

INTREPID POTASH – NEW MEXICO, LLC EAST PLANT



NSR Air Permit 755-M15 Modification Application UNIVERSAL APPLICATION FORMS UA1 – UA4

Carlsbad, New Mexico
Eddy County

Submittal Date: 08/2025, Revised 11/2025, 12/2025

PREPARED BY:

FC&E ENGINEERING, LLC
807 COLONIAL COURT
CARLSBAD, NM 88220

(601) 824-1860



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Modeling Documentation

Attachment A – Intrepid East Facility Wide Emission Calculations

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Air Permit Application Compliance History Disclosure Form

Pursuant to Subsection 74-2-7(S) of the New Mexico Air Quality Control Act ("AQCA"), NMSA §§ 74-2-1 to -17, the New Mexico Environment Department ("Department") may deny any permit application or revoke any permit issued pursuant to the AQCA if, within ten years immediately preceding the date of submission of the permit application, the applicant met any one of the criteria outlined below. In order for the Department to deem an air permit application administratively complete, or issue an air permit for those permits without an administrative completeness determination process, the applicant must complete this Compliance History Disclosure Form as specified in Subsection 74-2-7(P). An existing permit holder (permit issued prior to June 18, 2021) shall provide this Compliance History Disclosure Form to the Department upon request.

Permittee/Applicant Company Name		Expected Application Submittal Date
Intrepid Potash New Mexico, LLC		August 31, 2025
Permittee/Company Contact	Phone	Email
Roy Torres	(575) 234-3701	roy.torres@intrepidpotash.com
Within the 10 years preceding the expected date of submittal of the application, has the permittee or applicant:		
1	Knowingly misrepresented a material fact in an application for a permit?	☐ Yes ☒ No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	☐ Yes ☒ No
3	Been convicted of a felony related to environmental crime in any court of any state or the United States?	☐ Yes ☒ No
4	Been convicted of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud in any court of any state or the United States?	☐ Yes ☒ No
5a	Constructed or operated any facility for which a permit was sought, including the current facility, without the required air quality permit(s) under 20.2.70 NMAC, 20.2.72 NMAC, 20.2.74 NMAC, 20.2.79 NMAC, or 20.2.84 NMAC?	☐ Yes ☒ No
5b	If "No" to question 5a, go to question 6. If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions: a. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Department; or b. The operator of the facility estimated that the facility's emissions would not require an air permit, and the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.	☐ Yes ☐ No
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	☐ Yes ☒ No
7	For each "yes" answer, please provide an explanation and documentation.	

Mail Application To: 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		For Department use only: AIRS No.:
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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. [See Section 1-I for submittal instructions for other permits.](#)

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 ☒ 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) ☒ minor modification to a PSD source ☐ a PSD major modification

Acknowledgements:

- √ 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.
- √ \$500 NSR application Filing Fee enclosed **OR** ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).
- √ Check No.: **14495** in the amount of **\$500.00**
- √ 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.
- ☐ This facility qualifies to receive assistance from the Small Business Environmental Assistance program (SBEAP) and qualifies for 50% of the normal application and permit fees. Enclosed is a check for 50% of the normal application fee which will be verified with the Small Business Certification Form for your company.
- ☐ This facility qualifies to receive assistance from the Small Business Environmental Assistance Program (SBEAP) but does not qualify for 50% of the normal application and permit fees. To see if you qualify for SBEAP assistance and for the small business certification form go to https://www.env.nm.gov/aqb/sbap/small_business_criteria.html).

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.72.200.A 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 1 st 3 to 5 #s of permit IDEA ID No.): 208	Updating Permit/NOI #: 0755M15
1	Facility Name: Intrepid Potash New Mexico, LLC - East Plant	Plant primary SIC Code (4 digits): 1400 Plant NAIC code (6 digits): 212391	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): 210 Red Cloud Road, Carlsbad, NM 88220		
2	Plant Operator Company Name: Intrepid Potash – New Mexico, LLC	Phone/Fax: (575) 234-3861 [East Control Room]	
a	Plant Operator Address: P.O. Box 101, Carlsbad, NM 88221		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 26-1501877	
3	Plant Owner(s) name(s): Intrepid Potash – New Mexico, LLC	Phone/Fax: (575) 234-3861 [East Control Room]
a	Plant Owner(s) Mailing Address(s): P.O. Box 101, Carlsbad, NM 88221	
4	Bill To (Company): Intrepid Potash – New Mexico, LLC	Phone/Fax: (575) 307-9977
a	Mailing Address: P.O. Box 101, Carlsbad, NM 88221	E-mail: dusten.russell@intrepid potash.com
5	☒ Preparer: ☐ Consultant:	Phone/Fax: (601) 259-5217
a	Mailing Address: 807 Colonial Court, Carlsbad, NM 88220	E-mail: ken.faulkner@intrepid potash.com
6	Plant Operator Contact: Roy Torres, IPNM Manager – Mining and Minerals	Phone/Fax: (575) 234-3701
a	Address: P.O. Box 101, Carlsbad, NM 88221	E-mail: roy.torres@intrepidpotash.com
7	Air Permit Contact: Dusten Russell	Title: Environmental Engineer
a	E-mail: dusten.russell@intrepid potash.com	Phone/Fax: (575) 307-9977
b	Mailing Address: P.O. Box 101, Carlsbad, NM 88221	
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? ☒ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☒ 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 ☒ 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? ☒ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☒ 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 ☐ 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 ☐ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: P009R3
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☒ No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☒ No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: 0755M15
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☒ 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: 450 Tons Ore Feed	Daily: 10,800 Tons Ore Feed	Annually: 3.942 MM Tons Ore Feed
b	Proposed	Hourly: No change	Daily: No change	Annually: No change
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: 75 TPH	Daily: 1800 dry tons of product	Annually: 657,000 dry tons of product

b	Proposed	Hourly: No change	Daily: No change	Annually: No change
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Section 1-D: Facility Location Information

