4.41 x 10^7 BTU, LHV Basis	Daily: CTG + HRSG (total of 2) 9.73 x 10^{10} BTU LHV AUX 1.06 x 10^9 BTU, LHV Basis	Annually: CTG + HRSG (total of 2) 3.03 x 10^{13} BTU LHV AUX 1.10 x 10^{11} BTU, LHV Basis
b	Proposed	Hourly: CTG + HRSG (total of 2) 4.1 x 10^9 BTU LHV AUX 4.41 x 10^7 BTU, LHV Basis	Daily: CTG + HRSG (total of 2) 9.73 x 10^{10} BTU LHV AUX 1.06 x 10^9 BTU, LHV Basis	Annually: CTG + HRSG (total of 2) 3.03 x 10^{13} BTU LHV AUX 1.10 x 10^{11} BTU, LHV Basis
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			

a	Current	Hourly: 588,000 kW-hr	Daily: 14,100,000 kW-hr	Annually: 4,470,000,000 kW-hr
b	Proposed	Hourly: 588,000 kW-hr	Daily: 14,100,000 kW-hr	Annually: 4,470,000,000 kW-hr

Section 1-D: Facility Location Information

1	Section: 16	Range: 9W	Township: 23S	County: Luna	Elevation (ft): 4,380
2	UTM Zone: ☐ 12 or **X** 13			Datum: ☐ NAD 27 **X** NAD 83 ☐ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 237,880			UTM N (in meters, to nearest 10 meters): 3,577,000	
b	**AND** Latitude (deg., min., sec.): 32° 17' 56.9724"			Longitude (deg., min., sec.): 107° 47' 1.2192"	
3	Name and zip code of nearest New Mexico town: Deming, NM 88030				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Interstate Highway 10, drive878 north on US 180 for 2.4 miles. Turn west on Arrowhead Drive. Travel approximately 0.75 miles and turn right onto the plant property.				
5	The facility is 1.9 miles southwest of Keeler Farm.				
6	Status of land at facility (check one): **X** Private ☐ Indian/Pueblo ☐ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: City of Deming, Luna County				
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☐ Yes **X** No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers:				
9	Name nearest Class I area: Gila Wilderness				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 84.4 km				
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: 340 meters				
12	Method(s) used to delineate the Restricted Area: Fencing surrounding the plant with gates with restricted access signs and guard shack. "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes **X** No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☒ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?				

Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 7	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 8760		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start:	☐AM ☐PM	End:	☐AM ☐PM		
3	Month and year of anticipated start of construction: NA					
4	Month and year of anticipated construction completion: NA					
5	Month and year of anticipated startup of new or modified facility: Upon issue of significant permit revision					
6	Will this facility operate at this site for more than one year? **X** Yes ☐ No					

Section 1-F: Other Facility Information

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? ☐ Yes **X** No If yes, specify:		
a	If yes, NOV date or description of issue:		NOV Tracking No:
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ Yes **X** No If Yes, provide the 1c & 1d info below:		
c	Document Title:	Date:	Requirement # (or page # and paragraph #):
d	Provide the required text to be inserted in this permit:		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? **X** Yes ☐ No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes **X** No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? **X** Yes ☐ No		
a	If Yes, what type of source? ☐ **Major** (☐ ≥10 tpy of any single HAP **OR** ☐ ≥25 tpy of any combination of HAPS) **OR** **X Minor** (☐ <10 tpy of any single HAP **AND** **X** <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☐ Yes **X** No		
a	If yes, include the name of company providing commercial electric power to the facility: NA Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

Section 1-G: Streamline Application **(This section applies to 20.2.72.300 NMAC Streamline applications only)**

1	☐ I have filled out Section 18, "Addendum for Streamline Applications." **X** N/A (This is not a Streamline application.)

Section 1-H: Current Title V Information - Required for all applications from TV Sources

(Title V-source required information for all applications submitted pursuant to 20.2.72 NMAC (Minor Construction Permits), or 20.2.74/20.2.79 NMAC (Major PSD/NNSR applications), and/or 20.2.70 NMAC (Title V))

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC):		Phone:
a	R.O. Title:	R.O. e-mail:	
b	R. O. Address:		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC):		Phone:
a	A. R.O. Title:	A. R.O. e-mail:	
b	A. R. O. Address:		
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship):		
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.):		
a	Address of Parent Company:		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.):		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations:		

7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers:

Section 1-I – Submittal Requirements

Each 20.2.73 NMAC (**NOI**), a 20.2.70 NMAC (**Title V**), a 20.2.72 NMAC (**NSR** minor source), or 20.2.74 NMAC (**PSD**) application package shall consist of the following:

Hard Copy Submittal Requirements:

1) One hard copy **original signed and notarized application package** **printed double sided** **'head-to-toe'** **2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be head-to-head. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. Please include a copy of the check on a separate page.

2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This copy should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-to 2-hole punched copy required in 1) above. Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision. TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.

3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these permit application submittals, **two** CD copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a single CD submittal. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

Electronic files sent by (check one):

☒ CD/DVD attached to paper application

☐ secure electronic transfer. Air Permit Contact Name_____, Email_____ Phone number _____.

a. If the file transfer service is chosen by the applicant, after receipt of the application, the Bureau will email the applicant with instructions for submitting the electronic files through a secure file transfer service. Submission of the electronic files through the file transfer service needs to be completed within 3 business days after the invitation is received, so the applicant should ensure that the files are ready when sending the hard copy of the application. The applicant will not need a password to complete the transfer. **Do not use the file transfer service for NOIs, any type of GCP, or technical revisions to NSR permits.**

4) Optionally, the applicant may submit the files with the application on compact disk (CD) or digital versatile disc (DVD) following the instructions above and the instructions in 5 for applications subject to PSD review.

5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.

6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
   a. one additional CD copy for US EPA,
   b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

   If the application is submitted electronically through the secure file transfer service, these extra CDs do not need to be submitted.

Electronic Submittal Requirements [in addition to the required hard copy(ies)]:

1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

3) It is preferred that this application form be submitted as 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.

4) The electronic file names shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the core permit number (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the section # (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the header information throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
CTG-1	Combustion Turbine #1	General Electric	PG7241	298129	170 MW (nominal)	170 MW (nominal)	2001 / Dec-05	SCR-1 / 1	2101004002, 2101000000	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
CTG-2	Combustion Turbine #2	General Electric	PG7241	298130	170 MW (nominal)	170 MW (nominal)	2001 / Dec-05	SCR-2 / 2	2101004002, 2101000000	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
DB-1	HSRG w/Duct Burner	HSRG (CMI) DB (Coen)	HSRG (EPT1LLC) DB (1 HR-HRSG-1100)	HSRG (102148) DB (40D-13795-1-000	HRSG - 64 MW (nominal) DB - 524 MMBtu/Hr (LHV)	HRSG - 64 MW (nominal) DB - 524 MMBtu/Hr (LHV)	HSRG - 2005 DB - 01/2002 / Dec-05	SCR-1 / 1	21010004002	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
DB-2	HSRG w/Duct Burner	HSRG (CMI) DB (Coen)	HSRG (EPT1LLC) DB (1 HR-HRSG-2100)	HSRG (102149) DB (40D-13795-1-000	HRSG - 64 MW (nominal) DB - 524 MMBtu/Hr (LHV)	HRSG - 64 MW (nominal) DB - 524 MMBtu/Hr (LHV)	HSRG - 2005 DB - 01/2002 / Dec-05	SCR-2 / 2	21010004002	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
AUX-1	Auxiliary Boiler	Cleaver Brooks	CBI1700 750200	0L101693	42 MMBtu/Hr nominal	42 MMBtu/Hr nominal	2002 / Dec-05	NA / 3	21010004002	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
CT-1	Main Cooling Tower	GEA	545438-91-33-WCF	NA	175,000 gpm	175,000 gpm	2001 / Dec-05	NA / 4	NA	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit X To Be Modified ☐ To be Replaced	NA	NA
CT-2	Chiller Cooling Tower	Baltimore Aircoil	331328AG-4	1/C-CTW-0100A/B/C/D	23,348 gpm	23,348 gpm	2003 / Dec-05	NA / 5	NA	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
S1	GW Lime Silo	ZMI Portec	1GW-SKID-0250	NA	1,800 CUFT	1,800 CUFT	2002 / Dec-05	NA / 6	NA	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
S2	CTBT Soda Ash Silo	ZMI Portec	1MW-SKID-0300	NA	2,600 CUFT	2,600 CUFT	2002 / Dec-05	NA / 7	NA	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
S3	CTBT Lime Silo	ZMI Portec	1MW-SKID-0250	NA	3,500 CUFT	3,500 CUFT	2002 / Dec-05	NA / 8	NA	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition

Table 2-B: Insignificant Activities[1] (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at https://www.env.nm.gov/wp-content/uploads/sites/2/2017/10/InsignificantListTitleV.pdf. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
G-1	Emergency Generator	Caterpillar	3412T 3FZ03531	600 749 kW; HP	LIA 7 – Emergency generator <500 hrs/yr	Mar-02 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1FP-TK-0200	Diesel Fuel Tank	NA	NA NA	300 gal	LIA 5 – Vapor pressure < 10 mm Hg	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1FP-TK-0300	Diesel Fuel Tank	NA	NA NA	1,250 gal	LIA 5 – Vapor pressure < 10 mm Hg	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1CL-TK-0700	Ammonia Tank	NA	NA NA	20,000 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1MW-TK-0100	Caustic (Sodium Hydroxide) Tank	NA	NA NA	10,152 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1MW-TK-0120	Main Cooling Tower Acid (Hydrochloric Acid) Tank	NA	NA NA	16,000 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1IC-TK-0100	Chiller Cooling Tower Acid (Sulfuric Acid) Tank	NA	NA NA	4,000 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1 CI-TK-0450	Main Cooling Tower Acid (Sulfuric Acid) Tank	NA	NA NA	5,668 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1MW-TK-0140	Neutralization Tank	NA	NA NA	30,000 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1CI-TK-0500	GENGARD GN-8022	NA	NA NA	250 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1CI-TK-0100	STEAMATE NA1324	NA	NA NA	250 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1CI-TK-0220	OPTISPERSE HP54434	NA	NA NA	250 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
1IC-TK-0300	GENGARD GN8123	NA	NA NA	250 gal	LIA 1 – emissions less than 1 tpy	 Dec-05	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
1CI-TK-0110	OPTIGUARD MCA624	NA	NA	50			X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			NA	gal	LIA 1 – emissions less than 1 tpy	Dec-05	
1MW-SKID-0076	King Lee Pretreat Plus 0100	NA	NA	250			X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			NA	gal	LIA 1 – emissions less than 1 tpy	Dec-05	
1MW-SKID-0069	DPC Generic	NA	NA	250			X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			NA	gal	LIA 1 – emissions less than 1 tpy	Dec-05	
1MW-SKID-0200	AE1702	NA	NA	250			X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			NA	gal	LIA 1 – emissions less than 1 tpy	Dec-05	
Fire Pump	Emergency Fire Pump Engine	John Deere	6081 JW6H-UF30	265		Mar-02	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			RG6081A14-6521	HP	LIA 1 – emissions less than 1 tpy	Dec-05	

[1] Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated September 15, 2008. Emissions from these insignificant activities do not need to be reported, unless specifically requested.

[2] Specify date(s) required to determine regulatory applicability.

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B. In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
SCR-1	Selective Catalytic Reduction	Dec-05	NOx	CTG-1, DB-1	Note 2	NA
SCR-2	Selective Catalytic Reduction	Dec-05	NOx	CTG-2, DB-2	Note 2	NA
CT-1	High Efficiency Drift Eliminator	Dec-05	PM, PM10, PM2.5	CT-1	NA	NA
S1	Baghouse	Dec-05	PM, PM10, PM2.5	S1	99.9	Manufacturer
S2	Baghouse	Dec-05	PM, PM10, PM2.5	S2	99.9	Manufacturer
S3	Baghouse	Dec-05	PM, PM10, PM2.5	S3	99.9	Manufacturer
Note 2: Facility emission limits based on ppm and lbs/mmBtu, not on percent removal. No percent removal is specified for this equipment.						

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.

Table 2-D: Maximum Emissions (under normal operating conditions)

X This Table was intentionally left blank because it would be identical to Table 2-E.

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
CTG-1	21.5	-	37.0	-	2.7	-	3.7	-	19.0	-	19.0	-	19.0	-	-	-	-	-
CTG-1/ DB-1	28.5	-	82.8	-	19.0	-	5.0	-	33.8	-	33.8	-	33.8	-	-	-	-	-
CTG-2	21.5	-	37.0	-	2.7	-	3.7	-	19.0	-	19.0	-	19.0	-	-	-	-	-
CTG-2/ DB-2	28.5	-	82.8	-	19.0	-	5.0	-	33.8	-	33.8	-	33.8	-	-	-	-	-
CTG/DB Combined	-	246.3	-	713.0	-	88.6	-	37.2	-	222.3	-	222.3	-	222.3	-	-	-	-
Aux-1	1.5	4.0	6.6	16.9	0.70	1.8	0.090	0.23	0.44	1.1	0.44	1.1	0.44	1.1	-	-	-	-
CT-1	-	-	-	-	-	-	-	-	1.5	6.7	1.1	4.9	0.0036	0.016	-	-	-	-
CT-2	-	-	-	-	-	-	-	-	0.51	2.24	0.26	1.16	0.0012	0.0054	-	-	-	-
S1	-	-	-	-	-	-	-	-	18.25	0.55	11.75	0.35	2.33	0.070	-	-	-	-
S2	-	-	-	-	-	-	-	-	18.25	0.33	11.75	0.21	2.33	0.042	-	-	-	-
S3	-	-	-	-	-	-	-	-	18.25	0.33	11.75	0.21	2.33	0.042	-	-	-	-
Totals		250.2		730		90.4		37.5		234		230		224				

[1]**Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or $1.41E^{-4}$).

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
CTG-1	21.5	-	37.0	-	2.7	-	3.7	-	19.0	-	19.0	-	19.0	-	-	-	-	-
CTG-1/ DB-1	28.5	-	82.8	-	19.0	-	5.0	-	33.8	-	33.8	-	33.8	-	-	-	-	-
CTG-2	21.5	-	37.0	-	2.7	-	3.7	-	19.0	-	19.0	-	19.0	-	-	-	-	-
CTG-2/ DB-2	28.5	-	82.8	-	19.0	-	5.0	-	33.8	-	33.8	-	33.8	-	-	-	-	-
CTG/DB Combined	-	246.3	-	713.0	-	88.6	-	37.2	-	222.3	-	222.3	-	222.3	-	-	-	-
Aux-1	1.5	4.0	6.6	16.9	0.70	1.8	0.090	0.23	0.44	1.1	0.44	1.1	0.44	1.1	-	-	-	-
CT-1	-	-	-	-	-	-	-	-	1.5	6.7	1.1	4.9	0.0036	0.016	-	-	-	-
CT-2	-	-	-	-	-	-	-	-	0.51	2.24	0.26	1.16	0.0012	0.0054	-	-	-	-
S1	-	-	-	-	-	-	-	-	0.018	0.00055	0.012	0.00035	0.0023	7.00E-05	-	-	-	-
S2	-	-	-	-	-	-	-	-	0.018	0.00033	0.012	0.00021	0.0023	4.20E-05	-	-	-	-
S3	-	-	-	-	-	-	-	-	0.018	0.00033	0.012	0.00021	0.0023	4.20E-05	-	-	-	-
Totals		250.2		730		90.4		37.5		230		228		223				

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)

☐ This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scehduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanations of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine our predictable startup, shutdown or scheduled maintenance (SSM)[1], including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (https://www.env.nm.gov/aqb/permit/aqb_pol.html) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
CTG-1 (Note 1)	142.6	0	597.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CTG-2 (Note 1)	142.6	0	597.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Note 1: Additional SSM emissions apply to turbine without duct burner emissions scenario because the duct burner does not operate during SSM events. Total maximum emissions, per unit, would be 21.5 pph + 142.6 pph = 164.1 lbs/hr NOx and 37.0 lbs/hr + 597.0 lbs/hr = 634.0 lbs/hr CO.																		
Totals	142.6		597.0															

[1] **For instance**, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in this table. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below.

[2] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks

X I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Unit and stack numbering must correspond throughout the application package. Refer to Table 2-E for instructions on use of the "-" symbol and on significant figures.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		PM		PM10		PM2.5		□ H_2S or □ Lead	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals:																	

Table 2-H: Stack Exit Conditions

Unit and stack numbering must correspond throughout the application package. Include the stack exit conditions for each unit that emits from a stack, including blowdown venting parameters and tank emissions. If the facility has multiple operating scenarios, complete a separate Table 2-H for each scenario and, for each, type scenario name here:

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
1 (CTG-1)	CTG-1	V	N	160	237	17965	9219	8.5	70.6	18
1 (CTG-1 + DB-1)	CTG-1 plus DB-1	V	N	160	206	17406	9090	11.1	68.4	18
2 (CTG-2)	CTG-2	V	N	160	237	17965	9219	8.5	70.6	18
2 (CTG-2 + DB-2)	CTG-2 plus DB-2	V	N	160	206	17406	9090	11.1	68.4	18
3	Aux -1	V	N	60	410	13162	-	NA	45.0	2.67
4	CT-1 (9 cells, flow each cell)	V	N	47	93	22564	-	NA	27.2	33
5	CT-2 (8 cells, flow each cell)	V	N	20	66	5146	-	NA	33.4	14
6	S1	H	N	44	Ambient	400	-	NA	8.5	1
7	S2	H	N	51.5	Ambient	400	-	NA	8.5	1
8	S3	H	N	59	Ambient	400	-	NA	8.5	1

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs

In the table below, report the Potential to Emit for each HAP from each regulated emission unit listed in Table 2-A, only if the entire facility emits the HAP at a rate greater than or equal to one (1) ton per year For each such emission unit, HAPs shall be reported to the nearest 0.1 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources calculated to the nearest 0.1 ton per year. Per 20.2.72.403.A.1 NMAC, facilities not exempt [see 20.2.72.402.C NMAC] from TAP permitting shall report each TAP that has an uncontrolled emission rate in excess of its pounds per hour screening level specified in 20.2.72.502 NMAC. TAPs shall be reported using one more significant figure than the number of significant figures shown in the pound per hour threshold corresponding to the substance. Use the HAP nomenclature as it appears in Section 112 (b) of the 1990 CAAA and the TAP nomenclature as it listed in 20.2.72.502 NMAC. Include tank-flashing emissions estimates of HAPs in this table. For each HAP or TAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above.

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde x HAP or □ TAP		Toluene x HAP or □ TAP		Xylenes x HAP or □ TAP		Hexane x HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	CTG-1	0.748	3.3	0.38	1.7	0.248	1.1	0.12	0.5	-	-								
1	DB-1	1.042	2.1	0.042	0.1	-	-	-	-	1.0	2.0								
2	CTG-1	0.748	3.3	0.38	1.7	0.248	1.1	0.12	0.5	-	-								
2	DB-1	1.042	2.1	0.042	0.1	-	-	-	-	1.0	2.0								
Totals:																			

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
CTG-1	Natural Gas	Pipeline Quality Natural Gas	26,542 Btu/lb	1.51×10^{9} Btu	1.31×10^{13} Btu/yr	0.75 grains total sulfer per 100 scf	0.0
DB-1	Natural Gas	Pipeline Quality Natural Gas	26,542 Btu/lb	5.17×10^{8} Btu	2.07×10^{12} Btu/yr	0.75 grains total sulfer per 100 scf	0.0
CTG-2	Natural Gas	Pipeline Quality Natural Gas	26,542 Btu/lb	1.51×10^{9} Btu	1.31×10^{13} Btu/yr	0.75 grains total sulfer per 100 scf	0.0
DB-2	Natural Gas	Pipeline Quality Natural Gas	26,542 Btu/lb	5.17×10^{8} Btu	2.07×10^{12} Btu/yr	0.75 grains total sulfer per 100 scf	0.0
Aux-1	Natural Gas	Pipeline Quality Natural Gas	26,542 Btu/lb	4.41×10^{7} Btu	1.10×10^{11} Btu/yr	0.75 grains total sulfer per 100 scf	0.0

Table 2-K: Liquid Data for Tanks Listed in Table 2-L

For each tank, list the liquid(s) to be stored in each tank. If it is expected that a tank may store a variety of hydrocarbon liquids, enter "mixed hydrocarbons" in the Composition column for that tank and enter the corresponding data of the most volatile liquid to be stored in the tank. If tank is to be used for storage of different materials, list all the materials in the "All Calculations" attachment, run the newest version of TANKS on each, and use the material with the highest emission rate to determine maximum uncontrolled and requested allowable emissions rate. The permit will specify the most volatile category of liquids that may be stored in each tank. Include appropriate tank-flashing modeling input data. Use additional sheets if necessary. Unit and stack numbering must correspond throughout the application package.

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
1 (1FP-TK-0206)		Diesel Fuel	No. 2 Diesel Fuel	7.2	130	63.3	0.0072	71	0.0092
2 (1EB-TK-0100)		Diesel Fuel	No. 2 Diesel Fuel	7.2	130	63.3	0.0072	71	0.0092
3 (1HR-TK-0300)		Ammonia Solution	<20% solution of Ammonia in water	7.75	17	NA	NA	NA	NA
4 (1DW-TK-0200)		Caustic Solution	Solution of NaOH in water, variable composition	NA	NA	NA	NA	NA	NA
5 (2DW-TK-0300)		Acid Solution	93% Sulfuric acid solution	15.18	NA	NA	NA	NA	NA
6 (1DW-TK-0400)		Process Neutralization Tank	Variable (acid and caustic added to water to achieve desired pH)	8.3	NA	NA	NA	NA	NA
Note: All Tanks are insignificant emission sources									

Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
1 (1FP-TK-0206)	2002	Diesel Fuel	NA	NA	7.14	1.14	NA	NA	NA	NA	NA	NA	NA
2 (1EB-TK-0100)	2002	Diesel Fuel	NA	NA	29.8	4.7	NA	NA	NA	NA	NA	NA	NA
3 (1HR-TK-0300)	2002	Ammonia	NA	NA	476	75.7	NA	NA	NA	NA	NA	NA	NA
4 (1DW-TK-0200)	2002	Caustic	NA	NA	167	26.5	NA	NA	NA	NA	NA	NA	NA
5 (2DW-TK-0300)	2002	Acid	NA	NA	167	26.5	NA	NA	NA	NA	NA	NA	NA
6 (1DW-TK-0400)	2002	Water-Acid-Caustic	NA	NA	1,190	189.3	NA	NA	NA	NA	NA	NA	NA

Table 2-L2: Liquid Storage Tank Data Codes Reference Table

Roof Type	Seal Type, Welded Tank Seal Type		Seal Type, Riveted Tank Seal Type		Roof, Shell Color	Paint Condition
FX: Fixed Roof	**Mechanical Shoe Seal**	**Liquid-mounted resilient seal**	**Vapor-mounted resilient seal**	**Seal Type**	**WH**: White	Good
IF: Internal Floating Roof	**A**: Primary only	**A**: Primary only	**A**: Primary only	**A**: Mechanical shoe, primary only	**AS**: Aluminum (specular)	Poor
EF: External Floating Roof	**B**: Shoe-mounted secondary	**B**: Weather shield	**B**: Weather shield	**B**: Shoe-mounted secondary	**AD**: Aluminum (diffuse)	
P: Pressure	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**LG**: Light Gray	
					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M^3 = 42.0 gal

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
NA							

Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federal regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy
1	NOx	Thermo Scientific	42I LS	1172370041	10 sec	1 min; 1 hr; 24 hrs;	0-10; 0-200 ppm	0.1 ppm	3.80%
1	CO	Siemens	UltraMat 6E	P3-449	10 sec	1 min; 1 hr; 24 hrs;	0-50; 0-1000 ppm		
1	Dry O2	Siemens	OxyMat 6E	P3-449	10 sec	1 min; 1 hr; 24 hrs;	0-25%		1.70%
2	NOx	Thermo Scientific	42I LS	1172370042	10 sec	1 min; 1 hr; 24 hrs;	0-10; 0-200 ppm	0.1 ppm	3.80%
2	CO	Siemens	UltraMat 6E	T0-0174	10 sec	1 min; 1 hr; 24 hrs;	0-50;0-1000 ppm		
2	Dry O2	Siemens	OxyMat 6E	T0-0174	10 sec	1 min; 1 hr; 24 hrs;	0-25%		1.70%

Table 2-O: Parametric Emissions Measurement Equipment

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time
CTG-1	NG Fuel Flow	Feed to Combustor						
CTG-2	NG Fuel Flow	Feed to Combustor						
DB-1	NG Fuel Flow	Feed to Combustor						
DB-2	NG Fuel Flow	Feed to Combustor						
AUX-1	NG Fuel Flow	Feed to Combustor						

Table 2-P: Greenhouse Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box ☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									**Total GHG** Mass Basis ton/yr[4]	**Total CO_2e** ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
CTG-1	**mass GHG**	973220	1.84	18.36											973240.2	
	CO_2e	973220	570	385												974175
DB-1	**mass GHG**	132671	0.548	5.48											132677.03	
	CO_2e	132671	115	170												132956
CTG-2	**mass GHG**	973220	1.84	18.36											973240.2	
	CO_2e	973220	570	385												974175
DB-2	**mass GHG**	132671	0.548	5.48											132677.03	
	CO_2e	132671	115	170												132956
Aux-1	**mass GHG**	7057	0.0133	0.133											7057.1463	
	CO_2e	7057	4.12	2.80												7063.92
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO2e															
Total	**mass GHG**														2211834	
	CO_2e															2214262

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[3] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[4] Green house gas emissions on a **mass basis** is the ton per year green house gas emission before adjustment with its GWP.