1	Section: 4	Range: 31E	Township: 21S	County: Eddy	Elevation (ft): 3,650
2	UTM Zone: ☐ 12 or ☒ 13			Datum: ☒ NAD 27 ☐ NAD 83 ☐ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 614,386			UTM N (in meters, to nearest 10 meters): 3,596,934	
b	AND Latitude (deg., min., sec.): 32°30'19.88"N			Longitude (deg., min., sec.): 103°46'57.0633"W	
3	Name and zip code of nearest New Mexico town: Carlsbad 88220				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Carlsbad, New Mexico, take US Highway 62 /180 East for approximately 30 miles. The EAST facility is on the right hand side, 2 miles from US Hwy 62/180.				
5	The facility is 32 (distance) miles ENE (direction) of Carlsbad, NM (nearest town).				
6	Status of land at facility (check one): ☒ 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: Eddy County, Lea 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/aqb/modeling/class1areas.html)? ☐ Yes ☒ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers:				
9	Name nearest Class I area: Carlsbad Caverns National Park				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 52 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: 52 km				
12	Method(s) used to delineate the Restricted Area: The area is restricted through fencing, rough terrain and signage. "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 ☒ 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	($\frac{\text{hours}}{\text{year}}$): 8,760
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start: N/A		☐ AM ☐ PM	End: N/A ☐ AM ☐ PM
3	Month and year of anticipated start of construction: Plant is in operation			
4	Month and year of anticipated construction completion: N/A			
5	Month and year of anticipated startup of new or modified facility: Plant is an existing operation			
6	Will this facility operate at this site for more than one year? ☒ 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 ☒ No If yes, specify:		
a	If yes, NOV date or description of issue: N/A	NOV Tracking No: N/A	
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ Yes ☒ No If Yes, provide the 1c & 1d info below:		
c	Document Title: N/A	Date: N/A	Requirement # (or page # and paragraph #): N/A
d	Provide the required text to be inserted in this permit: N/A		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? ☒ 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 ☒ No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? ☒ 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 ☒ Minor (☒ <10 tpy of any single HAP AND ☒ <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☒ Yes ☐ No		
a	If yes, include the name of company providing commercial electric power to the facility: <u>Excel Energy</u> 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." ☒ N/A (This is not a Streamline application.)
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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.) Roy Torres (20.2.70.300.D.2 NMAC):		Phone: (575) 234-3701
a	R.O. Title: General Manager – IPNM Mining & Minerals	R.O. e-mail: roy.torres@intrepidpotash.com	
b	R. O. Address: P.O. Box 101, Carlsbad, NM 88221		
2	Alternate Responsible Official N/A (20.2.70.300.D.2 NMAC):		Phone: N/A
a	A. R.O. Title: N/A	A. R.O. e-mail: N/A	
b	A. R. O. Address: N/A		
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): N/A		
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.): Intrepid Potash Inc.		
a	Address of Parent Company: 1001 17th Street, Suite 1050, Denver, CO 80202		
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.): N/A		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: (575) 307-9977		
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: N/A		

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-toe 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	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.	
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #					
1B	Boiler	Keeler Co.	PK-54	14262-1	50,000 pph	50,000-Max; 33,333-Avg (pph)	6/1/1965	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
								1B					
3B	Boiler	Keeler Co.	PK-54	14262-3	50,000 pph	50,000-Max; 33,333-Avg (pph)	6/1/1965	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
								3B					
5B	Boiler	Zurn	--	99682	64,800 pph	64,800 pph	8/1/1995	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
								5B					
7B	Boiler	Rentech Boiler Systems, Inc.	D-Type	2012-27	70,000 pph	70,000 pph	2012	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
							Sep-13	7B					
8B	Boiler	Rentech Boiler Systems, Inc.	D-Type	2012-28	70,000 pph	70,000 pph	2012	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
							estimated Dec. 2013 / Jan. 2014	8B					
1D	Rotary Dryer	Standard Steel Corp.	--	N/A	30 mmbtu/hr	30 - Max; 24 Avg (mmbtu/hr)	6/1/1965	1D		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
								1D					
10D	FLUIDIZED BED DRYER	Custom Design	Barr Rosin		75 tph	75 tph	Sep-12	10S, 10cyc		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.109(A)(1)	N/A
								EP-10					
10B	BURNER - FBD	Custom Design	Barr Rosin		20 mmbtu/hr	20 mmbtu/hr	Sep-12	10S, 10cyc		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.109(A)(1)	N/A
								EP-10					
10Conv	CONVEYOR - FBD DISCHARGE	Custom Design	AMEC Americas		75 tph	75 tph	Sep-12	10S, 10cyc		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
								EP-10					
5	Product Load-out Screen Plant	various	various	N/A	N/A	400 tph	6/1/1965	5		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
							2010 (scrubber)	5					
7	Raw Ore Crusher	Pennsylvania	various	N/A	N/A	450 tph	6/1/1965	7		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20NMAC 2.19	N/A
								7					
8	Sylvite Compactors #2 and #3	various	custom	N/A	N/A	N/A	6/1/1965	8		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.109(A)(2)	N/A
							6-16-2006(scrubber)	8					
9	BURNER / COMBUSTION CHAMBER - DRYER	Custom built	N/A	D2010421 1E10R816	20 mmbtu/hr 75 tph	20 mmbtu/hr 75 tph	Jan-05	9		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.109(A)(1)	N/A
								15					
11 / F40 thru F67	Stack for F40-F46, F50-F56, F58-F67 Pelletizing Process	various	various	various	75 tph	75 tph	various	11		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.109(A)(1)	N/A
								11					

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	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
F1 thru F7	Feeders, Belts, Screens, Crusher, Rotary	various	various	various	404 tph	404 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	Fugitives				
F8 thru F15	Feeders, Belts, Screens, Mix Screws	various	various	various	89 tph	89 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	Fugitives				
F16 thru F18	Belts	various	various	various	89 tph	89 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	Fugitives				
F-19 thru F-20	Belts, Screens	various	various	various	89 tph	89 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	Fugitives				
F21 thru F24	Feeders, Belts, Screens, Mix Screws	various	various	various	89 tph	89 tph	various	EP-05		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	EP-05				
F-25	Paved Road Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							N/A	Fugitives				
F-26	Unpaved Road Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							N/A	Fugitives				
F-27 thru F-29	Belts, Diverters	various	various	various	250 tph	250 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	Fugitives				
F-30 thru F-31	Belts, Diverter	various	various	various	250 tph	250 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							2008	Fugitives				
F-32	Belt, Screw	various	various	various	250 tph	250 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964	Fugitives				
F-33	Belt	various	various	various	250 tph	250 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							1964 / 2008	Fugitives				
F-34 thru F-37	Belts, Diverter	various	various	various	250 tph	250 tph	various	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
							2008	Fugitives				

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufact-urer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.	
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #					
F-38	HOPPER - MAGNETITE	Custom Design	AMEC Americas		0.1 tph	0.1 tph	Sep-12	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
F-39	CONVEYOR - MAGNETITE	Custom Design	AMEC Americas		0.1 tph	0.1 tph	Sep-12	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.7.A; 110.B	N/A
F68	Material Handling (Operational Flexibility - combined activity unit)	N/A	various	various	NA	Emissions Cap	N/A	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.7.A	N/A
F69	Material Handling (Operational Flexibility - combined activity unit)	N/A	N/A	N/A	N/A	Emissions Cap	N/A	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.7.A	N/A
12	SALT DRYER WITH BAGHOUSE	Tarmac	6x30-PFD	BD448-DR1071	50 tph	50 tph	2019	12		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	20 NMAC 2.19.109(A)(1)	N/A
GEN3	Generator	TBD	TBD	TBD	49 HP	49 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG1	Mobile Salt Screen Diesel Engine	Caterpillar	C4.4	N/A	65 HP	65 HP	~ 2006	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG2	Air Compressor Gasoline Engine	TBD	TBD	TBD	13 HP	13 HP	N/A	ENG1		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	SI	N/A
ENG3	Light Tower Diesel Engine	TBD	TBD	TBD	25 HP	25 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG4	Diesel Pump Engine	TBD	TBD	TBD	99 HP	99 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG5	Diesel Pump Engine	TBD	TBD	TBD	≤199 HP	199 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG6	Diesel Pump Engine	TBD	TBD	TBD	≤199 HP	199 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG7	Diesel Pump Engine	TBD	TBD	TBD	≤199 HP	199 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A
ENG8	Various Diesel Engine(s)	TBD	TBD	TBD	TBD	825 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	CI	N/A

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	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
ENG9	C Pond Area Pump - Diesel Water Pump Eng	TBD	TBD	TBD	99 HP	99 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG10	Diesel Pump Engine	TBD	TBD	TBD	TBD	210 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG11	Catch Basin Backup Pump - Diesel Water Pump Engine	TBD	TBD	TBD	TBD	199 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG12	South Seal Backup Pump - Diesel Water Pump Engine	TBD	TBD	TBD	TBD	199 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG13	New SW Seep - Water Pump Engine	TBD	TBD	TBD	TBD	199 HP	Varies due to Demand	N/A		☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG14A	Floater Engine - Diesel Water Pump Eng	TBD	TBD	TBD	≤199 HP	199 HP	Varies due to Demand	N/A		☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG14B	Floater Engine - Diesel Water Pump Eng	TBD	TBD	TBD	≤199 HP	199 HP	Varies due to Demand	N/A		☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A
ENG15	Cavern Sump Engines - Diesel Water Pump Eng	TBD	TBD	TBD	≤199 HP	199 HP	Varies due to Demand	N/A		☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	CI	N/A

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 Activities¹ (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 <http://www.env.nm.gov/aqb/forms/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.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction ²	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²	
GEN-1	Emergency Backup Diesel-fired Generator	John Deere	6068HF475E	200	20.2.72.202.B(3) NMAC	2006	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	HP		2006/07	
GEN-2	Emergency Backup Diesel-fired Generator	Caterpillar	C27 ACERT	1,214	20.2.72.202.B(3) NMAC	2010	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			MJE02184	HP		2010	
FWP	Emergency Diesel-fired Fire Water Pump	John Deere	PE6068L276565	197	20.2.72.202.A(4) NMAC	2015	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	HP		2015	
Weed Flamer	Test trial of weed burner for drying salt	Red Dragon	N/A	N/A	20.2.72.202.B.(5) NMAC	2017	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	N/A		2017	
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

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 (c) 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
9	VENTURI SCRUBBER - EXISTING LANBEINITE	~ Jan. 2005	TSP/PM10/PM2.5	EP-09 (dryer only)	0.01 gr/dscf	Design
11S	VENTURI SCRUBBER - PELLETIZING	9/1/2012	TSP/PM10/PM2.5	F40 thru F67	0.01 gr/dscf	Design
11Cycl	CYCLONE - PELLETIZING	9/1/2012	TSP/PM10/PM2.5	F40 thru F67	99%>PM10	Design
12	Cyclone followed by Baghouse	TBD	TSP/PM10/PM2.5	12	99.97	Design
1D	Venturi Scrubber	1965	TSP/PM10/PM2.5	1D	99.8	Vendor Data
5	Wet Chamber Sprays	1965/2010	TSP/PM10/PM2.5	5	98	Typical Design
7	Wet Chamber Sprays	1965	TSP/PM10/PM2.5	7	99.8	Typical Design
8	Custom Compound Venturi Scrubber	2004	TSP/PM10/PM2.5	8	0.04 gr/dscf	Custom Design
10S	VENTURI SCRUBBER - FBD	9/1/2012	TSP/PM10/PM2.5	10D, 10Conv	> 99% (0.01 gr/dscf)	Design
10Cycl	CYCLONE - FBD DUST (No direct vent to the atmosphere. Cyclone vents to the Venturi Scrubber - 10S)	9/1/2012	TSP/PM10/PM2.5	10D, 10Conv	99.4	Design

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)

□ 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		TSP ²		PM10 ²		PM2.5 ²		H ₂ S		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
1D	2.51	11.01	12.04	52.72	0.16	0.71	0.08	0.37	5376.00	23546.88	5416.00	23722.08	1276.48	5590.98	0.00	0.00	0.00	0.00
5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	125.00	547.50	125.00	547.50	31.25	136.88	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	540.00	2365.20	540.00	2365.20	135.00	591.30	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	370.00	1620.50	370.00	1620.50	92.50	405.50	N/A	N/A	N/A	N/A
9	2.94	12.88	7.88	34.52	0.132	0.57	0.06	0.25	4950.90	21684.93	2147.69	9406.87	909.96	3985.63	0.00	0.00	0.00	0.00
Tanks	N/A	N/A	N/A	N/A	0.34	1.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1B	7.15	31.31	6.01	26.3	0.39	1.72	0.17	0.75	0.54	2.38	0.54	2.38	0.54	2.38	0.00	0.00	0.00	0.00
3B	7.15	31.31	6.01	26.3	0.39	1.72	0.17	0.75	0.54	2.38	0.54	2.38	0.54	2.38	0.00	0.00	0.00	0.00
5B	9.55	39	7.82	31.96	0.51	2.09	0.27	1.09	0.71	2.89	0.71	2.89	0.71	2.89	0.00	0.00	0.00	0.00
10D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4950.90	21684.93	2182.24	9558.20	944.51	4136.97	N/A	N/A	N/A	N/A
10B	2.35	10.31	1.98	8.66	0.132	0.57	0.06	0.25	0.15	0.67	0.15	0.67	0.15	0.67	N/A	N/A	N/A	N/A
10Conv	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.23	0.99	0.08	0.36	0.02	0.10	N/A	N/A	N/A	N/A
F1-F24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11.98	52.38	4.38	19.24	1.30	5.55	N/A	N/A	N/A	N/A
F27-F37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.25	36.19	3.08	13.20	0.88	3.85	N/A	N/A	N/A	N/A
F25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70.57	258.28	17.99	65.83	1.80	6.58	N/A	N/A	N/A	N/A
F26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	171.14	195.10	43.62	49.72	4.36	4.97	N/A	N/A	N/A	N/A
F38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A
F39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A
7B	3.36	14.73	3.46	15.14	0.37	1.64	0.12	0.53	0.71	3.11	0.71	3.11	0.71	3.11	0.00	0.00	4.7E-05	0.0002
8B	3.36	14.73	3.46	15.14	0.37	1.64	0.12	0.53	0.71	3.11	0.71	3.11	0.71	3.11	0.00	0.00	4.7E-05	0.0002
EP-11 (F40-F67)	-	-	-	-	-	-	-	-	38571.00	168941.00	1157.10	5068.00	154.30	676.00	-	-	-	-
EP-12	2.25	5.63	2.38	5.94	0.00	0.00	0.00	0.00	10208.00	44712.00	4083.00	17885.00	1021.00	4471.00	0.00	0.00	0.00	0.00
F68/F69	-	-	-	-	-	-	-	-	10.53	8.75	5.16	4.24	0.66	0.57	-	-	-	-
ENG1	2.02	8.83	0.43	1.90	0.16	0.72	0.13	0.58	0.14	0.63	0.14	0.63	0.14	0.63	-	-	-	-
GEN3	0.58	2.55	0.65	2.86	0.12	0.55	0.10	0.45	0.07	0.29	0.07	0.29	0.07	0.29	-	-	-	-
ENG2	0.14	0.63	0.09	0.40	0.28	1.23	0.01	0.03	0.01	0.04	0.01	0.04	0.01	0.04	-	-	-	-
ENG3	0.79	3.46	0.17	0.75	0.06	0.28	0.05	0.23	0.06	0.25	0.06	0.25	0.06	0.25	-	-	-	-
ENG4	0.73	3.18	0.81	3.57	0.25	1.09	0.20	0.89	0.07	0.29	0.07	0.29	0.07	0.29	-	-	-	-
ENG5	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG6	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG7	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG8	6.06	26.54	6.78	29.71	2.07	9.08	1.69	7.41	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
ENG9	0.73	3.18	0.81	3.57	0.25	1.09	0.20	0.89	0.07	0.29	0.07	0.29	0.07	0.29	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		TSP ²		PM10 ²		PM2.5 ²		H ₂ S		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
ENG10	1.54	6.75	1.73	7.56	0.53	2.31	0.43	1.89	0.14	0.61	0.14	0.61	0.14	0.61	-	-	-	-
ENG11	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG12	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG13	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG14A	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG14B	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
ENG15	1.46	6.40	1.64	7.17	0.50	2.19	0.41	1.79	0.13	0.57	0.13	0.57	0.13	0.57	-	-	-	-
Totals	66.36	283.64	77.24	331.50	11.04	48.21	5.10	22.25	65,369.33	285,675.64	16,100.18	#####	4,578.87	20,036.89	0.00	0.00	9.3E-05	0.00041