[5] **CO_2e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will affect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

The **Process Summary** shall include a brief description of the facility and its processes.

Startup, Shutdown, and Maintenance (SSM) routine or predictable emissions: Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

This application is for a 20.2.72.200.A.2 NMAC significant permit revision of the Luna Energy Center (LEC) NSR Permit PSD-NM-2450-M2-R4. LEC also operates under Title V permit number P209-R2 issued December 19, 2019. This permit revision is to allow an increase of the total dissolved solids (TDS) in the cooling tower water from 3000 to 4500 milligrams per liter (mg/l). No other physical changes or changes in the method of operation are requested for this permit revision application.

LEC is a natural gas fired electrical energy generating station located near Deming, in Luna County, New Mexico that commenced commercial operation in 2005. LEC consists of two General Electric Frame 7FA advanced gas turbines each with its own electric generator. Each unit also has a heat recovery steam generation unit (HRSG). Steam generated in the HRSG's is sent to a single steam turbine generator (STG). Each of the two combustion turbines includes the capability of supplemental firing for additional generation capacity during periods of peak electrical demand through use of a duct burner on each turbine unit. Steam sent to the STG is condensed with a surface condenser (heat exchanger) and is then cooled by a force draft multi-cell cooling tower for recycle through the system.

Each of the two combustion turbines has a nominal generating capacity at full firing rate of approximately 149 MW under typical operating conditions and up to 170 MW under certain meteorological conditions.[1] Without duct burners in operation, but at full firing rate for the two combustion turbines, an additional 150 MW (nominal) of electrical output power is generated by the STG. At full firing rate, each of the two duct burners adds an additional 64 MW (nominal) generating capacity to the STG bringing the STG capacity up to 278 MW and facility capacity up to a nominal 618 MW.[2]

The LEC facility includes the following air emission sources:

- 2 Combustion turbine generators fired by clean burning natural gas
- 2 supplemental firing duct burners fired by clean burning natural gas
- 1 auxiliary boiler fired by clean burning natural gas
- 1 induced draft cooling tower with 9 cooling cells

Frequent startup and shutdown are a normal and routine part of the operation of LEC. During startup, the emission rates of CO and NOx are greater than during steady-state operation. Both CO and NOx emission rates increase during startup conditions due to unsteady-state operation during these periods when combustion temperature, air/fuel ratio and other parameters that

[1] Generating capacity is a function of ambient temperature. Colder ambient temperatures increase air density, which results in greater generating capacity. The listed capacity is gross capacity over and above the work required by the compressor.

[2] This is a nominal maximum facility generating capacity. The actual capacity, even at full firing rates, will vary with variation in ambient conditions. At typical ambient temperature, the facility output capacity would be approximately 576 MW (149 + 149 + 278).

affect formation of CO and NOx are not constant. In addition, NOx emissions are controlled by use of a selective catalytic reduction (SCR) system. The SCR system must be at a minimum temperature before the catalyst system will function properly. The amount of time required to bring the SCR unit up to operating temperature depends on the initial starting temperature of the SCR and on the ability of the turbine to provide heat to the SCR unit.

Present Permit Request

In recent years, LEC has experienced a significant increase in operation at high loads as a result of the changing electrical generating resource profiles in the region, which is reflected by a historically high capacity factor from 63% in 2021, 67% in 2022, to 86% year to date in 2023.

The cooling tower TDS limit in the air permit combined with a limitation of flow to the evaporation ponds in the waste water discharge permit, along with the historically high capacity factor, has created a very constrained operating condition. In the peak of summer, when temperatures are the hottest and generation is at its highest demand, the water treatment system is the biggest risk to maintaining compliance with both the PSD and Title V permits.

By increasing the cooling tower conductivity limit, this constrained operating envelope would be loosened a bit and would allow LEC to maintain compliance with both its air permit and discharge permit while continuing to provide the region with efficient reliable power. Additionally, increasing the cycles of concentration in the cooling tower (i.e. increasing the TDS limit) could result in a decrease in fresh water required by the system to help maintain the low TDS as required by the permit. In the desert southwest, water conservancy is an important aspect, and this minor change could have an improvement on the overall water requirements by the system to maintain compliance.

With this permit revision, LEC request an increase in the TDS from 3000 to 4500 mg/l. While this is an increase in particulate (PM) emission rates from the cooling tower, the calculated emissions (based on the NMED cooling tower policy) will be less than the present PM permit limits.

Additionally, several units that exist that are emission sources are now included in this permit application. These sources included a chiller cooling tower with two (2) cells, a soda ash storage silo with baghouse that control particulate emissions during silo loading, two dolomitic lime (2) storage silos with baghouses that control particulate emissions during silo loading, two (2) sulfuric acid tanks storing 93% concentration sulfuric acid, and sodium hydroxide storage tanks. All these sources support water treatment activities at the LEC, with the chiller cooling tower and material storage silos as particulate matter emission sources and sulfuric acid and sodium hydroxide as state TAPs. The total increase in particulate matter emissions for these additional sources is presented in the table below. It shows that the total increase in PM, PM10, and PM2.5 annual emissions is below the PSD significant emission rate, keeping this application still a 20.2.72.200.A.2 NMAC significant permit revision.

Unit #	Description	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)
CT1	Main Cooling Tower Emission Increases	3.16	0.19	0.0078
CT2	Chiller Cooling Tower Emissions	2.23	1.16	0.0046
S1	CTBT Soda Ash Silo	0.00055	0.00035	0.000070
S2	CTBT Lime Silo	0.00033	0.00021	0.000042
S3	GW Lime Silo	0.00033	0.00021	0.000042
	Total Increase	5.39	1.34	0.013
	PSD SER	25	15	10

Section 4

Process Flow Sheet

A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

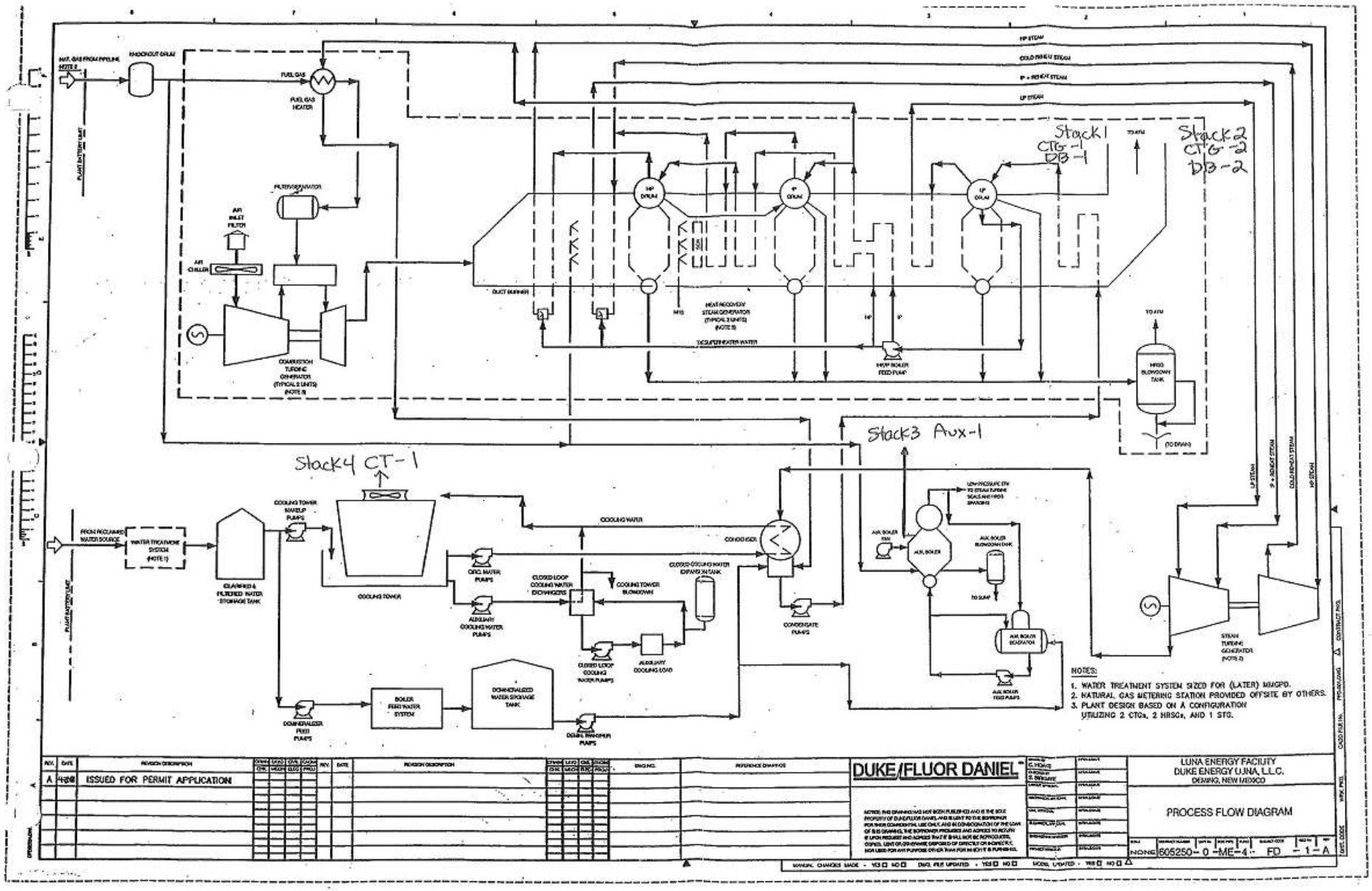

Figure 4-1: Process Flow of Luna Energy Center

Section 5

Plot Plan Drawn To Scale

A **plot plan drawn to scale** showing emissions points, roads, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. This plot plan must clearly designate the restricted area as defined in UA1, Section 1-D.12. The unit numbering system should be consistent throughout this application.

Figure 5-1: Plot Plan of Luna Energy Center

Section 6

All Calculations

Show all calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

Tank Flashing Calculations: The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis. If Hysis is used, all relevant input parameters shall be reported, including separator pressure, gas throughput, and all other relevant parameters necessary for flashing calculation.

SSM Calculations: It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rational for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

Glycol Dehydrator Calculations: The information provided to the AQB shall include the manufacturer's maximum design recirculation rate for the glycol pump. If GRI-Glycalc is used, the full input summary report shall be included as well as a copy of the gas analysis that was used.

Road Calculations: Calculate fugitive particulate emissions and enter haul road fugitives in Tables 2-A, 2-D and 2-E for:

1. If you transport raw material, process material and/or product into or out of or within the facility and have PER emissions greater than 0.5 tpy.
2. If you transport raw material, process material and/or product into or out of the facility more frequently than one round trip per day.

Significant Figures:

A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.

B. At least 5 significant figures shall be retained in all intermediate calculations.

C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

- **(1)** If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;
- **(2)** If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**
- **(3)** If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.
- **(4)** The final result of the calculation shall be expressed in the units of the standard.

Control Devices: In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the

application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

The increase in TDS in the cooling tower circulation water will increase PM emissions from the cooling tower (CT-1). While this is a theoretical increase in PM emission rates from the cooling tower, the calculated emissions using the NMED's "Permitting Guidance for Cooling Tower Particulate Emissions" dated June 25, 2013, will be less than the present permit limits. This increase is calculated below. The water circulation rate of 175,000 gallons per minute (gpm) and drift rate of 0.0006% will remain unchanged. Only the TDS will increase from 3000 to 4500 milligrams/liter (mg/l).

Main Cooling Tower CT-1 PM Emission Rate

Main cooling tower particulate emission calculations based on the NMED Policy "Calculating TSP, PM-10 and PM-2.5 from Cooling Towers" dated June 25, 2013

Emission rate based on a TDS of 4500 mg/l

Cooling Tower PM Calculation

TDS=	4,500	mg/l
rho Salt	2.5	g/cm3

Droplet Diameter um	Droplet Volume (um)3	Droplet Mass ug	PM Mass ug	PM Volume (um)3	Solid Diameters um	Mass Fraction %
10	523.6	0.001	2.36E-06	0.9	1.2	0.000
20	4188.7	0.004	1.88E-05	7.5	2.4	0.196
30	14136.8	0.014	6.36E-05	25.4	3.6	0.226
40	33509.5	0.034	1.51E-04	60.3	4.9	0.514
50	65448.2	0.065	2.95E-04	117.8	6.1	1.816
60	113094.4	0.113	5.09E-04	203.6	7.3	5.702
70	179589.7	0.180	8.08E-04	323.3	8.5	21.348
90	381693.6	0.382	1.72E-03	687.0	10.9	48.812
110	696892.0	0.697	3.14E-03	1254.4	13.4	70.509
130	1150316.8	1.150	5.18E-03	2070.6	15.8	82.023
150	1767100.2	1.767	7.95E-03	3180.8	18.2	88.012
180	3053549.1	3.054	1.37E-02	5496.4	21.9	91.032
210	4848922.9	4.849	2.18E-02	8728.1	25.5	92.468
240	7238042.4	7.238	3.26E-02	13028.5	29.2	94.091
270	10305728.3	10.306	4.64E-02	18550.3	32.8	94.689
300	14136801.6	14.137	6.36E-02	25446.2	36.5	96.288
350	22448717.3	22.449	1.01E-01	40407.7	42.6	97.011
400	33509455.6	33.509	1.51E-01	60317.0	48.7	98.340
450	47711705.3	47.712	2.15E-01	85881.1	54.7	99.071
500	65448155.4	65.448	2.95E-01	117806.7	60.8	99.071
600	113094412.6	113.094	5.09E-01	203569.9	73.0	100.000

Calculating Realistic PM10 Emissions from Cooling Towers
Abstract No. 216 Session No. AM-1b, Joel Reisman and Gordon Frisbie, Greyston Environmental Consultants, Inc.

PMtotal = TDS(mg/l) x 1(lbs/mg)/453600 x 3.785(l/gal) x Qcirc(gpm) x Qdrift%/100 x 60(min/hr)

TDS (mg/l)	4,500	
PM	94.7	highest value closest to 30 um
PM10	48.8	highest value closest to 10 um
PM2.5	0.226	highest value closest to 2.5 um

	Circulation Rate (Qcirc) gpm	drift rate (Qdrift%)	lb/hr PM	lb/hr PM10	lb/hr PM2.5	tpy PM	tpy PM10	tpy PM2.5
Cooling Tower	175,000	0.0006	2.24	1.15	0.0053	9.81	5.06	0.023
Permit Limit			1.6	1.6	0.016	6.9	6.9	0.069

Emission rate based on a TDS of 3000 mg/l

Cooling Tower PM Calculation

TDS=	3,000	mg/l
rho Salt	2.5	g/cm3

Droplet Diameter um	Droplet Volume (um)3	Droplet Mass ug	PM Mass ug	PM Volume (um)3	Solid Diameters um	Mass Fraction %
10	523.6	0.001	1.57E-06	0.6	1.1	0.000
20	4188.7	0.004	1.26E-05	5.0	2.1	0.196
30	14136.8	0.014	4.24E-05	17.0	3.2	0.226
40	33509.5	0.034	1.01E-04	40.2	4.3	0.514
50	65448.2	0.065	1.96E-04	78.5	5.3	1.816
60	113094.4	0.113	3.39E-04	135.7	6.4	5.702
70	179589.7	0.180	5.39E-04	215.5	7.4	21.348
90	381693.6	0.382	1.15E-03	458.0	9.6	48.812
110	696892.0	0.697	2.09E-03	836.3	11.7	70.509
130	1150316.8	1.150	3.45E-03	1380.4	13.8	82.023
150	1767100.2	1.767	5.30E-03	2120.5	15.9	88.012
180	3053549.1	3.054	9.16E-03	3664.3	19.1	91.032
210	4848922.9	4.849	1.45E-02	5818.7	22.3	92.468
240	7238042.4	7.238	2.17E-02	8685.7	25.5	94.091
270	10305728.3	10.306	3.09E-02	12366.9	28.7	94.689
300	14136801.6	14.137	4.24E-02	16964.2	31.9	96.288
350	22448717.3	22.449	6.73E-02	26938.5	37.2	97.011
400	33509455.6	33.509	1.01E-01	40211.3	42.5	98.340
450	47711705.3	47.712	1.43E-01	57254.0	47.8	99.071
500	65448155.4	65.448	1.96E-01	78537.8	53.1	99.071
600	113094412.6	113.094	3.39E-01	135713.3	63.8	100.000

PMtotal = TDS(mg/l) x 1(lbs/mg)/453600 x 3.785(l/gal) x Qcirc(gpm) x Qdrift%/100 x 60(min/hr)

TDS (mg/l)	3,000	
PM	96.3	highest value closest to 30 um
PM10	70.5	highest value closest to 10 um
PM2.5	0.226	highest value closest to 2.5 um

	Circulation Rate (Qcirc) gpm	drift rate (Qdrift%)	lb/hr PM	lb/hr PM10	lb/hr PM2.5	tpy PM	tpy PM10	tpy PM2.5
Cooling Tower	175,000	0.0006	1.52	1.11	0.0036	6.65	4.87	0.016

	lb/hr PM	lb/hr PM10	lb/hr PM2.5	tpy PM	tpy PM10	tpy PM2.5
Particulate Increase from 3000 TDS to 4500 TDS	0.72	0.043	0.0018	3.16	0.19	0.0078

Water Treatment

The water treatment plant has several emission sources that were left out of the permit. These include the introduction of chemicals into the water treatment stream and both lime and soda ash material into the water treatment stream. The additional equipment includes dry process material, lime and soda ash, storage silos; a chiller cooling tower, and water treatment chemicals. Some of these chemical additives contain state TAPs listed material.

CT-2 PM Emission Rate

The addition of the existing chiller cooling tower (CT-2) will increase PM emissions from the site. The chiller cooling tower has two modules, each with 4 cells. The total water circulation rate, for both modules, of 23,348 gallons per minute (gpm) with and drift rate of 0.24 gpm or 0.0010%. The TDS will be 4500 milligrams/liter (mg/l).

Cooling tower particulate emission calculations based on the NMED Policy "Calculating TSP, PM-10 and PM-2.5 from Cooling Towers" dated June 25, 2013

Emission rate based on a TDS of 4500 mg/l

Cooling Tower PM Calculation

TDS=	4,500	mg/l
rho Salt	2.5	g/cm3

Droplet Diameter um	Droplet Volume (um)3	Droplet Mass ug	PM Mass ug	PM Volume (um)3	Solid Diameters um	Mass Fraction %
10	523.6	0.001	2.36E-06	0.9	1.2	0.000
20	4188.7	0.004	1.88E-05	7.5	2.4	0.196
30	14136.8	0.014	6.36E-05	25.4	3.6	0.226
40	33509.5	0.034	1.51E-04	60.3	4.9	0.514
50	65448.2	0.065	2.95E-04	117.8	6.1	1.816
60	113094.4	0.113	5.09E-04	203.6	7.3	5.702
70	179589.7	0.180	8.08E-04	323.3	8.5	21.348
90	381693.6	0.382	1.72E-03	687.0	10.9	48.812
110	696892.0	0.697	3.14E-03	1254.4	13.4	70.509
130	1150316.8	1.150	5.18E-03	2070.6	15.8	82.023
150	1767100.2	1.767	7.95E-03	3180.8	18.2	88.012
180	3053549.1	3.054	1.37E-02	5496.4	21.9	91.032
210	4848922.9	4.849	2.18E-02	8728.1	25.5	92.468
240	7238042.4	7.238	3.26E-02	13028.5	29.2	94.091
270	10305728.3	10.306	4.64E-02	18550.3	32.8	94.689
300	14136801.6	14.137	6.36E-02	25446.2	36.5	96.288
350	22448717.3	22.449	1.01E-01	40407.7	42.6	97.011
400	33509455.6	33.509	1.51E-01	60317.0	48.7	98.340
450	47711705.3	47.712	2.15E-01	85881.1	54.7	99.071
500	65448155.4	65.448	2.95E-01	117806.7	60.8	99.071
600	113094412.6	113.094	5.09E-01	203569.9	73.0	100.000

Calculating Realistic PM10 Emissions from Cooling Towers
Abstract No. 216 Session No. AM-1b, Joel Reisman and Gordon Frisbie, Greyston Environmental Consultants, Inc.