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 TSP unless TSP is set equal to PM10 and PM2.5.

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		TSP ¹		PM10 ¹		PM2.5 ¹		H ₂ S		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
1D	2.51	11.01	12.04	52.72	0.16	0.71	0.08	0.37	50.00	219.00	29.70	130.22	10.00	43.62	0.00	0.00	0.00	0.00
5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.50	10.95	1.40	6.31	1.40	6.31	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00	5.00	1.00	5.00	1.00	5.00	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.40	32.41	0.30	1.32	0.07	0.31	N/A	N/A	N/A	N/A
9	2.94	12.88	7.88	34.52	0.13	0.57	0.06	0.25	2.88	12.63	2.88	12.63	2.88	12.63	0.00	0.00	0.00	0.00
Tanks	N/A	N/A	N/A	N/A	0.34	1.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1B	7.15	31.31	6.01	26.3	0.39	1.72	0.17	0.75	0.54	2.38	0.54	2.38	0.54	2.38	0.00	0.00	0.00	0.00
3B	7.15	31.31	6.01	26.3	0.39	1.72	0.2	0.89	0.54	2.38	0.54	2.38	0.54	2.38	0.00	0.00	0.00	0.00
5B	9.55	39	7.82	31.96	0.51	2.09	0.14	0.56	0.76	2.94	0.76	2.94	0.76	2.94	0.00	0.00	0.00	0.00
10D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.02	26.50	6.02	26.50	6.02	26.50	N/A	N/A	N/A	N/A
10B	2.35	10.31	1.98	8.66	0.13	0.57	0.06	0.25	*	*	*	*	*	*	0.00	0.00	0.00	0.00
10Conv	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*	*	*	*	*	*	N/A	N/A	N/A	N/A
									* Particulate emissions from 10B and 10Conv are included in the emissions for 10D									
EP-11 (F40-F67)	-	-	-	-	-	-	-	-	2.59	11.35	0.26	1.14	0.26	1.14	-	-	-	-
F-25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.04	1.35	0.41	0.27	0.10	0.07	N/A	N/A	N/A	N/A
F-26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13.09	16.43	3.34	4.19	0.33	0.42	N/A	N/A	N/A	N/A
F1-F24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10.09	44.19	3.68	16.23	1.09	4.64	N/A	N/A	N/A	N/A
F27-F37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.75	3.29	0.28	1.2	0.08	0.35	N/A	N/A	N/A	N/A
F-38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A
F-39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A
7B	3.36	12.22	3.46	12.56	0.37	1.36	0.12	0.44	0.71	2.58	0.71	2.58	0.71	2.58	0.00	0.00	4.7E-05	0.00017
8B	3.36	12.22	3.46	12.56	0.37	1.36	0.12	0.44	0.71	2.58	0.71	2.58	0.71	2.58	0.00	0.00	4.7E-05	0.00017
EP-12	2.25	5.63	2.375	5.94	0	0	0	0	3.06	7.70	3.06	7.70	3.06	7.70	0.00	0.00	0.00	0.00
F-68/F-69	-	-	-	-	-	-	-	-	8.19	5.37	4.10	2.67	0.45	0.30	-	-	-	-
ENG1	2.02	1.51	0.43	0.33	0.16	0.12	0.13	0.10	0.14	0.11	0.14	0.11	0.14	0.11	-	-	-	-
GEN3	0.58	0.44	0.65	0.49	0.12	0.09	0.10	0.08	0.07	0.05	0.07	0.05	0.07	0.05	-	-	-	-
ENG2	0.14	0.11	0.09	0.07	0.28	0.21	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-	-	-
ENG3	0.79	0.59	0.17	0.13	0.06	0.05	0.05	0.04	0.06	0.04	0.06	0.04	0.06	0.04	-	-	-	-
ENG4	0.73	1.13	0.81	1.26	0.25	0.39	0.20	0.31	0.07	0.10	0.07	0.10	0.07	0.10	-	-	-	-
ENG5	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG6	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG7	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		TSP ¹		PM10 ¹		PM2.5 ¹		H ₂ S		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
ENG8	6.06	9.39	6.78	10.52	2.07	3.21	1.69	2.62	0.54	0.84	0.54	0.84	0.54	0.84	-	-	-	-
ENG9	0.73	1.13	0.81	1.26	0.25	0.39	0.20	0.31	0.07	0.10	0.07	0.10	0.07	0.10	-	-	-	-
ENG10	1.54	2.39	1.73	2.68	0.53	0.82	0.43	0.67	0.14	0.21	0.14	0.21	0.14	0.21	-	-	-	-
ENG11	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG12	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG13	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG14A	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG14B	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
ENG15	1.46	2.27	1.64	2.54	0.50	0.78	0.41	0.63	0.13	0.20	0.13	0.20	0.13	0.20	-	-	-	-
Totals	66.36	202.95	77.24	251.07	11.03	23.83	7.45	13.78	115.13	412.32	61.95	231.53	32.26	125.14	0.00	0.00	0.00	0.00

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 TSP unless TSP is set equal to PM10 and PM2.5.

All applications for facilities that have emissions during routine or 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).

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 TSP unless TSP is set equal to PM10 and PM2.5.

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.

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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)			
EP-09	EP-09 dryer only	V	No	100	136	333	333	20.6	47.157	3.00
EP-11	F40 thru F67	V	No	100	~ 70	750	640	~ 1.4	106.10	3.00
EP-12	12	V	No	36	230	102	102	61	75	1.33
EP-1D	1D	V	No	96	145	353	353	24.5	82.867	2.33
EP-05	5	V	No	70	70	209.89	209.89	0.6	42.70	2.50
EP-07	7	V	No	46	80	78.3	78.3	1	15.958	2.5
EP-08	8	V	No	100	81	527.17	527.17	3.6	52.3	3.58
EP-10	10D, 10B, 10Conv	V	No	114.6	106	335	240.82	24.3	59.98	2.67
1B	1B	V	No	35	390	345.18	345.18	N/A	33.4	3.625
3B	3B	V	No	35	390	345.18	345.18	N/A	33.4	3.625
5B	5B	V	No	35	345	471.12	471.12	N/A	48.9	3.5
7B	7B	V	No	45	300	420.45	420.45	N/A	48.2	3.33
8B	8B	V	No	45	300	420.45	420.45	N/A	48.2	3.33
RICE-1	GEN-1	H	No	9	200	Data not Available	Data not Available	<1	2-3	4' x 2'
RICE-2	GEN-2	V	No	9	400	Data not Available	Data not Available	<1	10	1
RICE-3	FWP	H	No	5	200	Data not Available	Data not Available	<1	2-3	0.5
ENG1	ENG1	H	No	3.28	900	6.82	6.00	~12%	276	0.18
GEN3	GEN3	H	No	3.28	900	5.20	4.58	~12%	276	0.15
ENG2	ENG2	H	No	3.28	1200	1.67	1.47	~12%	276	0.09
ENG3	ENG3	H	No	3.28	900	2.62	2.31	~12%	276	0.11
ENG4	ENG4	V	No	6.00	900	11.05	9.72	~12%	276	0.22
ENG5	ENG5	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG6	ENG6	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG7	ENG7	V	No	6.00	900	20.88	18.37	~12%	276	0.31

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)			
ENG8	ENG8	V	No	3.28	900	86.57	76.19	~12%	276	0.63
ENG9	ENG9	V	No	6.00	900	11.05	9.724	~12%	276	0.22
ENG10	ENG10	H	No	3.28	900	22.04	19.39	~12%	276	0.32
ENG11	ENG11	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG12	ENG12	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG13	ENG13	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG14A	ENG14A	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG14B	ENG14B	V	No	6.00	900	20.88	18.37	~12%	276	0.31
ENG15	ENG15	V	No	6.00	900	20.88	18.37	~12%	276	0.31

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		n-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		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
Entire Facility	Entire Facility	1.1	4.3	0.9	3.7														
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
1B	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.059 MMSCF *	615 MMSCF *	N/A	
3B	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.059 MMSCF *	615 MMSCF *	N/A	
5B	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.093 MMSCF *	761 MMSCF *	N/A	
EP-1D	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.028 MMSCF *	50 MMSCF *	N/A	
EP-10	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.019 MMSCF/hr	166 MMSCF	N/A	
EP-12	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.012 MMSCF	57.5 MMSCF	N/A	
7B	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.0849 MMSCF *	Combined 1,234 MMSCF *	N/A	
8B	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.0849MMSCF *		N/A	
EP-09	Natural Gas (Sweet)	Purchased commercial	1050 Btu/ft3	0.019 MMSCF/hr	166 MMSCF	N/A	
GEN-1	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	10 gallons/hour	4,925 gallons/year	N/A	
GEN-2	Diesel	Purchased commercial	141 MMBTU/1,000 Gallons	35 gallons/hour	0 gallons/year	N/A	
FWP	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	10 gallons/hour	5,000 gallons/year	N/A	
ENG1	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	3.25 gallons/hr	8125 gallons/year	N/A	N/A
GEN3	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	2.48 gallons/hr	6200 gallons/year	N/A	N/A
ENG2	Gasoline	Purchased commercial	115 MMBTU/1,000 Gallons	0.79 gallons/hr	1978 gallons/year	N/A	N/A
ENG3	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	1.25 gallons/hr	3125 gallons/year	N/A	N/A
ENG4	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	4.95 gallons/hr	12375 gallons/year	N/A	N/A
ENG5	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG6	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A

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
ENG7	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG8	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	41.25 gallons/hr	103125 gallons/year	N/A	N/A
ENG9	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	4.95 gallons/hr	12375 gallons/year	N/A	N/A
ENG10	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	10.5 gallons/hr	26250 gallons/year	N/A	N/A
ENG11	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG12	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG13	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG14A	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG14B	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
ENG15	Diesel	Purchased commercial	140 MMBTU/1,000 Gallons	9.95 gallons/hr	24875 gallons/year	N/A	N/A
				Fuel used based on an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr	ENG Annual use based on 3100 hours/yr		
	* These values are stated as maximums. ** No more than 1 grains of sulfur / 100 scf. These are typical of sweet pipeline quality nat. gas. Intrepid will restrict annual natural gas combustion in the new boilers to no greater than 1234 million cubic feet on a						
	***Annual fuel consumption for the backup emergency generator and fire water pump is based on no more than 500 annual hours						

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)
3A	2.325E+09	Armeen HT97	Formerly Tallowalkylamine (now empty)	6.65	ND	145	0.004	150	0.002
35	2.325E+09	Chemtreat CT-931A	Oleic Acid Sulfonate	9.42	ND	Ambient	ND	Ambient	ND
36	2.325E+09	Chemtreat CT-931B	Oleic Acid Sulfonate	9.42	ND	Ambient	ND	Ambient	ND
33	2.325E+09	Chemtreat CT-932A	Dispersant	9.35	ND	Ambient	17	Ambient	N/A
34	2.325E+09	Chemtreat CT-932B	Dispersant	9.35	ND	Ambient	17	Ambient	N/A
14	2.325E+09	Gasoline	Mixed Petroleum Hydrocarbons	6.2	66	Ambient	5.68	Ambient	7.22
1	2.325E+09	Diesel	Mixed Petroleum Hydrocarbons	6.8	130	Ambient	0.0108	Ambient	0.0178
4	2.325E+09	Diesel	Mixed Petroleum Hydrocarbons	6.8	130	Ambient	0.0108	Ambient	0.0178
39	2.325E+09	Diesel	Mixed Petroleum Hydrocarbons	6.8	130	Ambient	0.0108	Ambient	0.0178
41	2.325E+09	Diesel	Mixed Petroleum Hydrocarbons	6.8	130	Ambient	0.0108	Ambient	0.0178
46	2.325E+09	Diesel	Mixed Petroleum Hydrocarbons	6.8	130	Ambient	0.0108	Ambient	0.0178
28	2.325E+09	Diesel	Mixed Petroleum Hydrocarbons	6.8	130	Ambient	0.0108	Ambient	0.0178
2	2.325E+09	Hydraulic Oil	Petroleum Hydrocarbons & Additives	N/A	130	Ambient	0.002	Ambient	0.0021
3	2.325E+09	Gear Oil	Mixed Petroleum & Additives	N/A	130	Ambient	0.002	Ambient	0.0021
43	2.325E+09	Pale Oil	Mixed Petroleum Hydrocarbons	7.6	ND	Ambient	0.002	Ambient	0.0021
7	2.325E+09	Used Oil	Mixed Petroleum & Additives	N/A	130	Ambient	0.002	Ambient	0.0021
45	2.325E+09	Dust Controller (Nalco 82211)	Mixed Petroleum Hydrocarbons	7.3	ND	Ambient	0.002	Ambient	0.0021
37	2.325E+09	Dust Controller (Nalco 82208)	Mixed Petroleum Hydrocarbons	7.3	ND	Ambient	0.002	Ambient	0.0021