PMtotal = TDS(mg/l) x 1(lbs/mg)/453600 x 3.785(l/gal) x Qcirc(gpm) x Qdrift%/100 x 60(min/hr)

TDS (mg/l)	4,500	
PM	94.7	highest value closest to 30 um
PM10	48.8	highest value closest to 10 um
PM2.5	0.226	highest value closest to 2.5 um

Drift rate Mass	0.12	gpm
Drift Rate %	0.0010	%

	Circulation Rate (Qcirc) gpm	drift rate (Qdrift%)	lb/hr PM	lb/hr PM10	lb/hr PM2.5	tpy PM	tpy PM10	tpy PM2.5
Cooling Tower								
Single Module	11,674	0.0010	0.26	0.13	0.00061	1.12	0.58	0.0027
2 Modules	23,348	0.0010	0.51	0.26	0.0012	2.24	1.16	0.0054

GW Lime Silo (S1)

The addition of the existing Lime Silo (S3) will increase PM emissions from the site. To estimate pre-controlled particulate emission rates for lime silo loading, emission equations were obtained from EPA's Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition, Section 11.12 (06/06), Table 11.12-2 "Cement Unloading to Elevated Storage Silo" and %CE. $PM_{2.5}$ emission factors for lime silo emissions loading were determined using the ratio of uncontrolled cement silo loading ratio Table 11.12-4 PM10 * PM2.5/PM10 (0.38/1.92). Maximum expected emissions were calculated using the control efficiency of the baghouse that captures particulate emissions that are vented from the silo pneumatic loading of 99.9% (see Section 7 for filter control efficiency). A delivery of lime is approximately 25 tons per load per hour. This throughput value was used in the emission equation. Annual pre-controlled and controlled emissions in tons per year (tpy) were calculated assuming operation with a maximum hourly lime throughput of 900 tons per year. Tables 6-1 and 6-2 summarizes the pre-controlled and maximum expected emission rates and for lime loading into the silo.

EPA's AP-42, Section 11.12 (06/06), Table 11.12-2

Lime Silo Loading Emission Factor

E_{PM} (lbs/ton) = 0.73 lbs/ton; E_{PM10} (lbs/ton) = 0.47 lbs/ton; $E_{PM2.5}$ (lbs/ton) = 0.0930 lbs/ton

The following equation was used to calculate the hourly emission rate for limestone loading:

Emission Rate (lbs/hour) = Process Rate (tons/hour) * Emission Factor (lbs/ton)

The following equation was used to calculate the pre-controlled annual emission rate:

$$\text{Emission Rate (tons/year)} = \frac{\text{Emission Rate (lbs/hour)} * 8760 \text{ hrs/year}}{2000 \text{ lbs/ton}}$$

The following equation was used to calculate the maximum expected annual emission rate:

Emission Rate (lbs/hour) = Process Rate (tons/year) * Emission Factor (lbs/ton)

Table 6-1 Pre-Controlled Lime Loading Emission Rates

Unit #	Process Unit Description	Process Rate (tons)	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)	PM_{10} Emission Rate (lbs/hr)	PM_{10} Emission Rate (tons/yr)	$PM_{2.5}$ Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (tons/yr)
S1	Lime Silo Loading	25 tph 900 tpy	18.25	0.33	11.75	0.21	2.33	0.042

Table 6-2 Controlled Lime Loading Emission Rates

Unit #	Process Unit Description	Process Rate (tons)	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)	PM_{10} Emission Rate (lbs/hr)	PM_{10} Emission Rate (tons/yr)	$PM_{2.5}$ Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (tons/yr)
S1	Lime Silo Loading	25 tph 900 tpy	0.018	0.00033	0.012	0.00021	0.0023	0.00004

CTBT Soda Ash Silo (S2)

The addition of the existing Soda Ash Silo (S1) will increase PM emissions from the site. To estimate pre-controlled particulate emission rates for soda ash silo loading, emission equations were obtained from EPA's Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition, Section 11.12 (06/06), Table 11.12-2 "Cement Unloading to Elevated Storage Silo" and %CE. $PM_{2.5}$ emission factors for soda ash silo emissions loading were determined using the ratio of uncontrolled cement silo loading ratio Table 11.12-4 PM10 * PM2.5/PM10 (0.38/1.92). Maximum expected emissions were calculated using the control efficiency of the baghouse that captures particulate emissions that are vented from the silo pneumatic loading of 99.9% (see Section 7 for filter control efficiency). A delivery of soda ash is approximately 25 tons per load per hour. This throughput value was used in the emission equation. Annual pre-controlled and controlled emissions in tons per year (tpy) were calculated assuming operation with a maximum hourly soda ash throughput of 1,500 tons per year. Tables 6-3 and 6-4 summarizes the pre-controlled and maximum expected emission rates and for soda ash loading into the silo.

EPA's AP-42, Section 11.12 (06/06), Table 11.12-2

Soda Ash Silo Loading Emission Factor

E_{PM} (lbs/ton) = 0.73 lbs/ton; E_{PM10} (lbs/ton) = 0.47 lbs/ton; $E_{PM2.5}$ (lbs/ton) = 0.0930 lbs/ton

The following equation was used to calculate the hourly emission rate for limestone loading:

Emission Rate (lbs/hour) = Process Rate (tons/hour) * Emission Factor (lbs/ton)

The following equation was used to calculate the pre-controlled annual emission rate:

$$\text{Emission Rate (tons/year)} = \frac{\text{Emission Rate (lbs/hour)} * 8760 \text{ hrs/year}}{2000 \text{ lbs/ton}}$$

The following equation was used to calculate the maximum expected annual emission rate:

Emission Rate (lbs/hour) = Process Rate (tons/year) * Emission Factor (lbs/ton)

Table 6-3 Pre-Controlled Soda Ash Loading Emission Rates

Unit #	Process Unit Description	Process Rate (tons)	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)	PM_{10} Emission Rate (lbs/hr)	PM_{10} Emission Rate (tons/yr)	$PM_{2.5}$ Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (tons/yr)
S2	Soda Ash Silo Loading	25 tph 1,500 tpy	18.25	0.55	11.75	0.35	2.33	0.070

Table 6-4 Controlled Soda Ash Loading Emission Rates

Unit #	Process Unit Description	Process Rate (tons)	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)	PM_{10} Emission Rate (lbs/hr)	PM_{10} Emission Rate (tons/yr)	$PM_{2.5}$ Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (tons/yr)
S2	Soda Ash Silo Loading	25 tph 1,500 tpy	0.018	0.00055	0.012	0.00035	0.0023	0.00007

CTBT Lime Silo (S3)

The addition of the existing Lime Silo (S2) will increase PM emissions from the site. To estimate pre-controlled particulate emission rates for lime silo loading, emission equations were obtained from EPA's Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition, Section 11.12 (06/06), Table 11.12-2 "Cement Unloading to Elevated Storage Silo" and %CE. $PM_{2.5}$ emission factors for lime silo emissions loading were determined using the ratio of uncontrolled cement silo loading ratio Table 11.12-4 PM10 * PM2.5/PM10 (0.38/1.92). Maximum expected emissions were calculated using the control efficiency of the baghouse that captures particulate emissions that are vented from the silo pneumatic loading of 99.9% (see Section 7 for filter control efficiency). A delivery of lime is approximately 25 tons per load per hour. This throughput value was used in the emission equation. Annual pre-controlled and controlled emissions in tons per year (tpy) were calculated assuming operation with a maximum hourly lime throughput of 900 tons per year. Tables 6-5 and 6-6 summarizes the pre-controlled and maximum expected emission rates and for lime loading into the silo.

EPA's AP-42, Section 11.12 (06/06), Table 11.12-2

Lime Silo Loading Emission Factor
E_{PM} (lbs/ton) = 0.73 lbs/ton; E_{PM10} (lbs/ton) = 0.47 lbs/ton; $E_{PM2.5}$ (lbs/ton) = 0.0930 lbs/ton

The following equation was used to calculate the hourly emission rate for limestone loading:

Emission Rate (lbs/hour) = Process Rate (tons/hour) * Emission Factor (lbs/ton)

The following equation was used to calculate the pre-controlled annual emission rate:

$$\text{Emission Rate (tons/year)} = \frac{\text{Emission Rate (lbs/hour)} * 8760 \text{ hrs/year}}{2000 \text{ lbs/ton}}$$

The following equation was used to calculate the maximum expected annual emission rate:

Emission Rate (lbs/hour) = Process Rate (tons/year) * Emission Factor (lbs/ton)

Table 6-5 Pre-Controlled Lime Loading Emission Rates

Unit #	Process Unit Description	Process Rate (tons)	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)	PM_{10} Emission Rate (lbs/hr)	PM_{10} Emission Rate (tons/yr)	$PM_{2.5}$ Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (tons/yr)
S3	Lime Silo Loading	25 tph 900 tpy	18.25	0.33	11.75	0.21	2.33	0.042

Table 6-6 Controlled Lime Loading Emission Rates

Unit #	Process Unit Description	Process Rate (tons)	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)	PM_{10} Emission Rate (lbs/hr)	PM_{10} Emission Rate (tons/yr)	$PM_{2.5}$ Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (tons/yr)
S3	Lime Silo Loading	25 tph 900 tpy	0.018	0.00033	0.012	0.00021	0.0023	0.00004

Water Treatment Chemicals

State TAPs that are introduced at the water treatment plant include sodium hydroxide, sulfuric acid, ammonia, ethanolamine, 2-diethylaminoethonal, and sodium bisulfate. Based on the chemical usage for these chemicals, no state TAPs emission limits were exceeded. First cut for determining emissions was the assumption that 1 percent of the chemicals purchased were emitted into the ambient air since the input of chemicals is driven by monitoring the chemical need of the waste water. If this conservative methodology showed any exceedance of a state TAPs, then EPAs Normal Storage Tank (11/2019 Rev.) was used to determine working and breathing losses. Of the chemicals used, only sodium hydroxide and sulfuric acid exceeded the conservative method of 1 percent of all purchased chemicals were emitted into the ambient air. Included in this application are the excel spreadsheet that determined the emission rate for sodium hydroxide and sulfuric acid. Tables 6-7 and 6-8 present the emission calculations for water treatment chemicals. Chemical SDS are available upon request.

Table 6-7 Water Treatment Chemical List

Product	Purpose	Chemical Name	CAS#	% Concentration	VOC	HAPs	State TAP	Regulated Pollutant
Sodium Hydroxide	Caustic Soda	Sodium hydroxide	1310-73-2	50	No	No	Yes	State TAP
Sulfuric Acid 93%	Main Cooling Tower Tank	Sulfuric Acid	7664-93-9	93	No	No	Yes	State TAP
Sulfuric Acid 93%	Chiller Cooling Tower Tank	Sulfuric Acid	7664-93-9	93	No	No	Yes	State TAP
GENGARD GN-8022	Corrosion inhibitor	Carboxylic Acid Polymer	TSRN 125438 - 5052P	100	No	No	No	
		Maleic acid	110-16-7	1	No	No	No	
STEAMATE NA1324	Steam condensate treatment	Ammonia solution	1336-21-6	40	No	No	Yes	State TAP
		Ethanolamine	141-43-5	10	Yes	No	Yes	State TAP, VOC
OPTISPERSE HP54434	Boiler Phosphates	Sodium hydroxide	1310-73-2	10	No	No	Yes	State TAP
		Polyphosphoric acids, sodium salts	68915-31-1	10	No	No	No	
GENGARD GN8123	Corrosion inhibitor	Sodium hydroxide	1310-73-2	10	No	No	Yes	State TAP
		Sodium diethylenetriamine penta(methylenephosphonate)	22042-96-2	10	No	No	No	
OPTIGUARD MCA624	Internal boiler treatment	Potassium sulfite	10117-38-1	20	No	No	No	
		2-Diethylaminoethanol	100-37-8	10	No	No	Yes	State TAP
King Lee Pretreat Plus 0100	Azol Dispersant	Phosphonic acids	13598-36-2	100	No	No	No	
DPC Generic	Sodium BiSulfate Solution	Sodium Bisulfate	7631-90-5	40	No	No	Yes	State TAP
AE1702	Flocculant	Distillates (petroleum), hydrotreated light	64742-47-8	40	No	No	No	
		Alcohols, C10-16, ethoxylated	68002-97-1	10	No	No	No	

Table 6-8 Water Treatment Chemical Emissions vs State TAPs

Product	Purpose	Annual Usage (gallons)	Component Usage (gallons)	Density (lbs/gal)	Mass Usage (lbs/yr)	Percentage Consumed	Emission Rate (lbs/yr)	Emission Rate (lbs/hr)	Emission Rate (tons/yr)	State Emission Limit (lbs/hr)
Sodium Hydroxide	Caustic Soda	215,827	107,914	10.26	1107192.5	EPA Tank Emission	0.00	0.00	0.00	
Sulfuric Acid 93%	Main Cooling Tower Tank	117,420	109,201	15.33	1674045.2	EPA Tank Emission	3.00E-04	3.42E-08	1.50E-07	
Sulfuric Acid 93%	Chiller Cooling Tower Tank	3,260	3,032	15.33	46477.5	EPA Tank Emission	9.20E-05	1.05E-08	4.60E-08	
GENGARD GN-8022	Corrosion inhibitor									
STEAMATE NA1324	Steam condensate treatment	15,307	6,123	6	36736.8	99	367.368	0.0419	0.184	1.2
		15,307	1,531	8.44	12919.1	99	129.19108	0.0147	0.065	0.533
OPTISPERSE HP54434	Boiler Phosphates	13,488	1,349	10.26	13838.7	99	138.38688	0.0158	0.069	0.133
GENGARD GN8123	Corrosion inhibitor	15,306	1,531	10.26	15704.0	99	157.03956	0.0179	0.079	0.133
OPTIGUARD MCA624	Internal boiler treatment									
		12,840	1,284	7.42	9527.3	99	95.2728	0.0109	0.048	3.33
King Lee Pretreat Plus 0100	Azol Dispersant									
DPC Generic	Sodium BiSulfate Solution	6,166	2,466	22.87	56406.6	99	564.06568	0.0644	0.282	0.333
AE1702	Flocculant									
							Total Sodium Hydroxide	**0.0337**	**0.1477**	**0.133**
							Total Sulfuric Acid	**4.47E-08**	**1.96E-07**	**0.0667**

Note: Emission rate pounds per hour cell highlighted in yellow is compared to state emission limit.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO_2e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO_2e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO_2e emissions in Table 2-P of this application. Emissions are reported in **short** tons per year and represent each emission unit's Potential to Emit (PTE).
5. All Title V major sources, PSD major sources, and all power plants, whether major or not, must calculate and report GHG mass and CO2e emissions for each unit in Table 2-P.
6. For minor source facilities that are not power plants, are not Title V, and are not PSD there are three options for reporting GHGs in Table 2-P: 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHGs as a second separate unit; 3) or check the following □ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

Sources for Calculating GHG Emissions:

- Manufacturer's Data
- AP-42 Compilation of Air Pollutant Emission Factors at http://www.epa.gov/ttn/chief/ap42/index.html
- EPA's Internet emission factor database WebFIRE at http://cfpub.epa.gov/webfire/
- 40 CFR 98 Mandatory Green House Gas Reporting except that tons should be reported in short tons rather than in metric tons for the purpose of PSD applicability.
- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry. August 2009 or most recent version.
- Sources listed on EPA's NSR Resources for Estimating GHG Emissions at http://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases:

Global Warming Potentials (GWP):
Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO_2 over a specified time period.

"Greenhouse gas" for the purpose of air permit regulations is defined as the aggregate group of the following six gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. **(20.2.70.7 NMAC, 20.2.74.7 NMAC).** You may also find GHGs defined in 40 CFR 86.1818-12(a).

Metric to Short Ton Conversion:
Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.
1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

- ☐ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- **X** If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☐ If an older version of AP-42 is used, include a complete copy of the section.
- **X** If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- **X** If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

Cooling tower (CT-1 and CT-2) particulate emission calculations based on the NMED Policy "Calculating TSP, PM-10 and PM-2.5 from Cooling Towers" dated June 25, 2013

Lime and Soda Ash Storage Silo (S1, S2, and S3) – AP-42 Section 11.12 "Concrete Batching" Table 11.12-2 "Uncontrolled Emissions Cement Unloading to Elevated Storage Silo"

Sodium Hydroxide - EPA Tanks Emissions Excel Spreadsheet (attached)

Sulfuric Acid - EPA Tanks Emissions Excel Spreadsheet (attached)

Luna Energy Center Emission Calculations Excel Spreadsheet (attached)

NEW MEXICO
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RYAN FLYNN
Cabinet Secretary-designate
BUTCH TONGATE
Deputy Secretary

TECHNICAL MEMORANDUM

TO: All Permitting Staff

FROM: Daren Zigich

THROUGH: Ted Schooley, Ned Jerabek, Cember Hardison

VERSION: June 25, 2013

SUBJECT: Calculating TSP, PM-10 and PM-2.5 from Cooling Towers

The goal of this memo is to standardize a step-by-step approach for calculating particulate emissions from cooling towers.

Due to the variability of methods used by permittees to estimate particulate emissions from cooling towers, a consistent, defensible approach is warranted. For example, some permittees have used a droplet settling ratio from Reference 3 to lower the total potential emissions rate of total particulate matter (PM_{total}). This is unacceptable due to the following:

1. Particulate settling is not appropriate since any verification testing would be completed inside the cooling tower fan stack. All particulate mass that can be measured by an EPA reference method and are emitted to the atmosphere shall be counted as particulate emissions. Particle size distribution can then be used to modify the emission rate of each regulated particulate size.
2. The New Mexico, AQB is not aware of information that verifies the droplet settling data is representative for arid climates where evaporation rates are high.
3. The droplet size distribution and % mass data from Reference 1 only consider droplets up to 600 microns. Reference 3 states that settling only exists for droplets greater than 450 microns. Reference 1 lists the % mass of droplets greater than 450 microns to be less than 1 percent of the total mass.
4. Reference 2 test data shows that towers with significant drift droplet diameters greater than 600 microns usually suffer from poor installation of the drift eliminator or from

poor water distribution due to issues with the tower packing. Large droplets may indicate that the assumed or guaranteed drift eliminator efficiency is not being met. Thus providing emissions credit for poor installation, operation or maintenance runs counter to general AQB practice.

5. References 1 and 2 make no reference to and assign no credit for the settling theory stated in Reference 3.

For the above reasons, the Reference 3 settling ratio is not an acceptable emissions reduction approach.

Acceptable Calculation Method

Cooling tower particulate emissions are a function of the Drift rate and the concentration of dissolved solids present in the water. The Drift rate is normally listed as a percentage of the circulating water flow rate of the cooling tower.

Step 1 – Establish maximum water circulation rate (Q_{circ}) for the cooling tower. This is usually dependent on the capacity of the circulation pumps and the plant cooling system and should be reported as gallons per minute (gpm). The circulation rate is the sum of the circulation rates for each cell in the tower and thus represents the total flow for the tower.

Step 2 – Establish Drift rate (Q_{drift}) of the cooling tower. This information is dependent on the drift eliminator design and is usually supplied by the tower manufacturer. If manufacturer data is unavailable, the standard drift of 0.02 percent, listed in AP-42, should be used.

Step 3 – Establish maximum Total Dissolved Solids concentration (TDS) in the circulating cooling water. This is dependent on the facility's operations. TDS should be reported as parts per million (ppm) or mg/l.

Step 4 – Calculate total potential hourly particulate emissions (PM_{total}) in pounds per hour (lbs/hr).

$$PM_{total} = TDS(mg/l) \times \frac{1(lbs/mg)}{453{,}600} \times 3.785(l/gal) \times Q_{circ}(gpm) \times \frac{Q_{drift}(\%Q_{circ})}{100} \times 60(min/hr)$$

Example: TDS = 3000 ppm or mg/l, Q_{circ} = 50,000 gpm, Q_{drift} = 0.004%

$PM_{total} = 3000 \times (1/453{,}600) \times 3.785 \times 50{,}000 \times (0.004/100) \times 60$

PM_{total} = 3.0 lbs/hr

Step 5 – Estimate particulate size distribution of the PM_{total} to determine potential emissions of TSP/PM, PM_{10} and $PM_{2.5}$.

The current estimating technique used in References 1 and 2 employs a formula for determining a potential particulate size (i.e. diameter) for a given set of variables. The variables are:

d_d = Drift droplet diameter, microns
C_{TDS} = Concentration of TDS in the circulating water, ppm
ρ_w = Density of Drift droplet, g/cm^3
ρ_{salt} = Density of particle, g/cm^3

The equation for determining particle size/diameter (d_p), in microns is:

$$d_p = \frac{d_d}{(\rho_{salt} / \rho_w C_{TDS})^{1/3}}$$

The tables below list particle size related to droplet size for various concentrations (1000 ppm to 12,000 ppm) of TDS in the circulating cooling water. The density of the water droplet (ρ_w) is assumed to be 1.0 g/cm3 (based on density of pure water) and the average density of the TDS salts is assumed to be 2.5 g/cm3. This assumed density is selected based on the average density of common TDS constituents, $CaCO_3$, $CaSO_4$, $CaCl_2$ NaCl, Na_2SO_4, and Na_2CO_3. If actual circulating water constituents are available, that data may be used to estimate the dissolved solids average density.

To determine the droplet size that generates particulate matter of the applicable regulated diameters, TSP/PM (defined as 30 microns or less per NM AQB policy[1]), PM10 and PM2.5, find the column in the table that matches the maximum circulating water TDS concentration and read the values associated with the PM2.5, PM10 and TSP/PM boxes. Boxed values are not exactly equal to the applicable sizes, but are the values closest to the applicable sizes given the listed water droplet values from Reference 1.

The far right column of each table provides mass distribution data from Reference 1. The values indicate what percent of the total particulate mass emission, calculated in Step 4, is associated with the applicable particulate size. Read the value that is on the same line (same color) as the applicable particulate size associated with the specified TDS concentration column.

Example: Continuing from Step 4,

PM_{total} = 3.0 lbs/hr
C_{TDS} = 3000 ppm

From Table:

$PM_{2.5}$: d_d = 20 %Mass = 0.196%

PM_{10}: $d_d = 90$ %Mass = 49.812%
TSP/PM: $d_d = 270$ %Mass = 94.689%

The mass emission of each applicable particulate size is:

$PM_{2.5} = PM_{total}(\%Mass/100) = 3.0(0.00196) = 0.006$ lbs/hr
$PM_{10} = 3.0(.49812) = 1.494$ lbs/hr
TSP/PM = 3.0(.94689) = 2.841 lbs/hr

[1]Definition of TSP for purposes of permitting emission sources, 11/2/09, see P:\AQB-Permits-Section\NSR-TV-Common\Permitting-Guidance-Documents – Index & Links document

Size Distribution								
1000 ppm (TDS)			2000 ppm			3000 ppm			% Mass
d_d	d_p		d_d	d_p		d_d	d_p		≤
10	0.73873		10	0.930527		10	1.065044		0
20	1.477461		20	1.861054		20	2.130087	PM2.5	0.196
30	2.216191	PM2.5	30	2.791581	PM2.5	30	3.195131		0.226
40	2.954922		40	3.722108		40	4.260174		0.514
50	3.693652		50	4.652635		50	5.325218		1.816
60	4.432382		60	5.583162		60	6.390261		5.702
70	5.171113		70	6.513689		70	7.455305		21.348
90	6.648574		90	8.374743		90	9.585392	PM10	49.812
110	8.126035		110	10.2358	PM10	110	11.71548		70.509
130	9.603495	PM10	130	12.09685		130	13.84557		82.023
150	11.08096		150	13.9579		150	15.97565		88.012
180	13.29715		180	16.74949		180	19.17078		91.032
210	15.51334		210	19.54107		210	22.36591		92.468
240	17.72953		240	22.33265		240	25.56104		94.091
270	19.94572		270	25.12423		270	28.75618	TSP/PM30	94.689
300	22.16191		300	27.91581	TSP/PM30	300	31.95131		96.288
350	25.85556		350	32.56844		350	37.27652		97.011
400	29.54922	TSP/PM30	400	37.22108		400	42.60174		98.34
450	33.24287		450	41.87371		450	47.92696		99.071
500	36.93652		500	46.52635		500	53.25218		99.071
600	44.32382		600	55.83162		600	63.90261		100

Size Distribution									
4000 ppm (TDS)			5000 ppm			6000 ppm			% Mass
d_d	d_p		d_d	d_p		d_d	d_p		≤
10	1.17212		10	1.262534		10	1.341561		0
20	2.344239	PM2.5	20	2.525067	PM2.5	20	2.683121	PM2.5	0.196
30	3.516359		30	3.787601		30	4.024682		0.226
40	4.688479		40	5.050135		40	5.366243		0.514
50	5.860598		50	6.312669		50	6.707804		1.816
60	7.032718		60	7.575202		60	8.049364		5.702
70	8.204838		70	8.837736	PM10	70	9.390925	PM10	21.348
90	10.54908	PM10	90	11.3628	PM10	90	12.07405		49.812
110	12.89332		110	13.88787		110	14.75717		70.509
130	15.23756		130	16.41294		130	17.44029		82.023
150	17.5818		150	18.93801		150	20.12341		88.012
180	21.09815		180	22.72561		180	24.14809		91.032
210	24.61451		210	26.51321		210	28.17278	TSP/PM30	92.468
240	28.13087		240	30.30081	TSP/PM30	240	32.19746		94.091
270	31.64723	TSP/PM30	270	34.08841		270	36.22214		94.689
300	35.16359		300	37.87601		300	40.24682		96.288
350	41.02419		350	44.18868		350	46.95463		97.011
400	46.88479		400	50.50135		400	53.66243		98.34
450	52.74539		450	56.81402		450	60.37023		99.071
500	58.60598		500	63.12669		500	67.07804		99.071
600	70.32718		600	75.75202		600	80.49364		100

Size Distribution									
7000 ppm (TDS)			8000 ppm			9000 ppm			% Mass
d_d	d_p		d_d	d_p		d_d	d_p		≤
10	1.412224		10	1.476437		10	1.535496		0
20	2.824448	PM2.5	20	2.952874	PM2.5	20	3.070992	PM2.5	0.196
30	4.236672		30	4.429311		30	4.606488		0.226
40	5.648896		40	5.905748		40	6.141985		0.514
50	7.061121		50	7.382185		50	7.677481		1.816
60	8.473345		60	8.858622		60	9.212977		5.702
70	9.885569	PM10	70	10.33506	PM10	70	10.74847	PM10	21.348
90	12.71002		90	13.28793		90	13.81947		49.812
110	15.53447		110	16.24081		110	16.89046		70.509
130	18.35891		130	19.19368		130	19.96145		82.023
150	21.18336		150	22.14656		150	23.03244		88.012
180	25.42003		180	26.57587		180	27.63893		91.032
210	29.65671	TSP/PM30	210	31.00518	TSP/PM30	210	32.24542	TSP/PM30	92.468
240	33.89338		240	35.43449		240	36.85191		94.091
270	38.13005		270	39.8638		270	41.4584		94.689
300	42.36672		300	44.29311		300	46.06488		96.288
350	49.42784		350	51.6753		350	53.74237		97.011
400	56.48896		400	59.05748		400	61.41985		98.34
450	63.55009		450	66.43967		450	69.09733		99.071
500	70.61121		500	73.82185		500	76.77481		99.071
600	84.73345		600	88.58622		600	92.12977		100

Size Distribution								
10,000 ppm (TDS)			11,000 ppm			12,000 ppm			% Mass
d_d	d_p		d_d	d_p		d_d	d_p		≤
10	1.590325		10	1.641609		10	1.68987	PM2.5	0
20	3.180651	PM2.5	20	3.283218	PM2.5	20	3.37974		0.196
30	4.770976		30	4.924827		30	5.06961		0.226
40	6.361301		40	6.566436		40	6.759481		0.514
50	7.951627		50	8.208045		50	8.449351		1.816
60	9.541952	PM10	60	9.849654	PM10	60	10.13922	PM10	5.702
70	11.13228		70	11.49126		70	11.82909		21.348
90	14.31293		90	14.77448		90	15.20883		49.812
110	17.49358		110	18.0577		110	18.58857		70.509
130	20.67423		130	21.34092		130	21.96831		82.023
150	23.85488		150	24.62414		150	25.34805		88.012
180	28.62586	TSP/PM30	180	29.54896	TSP/PM30	180	30.41766	TSP/PM30	91.032
210	33.39683		210	34.47379		210	35.48727		92.468
240	38.16781		240	39.39862		240	40.55688		94.091
270	42.93878		270	44.32344		270	45.62649		94.689
300	47.70976		300	49.24827		300	50.6961		96.288
350	55.66139		350	57.45632		350	59.14545		97.011
400	63.61301		400	65.66436		400	67.59481		98.34
450	71.56464		450	73.87241		450	76.04416		99.071
500	79.51627		500	82.08045		500	84.49351		99.071
600	95.41952		600	98.49654		600	101.3922		100

References

1. Calculating Realistic PM10 Emissions from Cooling Towers, Abstract No. 216 Session No. AS-1b, J. Reisman and G. Frisbie, Greyston Environmental Consultants, Inc.
2. Cooling Tower Particulate Matter and Drift Rate Emissions Testing Using the Cooling Technology Institute Test Code – CTI ATC-140, August 2003 EPRI Cooling Tower Technology Conference, K. Hennnon, P.E., D. Wheeler, P.E., Power Generation Technology.
3. Effects of Pathogenic and Toxic Materials Transported Via Cooling Device Drift, Vol. 1 Technical Report, EPA-600/7-79-251a, H.D. Freudenthal, J.E. Rubinstein, and A. Uzzo, November 1979.

11.12 Concrete Batching

11.12.1 Process Description [1-5]

Concrete is composed essentially of water, cement, sand (fine aggregate) and coarse aggregate. Coarse aggregate may consist of gravel, crushed stone or iron blast furnace slag. Some specialty aggregate products could be either heavyweight aggregate (of barite, magnetite, limonite, ilmenite, iron or steel) or lightweight aggregate (with sintered clay, shale, slate, diatomaceous shale, perlite, vermiculite, slag pumice, cinders, or sintered fly ash). Supplementary cementitious materials, also called mineral admixtures or pozzolan minerals may be added to make the concrete mixtures more economical, reduce permeability, increase strength, or influence other concrete properties. Typical examples are natural pozzolans, fly ash, ground granulated blast-furnace slag, and silica fume, which can be used individually with portland or blended cement or in different combinations. Chemical admixtures are usually liquid ingredients that are added to concrete to entrain air, reduce the water required to reach a required slump, retard or accelerate the setting rate, to make the concrete more flowable or other more specialized functions.

Approximately 75 percent of the U.S. concrete manufactured is produced at plants that store, convey, measure and discharge these constituents into trucks for transport to a job site. At most of these plants, sand, aggregate, cement and water are all gravity fed from the weight hopper into the mixer trucks. The concrete is mixed on the way to the site where the concrete is to be poured. At some of these plants, the concrete may also be manufactured in a central mix drum and transferred to a transport truck. Most of the remaining concrete manufactured are products cast in a factory setting. Precast products range from concrete bricks and paving stones to bridge girders, structural components, and panels for cladding. Concrete masonry, another type of manufactured concrete, may be best known for its conventional 8 x 8 x 16-inch block. In a few cases concrete is dry batched or prepared at a building construction site. Figure 11.12-1 is a generalized process diagram for concrete batching.

The raw materials can be delivered to a plant by rail, truck or barge. The cement is transferred to elevated storage silos pneumatically or by bucket elevator. The sand and coarse aggregate are transferred to elevated bins by front end loader, clam shell crane, belt conveyor, or bucket elevator. From these elevated bins, the constituents are fed by gravity or screw conveyor to weigh hoppers, which combine the proper amounts of each material.

11.12.2 Emissions and Controls [6-8]

Particulate matter, consisting primarily of cement and pozzolan dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. In addition, there are emissions of metals that are associated with this particulate matter. All but one of the emission points are fugitive in nature. The only point sources are the transfer of cement and pozzolan material to silos, and these are usually vented to a fabric filter or “sock”. Fugitive sources include the transfer of sand and aggregate, truck loading, mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions generated during the transfer of sand and aggregate depends primarily on the surface moisture content of these materials. The extent of fugitive emission control varies widely from plant to plant. Particulate emission factors for concrete batching are give in Tables 11.12-1 and 11.12-2.

TABLE 11.12-2 (ENGLISH UNITS)
EMISSION FACTORS FOR CONCRETE BATCHING [a]

Source (SCC)	Uncontrolled				Controlled			
	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating
Aggregate transfer [b] (3-05-011-04,-21,23)	0.0069	D	0.0033	D	ND		ND	
Sand transfer [b] (3-05-011-05,22,24)	0.0021	D	0.00099	D	ND		ND	
Cement unloading to elevated storage silo (pneumatic)[c] (3-05-011-07)	0.73	E	0.47	E	0.00099	D	0.00034	D
Cement supplement unloading to elevated storage silo (pneumatic)[d] (3-05-011-17)	3.14	E	1.10	E	0.0089	D	0.0049	E
Weigh hopper loading [e] (3-05-011-08)	0.0048	D	0.0028	D	ND		ND	
Mixer loading (central mix)[f] (3-05-011-09)	0.572 or Eqn. 11.12-1	B	0.156 or Eqn. 11.12-1	B	0.0184 or Eqn. 11.12-1	B	0.0055 or Eqn. 11.12-1	B
Truck loading (truck mix)[g] (3-05-011-10)	1.118	B	0.310	B	0.098 or Eqn. 11.12-1	B	0.0263 or Eqn. 11.12-1	B
Vehicle traffic (paved roads)	See AP-42 Section 13.2.1, Paved Roads							
Vehicle traffic (unpaved roads)	See AP-42 Section 13.2.2, Unpaved Roads							
Wind erosion from aggregate and sand storage piles	See AP-42 Section 13.2.5, Industrial Wind Erosion							

ND = No data

[a] All emission factors are in lb of pollutant per ton of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 1865 lbs course aggregate, 1428 lbs sand, 491 lbs cement and 73 lbs cement supplement. Approximately 20 gallons of water was added to this solid material to produce 4024 lbs (one cubic yard) of concrete.

[b] Reference 9 and 10. Emission factors are based upon an equation from AP-42, section 13.2.4 Aggregate Handling And Storage Piles, equation 1 with k_{PM-10} =.35, k_{PM} = .74, U = 10mph, $M_{aggregate}$ =1.77%, and M_{sand} = 4.17%. These moisture contents of the materials ($M_{aggregate}$ and M_{sand}) are the averages of the values obtained from Reference 9 and Reference 10.

[c] The uncontrolled PM & PM-10 emission factors were developed from Reference 9. The controlled emission factor for PM was developed from References 9, 10, 11, and 12. The controlled emission factor for PM-10 was developed from References 9 and 10.

[d] The controlled PM emission factor was developed from Reference 10 and Reference 12, whereas the controlled PM-10 emission factor was developed from only Reference 10.

[e] Emission factors were developed by using the Aggregate and Sand Transfer Emission Factors in conjunction with the ratio of aggregate and sand used in an average yard^3 of concrete. The unit for these emission factors is lb of pollutant per ton of aggregate and sand.

[f] References 9, 10, and 14. The emission factor units are lb of pollutant per ton of cement and cement supplement. The general factor is the arithmetic mean of all test data.

[g] Reference 9, 10, and 14. The emission factor units are lb of pollutant per ton of cement and cement supplement. The general factor is the arithmetic mean of all test data.

The particulate matter emissions from truck mix and central mix loading operations are calculated in accordance with the values in Tables 11.12-1 or 11.12-2 or by Equation 11.12-1[14] when site specific data are available.

$$E = k\,(0.0032)\left[\frac{U^{a}}{M^{b}}\right] + c \qquad \text{Equation 11.12-1}$$

E	=	Emission factor in lbs./ton of cement and cement supplement
k	=	Particle size multiplier (dimensionless)
U	=	Wind speed at the material drop point, miles per hour (mph)
M	=	Minimum moisture (% by weight) of cement and cement supplement
a, b	=	Exponents
c	=	Constant

The parameters for Equation 11.12-1 are summarized in Tables 11.12-3 and 11.12-4.

Table 11.12-3. Equation Parameters for Truck Mix Operations

Condition	Parameter Category	k	a	b	c
Controlled[1]	Total PM	0.8	1.75	0.3	0.013
	PM_{10}	0.32	1.75	0.3	0.0052
	$PM_{10-2.5}$	0.288	1.75	0.3	0.00468
	$PM_{2.5}$	0.048	1.75	0.3	0.00078
Uncontrolled[1]	Total PM	0.995			
	PM_{10}	0.278			
	$PM_{10-2.5}$	0.228			
	$PM_{2.5}$	0.050			

Table 11.12-4. Equation Parameters for Central Mix Operations

Condition	Parameter Category	k	a	b	c
Controlled[1]	Total PM	0.19	0.95	0.9	0.0010
	PM_{10}	0.13	0.45	0.9	0.0010
	$PM_{10-2.5}$	0.12	0.45	0.9	0.0009
	$PM_{2.5}$	0.03	0.45	0.9	0.0002
Uncontrolled[1]	Total PM	5.90	0.6	1.3	0.120
	PM_{10}	1.92	0.4	1.3	0.040
	$PM_{10-2.5}$	1.71	0.4	1.3	0.036
	$PM_{2.5}$	0.38	0.4	1.3	0

1. Emission factors expressed in lbs/tons of cement and cement supplement

To convert from units of lbs/ton to units of kilograms per mega gram, the emissions calculated by Equation 11.12-1 should be divided by 2.0.

Particulate emission factors per yard of concrete for an average batch formulation at a typical facility are given in Tables 11.12-5 and 11.12-6. For truck mix loading and central mix loading, the

Section 8

Map(s)

A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	

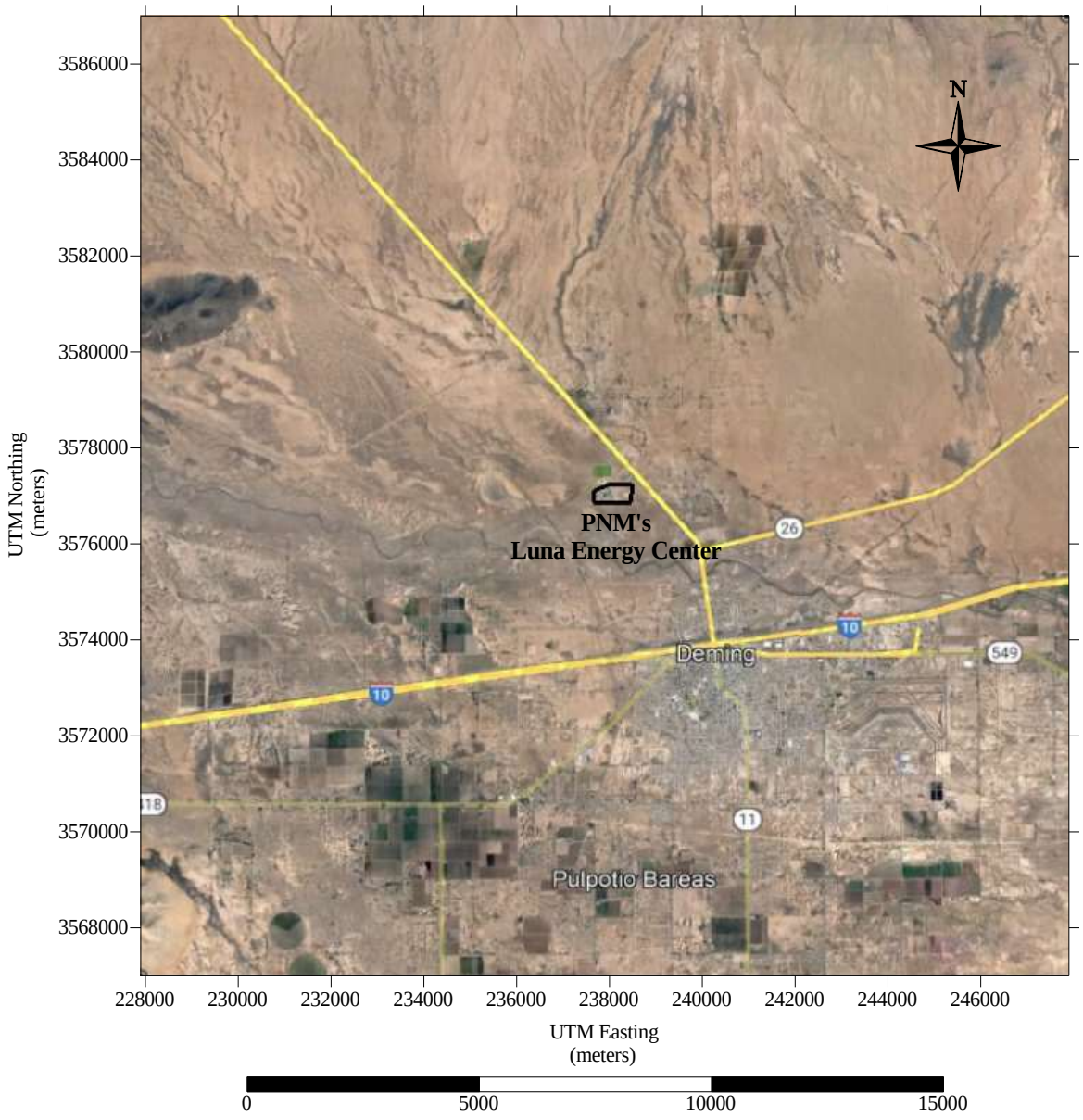


Figure 8-1: Aerial Map of Luna Energy Center with 10 kilometer Radius

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)
(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

X I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"
This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant's Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

New Permit and **Significant Permit Revision** public notices must include all items in this list.

Technical Revision public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. X A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
2. X A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
3. X A copy of the property tax record (20.2.72.203.B NMAC).
4. X A sample of the letters sent to the owners of record.
5. X A sample of the letters sent to counties, municipalities, and Indian tribes.
6. X A sample of the public notice posted and a verification of the local postings.
7. X A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. X A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. X A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
10. X A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
11. X A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.

Figure 9-1: 10 Mile Radius Surrounding the Luna Energy Center

Government Entities within 10 Miles

Luna County	Berenda McWright, County Clerk	700 S. Silver Ave., Box 7	Deming	NM	88030
City of Deming	Mary Jo Valdez, Municipal Clerk	309 South Gold Avenue	Deming	NM	88030

Landowner within 100 feet of Luna Energy Center (Facility Located within Deming City Limits)

UPC	Owner	Address			
O#47339	PUBLIC SERVICE COMPANY OF NM	414 SILVER AVE SW MS 1025	ALBUQUERQUE	NM	87102
3052135392244	TARANGO, ALFREDO & BERTH A	4414 S 7TH PL	PHOENIX	AZ	85040
3052135408244	TARANGO, BENJAMIN & ROSA S	4414 S 7TH PL	PHOENIX	AZ	85040
3052135428243	TARANGO, BENJAMIN & ALFREDO	4414 S 7TH PL	PHOENIX	AZ	85040
3052135437196	VIEJO GROUP LLC	PO BOX 36076	TUCSON	AZ	85740
3052135500216	VIEJO GROUP LLC	PO BOX 36076	TUCSON	AZ	85740
3053135072331	TRUESDELL, LYNDA KAYE & KINGSLEY, JEFFERY	PO BOX 2277	LAS CRUCES	NM	88004
3053135074463 O#110065	GEO SOUTHWEST LTD	P O BOX 353	SILVERTON	TX	79257
3052135212442	PLEYTE, JOHN J	PO BOX 67	CHELAN	WA	98816
O#110065	GEO SOUTHWEST LTD	P O BOX 353	SILVERTON	TX	79257
O#110065	GEO SOUTHWEST LTD	P O BOX 353	SILVERTON	TX	79257

July 7, 2023

CERTIFIED MAIL XXXX XXXX XXXX XXXX

Dear **[Neighbor/Environmental Director/county or municipal official]**

Public Service Company of New Mexico (PNM) announces its application submittal to the New Mexico Environment Department for a modification of air quality permit #2450-M2-R4 for the Luna Energy Center facility. The expected date of application submittal to the Air Quality Bureau is July 31, 2023.

The address for the existing facility known as, Luna Energy Center, is at 1895 Arrowhead Drive, Deming, NM. The exact location of the Luna Energy Facility is at Zone 13, UTM Easting 237,880 meters, UTM Northing 3,577,000 meters The approximate location of this facility is 1.9 miles southwest of Keeler Farm in Luna county.

LEC is a natural gas fired electrical energy generating station that consists of two General Electric Frame 7FA advanced gas turbines each with its own electric generator. Each unit also has a heat recovery steam generation unit (HRSG). Steam generated in the HRSG's is sent to a single steam turbine generator (STG). Each of the two combustion turbines includes the capability of supplemental firing for additional generation capacity during periods of peak electrical demand through use of a duct burner on each turbine unit. Steam sent to the STG is condensed with a surface condenser (heat exchanger) and is then cooled by a force draft multi-cell cooling tower for recycle through the system. This application is for a significant permit revision of LEC NSR Permit PSD-NM-2450-M2-R4 to increase the total dissolved solids (TDS) in the cooling tower water from 3000 to 4500 milligrams per liter (mg/l). No other physical changes or changes in the method of operation are requested for this permit revision application.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) (Maximum Normal Operations and Maximum Startup/Shutdown and Routine Maintenance (SSM)) and maximum tons per year (tpy) and may change slightly during the course of the Department's review:

Pollutant:	Maximum Normal Pounds per hour	Maximum SSM Pounds per hour	Maximum Tons per year
Particulate Matter (PM)	70.0 pph	70.0 pph	230 tpy
PM_{10}	69.0 pph	69.0 pph	228 tpy
$PM_{2.5}$	68.0 pph	68.0 pph	223 tpy
Sulfur Dioxide (SO_2)	10.1 pph	10.1 pph	37.5 tpy
Nitrogen Oxides (NO_x)	58.5 pph	329.7 pph	250 tpy
Carbon Monoxide (CO)	172.2 pph	1274.6 pph	730 tpy
Volatile Organic Compounds (VOC)	38.7 pph	38.7 pph	90.4 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	3.6 pph	3.6 pph	10.8 tpy
Toxic Air Pollutant (TAP)	0 pph	0 pph	0 tpy
Green House Gas Emissions as Total CO_2e	n/a	n/a	2,214,262 tpy

The standard operating schedule of the facility is 24 hour per day, 7 days per week, and 52 weeks per year.