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	1970s	Diesel Fuel	N/A	FX	214	34	2.4384	N/A	OT	OT	Poor	110,485	12.28
2	1970s	Hydraulic Oil	N/A	FX	214	34	2.4384	N/A	OT	OT	Poor	145,495	16.17
3	1970s	Gear Oil	N/A	FX	214	34	2.4384	N/A	WH	WH	Poor	7,712	0.86
4	1980s	Diesel Fuel	N/A	FX	14	2	1	N/A	OT	OT	Good	7,200	12.00
5	1980s	Hydraulic Oil	N/A	FX	14	2	1	N/A	OT	OT	Good	7,200	12.00
6	1980s	Gear Oil	N/A	FX	14	2	1	N/A	OT	OT	Good	600	1.00
7	1980s	Used Oil Tank	N/A	FX	12	2	1	N/A	OT	OT	Good	6,179	10.30
14	1989	Gasoline	N/A	FX	48	8	1.8288	N/A	WH	WH	Poor	24,076	12.04
32	1998	Chemtreat BL-197	N/A	FX	12	2	1.9812	N/A	WH	WH	Good	110	1.00
33	1998	Chemtreat CT-932A	N/A	FX	145	23	2.4384	N/A	WH	WH	Good	13,302	2.22
34	1998	Chemtreat CT-932B	N/A	FX	95	15	2.4384	N/A	WH	WH	Good	13,302	3.33
35	1998	Chemtreat CT-931A	N/A	FX	145	23	2.4384	N/A	WH	WH	Good	11,105	1.85
36	1998	Chemtreat CT-931B	N/A	FX	95	15	2.4384	N/A	WH	WH	Good	11,105	2.78
45	2008	Dust Controller (Nalco 82211)	N/A	FX	310	49	4	N/A	OT	OT	Good	28,092	2.16
39	2008	Diesel Fuel	N/A	FX	6	1	1	N/A	OT	OT	Good	3,000	12.00
41	2008	Diesel Fuel	N/A	FX	6	1	1	N/A	OT	OT	Good	3,000	12.00
43	1989	Former Pale Oil	N/A	FX	238	38	34	N/A	OT	OT	Poor	0	0.00
37	2008	Dedust Oil (Nalco 82208)	N/A	FX	357	57	3	N/A	OT	OT	Poor	371,960	24.80
46	2008	Diesel Fuel	N/A	FX	13	2	1.2192	N/A	WH	WH	Good	6,300	12.00
28	unknown	Diesel Fuel	N/A	FX	7	1	1	N/A	WH	WH	Good	3,600	12.00

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: $1.00 \text{ bbl} = 0.159 \text{ M}^3 = 42.0 \text{ gal}$

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)
Langbeinite	2MgSO ₄ , K ₂ SO ₄	Solid	25.64 TPH	Pelletized Langbeinite	2MgSO ₄ , K ₂ SO ₄	Solid	75 TPH
Potash Ore	Typical Analysis: 20% KCl; 24.8% K ₂ Mg ₂ (SO ₄) ₃ ; 47% NaCl; 7% Clay; 1.2% Water	Solid	450 tons per hour (Max.)	Langbeinite: Standard and Granular	2MgSO ₄ , K ₂ SO ₄	Solid	75 dry TPH (monthly average basis); 657,000 TPY
				Soluble Potash (Sylvite) Standard or Compacted	2MgSO ₄ , K ₂ SO ₄	Solid	80 dry TPH (monthly average basis); 700,800 TPY
				Coarse Salt	2MgSO ₄ , K ₂ SO ₄	Solid	125 dry TPH

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.

[illegible]

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 ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²									Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs ¹	1	265	28	22,800	footnote 3										
1B	mass GHG	32915.09	0.06	0.62	0	0									32,916	N/A
	CO ₂ e	32915.09	16.45	17.38	0	0									N/A	32,949
3B	mass GHG	32915.09	0.06	0.62	0	0									32,916	N/A
	CO ₂ e	32915.09	16.45	17.38	0	0									N/A	32,949
5B	mass GHG	45708.72	0.09	0.86	0	0									45,710	N/A
	CO ₂ e	45708.72	24.49	24.08	0	0									N/A	45,757
7B	mass GHG	37059.50	0.07	0.70	0	0									37,060	N/A
	CO ₂ e	37059.50	18.52	19.57	0	0									N/A	37,098
8B	mass GHG	37059.50	0.07	0.70	0	0									37,060	N/A
	CO ₂ e	37059.50	18.52	19.57	0	0									N/A	37,098
9	mass GHG	10024.69	0.02	0.19	0	0									10,025	N/A
	CO ₂ e	10024.69	5.01	5.29	0	0									N/A	10,035
10	mass GHG	10024.69	0.02	0.19	0	0									10,025	N/A
	CO ₂ e	10024.69	5.01	5.29	0	0									N/A	10,035
12	mass GHG	6315.55	0.01	0.12	0	0									6,316	N/A
	CO ₂ e	6315.55	3.16	3.34	0	0									N/A	6,322
1D	mass GHG	15034.03	0.03	0.28	0	0									15,034	N/A
	CO ₂ e	15034.03	7.51	7.94	0	0									N/A	15,049
ENG1	mass GHG	115.86	0.00	0.00	0	0									116	N/A
	CO ₂ e	115.86	0.25	0.13	0	0									N/A	116
GEN3	mass GHG	42.78	0.00	0.00	0	0									43	N/A
	CO ₂ e	42.78	0.09	0.05	0	0									N/A	43
ENG2	mass GHG	21.76	0.00	0.00	0	0									22	N/A
	CO ₂ e	21.76	0.05	0.03	0	0									N/A	22
ENG3	mass GHG	45.45	0.00	0.00	0	0									45	N/A
	CO ₂ e	45.45	0.09	0.05	0	0									N/A	46
ENG4	mass GHG	176.47	0.00	0.01	0	0									176	N/A
	CO ₂ e	176.47	0.38	0.20	0	0									N/A	177
ENG5	mass GHG	354.72	0.00	0.01	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG6	mass GHG	354.72	0.00	0.01	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG7	mass GHG	354.72	0.00	0.01	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG8	mass GHG	1470.56	0.01	0.06	0	0									1471	N/A
	CO ₂ e	1470.56	3.13	1.65	0	0									N/A	1475

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 ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²									Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
ENG9	mass GHG	176.47	0.00	0.01	0	0									176	N/A
	CO ₂ e	176.47	0.38	0.20	0	0									N/A	177
ENG10	mass GHG	374.33	0.00	0.02	0	0									374	N/A
	CO ₂ e	374.33	0.80	0.42	0	0									N/A	376
ENG11	mass GHG	354.72	0.00	0.01	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG12	mass GHG	354.72	0.00	0.01	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG13	mass GHG	354.72	0.00	0.01	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG14 A	mass GHG	354.72	0.0029	0.0143	0	0									355	N/A
	CO ₂ e	354.72	0.05	0.25	0	0									N/A	355
ENG14 B	mass GHG	354.72	0.0029	0.0143	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
ENG15	mass GHG	354.72	0.0029	0.0143	0	0									355	N/A
	CO ₂ e	354.72	0.76	0.40	0	0									N/A	356
Total	mass GHG	232,673	0.4796	4.5060	0	0									232678	N/A
	CO ₂ e	232,673	126.38	126.02	0	0									N/A	232,925