The owner and/or operator of the Facility is:

Public Service Company of New Mexico
2401 Aztec Road, NE
MS Z100
Albuquerque, NM 87107
Tucson Electric Power Company
3950 East Irvington Road
Tucson, AZ 85714
Samchully Power and Utilities 1, LLC
123 Marcy St.
Suite 101
Santa Fe, NM 87501

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

Attención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

Sincerely,

Public Service Company of New Mexico

7/03/2023 15:37:00 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0047339 Dist DEM NonRend% 0 58069653 Centrl 58069653 Full

PUBLIC SERVICE COMPANY OF NM FinCo 0 Land 19356551 Txbl

0 Impr 0 Exmpt

414 SILVER AVE SW MS 1025 0 P.P.

0 M.H. 19356551 Net

ALBUQUERQUE NM 87102 0 Livstk

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
P 004 733 911 09F 134401	040	UTILITY			19356551
SUMMARY OF REAL ESTATE BUILDING AND IMPROVEMENTS (ELECTRIC COSTS)					
SUMMARY OF PERSONAL PROPERTY (ELECTRIC COSTS)					
CONSTRUCTION WORK IN PROGRESS					

N/R-Values Full	58069653
N/R-Values Taxable	19356551
N/R-Values Net	19356551

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

7/03/2023 13:58:47 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0107105 Dist LUNA NonRend% 0 0 Centrl 12750 Full

TARANGO, ALFREDO & BERTH A FinCo 12750 Land 4250 Txbl

0 Impr 0 Exmpt

0 P.P.

4414 S 7TH PL 0 M.H. 4250 Net

PHOENIX AZ 85040 0 Livstk

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
3 052 135 392 244	182	MSC-L-N.	1.50		4250

FILE 200701285 02/23/07

SECTION-16 TOWNSHIP-23S RANGE-09W

1.5 ACS IN SHNWQ

N/R-Values Full	12750
N/R-Values Taxable	4250
N/R-Values Net	4250

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

7/03/2023 13:59:22 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0107106 Dist LUNA NonRend% 0 0 Centrl 12750 Full

TARANGO, BENJAMIN & ROSA S FinCo 12750 Land 4250 Txbl

0 Impr 0 Exmpt

0 P.P.

4414 S 7TH PL 0 M.H. 4250 Net

PHOENIX AZ 85040 0 Livstk

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
3 052 135 408 244	182	MSC-L-N.	1.50		4250

FILE 200701284 02/23/07

SECTION-16 TOWNSHIP-23S RANGE-09W

1.5 ACS IN SHNWQ

N/R-Values Full	12750
N/R-Values Taxable	4250
N/R-Values Net	4250

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

7/03/2023 13:59:59 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0107075 Dist LUNA	NonRend% 0	0	Centrl	26547	Full
TARANGO, BENJAMIN & ALFREDO	FinCo	26547	Land	8849	Txbl
		0	Impr	0	Exmpt
		0	P.P.		
4414 S 7TH PLACE		0	M.H.	8849	Net
PHOENIX AZ 85040		0	Livstk		

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
3 052 135 428 243	101	H-SIT-R.	2.00		8849
FILE 200704654 07/24/07					
SECTION-16 TOWNSHIP-23S RANGE-09W					
2.0 ACS IN SHSHNWQ					

Res-Values Full	26547
Res-Values Taxable	8849
Res-Values Net	8849

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

7/03/2023 14:00:34 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0097603 Dist LUNA	NonRend% 0	0	Centrl	20583	Full
VIEJO GROUP LLC	FinCo	20583	Land	6861	Txbl
		0	Impr	0	Exmpt
		0	P.P.		
P O BOX 36076		0	M.H.	6861	Net
TUCSON AZ 85740		0	Livstk		

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
3 052 135 437 196	182	MSC-L-N.	12.80		6861
FILE 202003278 10/13/20					
SECTION-16 TOWNSHIP-23S RANGE-09W					
12.8 AC IN SHNWQ			N/R-Values Full		20583
			N/R-Values Taxable		6861
			N/R-Values Net		6861

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

7/03/2023 14:01:00 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0097601 Dist LUNA NonRend% 0 0 Centrl 27870 Full

VIEJO GROUP LLC FinCo 27870 Land 9290 Txbl

0 Impr 0 Exmpt

0 P.P.

P O BOX 36076 0 M.H. 9290 Net

TUCSON AZ 85740 0 Livstk

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
3 052 135 059 146	182	MSC-L-N.	37.11		9290
FILE 202003278 10/13/20					
SECTION-16 TOWNSHIP-23S RANGE-09W					
23.60 ACS IN EH (EAST OF HWY)					
3 052 135 500 216					
SECTION-16 TOWNSHIP-23S RANGE-09W					
13.5 ACS IN SHNWQ (WEST OF HWY)					

N/R-Values Full 27870

N/R-Values Taxable 9290

N/R-Values Net 9290

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

7/03/2023 14:03:33 LUNA COUNTY ASSESSOR Year 2023 ASSRA4

0015158 Dist LUNA NonRend% 0 0 Centrl 12120 Full

TRUESDELL, LYNDA KAYE TRUSTEE & FinCo 12120 Land 4040 Txbl

KINGSLEY, JEFFREY G TRUSTEE 0 Impr 0 Exmpt

PO BOX 2277 0 P.P.

0 M.H. 4040 Net

LAS CRUCES NM 88004 0 Livstk

Pos to() _ Print=Y _

Property Description	Code	ValueDesc	Quantity	Rate	Taxable
3 053 135 072 331	182	MSC-L-N.	120.00		4040

FILE 2022 PG 6878 202206876 032522

SECTION-17 TOWNSHIP-23S RANGE-09W

NHSEQ AND SEQNEQ

N/R-Values Full	12120
N/R-Values Taxable	4040
N/R-Values Net	4040

Bottom

F3=Cancel F4=Prompt() F6=Chg Yrs F12=Return

Owner # **0110065**
Non-Rend% 0
GEO SOUTHWEST LTD

Dist LUNA

00000

VALUATION		RECAP	
0	Central	**0**	Full Value
0	Land		
0	Improvements	**0**	Taxable Value
0	Personal Prop	**0**	Exemptions
0	Mfg Home		
0	Livestock	**0**	Net Taxable

Property Description	Code	Value	Description	Quantity	Rate	Taxable

3 053 135 074 463
FILE 201401169 04/10/14
SECTION-17 TOWNSHIP-23S RANGE-09W
CENTRAL ASSESSMENT
LOCATIONAL PURPOSES ONLY
SEQSEQ 39.85 ACRES FILE HERE

3 053 136 132 267
FILE 201401169 04/10/14
SECTION-20 TOWNSHIP-23S RANGE-09W
CENTRAL ASSESSMENT
LOCATIONAL PURPOSES ONLY
EH LESS 3.57 ACS IN SE CORNER

3 052 136 269 266
FILE 201401169 04/10/14
SECTION-21 TOWNSHIP-23S RANGE-09W
CENTRAL ASSESSMENT
LOCATIONAL PURPOSES ONLY
ALL 611.57 ACS LESS TWO PARCELS
17.98 ACS IN SW CORNER &
13.89 ACS IN SE CORNER

3 053 137 133 132
FILE 201401169 04/10/14
SECTION-29 TOWNSHIP-23S RANGE-09W
CENTRAL ASSESSMENT
LOCATIONAL PURPOSES ONLY
NEQ (161.71 ACS) LESS .50 AC PARCEL
IN SE CORNER & NWQSWQ &
NWQSWQSWQ(50.40 ACS)

N/R-Values Net 0

Click to Print

Owner Information

Owner # 101476 **District** LUNA
PLEYTE, JOHN J

PO BOX 67
CHELAN WA 98816

Estimated Taxes for Owner

Estimated Tax	Estimated Year used
$155.71	2022

Calculate Estimated Tax

Recap Value Information

Central Full Value	0	**Full Value**	21756
Land Full Value	21756	**Taxable Value**	7252
Improvements Full value	0	**Exempt Value**	0
Personal Property Full Value	0	**Net Value**	7252
Manufactured Home Full Value	0		

Livestock Full Value 0

Property Information

Property Code 3052135212442
Book **Page** 0 **Reception#** 198300471
Physical Address
Bldg **Apt**
Section 16 **Township** 23 S **Range** 9 W

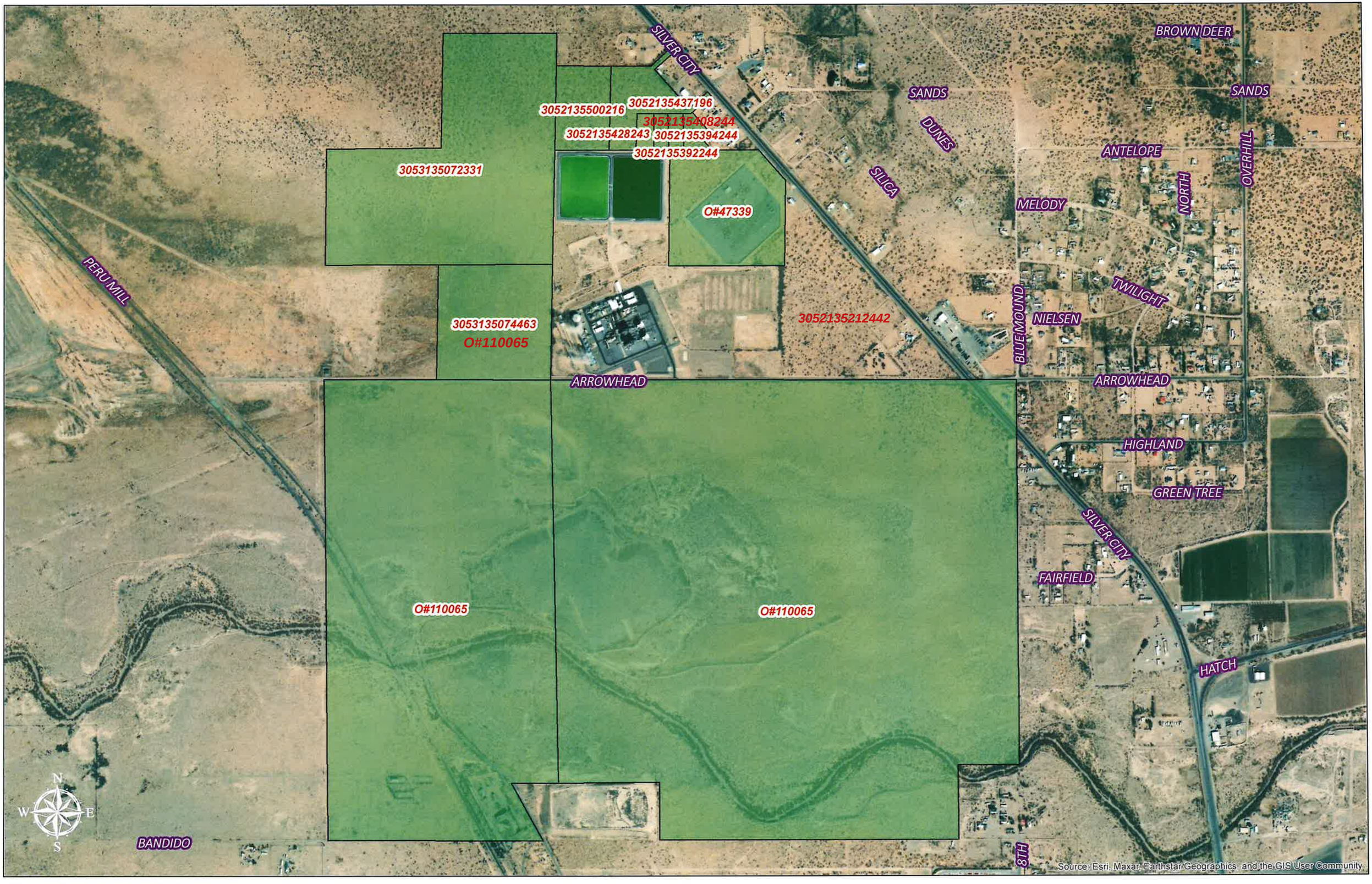
PTLY IN NWQSEQ & SWQSEQ 38.17 AC

Appraisal Information

Basement Sq. Ft. 0 First Floor Sq. Ft. 1 Second Floor Sq. Ft. 0 Year built 0

Property Value Information

182 Non-Residential Land 38.17 0.00 21756


SILVER CITY
3052135500216
3052135437196
3052135408244
3052135428243
3052135394244
3052135392244
3053135072331
O#47339
SANDS
DUNES
SILICA
BROWN DEER
SANDS
ANTELOPE
NORTH
OVERHILL
MELODY
PERU MILL
3053135074463
O#110065
3052135212442
BLUE MOUND
NIELSEN
TWILIGHT
ARROWHEAD
ARROWHEAD
HIGHLAND
GREEN TREE
SILVER CITY
FAIRFIELD
HATCH
O#110065
O#110065
N
W
E
S
BANDIDO
H18
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Sent To
Berenda McWright, County Clerk
Street and Apt. No., or PO Box No. 700 S. Silver Ave., Box 7
City, State, ZIP+4® Deming, NM 88030-4105

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Sent To
Mary Jo Valdez, Municipal Clerk
Street and Apt. No., or PO Box No. 309 South Gold Avenue
City, State, ZIP+4® Deming, NM 88030-4105

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Adult Signature Restricted Delivery $ ____

Postage $ 0.60
Total Postage and Fees $ 4.75

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Sent To
PUBLIC SERVICE COMPANY OF NM
Street and Apt. No., or PO Box No. 414 SILVER AVE SW MS 1025
City, State, ZIP+4® Albuquerque, NM 87102-3226

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Adult Signature Restricted Delivery $ ____

Postage $ 0.60
Total Postage and Fees $ 4.75

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Sent To
TARANGO, ALFREDO & BERTH A
Street and Apt. No., or PO Box No. 4414 S 7TH PL
City, State, ZIP+4® Phoenix AZ 85040-2226

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Adult Signature Restricted Delivery $ ____

Postage $ 0.60
Total Postage and Fees $ 4.75

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TARANGO, BENJAMIN & ROSA S
Street and Apt. No., or PO Box No. 4414 S 7TH PL
City, State, ZIP+4® Phoenix AZ 85040-2226

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Adult Signature Required $ ____
- ☐ Adult Signature Restricted Delivery $ ____

Postage $ 0.60
Total Postage and Fees $ 4.75

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TARANGO, BENJAMIN & ALFREDO
Street and Apt. No., or PO Box No. 4414 S 7TH PL
City, State, ZIP+4® Phoenix AZ 85040-2226

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- ☐ Adult Signature Restricted Delivery $ ____

Postage
$ 0.65

Total Postage and Fees
$ 4.75

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JUL -7 2023

Sent To
TRUESDELL, LYNDA KAYE &
KINGSLEY, JEFFERY

Street and Apt. No., or PO Box No.
PO BOX 2277

City, State, ZIP+4®
Las Cruces, NM 88004-2277

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- ☐ Adult Signature Required $ ____
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Postage
$ 0.60

Total Postage and Fees
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JUL 7 2023

Sent To
GEO SOUTHWEST LTD

Street and Apt. No., or PO Box No.
PO BOX 353

City, State, ZIP+4®
Silverton, TX 79257-0353

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- ☐ Return Receipt (electronic) $ ____
- ☐ Certified Mail Restricted Delivery $ ____
- ☐ Adult Signature Required $ ____
- ☐ Adult Signature Restricted Delivery $ ____

Postage
$ 0.60

Total Postage and Fees
$ 4.75

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JUL 2023

Sent To
VIEJO GROUP LLC

Street and Apt. No., or PO Box No
PO BOX 36076

City, State, ZIP+4®
Tucson, AZ 85740-6076

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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$ 4.15

Extra Services & Fees *(check box, add fee as appropriate)*
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- ☐ Return Receipt (electronic) $ ____
- ☐ Certified Mail Restricted Delivery $ ____
- ☐ Adult Signature Required $ ____
- ☐ Adult Signature Restricted Delivery $ ____

Postage
$ 0.60

Total Postage and Fees
$ 4.75

Postmark Here
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JUL -7 2023

Sent To
PLEYTE, JOHN J

Street and Apt. No., or PO Box No.
PO BOX 67

City, State, ZIP+4®
Chelan, WA 98816-0067

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NOTICE OF AIR QUALITY PERMIT APPLICATION

Public Service Company of New Mexico (PNM) announces its application submittal to the New Mexico Environment Department for a modification of air quality permit #2450-M2-R4 for the Luna Energy Center facility. The expected date of application submittal to the Air Quality Bureau is July 31, 2023.

The address for the existing facility known as, Luna Energy Center, is at 1895 Arrowhead Drive, Deming, NM. The exact location of the Luna Energy Facility is at Zone 13, UTM Easting 237,880 meters, UTM Northing 3,577,000 meters The approximate location of this facility is 1.9 miles southwest of Keeler Farm in Luna county.

LEC is a natural gas fired electrical energy generating station that consists of two General Electric Frame 7FA advanced gas turbines each with its own electric generator. Each unit also has a heat recovery steam generation unit (HRSG). Steam generated in the HRSG's is sent to a single steam turbine generator (STG). Each of the two combustion turbines includes the capability of supplemental firing for additional generation capacity during periods of peak electrical demand through use of a duct burner on each turbine unit. Steam sent to the STG is condensed with a surface condenser (heat exchanger) and is then cooled by a force draft multi-cell cooling tower for recycle through the system. This application is for a significant permit revision of LEC NSR Permit PSD-NM-2450-M2-R4 to increase the total dissolved solids (TDS) in the cooling tower water from 3000 to 4500 milligrams per liter (mg/l). No other physical changes or changes in the method of operation are requested for this permit revision application.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) (Maximum Normal Operations and Maximum Startup/Shutdown and Routine Maintenance (SSM)) and maximum tons per year (tpy) and may change slightly during the course of the Department's review:

Pollutant:	Maximum Normal Pounds per hour	Maximum SSM Pounds per hour	Maximum Tons per year
Particulate Matter (PM)	70.0 pph	70.0 pph	230 tpy
PM_{10}	69.0 pph	69.0 pph	228 tpy
$PM_{2.5}$	68.0 pph	68.0 pph	223 tpy
Sulfur Dioxide (SO_2)	10.1 pph	10.1 pph	37.5 tpy
Nitrogen Oxides (NO_x)	58.5 pph	329.7 pph	250 tpy
Carbon Monoxide (CO)	172.2 pph	1274.6 pph	730 tpy
Volatile Organic Compounds (VOC)	38.7 pph	38.7 pph	90.4 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	3.6 pph	3.6 pph	10.8 tpy
Toxic Air Pollutant (TAP)	0 pph	0 pph	0 tpy
Green House Gas Emissions as Total CO_2e	n/a	n/a	2,214,262 tpy

The standard operating schedule of the facility is 24 hour per day, 7 days per week, and 52 weeks per year.

The owner and/or operator of the Facility is:

Public Service Company of New Mexico
2401 Aztec Road, NE
MS Z100
Albuquerque, NM 87107

Tucson Electric Power Company
3950 East Irvington Road
Tucson, AZ 85714

Samchully Power and Utilities 1, LLC
123 Marcy St.
Suite 101
Santa Fe, NM 87501

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

Attención
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Notice of Non-Discrimination
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Lawmakers to assert privilege in redistricting suit

GOP alleges gerrymandering of 2nd Congressional district

By Austin Fisher
Source New Mexico

As a state district court judge decides whether New Mexico's congressional map signed into law in 2021 is a partisan gerrymander, he will have to figure out a way to properly question the lawmakers who drew it.

Ninth Judicial District Court Judge Fred Van Soelen met by phone on Monday morning with attorneys representing the Republican Party of New Mexico and government officials representing the governor's office and the statehouse.

Carter Harrison was one of the attorneys who appeared on behalf of the New Mexico GOP, which argues that the new map "cracked" a Republican voting bloc in the southeastern part of the state, making it harder for a Republican candidate to win the Congressional District 2 seat in the U.S. House of Representatives.

In 2022, under the redrawn maps, southern New Mexico Democrat Gabe Vasquez won the congressional district by 1,346 votes. All three of the state's federal delegates in the U.S. House are Democrats.

Van Soelen in April 2022 refused to dismiss the lawsuit, and Democratic leaders that July asked the state Supreme Court to decide whether the state's courts have the power to weigh in on cases like this one.

The justices on July 5 found state courts do have that power, ruled in favor of the GOP, and sent the case back down to Van Soelen.

Lawmakers to assert 'legislative privilege'

The justices ordered him to review the Republican Party's claims using a three-part test: whether the lawmakers intentionally tried to dilute the votes of their opponents, whether they succeeded and whether they had any legitimate, nonpartisan reasons for the way they drew the maps.

Answering these questions may prove difficult because New Mexico's constitution makes evidence of "legislative actions" inadmissible in court in most circumstances.

The state constitution says lawmakers "shall not be questioned in any other place for any speech or debate or for any vote cast" in the House or Senate. In previous cases, for example, emails between a lawmaker and his staff were considered privileged.

Harrison said one issue he knows will come up in discovery will be "the assertion of legislative privilege under the Speech and Debate clause of the state constitution."

Richard Olson appeared on behalf of Senate President Pro Tempore Mimi Stewart and House Speaker Javier Martinez, both Albuquerque Democrats.

He said there are two areas where legislative privilege is going to come up, but only mentioned one during the meeting on Monday, having to do with "discovery directed toward documentary evidence."

One way of handling it, Harrison said, would be for lawmakers to testify in depositions outside the courthouse, assert the privilege on a question-by-question basis, and for the GOP to formally compel them to answer if they feel it is appropriate.

Another way of doing it, Harrison said, would be for the court to appoint a special master. The special master would be called on to resolve any disputes about legislative privilege coming out of the depositions, Olson said.

"I don't think that I'll have an issue with it," Van Soelen said, referring to appointing a special master. "That might be something where a special master would be helpful."

The order contains four names of possible candidates to take the appointment, Harrison said.

Van Soelen said he received an email with a proposed scheduling order, but by Monday afternoon the order had not been published in the online court records system.

Election clock ticking

The state Supreme Court gave Van Soelen until Oct. 1 to decide the case.

The time issue is "comin' up quick," he said.

"The Supreme Court has given us a short time window, and I understand why, and we'll do everything we can to follow through on that," the judge said.

The state's election administrators have said they need the maps dealt with by then so candidates and voters will be ready for the 2024 primary election.

Harrison said the order lays out proposed expert disclosure deadlines, and that both sides think it would be helpful for an expert to weigh in.

Olson said the parties would need two to three full days for the hearing to include testimony from "probably multiple experts" and "various fact witnesses."

Harrison said the order gives the judge the option of deciding the issues based only on written submissions, or if he wants he could conduct a bench trial that would entail live testimony from any witness he wants to question.

NOTICE OF AIR QUALITY PERMIT APPLICATION

Public Service Company of New Mexico (PNM) announces its application submittal to the New Mexico Environment Department for a modification of air quality permit #2450-M2-R4 for the Luna Energy Center facility. The expected date of application submittal to the Air Quality Bureau is July 31, 2023.

The address for the existing facility known as, Luna Energy Center, is at 1895 Arrowhead Drive, Deming, NM. The exact location of the Luna Energy Facility is at Zone 13, UTM Easting 237,880 meters, UTM Northing 3,577,000 meters The approximate location of this facility is 1.9 miles southwest of Keeler Farm in Luna county.

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$PM_{2.5}$	68.0 pph	68.0 pph	223 tpy
Sulfur Dioxide (SO_2)	10.1 pph	10.1 pph	37.5 tpy
Nitrogen Oxides (NO_x)	58.5 pph	329.7 pph	250 tpy
Carbon Monoxide (CO)	172.2 pph	1274.6 pph	730 tpy
Volatile Organic Compounds (VOC)	38.7 pph	38.7 pph	90.4 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	3.6 pph	3.6 pph	10.8 tpy
Toxic Air Pollutant (TAP)	0 pph	0 pph	0 tpy
Green House Gas Emissions as Total CO_2e	n/a	n/a	2,214,262 tpy

The standard operating schedule of the facility is 24 hour per day, 7 days per week, and 52 weeks per year.

The owner and/or operator of the Facility is:

Public Service Company of New Mexico
2401 Aztec Road, NE
MS Z100
Albuquerque, NM 87107
Tucson Electric Power Company
3950 East Irvington Road
Tucson, AZ 85714
Samchully Power and Utilities 1, LLC
123 Marcy St.
Suite 101
Santa Fe, NM 87501

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

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THE DEMING HEADLIGHT

AFFIDAVIT OF PUBLICATION

See Proof on Next Page

Deming Headlight
208 S. Gold Ave
(575) 546-2611

I, Nickolas C. Seibel, of lawful age, being duly sworn upon oath, deposes and says that I am the publisher of Deming Headlight, a publication that is a "legal newspaper" as that phrase is defined for the city of Deming, for the County of Luna, in the state of New Mexico, that this affidavit is Page 1 of 2 with the full text of the sworn-to notice set forth on the pages that follow, and that the attachment hereto contains the correct copy of what was published in said legal newspaper in consecutive issues on the following dates:

PUBLICATION DATES:
21 Jul 2023

Notice ID: XasTLne9d6T7ejFM2VTy
Notice Name: PNM Luna Energy Center

PUBLICATION FEE: $158.93

Nickolas C Seibel
publisher

VERIFICATION

STATE OF NEW MEXICO
COUNTY OF LUNA

Signed or attested before me on this

25th day of July, A.D. 2023.

Melanie Kae Rogers
Notary Public
My Commission Expires: Aug. 2, 2026

MELANIE KAE ROGERS
Notary Public - State of New Mexico
Commission # 1073686
My Comm. Expires Aug 2, 2026

NOTICE OF AIR QUALITY PERMIT APPLICATION

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The address for the existing facility known as: Luna Energy Center, is at 1895 Arrowhead Drive, Deming, NM. The exact location of the Luna Energy Facility is at Zone 13, UTM Easting 247,850 meters, UTM Northing 3,577,200 meters. The approximate location of this facility is 1.9 miles southeast of Border Farm in Luna county

LEC is a natural gas (ng) electrical energy generating station that consists of two General Electric Frame 7FA advanced gas turbines, each with its own electric generator. Each unit also has a heat recovery steam generator unit (HRSG). Steam generated in the HRSG's is sent to a single steam turbine generator (STG). Each of the two combustion turbines includes the capability of supplemental firing for additional generation capacity during periods of peak electrical demand through use of a duct burner on each turbine inlet. Steam sent to the STG is condensed with a surface condenser (heat exchanger) and is then cooled by a forced draft multi-cell cooling tower for recycle through the system. This application is for a significant permit revision of LEC NSR Permit PSD-NM-2450-M2-R4 to increase the total dissolved solids (TDS) in the cooling tower water from 3900 to 4500 milligrams per liter (mg/l). No other physical changes or changes in the method of operation are requested for this permit revision application

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PM2.5	68.0 pph	68.0 pph	251 tpy
Sulfur Dioxide (SO_2)	10.1 pph	10.1 pph	37.5 tpy
Nitrogen Oxides (NO_x)	68.5 pph	323.5 pph	250 tpy
Carbon Monoxide (CO)	172.5 pph	1254.0 pph	750 tpy
Volatile Organic Compounds (VOC)	38.5 pph	38.7 pph	90.4 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	3.6 pph	3.6 pph	10.8 tpy
Toxic Air Pollutant (TAP)	0 pph	0 pph	0 tpy
Green House Gas Emissions as Total CO_2e	n/a	n/a	2,214,262 tpy

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Attn: Alice Road NE
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Albuquerque, NM 87107
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General Posting of Notices – Certification

I, Travis Self, the undersigned, certify that on 7/10/2023, posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the Deming of Luna County, State of New Mexico on the following dates:

1. Facility entrance, 1895 Arrowhead Dr. NW, 88030 Deming, New Mexico-7/10/2023
2. Luna County Court House,700 S Silver Ave, Deming, NM 88030-7/10/2023
3. Deming Motor Vehicle Department700 E Spruce St, Deming, NM 88030, -7/10/2023
4. Deming City Hall, 309 S Gold Ave, Deming, NM 88031 -7/10/2023

Signed this 10th day of July 2023

Signature

7/10/23
Date

Travis Self

Printed Name

Compliance Specialist-Luna Energy Facility
Title

Return Receipt Requested

NSR Permit No:	PSD-2450-M2R1
Facility Name:	Luna Energy Center
Permittee Name:	Public Service Company of New Mexico (PNM)
Mailing Address:	2401 Aztec Road NE, MS Z100 Albuquerque, NM 87107
TEMPO/IDEA ID No:	878-PRN20130001
AIRS No:	35-029-0013
Permitting Action:	Administrative Revision
Source Classification:	PSD and TV MAJOR
Facility Location:	32°17'55.8" N and 107°47'0.0" W
County:	Luna County
Air Quality Bureau Contact	Cille Pritchard-Hoback
Main AQB Phone No.	(505) 476-4300

for Richard L. Goodyear, PE
Bureau Chief
Air Quality Bureau

Date 6/26/13

Template version: 9/17/12

Tempo/IDEA ID No.: 878 - PRT20170003
FACILITY NAME: Luna Energy Center
FACILITY OWNER/OPERATOR: Public Service Company of New Mexico (PNM)

PERMITTEE: Public Service Company of New Mexico (PNM)
2401 Aztec Rd NE MS Z100
Albuquerque, NM 87107

DESIGNATED REPRESENTATIVE: Randy Pickering
Director, Plant Management

ISSUED BY: New Mexico Environment Department – Air Quality Bureau

for Liz Bisbey-Kuehn
Air Quality Bureau Chief

DEC 19 2019
Date of Issuance

INTRODUCTION

Acid Rain Permit Number P209A-R3 is issued by the Air Quality Bureau of the New Mexico Environment Department ("Department") to Public Service Company of New Mexico (PNM) pursuant to the Federal Clean Air Act ("Federal Act"), the New Mexico Air Quality Control Act ("state Act") and regulations adopted pursuant to the state and Federal Acts, including Title 20, New Mexico Administrative Code, Chapter 2, Part 84 (20.2.84 NMAC)-Acid Rain Program, and Chapter 2, Part 70 (20.2.70 NMAC)-Operating Permits. This permit authorizes the operation of this facility located at UTM Zone 13, UTMH 237911 km, UTMV 3576964 km.

Permit Effective Date, Expiration, and Renewal
This permit is effective on date of issuance and will expire five (5) years from that effective date (40 CFR 72.73(b)(2)). Application for renewal of this permit is due within six (6) months before the date of expiration, pursuant to 40 CFR 72.30(c).

Template Version: 01/08/2019

NEW MEXICO
ENVIRONMENT DEPARTMENT

Harold Runnels Building
1190 St. Francis Drive
P.O. Box 5469, Santa Fe, New Mexico 87502-5469
Phone (505) 827-2855 Fax (505) 827-2965
www.nmenv.state.nm.us

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

April 20, 2015

Thomas Price, Director, Southern New Mexico Plants
Luna Energy Facility
10100 West Afton Rd., #5
La Mesa, NM 88044

RE: Discharge Permit Renewal, DP-1305, Luna Energy Facility

Dear Mr. Price:

The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit Renewal, DP-1305, to Public Service Company of New Mexico (PNM, permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

On April 2, 2015, NMED received written comments, submitted on your behalf by John Hale, regarding the revised draft Discharge Permit, dated March 24, 2015. NMED is in substantial agreement with these comments and has responded below.

- Terms and Conditions #8: NMED has revised the first sentence of Condition #8 to read, "The permittee shall remove solids from the water treatment system as needed," as requested.
- Terms and Conditions #18: NMED has revised this section to read, "In addition to, and as part of one of the ground water sampling events required by Condition 17 of this permit, the permittee shall perform two ground water sampling events, (one in 2016 and one in 2018) in one monitoring well…" as requested.
- Discharge Permit Summary: NMED has revised the meter descriptions to read, "Meineke WPD100, or equivalent," as requested.

The Discharge Permit contains terms and conditions that shall be complied with by the permittee and are enforceable by NMED pursuant to Section 20.6.2.3104 NMAC, WQA, NMSA 1978

4/29/ 9:28AM HPFAX Page 2

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NORTH AMERICAN ENERGY SERVICES

ATTN: PLANT MANAGER
NORTH AMERICAN ENERGY SERVICES
PO BOX 1698
DEMING, NM 88031

Call Sign	File Number
[illegible]	[illegible]
Radio Service: [illegible] Industrial/Business Pool, Conventional	
Regulatory Status: PMRS	
Frequency Coordination Number	

FCC Registration Number (FRN): [illegible]

Grant Date	Effective Date	Expiration Date	Print Date
01-14-2016	01-14-2016	03-10-2026	01-14-2016

STATION TECHNICAL SPECIFICATIONS

Fixed Location Address or Mobile Area of Operation
Loc. 1 Address: 1895 ARROWHEAD DR NW
City: DEMING County: LUNA State: NM
Lat (NAD83): 32-17-52.6 N Long (NAD83): 107-47-42.4 W ASR No.: Ground Elev: 1341.0
Loc. 2 Area of operation
Operating within a 32.0 km radius around fixed location 1
Loc. 3 Area of operation
Land Mobile Control Station meeting the 6.1 Meter Rule: LUNA county, NM

Antennas

Loc. No.	Ant. No.	Frequencies (MHz)	Sta. Cls.	No. Units	No. Pagers	Emission Designator	Output Power (watts)	ERP (watts)	Ant. Ht./Tp meters	Ant. AAT meters	Construct Deadline Date
1	1	000451.82500000	FB2	1		11K2F3E	[illegible]	300.000	45.7	28.9	03-10-2007
1	1	000452.61000000	FB	1		11K2F3E	[illegible]	300.000	45.7	28.9	03-10-2007
1	1	000462.20000000	FB	1		11K2F3E	50.000	300.000	45.7	28.9	03-10-2007
1	1	000463.22500000	FB	1		11K2F3E	50.000	300.000	45.7	28.9	03-10-2007

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

FCC 601-LM
August 2007

Page 1 of 2

NOTICE

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…he address for the existing facility known as, Luna Energy Center, is at 1895 Arrowhead Drive, Deming, NM. …he exact location of the Luna Energy Facility is at Zone 13, UTM Easting 237,880 meters, UTM Northing …577,000 meters. The approximate location of this facility is 1.9 miles southwest of Keeler Farm in Luna …ounty.

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Pollutant:	Maximum Normal Pounds per hour	Maximum SSM Pounds per hour	Maximum Tons per year
…articulate Matter (PM)	70.0 pph	70.0 pph	230 tpy
…M₁₀	69.0 pph	69.0 pph	228 tpy
…M₂.₅	68.0 pph	68.0 pph	223 tpy
…ulfur Dioxide (SO_2)	10.1 pph	10.1 pph	37.5 tpy
…itrogen Oxides (NO_x)	58.5 pph	329.7 pph	250 tpy
…arbon Monoxide (CO)	172.2 pph	1274.6 pph	730 tpy
…olatile Organic Compounds (VOC)	38.7 pph	38.7 pph	90.4 tpy
…otal sum of all Hazardous Air Pollutants (HAPs)	3.6 pph	3.6 pph	10.8 tpy
…oxic Air Pollutant (TAP)	0 pph	0 pph	0 tpy
…reen House Gas Emissions as Total CO_2e	n/a	n/a	2,214,262 tpy

…he standard operating schedule of the facility is 24 hour per day, 7 days per week, and 52 weeks per year.

…he owner and/or operator of the Facility is:
Public Service Company of New Mexico
2401 Aztec Road, NE
MS Z100
Albuquerque, NM 87107

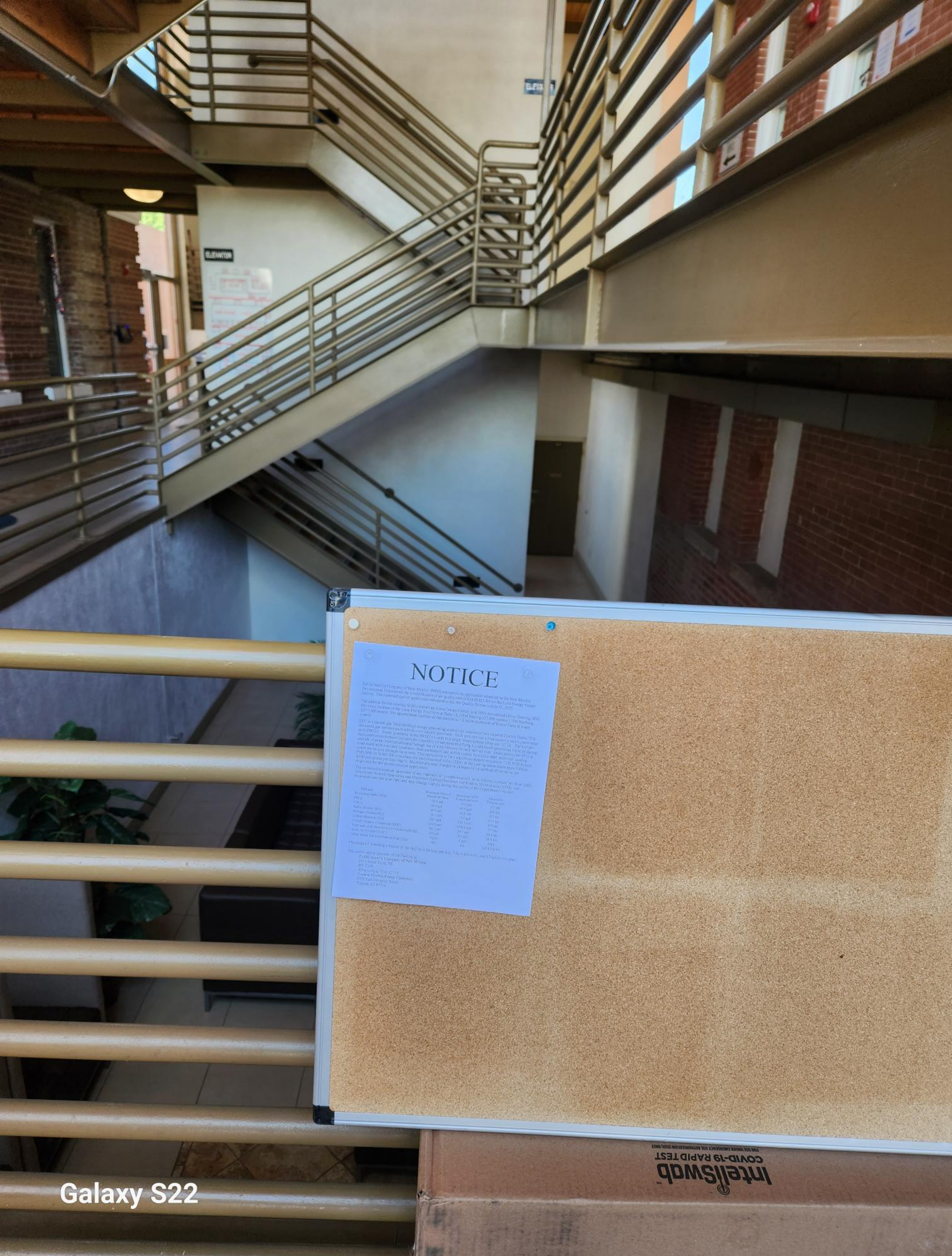
Samchully Power and Utilities 1, LLC
123 Marcy St.
Suite 101
Santa Fe, NM 87501

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

Attención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

Notice of Non-Discrimination
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@env.nm.gov. You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.


ELEVATOR
NOTICE
IntelliSwab
COVID-19 RAPID TEST
FOR USE UNDER EMERGENCY USE AUTHORIZATION (EAU) ONLY
Galaxy S22

NOTICE

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LEC is a natural gas fired electrical energy generating station that consists of two General Electric Frame 7FA advanced gas turbines each with its own electric generator. Each unit also has a heat recovery steam generation unit (HRSG). Steam generated in the HRSG's is sent to a single steam turbine generator (STG). Each of the two combustion turbines includes the capability of supplemental firing for additional generation capacity during periods of peak electrical demand through use of a duct burner on each turbine unit. Steam sent to the STG is condensed with a surface condenser (heat exchanger) and is then cooled by a force draft multi-cell cooling tower for recycle through the system. This application is for a significant permit revision of LEC NSR Permit PSD-NM-2450-M2-R4 to increase the total dissolved solids (TDS) in the cooling tower water from 3000 to 4500 milligrams per liter (mg/l). No other physical changes or changes in the method of operation are requested for this permit revision application.

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Total sum of all Hazardous Air Pollutants (HAPs)	3.6 pph	3.6 pph	10.8 tpy
Toxic Air Pollutant (TAP)	0 pph	0 pph	0 tpy
Green House Gas Emissions as Total CO_2e	n/a	n/a	2,214,262 tpy

The standard operating schedule of the facility is 24 hour per day, 7 days per week, and 52 weeks per year.

The owner and/or operator of the Facility is:

Public Service Company of New Mexico
2401 Aztec Road, NE
MS Z100
Albuquerque, NM 87107
Tucson Electric Power Company
3950 East Irvington Road
Tucson, AZ 85714

Public Notices

LEGAL NOTICE
CITY COUNCIL MEETING

The Deming City Council will hold their regularly scheduled meeting on July 18, 2023, at 5:30 p.m.
The meeting will allow for virtual attendance via GoToMeeting.com with the credentials below.
You may dial in 10-15 minutes before the meeting begins.

Please join the meeting from your computer, tablet, or smartphone.
https://meet.goto.com/CityofDeming

You can also dial in using your phone.
United States (Toll Free): 1-866-899-4679
United States: +1 (312) 757-3119

Access Code: 595-334-189
Meeting password: 595334189

New to GoToMeeting? Get the app now and be ready when your first meeting starts: https://meet.goto.com/install

An agenda which includes all items and business that will properly be heard before Council, may be accessed at http://www.cityofdeming.org/index.php?option=com_content&view=article&id=101&Itemid=163 or requested from the City Clerk at mvaldez@cityofdeming.org 72 hours prior to the scheduled meeting.

SS: Mary Jo Valdez, CMC
Municipal Clerk

Posted: June 22, 2023
Published: July 5, 2023

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LEGAL NOTICE
CITY COUNCIL SPECIAL MEETING

The Deming City Council will hold a special meeting on Wednesday, July 26, 2023, at 10:00 a.m. at the Deming Municipal Building, 309 S. Gold Avenue.

A draft agenda may be obtained on our website at www.cityofdeming.org, 72 hours prior to the meeting.

SS: Mary Jo Valdez
Municipal Clerk

Posted: June 22, 2023
Publish: July 14, 2023

CITY OF DEMING
NOTICE OF QUASI-JUDICIAL PUBLIC HEARING
TO CONSIDER AN ALTERNATE SUBDIVISION FOR PROPERTY
LOCATED AT 1295 4th STREET NORTHWEST

NOTICE IS HEREBY GIVEN that the City Council of the City of Deming will, at its next Cit
Meeting scheduled to be held on July 18, 2023, at 5:30 p.m. at the Deming Municipal Building
Gold, Deming, New Mexico, consider an alternate subdivision request for the property owned
Middleton, located at 1295 4th Street Northwest, within the limits of the City of Deming.

By: Mary Jo Valdez, CMC Municipal City Clerk

Posted: June 22, 2023
Publish: June 28, 2023

CITY OF DEMING
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Deming will
public hearing at the next Special City Council Meeting on July 26, 2023 at 10:00
the City Council Chambers at the John Strand Municipal Building located at 309
Ave. The public hearing will determine whether the City Council should
ordinance approving the sale of tangible property legally described as "THE

LEGAL NOTICE

PUBLIC SERVICE ANNOUNCEMENT

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This application is to increase the total dissolved solids in the cooling tower water from 3000 to 4500 milligrams per liter (mg/l). No other physical changes or changes in the method of operation are requested for this permit revision application.

Public notices have been posted in the following locations for review by the public:

1. At Luna County Court House, 700 S Silver Ave, Deming, NM;
2. At Deming Motor Vehicle Department, 700 E Spruce St, Deming, NM;
3. At Deming City Hall, 309 S Gold Ave, Deming, NM; and
4. At the main entrance to Luna Energy Center at 1895 Arrowhead Drive, Deming, NM

The owner and/or operator of the Facility is:

Public Service Company of New Mexico
2401 Aztec Road, NE
MS Z100
Albuquerque, NM 87107

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address:

Permit Programs Manager
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico; 87505-1816
Telephone Number (505) 476-4300 or 1 800 224-7009

July 12, 2023

KOTS Radio
1700 S. Gold Ave.
Deming, NM 88030

CERTIFIED MAIL

Dear KOTS Radio:

SUBJECT: PSA Request - Proposed Air Quality Construction Permit Revision Application for Luna Energy Center at 1895 Arrowhead Drive, Deming, NM

Attached is a copy of a public service announcement regarding a proposed air quality construction permit revision application for Public Service Company of New Mexico's (PNM) Luna Energy Center. This announcement is being submitted by Montrose Environmental Solutions, Inc., Albuquerque, NM on behalf of PNM.

The announcement request is being made to fulfill the requirements of the New Mexico Environmental Department air quality permitting regulations. Please consider reading the attached announcement as a public service message.

If you have any questions or need additional information, please contact me at (505) 830-9680 ext 6 (voice), (505) 830-9678 (fax) or email at pwade@montrose-env.com. You may also contact Mr. Greg Little, PNM at (505) 241-2016.

Thank you.

Sincerely,

Paul Wade

Paul Wade
Principal/Senior Associate Engineer

Montrose Environmental Solutions, Inc.
3500 Comanche Road NE Suite G
Albuquerque, NM 87107-4546

T: 505.830.9680 ext. 6
F: 505.830.9678
Pwade@montrose-env.com
www.montrose-env.com

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- ☐ Adult Signature Required $ ____
- ☐ Adult Signature Restricted Delivery $ ____

Postage
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Total Postage and Fees
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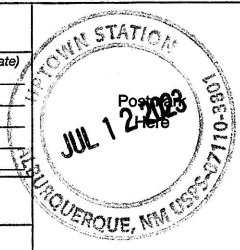

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KOTS RADIO

Street and Apt. No., or PO Box No.
1700 S GOLD AVE

City, State, ZIP+4®
DEMING NM, 88030-5839

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Submittal of Public Service Announcement – Certification

I, Paul Wade, the undersigned, certify that on 7/11/2023, submitted a public service announcement to KOTS Radio that serves the City of Deming, Luna County, New Mexico, in which the source is or is proposed to be located and that KOTS Radio DID NOT RESPOND THAT IT WOULD AIR THE ANNOUNCEMENT.

Signed this 12 day of July, 2023

Paul Wade
Signature

7/12/23
Date

Paul Wade
Printed Name

Air Quality Consultant – Montrose Environmental Solutions, Inc.
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

Section 10

Written Description of the Routine Operations of the Facility

---

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

Electric power is produced at the Luna Energy Center (LEC) by three generators. There are two combustion turbines, and each combustion turbine drives a generator. The exhaust heat from each combustion turbine generator (CTG) in then delivered to two heat recovery steam generators (HRSGs). The HRSGs produce steam that is used to drive the third generator, which is part of the steam turbine generator (STG). Supplemental firing, using duct burners, is used to add more heat to each HRSG during periods of peak electricity demand.

A surface condenser (heat exchanger) is used to condense the steam exhaust from the STG. Condensing the steam produces a slight vacuum which increases the pressure differential that drives the steam turbine and therefore increases the overall efficiency of the power plant. A nine-cell cooling tower is used to cool the water after it passes through the surface condenser so that the water can be cycled back to the cooler.

All other facility operations support these primary power generation functions.

The plant operates in a base load condition for up to 8,391 hours per year and could operate in startup mode for up to 369 hours per turbine per year, for a total of 8,760 hours per year.