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 **CO₂e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Intrepid Potash East Plant

Portable Non-road Engines

AP-42 Table 3.3-1. Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines															EPA-420-B-16-022																				Facility Nonroad Engine Total												Project Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	Gasoline Fuel (SCC 2-02-001-01, 2-03-003, EMISSI ON FACTO R RATING				D	Diesel Fuel (SCC 2-02-001-02, 2-03-001-01) Max Tier 2 Engine (g/kw-hr) Max Tier 3 Engine (g/kw-hr) Max Tier 2 Engine 130kw/450 (g/kw-hr) Emission Standard 56 ± kw <75 (g/kw-hr)										Emissions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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* For NOx+NMHC standards, NOx assumed 95% and VOC 5%
Emissions based on AP-42 factor for gasoline
Emissions based on AP-42 factor for diesel (ENG CO₂e emissions are shown with GWP of 28 for CH₄ and 265 for N₂O included in calc)
Emissions based on Tiered Compression Engine 56 ± kw <75
Emissions based on maximum Tier 2 emission rates
Emissions based on maximum emission standard for a Tiered Compression Engine greater than or equal to 75 kw

Annual operation limited to 3,100 hrs per pump engine; not to exceed the HP-Hrs shown above
Annual operation limited to 750 hrs per engine for ENG1 through ENG3 & GEN3

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.

Intrepid Potash – New Mexico, LLC (“Intrepid”) is submitting this application per 20.2.72.200.A.(2) to include portable non-road engines in the facility permit. As an inherent part of the mining process, tailings are produced and are pumped as a slurry to the tailings pile. Water draining from the tailings pile is managed in a pond which on occasion has seeps through the levees. Rental pump engines are to be used to manage water that seeps through the tailings pond dams as needed. Intrepid is proposing to expand the restricted boundary along the western and southern side of the tailings ponds. One additional 199 hp engine (ENG15) is being proposed at a fixed location and two 199 hp engines (ENG14A & ENG14B) are proposed as “floating” locations to address needs as they arise. The new proposed engines and existing ENG4 through ENG13 will be rental diesel pump engines and will be required by contract to meet the tier 3 exhaust standards of 40 CFR 89.112.

The “floating” location engines (ENG14A & ENG14B) will be located at a minimum distance from the restricted area boundary of 50 meters, and only one engine will be located within 100 meters of ENG4 or within 100 meters of ENG5. These restrictions are illustrated by the shaded regions in the plot plan presented in Section 5 of the application.

Intrepid is also proposing to limit the annual engine use on a hp-hr/yr basis rather than hr/yr basis for the engines. Modeling has been based on continuous operation at the maximum hourly rate. The hp-hr/yr limit is used to ensure that the collective emissions from portable engines remain below the PSD significant emission rate, particularly the NOx emissions. Because the engines are rental, the engine hp may be lower than the maximum hp that is permitted. Tracking the engine use on a hp-hr basis will allow facility flexibility on the annual operation of engines while remaining below the PSD significant emission rates. The proposed restrictions in this request are summarized as follows:

- ENG14A & ENG14B will operate no closer than 50 meters from the restricted boundary. Only one of the two engines will operate within 100 meters of ENG4 or within 100 meters of ENG5.
- ENG4 through ENG15 will be Tier 3 engines or higher.
- The annual operation of ENG4 through ENG15 will not exceed 9,374,400 hp-hr.
- The annual operation of ENG1 will not exceed 97,500 hp-hr.
- The annual operation of GEN3 will not exceed 74,397 hp-hr.
- The annual operation of ENG2 will not exceed 19,500 hp-hr.
- The annual operation of ENG3 will not exceed 38,250 hp-hr.

Section 4

Process Flow Sheet

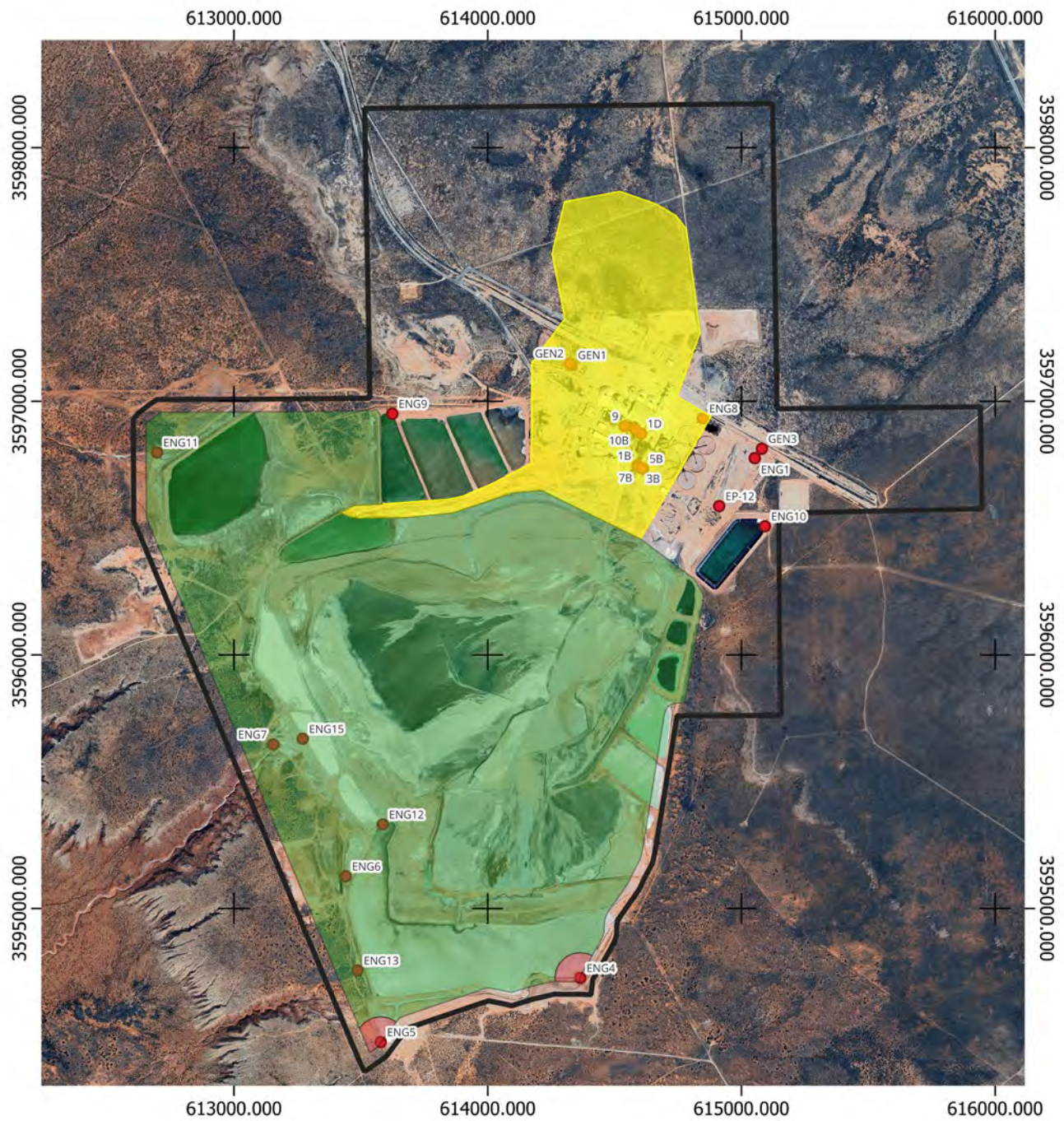
A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

The equipment to be permitted are portable non-road engines, a process flow is not applicable.