Combustion Turbine Generators

The LEC consists of two advanced firing, General Electric F-class gas turbines. These combustion turbines are fired exclusively with clean burning natural gas. The combustion turbines are very similar to large jet engines in function and design.

Each combustion turbine (CTG-1 and CTG-2) consists of a compressor, a combustor and an expansion turbine. After filtration, air passes through the compressor before combining with the fuel and entering the dry low of NOx (DLN) combustor. The combustion products then pass through the expansion turbine which drives both the compressor and the generator. Approximately 149 MW of gross electric power is produced by each CTG over and above the work required for the compressor.

The exhaust air from each combustion turbine enters the HRSG at high temperature (1,000 to 1,100 deg F). The STG does not create air pollutants, although the duct burners add more heat to the system and also add air emissions.

As mentioned above, the LEC will be configured to produce additional power by adding more heat to each HRSG during periods of peak electrical demand. This is accomplished by firing additional clean burning natural gas in a duct burner from each HRSG. No additional air or oxygen is added to the CTG exhaust. The combustion of gas in the duct burners consumes only excess oxygen present in the exhaust flow.

Each duct burner is capable of combustion up to 517 million British thermal units per hour LHV basis. Both duct burners combined add up to 128 MW of additional output from the STG, thus increasing maximum STG output from 150 MW to 278 MW.

During peak demand on the electrical market, the plant will add supplemental firing to each HRSG. The requested limit for supplemental firing is 4,000 hours per HRSG per year.

The exhaust gas then passes through a Selective Catalytic Reduction (SCR-1 and SCR-2), for each combustion turbine and duct burner combination, to control nitrogen oxide (NO_X) emissions.

Each turbine/HRSG at the LEC (CTG-1/DB-1 and CTG-2/DB-2) is permitted to operate up to 8,760 hours per year including periods of normal operation and startup/shutdown periods. Actual annual hours of operation (based on a rolling 12-month period) may be limited below 8,760 hours per year by the annual tons per year emission limits specified in Condition A106 of the facility NSR permit PSD-NM-2450-M2-R4. This limitation is specified in Condition A108 of NSR permit PSD-NM-2450-M2-R4.

Auxiliary Boiler

The Auxiliary Boiler (AUX-1) will be used for the following at LEC:

- Start-up steam to set seals on STG.
- Provide heat to HRSG's and STG to shorten start-up cycle.
- Provide steam to maintain vacuum on STG.
- Maintaining HRSG's drum pressure during short unit outages.
- Provides freeze protection to HRSG's and other equipment when not in use in severe cold weather.
- Provides steam for make-up water reverse osmosis system (steam increases the efficiency of system.

It is assumed that the Auxiliary Boiler will operate every hour that the CTGs are not online and will overlap with start-up. Assuming that the CTGs only operate during the peak hours (5 days per week, 16 hours per day), the CTGs will be online 4,160 hours per year, which leaves the Auxiliary Boiler to operate 4,600 hours per year. Assuming 2 hours of overlap for each start-up in which both the CTG's and Auxiliary Boiler are operating, the Auxiliary Boiler can operate an additional 520 hours per year. Totaling the offline hours and start-up overlap, the Auxiliary Boiler annual operation is 5,120 hour.

However, the actual operating hours are limited by Condition A602.A of NSR permit PSD-NM-2450-M2-R4 by the requirement that the auxiliary boiler shall consume no more than 177 MM (million million) scf/yr of natural gas calculated once per month and based on a 12 month rolling total. In addition, condition A602.B of the NSR permit PSD-NM-2450-M2-R4 requires that the auxiliary boiler shall not be operated when the duct burners (DB-1 and/or DB-2) are being fired. The auxiliary boiler (AUX-1) is a dry low NOx design with inherently low emissions.

Main Cooling Tower

As described above, the primary purpose of the main cooling tower (CT-1) and chiller cooling tower (CT-2) is to cool water that is pumped through the surface condenser, which increases power plant efficiency. The cooling tower water treatment for LEC will include:

- Control of pH – acid addition to balance the carbon dioxide (CO_2), which is introduced through ambient air and dissolves into the water.
- Scale inhibitors and dispersants – allows increased recycle of cooling water without adverse scaling of salts or colloidal silica.
- Sodium hypochlorite will be used as a biocide to prevent biological growth in the cooling water.

A cooling towers operates by allowing water to flow over a series of distributors and spreading the water over a large surface area. Air is then pulled through the bottom of the tower and up through the distributors. The large surface area provides for efficient contact of the air and water. A portion of the warm water evaporates into the air and cools the portion of the water that remains. The cooled water is then pumped back to the power plant where it can be used to remove heat form the surface condenser.

The main cooling tower will operate at all times that either or both turbines are operating in a normal mode. The chiller cooling tower will operate at all times that the chiller is operating in a normal mode. The cooling towers are equipped with high efficiency drift eliminators that are passive devices not subject to creating excess emissions during startup, shutdown or emergencies.

Per NSR Permit Condition A605, the total dissolved solids (TDS) in the main cooling tower (CT-1) circulating water shall not exceed 3,000 parts per million. With this permit revision, LEC is requesting to increase the TDS to 4,500 parts per million.

The water circulation rate will remain the same at 175,000 gallons per minute, as well as limiting the drift rate with High Efficiency Drift Eliminator (CT-1) at 0.0006%.

The total dissolved solids (TDS) in the chiller cooling tower (CT-2) circulating water shall not 4,500 parts per million. The water circulation rate will be 23,348 gallons per minute, as well as limiting the drift rate with High Efficiency Drift Eliminator (CT-2) at 0.001%.

Water Treatment Plant

Sulfuric Acid is used in the Cooling Towers (CT-1 and CT-2) to control pH. The sulfuric acid is stored in insignificant source storage tanks (1IC-TK-0100 and 1CI-TK-045O). The Cooling Tower water is then blown down to the Cooling Tower Blow Down Tank (Clarifier) to reduce Total dissolved solids (TDS) water. Lime and soda ash are injected into the CTBT Clarifier to raise the pH from 7 to 11 and soften the water, respectively. The soda ash and lime are stored in CTBT storage silos (S2 and S3). Both are used along with Ferric Chloride and Polymer to help drop out solids (mainly Hardness, sulfates, and silica). Lime is injected into the GW Grey Water Clarifier to soften the water. The lime is stored in the GW silo (S1).

From there the water is sent through an Acid Mixing Tank where Hydrochloric Acid (HCL) (1MW-TK-0120) is injected to reduce the waters pH back down to 6.8. From there the water goes through gravity filters and Weak Acid Cation vessels to remove suspended solids and hardness down to 0 ppm. The resin in these vessels are regenerated by HCL when they become exhausted. The water is pushed through cartridge filters, then the Reverse Osmosis (RO) train. Some of this cleaner water is pushed back to the Cooling Tower for dilution and the rest goes through the Demineralization Train. The Demineralization train consists of Strong Acid Cation (SAC), Strong Based Anion (SBA) and Mixed Bed (MB) vessels. The SAC's are regenerated by Hydrochloric Acid, SBA by Sodium Hydroxide and MB by both.

Reject and regeneration waste water from the RO's, WAC's, SAC's, SBA's and MB are routed to the Neutralization tank where HCL or Sodium Hydroxide is used to either reduce or elevate the waters pH to be sent to evaporation ponds to maintain a pH between 3 and 12.

Startup/Shutdown/Maintenance (SSM)

Startup and shutdowns are an expected part of LEC operations. NSR permit annual emission limits include startup emissions for the estimated annual startup periods (estimated at 369 hours per year per turbine). LEC must include startup emissions, per NSR permit PSD-NM-2450-M2-R4 Condition A107, in the annual total emissions to show compliance with the NSR permit annual emission limits. This requirement serves to limit excess emissions during startup conditions.

Emergency Generator and Fire Pump Engine

The facility contains a backup generator (G-1) and fire pump engine (Fire Pump) that shall be operated only during the unavoidable loss of commercial utility power, for maintenance activity, or firefighting activities. These engines are limited to operating less than 500 hours per year based on a 12-month rolling average.

Fuel Specification

Clean pipeline quality natural gas with low sulfur content will be used as fuel for the combustion turbines, duct burners and the auxiliary boiler. Per NSR Permit Condition A110, the combustion turbines, duct burners and auxiliary boiler shall combust natural gas that contains 0.75 grains or less of total sulfur per 100 standard cubic feet of natural gas.

In general, Condition B101 of the NSR permit requires all equipment that produces, controls or monitors air pollution, including the cooling towers, shall be installed, operated and maintained in a manner consistent with the manufacturer's intended purpose, specifications and recommended procedures.

The LEC must report periods of excess emissions in accordance with 20.2.7NMAC. 20.2.7NMAC requires that for excess emissions due to malfunction or shutdown, the excess emissions report include the nature and cause of the condition and the efforts taken to minimize emissions and to repair or otherwise bring the facility into compliance with emission limits.

Section 11
Source Determination

Source submitting under 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC

Sources applying for a construction permit, PSD permit, or operating permit shall evaluate surrounding and/or associated sources (including those sources directly connected to this source for business reasons) and complete this section. Responses to the following questions shall be consistent with the Air Quality Bureau's permitting guidance, Single Source Determination Guidance, which may be found on the Applications Page in the Permitting Section of the Air Quality Bureau website.

Typically, buildings, structures, installations, or facilities that have the same SIC code, that are under common ownership or control, and that are contiguous or adjacent constitute a single stationary source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes. Submission of your analysis of these factors in support of the responses below is optional, unless requested by NMED.

A. Identify the emission sources evaluated in this section (list and describe)**:** LEC facility including two combustion turbines and supporting equipment. No other emission sources are located at the site.

B. Apply the 3 criteria for determining a single source:

SIC Code: Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility, OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

X Yes **☐ No**

Common Ownership or Control: Surrounding or associated sources are under common ownership or control as this source.

X Yes **☐ No**

Contiguous or Adjacent: Surrounding or associated sources are contiguous or adjacent with this source.

X Yes **☐ No**

C. Make a determination:

X The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "**YES**" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "**NO**" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.

☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe):

Section 12

Section 12.A
PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

A PSD applicability determination for all sources. For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74.AG and 20.2.74.200 NMAC and to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is a PSD Major source performing a minor modification

- ☐ **a minor PSD source before and after this modification (if so, delete C and D below).**
- ☐ **a major PSD source before this modification. This modification will make this a PSD minor source.**
- **X** **an existing PSD Major Source that has never had a major modification requiring a BACT analysis.**
- ☐ **an existing PSD Major Source that has had a major modification requiring a BACT analysis**
- ☐ **a new PSD Major Source after this modification.**

B. This facility is not one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions for this modification are not significant, since the only change in emissions are particulate with less than 4 tons per year for PM.

a. **NOx: 250.2 TPY**
b. **CO: 730 TPY**
c. **VOC: 90.4 TPY**
d. **SOx: 37.5 TPY**
e. **PM: 230 TPY**
f. **PM10: 228 TPY**
g. **PM2.5: 223 TPY**
h. **Fluorides: 0 TPY**
i. **Lead: 0 TPY**
j. **Sulfur compounds (listed in Table 2): 0 TPY**
k. **GHG: 2,211,834 TPY**

Section 13

Determination of State & Federal Air Quality Regulations

This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

Required Information for Specific Equipment:
For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. **For example**, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

Required Information for Regulations that Apply to the Entire Facility:
See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

Regulatory Citations for Regulations That Do Not, but Could Apply:
If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation. For example** if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not. For example,** if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

Regulatory Citations for Emission Standards:
For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard. Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

Federally Enforceable Conditions:
All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVENT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: http://cfpub.epa.gov/adi/

Table for State Regulations:

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	Facility is applicable to all ambient air NMAAQS.
20.2.7 NMAC	Excess Emissions	Yes	Facility	All major sources are subject to Air Quality Control Regulations, as defined in 20.2.7 NMAC, and are thus subject to the requirements of this regulation.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	CTG-1, CTG-2, DB-1, DB-2, AUX-1, G-1, Fire Pump	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment.
20.2.70 NMAC	Operating Permits	Yes	Facility	This facility is subject to 20.2.70 NMAC and operates under Title V Permit number: P209-R2 issued December 19, 2019
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	Yes, this facility is subject to 20.2.70 NMAC and is in turn subject to 20.2.71 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	This facility is subject to 20.2.72 NMAC and NSR Permit number: PSD-NM-2450-M2-R4.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	**Emissions Inventory Reporting:** 20.2.73.300 NMAC applies. All Title V major sources meet the applicability requirements of 20.2.73.300 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	Yes	Facility	This facility is a major NSR source (steam electric generating units) with emissions of NOx, CO and PM > 100 tpy
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This is a 20.2.72 NMAC application it is subject to 20.2.75.10, 11 permit fee, and 11.E annual fees.
20.2.77 NMAC	New Source Performance	Yes	CTG-1, CTG-2, DB-1, DB-2, AUX-1	This is a stationary source which is subject to the requirements of 40 CFR Part 60.
20.2.78 NMAC	Emission Standards for HAPS	No	Units Subject to 40 CFR 61	This facility emits hazardous air pollutants but is not applicable to 40 CFR 61.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	Units Subject to 40 CFR 63	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.
20.2.84 NMAC	Acid Rain Permit	Yes	CTG-1, CTG-2, DB-1, DB-2	LEC is an Acid Rain source per 40CFR72, Subpart A and operates under P209A-R3 issued December 19, 2019

Table for Applicable Federal Regulations:

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	Facility is applicable to all NAAQS.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	CTG-1, CTG-2, DB-1, DB-2, AUX-1	Sources are applicable to 40 CFR 60 Subparts.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for Electric Utility Steam Generating Units	Yes	DB-1, DB-2,	Establishes PM, SO_2 and NOx emission limits/standards of performance for the duct burners.
NSPS 40 CFR60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	AUX-1	Establishes SO_2 and NOx emission limits/standards of performance for the auxiliary boiler.
NSPS 40 CFR 60.330 Subpart GG	Standards of Performance for Stationary Gas Turbines	Yes	CTG-1, CTG-2	Establishes SO_2 and NOx emission limits/standards of performance for the duct burners.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	G-1, Fire pump	G-1 and the fire pump are applicable to 40 CFR 63 Subpart ZZZZ.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	Yes	G-1, Fire pump	G-1 and the fire pump are applicable to 40 CFR 63 Subpart ZZZZ.
Title IV – Acid Rain 40 CFR 72	Acid Rain	Yes	CTG-1, CTG-2, DB-1, DB-2	LEC is an Acid Rain source per 40CFR72, Subpart A and operates under P209A-R3 issued December 19, 2019
Title IV-Acid Rain 40 CFR 75	Continuous Emissions Monitoring	Yes	CTG-1, CTG-2, DB-1, DB-2	CTG-1 and CGT-2 must have a CEMS for NOx and O_2.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

X Title V Sources (20.2.70 NMAC)**:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☐ **NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

X Title V (20.2.70 NMAC)**, NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Alternative Operating Scenarios: Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

Construction Scenarios: When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: www.env.nm.gov/air-quality/permitting-section-procedures-and-guidance/. Compliance with standards must be maintained during construction, which should not usually be a problem unless simultaneous operation of old and new equipment is requested.

In this section, under the bolded title "Construction Scenarios", specify any information necessary to write these conditions, such as: conservative-realistic estimated time for completion of construction of the various units, whether simultaneous operation of old and new units is being requested (and, if so, modeled), whether the old units will be removed or decommissioned, any PSD ramifications, any temporary limits requested during phased construction, whether any increase in emissions is being requested as SSM emissions or will instead be handled as a separate Construction Scenario (with corresponding emission limits and conditions, etc.

There are no alternative operating scenarios for LEC.

Section 16

Air Dispersion Modeling

1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.

X See attached, approved modeling **waiver for some** pollutants from the facility.

☐ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.

X Attached in UA4 is a **modeling report for some** pollutants from the facility.

☐ No modeling is required.

New Mexico Environment Department
Air Quality Bureau
Modeling Section
525 Camino de Los Marquez - Suite 1
Santa Fe, NM 87505

Phone: (505) 476-4300
Fax: (505) 476-4375
www.env.nm.gov/aqb/

For Department use only:

Approved by: Sufi A. Mustafa

Date: 7/6/2023

Air Dispersion Modeling Waiver Request Form

This form must be completed and submitted with all air dispersion modeling waiver requests.

If an air permit application requires air dispersion modeling, in some cases the demonstration that ambient air quality standards and Prevention of Significant Deterioration (PSD) increments will not be violated can be satisfied with a discussion of previous modeling. The purpose of this form is to document and streamline requests to certify that previous modeling satisfies all or some of the current modeling requirements. The criteria for requesting and approving modeling waivers is found in the Air Quality Bureau Modeling Guidelines. Typically, only construction permit applications submitted per 20.2.72, 20.2.74, or 20.2.79 NMAC require air dispersion modeling. However, modeling is sometimes also required for a Title V permit application.

A waiver may be requested by e-mailing this completed form in **MS Word** format to the modeling manager, sufi.mustafa@state.nm.us.

This modeling waiver is not valid if the emission rates in the application are higher than those listed in the approved waiver request.

Section 1 and Table 1: Contact and facility information:

Contact name	Paul Wade
E-mail Address:	pwade@montrose-env.com
Phone	(505) 830-9680 x6
Facility Name	Luna Energy Center
Air Quality Permit Number(s)	PSD2450-M2-R4; P209-R2
Agency Interest Number (if known)	878
Latitude and longitude of facility (decimal degrees)	32.298833; -107.783333

General Comments: (Add introductory remarks or comments here, including the purpose of and type of permit application.)

Luna Energy Center has been in commercial operation since 2005 and has been utilized as an efficient reliable source of electrical generation for its 3 owners. In recent years, Luna has experienced a significant increase in operation at high loads as a result of the changing electrical generating resource profiles in the region which is reflected by a historically high capacity factor from 63% in 2021, 67% in 2022, to 86% year to date in 2023.

The cooling tower TDS limit in the air permit combined with a limitation of flow to the evaporation ponds in the discharge permit along with the historically high capacity factor has created a very constrained operating condition. In the peak of summer, when temperatures are the hottest and generation is at its highest demand, the water treatment system is the biggest risk to maintaining compliance with both the PSD and Title V permits.

By increasing the cooling tower conductivity limit this constrained operating envelope would be loosened a bit and would allow Luna to maintain compliance with both its air permit and discharge permit while continuing to provide the region

with efficient reliable power. Additionally, increasing the cycles of concentration in the cooling tower (i.e. increasing the TDS limit) could result in a decrease in fresh water required by the system to help maintain the low TDS as required by the permit. In the desert southwest, water conservancy is an important aspect, and this minor change could have an improvement on the overall water requirements by the system to maintain compliance.

With this permit revision, Luna Energy Center request an increase in the TDS from 3000 to 4500 milligrams/liter. While this is an increase in PM emission rates from the cooling tower, the calculated emissions (based on the NMED cooling tower policy) will be less than the present permit limits. Luna Energy Center is requesting and modeling waiver for this increase in PM emissions. No change in combustion emissions (CO, NO2, or SO2) is requested in this permit revision.

Section 2 – List All Regulated Pollutants from the Entire Facility - Required

In Table 2, below, list all regulated air pollutants emitted from your facility, except for New Mexico Toxic Air Pollutants, which are listed in Table 6 of this form. All pollutants emitted from the facility must be listed regardless if a modeling waiver is requested for that pollutant or if the pollutant emission rate is subject to the proposed permit changes.

Table 2: Air Pollutant summary table (Check all that apply. Include all pollutants emitted by the facility):

Pollutant	Pollutant is not emitted at the facility and modeling or waiver are not required.	Pollutant does not increase in emission rate at any emission unit (based on levels currently in the permit) and stack parameters are unchanged. Modeling or waiver are not required.	Stack parameters or stack location has changed.	Pollutant is new to the permit, but already emitted at the facility.	Pollutant is increased at any emission unit (based on levels currently in the permit).	A modeling waiver is being requested for this pollutant.	Modeling for this pollutant will be included in the permit application.
CO		X					
NO_2		X					
SO_2		X					
PM10						X	
PM2.5							X
H_2S	X						
Reduced S	X						
O_3 (PSD only)	X						
Pb	X						

Section 3: Facility wide pollutants, other than NMTAPs, with very low emission rates

The Air Quality Bureau has performed generic modeling to demonstrate that small sources, as listed in Appendix 2 of this form, do not need computer modeling. After comparing the facility's emission rates for various pollutants to Appendix 2, please list in Table 3 the pollutants that do not need to be modeled because of very low emission rates.

Section 3 Comments. (If you are not requesting a waiver for any pollutants based on their low emission rate, then note that here. You do not need to complete the rest of Section 3 or Table 3.)
NA

Table 3: List of Pollutants with very low facility-wide emission rates

Pollutant	Requested Allowable Emission Rate From Facility (pounds/hour)	Release Type (select "all from stacks >20 ft" or "other")	Waiver Threshold (from appendix 2) (lb/hr)

Section 4: Pollutants that have previously been modeled at equal or higher emission rates

List the pollutants and averaging periods in Table 4 for which you are requesting a modeling waiver based on previous modeling for this facility. The previous modeling reports that apply to the pollutant must be submitted with the modeling waiver request. Request previous modeling reports from the Modeling Section of the Air Quality Bureau if you do not have them and believe they exist in the AQB modeling file archive or in the permit folder.

Section 4 Comments. (If you are not asking for a waiver based on previously modeled pollutants, note that here. You do not need to complete the rest of section 4 or table 4.)

For this permit revision Luna Energy is not requesting any change in combustion emissions (CO, NO_2, or SO_2). The only requested change is for the cooling towers. While the emissions for PM will increase due to the change of TDS, the NMED policy for calculation of cooling tower emissions will produce lower emissions than previously calculated for the present permit. So the cooling tower emission rates are lower than what was originally modeled.

Table 4: List of previously modeled pollutants (facility-wide emission rates)

Pollutant	Averaging period	Proposed emission rate (pounds/hour)	Previously modeled emission rate (pounds/hour)	Proposed minus modeled emissions (lb/hr)	Modeled percent of standard or increment	Year modeled
CO	1-Hour	730.5	730.5	0	0.16	2002
CO	8-Hour	730.5	730.5	0	0.032	2002
NO_2	24-Hour	250.3	250.3	0	2.1	2002
NO_2	Annual	250.3	250.3	0	0.35	2002
NO_2 SSM	1-Hour	331.5	331.5	0	66.1	2010
NO_2 SSM	24-Hour	331.5	331.5	0	5.1	2010
NO_2 SSM	Annual	331.5	331.5	0	3.8	2010
SO_2	No modeling was performed. Was waivered, because the of low emission rate (total facility 9.9 lbs/hr; 37.2 tpy).					
PM10	24-Hour	234.9	235.4	-0.5	2.2	2002

Section 4, Table 5: Questions about previous modeling: NA

Question	Yes	No
Was AERMOD used to model the facility?		
Did previous modeling predict concentrations less than 95% of each air quality standard and PSD increment?		
Were all averaging periods modeled that apply to the pollutants listed above?		
Were all applicable startup/shutdown/maintenance scenarios modeled?		
Did modeling include all sources within 1000 meters of the facility fence line that now exist?		
Did modeling include background concentrations at least as high as current background concentrations?		
If a source is changing or being replaced, is the following equation true for all pollutants for which the waiver is requested? (Attach calculations if applicable.) $\frac{[(g) \times (h1)] + [(v1)^2/2] + [(c) \times (T1)]}{q1} <= \frac{[(g) \times (h2)] + [(v2)^2/2] + [(c) \times (T2)]}{q2}$ Where g = gravitational constant = 32.2 ft/sec^2		

h1 = existing stack height, feet v1 = exhaust velocity, existing source, feet per second c = specific heat of exhaust, 0.28 BTU/lb-degree F T1 = absolute temperature of exhaust, existing source = degree F + 460 q1 = emission rate, existing source, lbs/hour h2 = replacement stack height, feet v2 = exhaust velocity, replacement source, feet per second T2 = absolute temperature of exhaust, replacement source = degree F + 460 q2 = emission rate, replacement source, lbs/hour		

If you checked "no" for any of the questions, provide an explanation for why you think the previous modeling may still be used to demonstrate compliance with current ambient air quality standards.

Section 5: Modeling waiver using scaled emission rates and scaled concentrations

At times it may be possible to scale the results of modeling one pollutant and apply that to another pollutant. If the analysis for the waiver gets too complicated, then it becomes a modeling review rather than a modeling waiver, and applicable modeling fees will be charged for the modeling. Plume depletion, ozone chemical reaction modeling, post-processing, and unequal pollutant ratios from different sources are likely to invalidate scaling.

If you are not scaling previous results, note that here. You do not need to complete the rest of section 5.

To demonstrate compliance with standards for a pollutant describe scenarios below that you wish the modeling section to consider for scaling results.

Section 6: New Mexico Toxic air pollutants – 20.2.72.400 NMAC

Modeling must be provided for any New Mexico Toxic Air Pollutant (NMTAP) with a facility-wide controlled emission rate in excess of the pound per hour emission levels specified in Tables A and B at **20.2.72.502 NMAC** - Toxic Air Pollutants and Emissions. An applicant may use a stack height correction factor based on the release height of the stack for the purpose of determining whether modeling is required. See Table C - Stack Height Correction Factor at 20.2.72.502 NMAC. Divide the emission rate for each release point of a NMTAP by the correction factor for that release height and add the total values together to determine the total adjusted pound per hour emission rate for that NMTAP. If the total adjusted pound per hour emission rate is lower than the emission rate screening level found in Tables A and B, then modeling is not required.

In Table 6, below, list the total facility-wide emission rates for each New Mexico Toxic Air Pollutant emitted by the facility. The table is pre-populated with common examples. Extra rows may be added for NMTAPS not listed or for NMTAPS emitted from multiple stack heights. NMTAPS not emitted at the facility may be deleted, left blank, or noted as 0 emission rate. Toxics previously modeled may be addressed in Section 5 of this waiver form. For convenience, we have listed the stack height correction factors in Appendix 1 of this form.

Section 6 Comments. (If you are not requesting a waiver for any NMTAPs then note that here. You do not need to complete the rest of section 6 or Table 6.)

NA

Table 6: New Mexico Toxic Air Pollutants emitted at the facility

If requesting a waiver for any NMTAP, all NMTAPs from this facility must be listed in Table 3 regardless if a modeling waiver is requested for that pollutant or if the pollutant emission rate is subject to the proposed permit changes.

Pollutant	Requested	Release	Correction	Allowable Emission Rate Divided by	Emission Rate

	Allowable Emission Rate (pounds/hour)	Height (Meters)	Factor	Correction Factor	Screening Level (pounds/hour)
Ammonia					1.20
Asphalt (petroleum) fumes					0.333
Carbon black					0.233
Chromium metal					0.0333
Glutaraldehyde					0.0467
Nickel Metal					0.0667
Wood dust (certain hard woods as beech & oak)					0.0667
Wood dust (soft wood)					0.333
(add additional toxics if they are present)					

Section 7: Approval or Disapproval of Modeling Waiver

The AQB air dispersion modeler should list each pollutant for which the modeling waiver is approved, the reasons why, and any other relevant information. If not approved, this area may be used to document that decision.

This modeling waiver request is approved on the basis that CO, SO2 and NOx emissions are not increasing, PM10 emissions are decreasing slightly and other emission parameters remain the same since the facility was modeled in the past.

Appendix 1: Stack Height Release Correction Factor (adapted from 20.2.72.502 NMAC)

Release Height in Meters	Correction Factor
0 to 9.9	1
10 to 19.9	5
20 to 29.9	19
30 to 39.9	41
40 to 49.9	71
50 to 59.9	108
60 to 69.9	152
70 to 79.9	202
80 to 89.9	255
90 to 99.9	317
100 to 109.9	378
110 to 119.9	451
120 to 129.9	533
130 to 139.9	617
140 to 149.9	690
150 to 159.9	781
160 to 169.9	837
170 to 179.9	902
180 to 189.9	1002
190 to 199.9	1066
200 or greater	1161

Appendix 2. Very small emission rate modeling waiver requirements

Modeling is waived if emissions of a pollutant for the entire facility (including haul roads) are below the amount:

Pollutant	If all emissions come from stacks 20 feet or greater in height and there are no horizontal stacks or raincaps (lb/hr)	If not all emissions come from stacks 20 feet or greater in height, or there are horizontal stacks, raincaps, volume, or area sources (lb/hr)
CO	50	2
H_2S (Pecos-Permian Basin)	0.1	0.02
H_2S (Not in Pecos-Permian Basin)	0.01	0.002
Lead	No waiver	No waiver
NO_2	2	0.025
PM2.5	0.3	0.015
PM10	1.0	0.05
SO_2	2	0.025
Reduced sulfur (Pecos-Permian Basin)	0.033	No waiver
Reduced sulfur (Not in Pecos-Permian Basin)	No waiver	No waiver

Universal Application 4

Air Dispersion Modeling Report

Refer to and complete Section 16 of the Universal Application form (UA3) to assist your determination as to whether modeling is required. If, after filling out Section 16, you are still unsure if modeling is required, e-mail the completed Section 16 to the AQB Modeling Manager for assistance in making this determination. If modeling is required, a modeling protocol would be submitted and approved prior to an application submittal. The protocol should be emailed to the modeling manager. A protocol is recommended but optional for minor sources and is required for new PSD sources or PSD major modifications. Fill out and submit this portion of the Universal Application form (UA4), the "Air Dispersion Modeling Report", only if air dispersion modeling is required for this application submittal. This serves as your modeling report submittal and should contain all the information needed to describe the modeling. No other modeling report or modeling protocol should be submitted with this permit application.

16-A: Identification

1	Name of facility:	Luna Energy Center
2	Name of company:	Public Service Company of New Mexico
3	Current Permit number:	PSD2450-M2-R4; Title V P209-R2
4	Name of applicant's modeler:	Paul Wade, Montrose Environmental Solutions, Inc.
5	Phone number of modeler:	(505) 830-9680 x6
6	E-mail of modeler:	pwade@montrose-env.com

16-B: Brief

1	Was a modeling protocol submitted and approved?	Yes☐	No☒
2	Why is the modeling being done?	Other (describe below)	
3	Describe the permit changes relevant to the modeling.		
	With this permit revision, Luna Energy Center request an increase in the TDS from 3000 to 4500 milligrams/liter. While this is a theoretical increase in PM emission rates from the cooling tower, the calculated emissions (based on the NMED cooling tower policy) will be less than the present permit limits. Modeling analysis is performed because no previous PM2.5 modeling was previously completed. This is a minor modification to an existing PSD source operating under NSR Permit PSD2450-M2-R4. Additionally, sources that were not included in the original application were included in the new PM2.5 modeling. This includes the chiller cooling tower (C-2), GW lime silo (S1), CTBT soda ash silo (S2), and CTBT lime silo (S3)		
4	What geodetic datum was used in the modeling?	NAD83	

5	How long will the facility be at this location?	Permanent	
6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	Yes☒	No☐
7	Identify the Air Quality Control Region (AQCR) in which the facility is located	012	
8	List the PSD baseline dates for this region (minor or major, as appropriate).		
	NO2	8/10/1995	
	SO2	8/10/1995	
	PM10	8/10/1995	
	PM2.5	NA	
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).		
	Gila Wilderness – 84.4 km; Chiricahua Wilderness – 145.7 km; Chiricahua National Monument – 146.5 km		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	No☒
11	Describe any special modeling requirements, such as streamline permit requirements.		
	NA		

16-C: Modeling History of Facility

Describe the modeling history of the facility, including the air permit numbers, the pollutants modeled, the National Ambient Air Quality Standards (NAAQS), New Mexico AAQS (NMAAQS), and PSD increments modeled. (Do not include modeling waivers).

1

Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
CO	PSD-2450-M1	6/11/2002	NSR Significant Revision
NO_2	PSD-2450-M2R1	6/12/2013	NSR Significant Revision - SSM Emissions
SO_2	PSD-2450-M1	6/11/2002	NSR Significant Revision
H_2S	None		
PM2.5	None		
PM10	PSD-2450-M1	6/11/2002	NSR Significant Revision
Lead	None		
Ozone (PSD only)	None		
NM Toxic Air Pollutants (20.2.72.402 NMAC)	None		

16-D: Modeling performed for this application

1 For each pollutant, indicate the modeling performed and submitted with this application.
Choose the most complicated modeling applicable for that pollutant, i.e., culpability analysis assumes ROI and cumulative analysis were also performed.

	Pollutant	ROI	Cumulative analysis	Culpability analysis	Waiver approved	Pollutant not emitted or not changed.
	CO	☐	☐	☐	☐	☒
	NO_2	☐	☐	☐	☐	☒
	SO_2	☐	☐	☐	☐	☒
	H_2S	☐	☐	☐	☐	☒
	PM2.5	☒	☒	☐	☐	☐
	PM10	☐	☐	☐	☒	☐
	Lead	☐	☐	☐	☐	☒
	Ozone	☐	☐	☐	☐	☒
	State air toxic(s) (20.2.72.402 NMAC)	☐	☐	☐	☐	☒

16-E: New Mexico toxic air pollutants modeling

1 List any New Mexico toxic air pollutants (NMTAPs) from Tables A and B in 20.2.72.502 NMAC that are modeled for this application.

2 List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required.

Pollutant	Emission Rate (pounds/hour)	Emission Rate Screening Level (pounds/hour)	Stack Height (meters)	Correction Factor	Emission Rate/ Correction Factor
NA					

16-F: Modeling options

1	Was the latest version of AERMOD used with regulatory default options? If not explain below.	Yes☒	No☐

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	6/19/2023

2 If the surrounding source inventory provided by the Air Quality Bureau was believed to be inaccurate, describe how the sources modeled differ from the inventory provided. If changes to the surrounding source inventory were made, use the table below to describe them. Add rows as needed.

AQB Source ID	Description of Corrections
38308@1	Annual PM2.5 emissions changed to 17.875 tpy per Modeling Guidelines Section 4.8.1.3
29979@1	Annual PM2.5 emissions changed to 17.875 tpy per Modeling Guidelines Section 4.8.1.3
38847@1	Annual PM2.5 emissions changed to 17.875 tpy per Modeling Guidelines Section 4.8.1.3

16-H: Building and structure downwash

1	How many buildings are present at the facility?	9 Building		
2	How many above ground storage tanks are present at the facility?	8 Tanks		
3	Was building downwash modeled for all buildings and tanks? If not explain why below.		Yes☒	No☐
4	Building comments			

16-I: Receptors and modeled property boundary

1	"Restricted Area" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with a steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area. A Restricted Area is required in order to exclude receptors from the facility property. If the facility does not have a Restricted Area, then receptors shall be placed within the property boundaries of the facility. Describe the fence or other physical barrier at the facility that defines the restricted area.						
	Model boundary consist of fencing with guard shack at the entrance.						
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?					Yes☐	No☒
3	Are restricted area boundary coordinates included in the modeling files?					Yes☒	No☐
4	Describe the receptor grids and their spacing. The table below may be used, adding rows as needed.						
	Grid Type	Shape	Spacing	Start distance from restricted area	End distance from restricted area	Comments	
	Very Fine	Rectangular	50	0	500		
	Fine	Rectangular	100	500	2000		
	Cource	Rectangular	250	2000	5000		
5	Describe receptor spacing along the fence line.						
	25 meters						
6	Describe the PSD Class I area receptors.						
	No PSD Class I modeling performed						

16-J: Sensitive areas

1	Are there schools or hospitals or other sensitive areas near the facility? If so describe below. This information is optional (and purposely undefined) but may help determine issues related to public notice.	Yes☐	No☒
3	The modeling review process may need to be accelerated if there is a public hearing. Are there likely to be public comments opposing the permit application?	Yes☐	No☒

16-K: Modeling Scenarios

1	Identify, define, and describe all modeling scenarios. Examples of modeling scenarios include using different production rates, times of day, times of year, simultaneous or alternate operation of old and new equipment during transition periods, etc. Alternative operating scenarios should correspond to all parts of the Universal Application and should be fully described in Section 15 of the Universal Application (UA3).		
	Two modeling scenarios: 1. Only combustion turbines, auxiliary boiler and cooling tower was modeled (Group STKLEC) 2. Combustion turbine, duct burner, auxiliary boiler, and cooling tower was modeled (Group STKDLEC) Group ID STK include scenario 1 and all neighboring sources and Group ID STKDUCT includes scenario 2 and all neighboring sources.		
2	Which scenario produces the highest concentrations? Why?		
	Scenario 2 with neighboring sources (Group ID STKDUCT) since both the combustion turbine and duct burner are operating for both units.		
3	Were emission factor sets used to limit emission rates or hours of operation? (This question pertains to the "SEASON", "MONTH", "HROFDY" and related factor sets, not to the factors used for calculating the maximum emission rate.)	Yes☐	No☒
4	If so, describe factors for each group of sources. List the sources in each group before the factor table for that group. (Modify or duplicate table as necessary. It's ok to put the table below section 16-K if it makes formatting easier.) Sources:		

5

Hour of Day	Factor	Hour of Day	Factor								
1		13									
2		14									
3		15									
4		16									
5		17									
6		18									
7		19									
8		20									
9		21									
10		22									
11		23									
12		24									

If hourly, variable emission rates were used that were not described above, describe them below.

6	Were different emission rates used for short-term and annual modeling? If so describe below.	Yes☐	No☒

16-L: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply. No NO2 modeling was performed.	
	☐	ARM2
	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	NO2 modeling was waivered based on previous model results and no change in permitted NO2 emission rates	
3	Were default NO_2/NO_X ratios (0.5 minimum, 0.9 maximum or equilibrium) used? If not describe and justify the ratios used below.	Yes☐ No☐
4	Describe the design value used for each averaging period modeled.	
	1-hour: Choose an item. Annual: Choose an item.	

16-M: Particulate Matter Modeling

1	Select the pollutants for which plume depletion modeling was used.	
	☐	PM2.5
	☐	PM10
	☒	None
2	Describe the particle size distributions used. Include the source of information.	
3	Does the facility emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2? Sources that emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2 are considered to emit significant amounts of precursors and must account for secondary formation of PM2.5.	Yes☒ No☐
4	Was secondary PM modeled for PM2.5?	Yes☒ No☐

5	If MERPs were used to account for secondary PM2.5 fill out the information below. If another method was used describe below.			
	NO_X (ton/yr)	SO_2 (ton/yr)	$[PM2.5]_{annual}$	$[PM2.5]_{24\text{-hour}}$
	250.2	37.5	0.00052	0.012
	Following recent EPA guidelines for conversion of NO_X and SO_2 emission rates to secondary $PM_{2.5}$ emissions, LEC emissions are compared to appropriate "The rest of New Mexico" MERPs values (NO_X 24 Hr – 42498 tpy; NO_X Annual –			

	130260 tpy; SO_2 24 Hr – 9753 tpy; SO_2 Annual – 53898 tpy). The following equation, found in NMED AQB modeling guidance document on MERPs, was used to determine if secondary emission would cause violation with $PM_{2.5}$ NAAQS. $PM_{2.5}$ annual = ((NO_X emission rate (tpy)/130260 + (SO_2 emission rate (tpy)/53898)) x 0.2 µg/m^3 $PM_{2.5}$ 24 hour = ((NO_X emission rate (tpy)/42498 + (SO_2 emission rate (tpy)/9753)) x 1.2 µg/m^3 $PM_{2.5}$ Annual 0.00052 µg/m^3 = (250.2/130260 + 37.5/53898) x 0.2 µg/m^3 $PM_{2.5}$ 24 Hour 0.012 µg/m^3 = (250.2/42498 + 37.5/9753) x 1.2 µg/m^3

16-N: Setback Distances

1	Portable sources or sources that need flexibility in their site configuration requires that setback distances be determined between the emission sources and the restricted area boundary (e.g. fence line) for both the initial location and future locations. Describe the setback distances for the initial location.
	NA
2	Describe the requested, modeled, setback distances for future locations, if this permit is for a portable stationary source. Include a haul road in the relocation modeling.

16-O: PSD Increment and Source IDs

1	The unit numbers in the Tables 2-A, 2-B, 2-C, 2-E, 2-F, and 2-I should match the ones in the modeling files. Do these match? If not, provide a cross-reference table between unit numbers if they do not match below.	Yes☒	No☐

Unit Number in UA-2	Unit Number in Modeling Files

2	The emission rates in the Tables 2-E and 2-F should match the ones in the modeling files. Do these match? If not, explain why below.	Yes☒	No☐
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled?	Yes☐	No☒

4 Which units consume increment for which pollutants?

Unit ID	NO_2	SO_2	PM10	PM2.5
NA				

5	PSD increment description for sources. (for unusual cases, i.e., baseline unit expanded emissions after baseline date).	NA
6	Are all the actual installation dates included in Table 2A of the application form, as required? This is necessary to verify the accuracy of PSD increment modeling. If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☒ No☐

16-P: Flare Modeling

1	For each flare or flaring scenario, complete the following			
	Flare ID (and scenario)	Average Molecular Weight	Gross Heat Release (cal/s)	Effective Flare Diameter (m)
	NA			

16-Q: Volume and Related Sources

1	Were the dimensions of volume sources different from standard dimensions in the Air Quality Bureau (AQB) Modeling Guidelines? If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☐	No☒
	NA		
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		
4	Describe any open pits.		
5	Describe emission units included in each open pit.		

16-R: Background Concentrations

1	Were NMED provided background concentrations used? Identify the background station used below. If non-NMED provided background concentrations were used describe the data that was used.	Yes☒	No☐
	CO: Choose an item.		
	NO_2: Choose an item.		
	PM2.5: Las Cruces Distric Office (350130025)		
	PM10: Choose an item.		
	SO_2: Choose an item.		

	Other:			
	Comments:	Closes Monitor to Site (Deming)		
2	Were background concentrations refined to monthly or hourly values? If so describe below.		Yes☐	No☒

16-S: Meteorological Data

1	Was NMED provided meteorological data used? If so select the station used.	Yes☒	No☐
2	If NMED provided meteorological data was not used describe the data set(s) used below. Discuss how missing data were handled, how stability class was determined, and how the data were processed.		
	Deming 2015 - 2019		

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	Yes☒	No☐
2	What was the source of the terrain data?		
	DEM Files		

16-U: Modeling Files

Describe the modeling files: PM2.5 ROI and Cumulative Modeling

File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
LunaPM25ROI	PM2.5	ROI
LunaPM25RefineAnnual	PM2.5 Annual	Cumulative
LunaPM25Refine24Hour	PM2.5 24 Hour	Cumulative

16-V: PSD New or Major Modification Applications			
1	A new PSD major source or a major modification to an existing PSD major source requires additional analysis. Was preconstruction monitoring done (see 20.2.74.306 NMAC and PSD Preapplication Guidance on the AQB website)?	Yes☐	No☒
2	If not, did AQB approve an exemption from preconstruction monitoring?	Yes☐	No☐
3	Describe how preconstruction monitoring has been addressed or attach the approved preconstruction monitoring or monitoring exemption.		
	NA		
4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
	NA		
5	If required, have ozone and secondary PM2.5 ambient impacts analyses been completed? If so describe below.	Yes☒	No☐
	PM2.5 MERPs analysis		

16-W: Modeling Results

1	If ambient standards are exceeded because of surrounding sources, a culpability analysis is required for the source to show that the contribution from this source is less than the significance levels for the specific pollutant. Was culpability analysis performed? If so describe below.	Yes☐	No☒
2	Identify the maximum concentrations from the modeling analysis. Rows may be modified, added and removed from the table below as necessary.		

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
PM2.5 24hr	1.23	3.7	0.012	11.0	14.7	35	42.0	238550.0	3577050.0	1331.80
PM2.5 Annual	0.20	2.75	0.0052	5.2	7.95	12	66.3	236700.0	3577000.0	1336.01

16-X: Summary/conclusions

	A statement that modeling requirements have been satisfied and that the permit can be issued.
1	Dispersion modeling was performed for PM2.5 NAAQS for the Luna Energy Center's minor modification of a PSD facility. All PM2.5 pollutant sources were modeled along with applicable neighboring sources and background to show compliance with the PM2.5 NAAQS. All results of this modeling showed the facility in compliance with the PM2.5 NAAQS.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

Compliance Test History Table

Unit No.	Test Description	Test Date
1,2	Tested in accordance with EPA test methods for NOx and CO as required by Title V permit P209 R1	12/6/2022
1,2	Tested in accordance with EPA test methods for NOx and CO as required by NSR permit PSD-2450-M2R1.	12/6/2022

Section 20

Other Relevant Information

Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

NA

Section 22: Certification

Company Name: Public Service Co. of New Mexico

I, Gregory Cain, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 31 day of August, 2023, upon my oath or affirmation, before a notary of the State of _____.

*Signature 8-31-2023
Date

Gregory Cain
Printed Name

Director, Southern NM Gas Plants
Title

Scribed and sworn before me on this 31st day of August, 2023.

My authorization as a notary of the State of New Mexico expires on the 19th day of MARCH, 2025.

Graciela R. Gabaldon 8-31-2023
Notary's Signature Date

Graciela R. Gabaldon
Notary's Printed Name

*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.

STATE OF NEW MEXICO
NOTARY PUBLIC
GRACIELA R. GABALDON
COMMISSION NUMBER: 1101230
EXPIRATION DATE: MARCH 19, 2025

Graciela R. Gabaldon
Notary Public

August 31, 2023

New Mexico Environment Department
Air Quality Bureau
Permits Section
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico 87507-3313

Subject: Permit Application for PNM's Luna Energy Center PSD-NM-2450-M2-R4

To Whom it May Concern:

Attached please find two (2) hardcopies and three (3) electronic (CD) copies of the 20.2.72 NMAC Permit Application for Public Service Company's Luna Energy Center. This letter is attached to the application copy that has the original notarized signature page (Section 22), along with an application submittal fee of $500.

Luna Energy Center (LEC) is applying for a revision of 20.2.72 NMAC NSR Permit PSD-NM-2450-M2-R4 operated within the county of Luna, state of New Mexico. Regulation governing this permit application is 20.2.72.200.A(2) NMAC. With this permit revision, LEC request an increase in the total dissolved solids (TDS) in the cooling tower (CT-1) from 3000 to 4500 mg/l. While this is an increase in particulate (PM) emission rates from the cooling tower, the calculated emissions (based on the NMED cooling tower policy) will be less than the present PM permit limits. No other physical changes or changes in the method of operation or in combustion emissions (CO, NO2, or SO2) are requested for this permit revision application.

Please let me know if you have any questions or need additional information.

Sincerely,

Paul Wade
Senior Associate Engineer
Montrose Environmental Solutions, Inc.

Cc: Greg Little, PNM

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