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.



Restricted Boundary

Eng14A or 14B Flexibility Area

Eng14A and/or 14B Operational Flexibility

Engine 8 Operational Flexibility

Emission Sources



0 250 500 m



WGS84 UTM Zone 13

Plot Plan
Intrepid Potash - New Mexico
East Plant

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.

Intrepid Potash East Plant

Portable Non-road Engines

Area:	Mobile Salt Screen Eng (Cat CA.II.ACCERT)	Gen 3	Air Compressor at Salt Area	Light Plant at Salt Area	Gas Pump Pond - Diesel Water Pump Eng	WIPP Pond - Diesel Water Pump Eng	New Pond - Diesel Water Pump Eng	South Seep Pond - Diesel Water Pump Eng	Various Tier 3 engines not to exceed 825 HP, ENG8 engine	C Pond Area Pump - Diesel Water Pump Eng	Fresh Water Pond Backup Pump - Diesel Water Pump Eng	Catch Basin Backup Pump - Diesel Water Pump Eng	South Seal Backup Pump - Diesel Water Pump Eng	SW Seep - Diesel Water Pump Eng	Floator Engine - Diesel Water Pump Eng	Floator Engine - Diesel Water Pump Eng 2	Cavern Sump Engines - Diesel Water Pump Eng
Capacity (HP):	65	49.6	13	25.5	99	199	199	199	825	99	210	199	199	199	199	199	199
HP-Hrs:	97,500	74,397	15,500	16,750	306,900	616,900	616,900	616,900	2,557,500	306,900	651,000	616,900	616,900	616,900	616,900	616,900	616,900
Capacity (KW):	48.5	37	9.7	19	74	148	148	148	615.45	74	157	148	148.454	148	148	148	148
Fuel:	Diesel	Diesel	Gas	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Emission Point:	ENG1	GEN3	ENG2	ENG3	ENG4	ENG5	ENG6	ENG7	ENG8	ENG9	ENG10	ENG11	ENG12	ENG13	ENG14A	ENG14B	ENG15

AP-42 Table 3.3-1. Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines										EPA-420-B-16-022																														Facility Nonroad Engine Total		Project Total																																																																																																																																																																																																																																																																																																																																																																											
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				Max Tier 2 (g/kw-hr)	Max Tier 3 (g/kw-hr)	Engine 1300hp/450 (g/kw-hr)	Engine Standard 56 ± kw <75 (g/kw-hr)	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY																																																																																																																																																																																																																																																																																																																																																																														
NO _x *	0.011	1.63	0.031	4.41	D	7.5	4.7	6.6	7.5	2.02	1.51	0.58	0.44	0.14	0.11	0.79	0.59	0.73	1.13	1.46	2.27	1.46	2.27	1.46	2.27	1.46	2.27	1.46	2.27	1.46	2.27	1.46	2.27	1.46	2.27	1.46	2.27	25.74	37.07	4.38	6.80																																																																																																																																																																																																																																																																																																																																																																												
CO	0.007	0.99	0.007	0.95	D	8	5	3.5	5	0.43	0.33	0.65	0.49	0.09	0.07	0.17	0.13	0.81	1.26	1.64	2.54	1.64	2.54	1.64	2.54	1.64	2.54	1.64	2.54	1.64	2.54	1.64	2.54	1.64	2.54	1.64	2.54	26.21	39.55	4.91	7.61																																																																																																																																																																																																																																																																																																																																																																												
SO _x	0.001	0.08	0.002	0.29	D					0.13	0.10	0.10	0.08	0.01	0.01	0.05	0.04	0.20	0.31	0.41	0.63	0.41	0.63	0.41	0.63	0.41	0.63	0.41	0.63	0.41	0.63	0.41	0.63	0.41	0.63	0.41	0.63	6.49	9.83	1.22	1.90																																																																																																																																																																																																																																																																																																																																																																												
PM ₁₀	0.001	0.10	0.002	0.31	D	0.8	0.4	0.2	0.4	0.14	0.11	0.07	0.05	0.01	0.01	0.06	0.04	0.07	0.10	0.13	0.20	0.13	0.20	0.13	0.20	0.13	0.20	0.13	0.20	0.13	0.20	0.13	0.20	0.13	0.20	0.13	0.20	2.26	3.29	0.29	0.51																																																																																																																																																																																																																																																																																																																																																																												
CO ₂	1.080	154.00	1.150	164						74.75	56.06	57.04	42.78	14.04	10.53	29.33	21.99	113.85	176.47	228.85	354.72	228.85	354.72	228.85	354.72	228.85	354.72	228.85	354.72	228.85	354.72	228.85	354.72	228.85	354.72	228.85	354.72	3,652.75	5,521.64	686.55	1,064.15																																																																																																																																																																																																																																																																																																																																																																												
CH ₄		0.0066		0.0066	EPA 2025 GHG factors					0.0030	0.0023	0.0023	0.0017	0.0006	0.0005	0.0012	0.0009	0.0046	0.0071	0.0092	0.0143	0.0092	0.0143	0.0381	0.0591	0.0046	0.0071	0.0097	0.0150	0.0092	0.0143	0.0092	0.0143	0.0092	0.0143	0.0092	0.0143	0.0092	0.0143	0.015	0.22	0.03	0.04																																																																																																																																																																																																																																																																																																																																																																										
N ₂ O		0.0013		0.0013							0.0006	0.0005	0.0005	0.0003	0.0001	0.0001	0.0002	0.0002	0.0009	0.0014	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.0018	0.0029	0.03	0.04	0.01	0.01																																																																																																																																																																																																																																																																																																																																																																									
Total CO ₂ e (short tons)											56.24		42.92		10.57		22.06		177.04		355.87		355.87		355.87		1475.35		177.04		375.54		355.87		355.87		355.87		355.87		355.87	-	5,539.61	-	1,067.62																																																																																																																																																																																																																																																																																																																																																																								
Total CO ₂ e (metric tons)											51.03		38.93		9.59		20.02		160.61		322.85		322.85		322.85		1338.44		160.61		340.69		322.85		322.85		322.85		322.85		322.85	-	5,025.54	-	968.54																																																																																																																																																																																																																																																																																																																																																																								
Aldehydes										0.03	0.02	0.02	0.02	0.01	0.00	0.01	0.01	0.05	0.07	0.09	0.14	0.09	0.14	0.09	0.14	0.38	0.59	0.05	0.07	0.10	0.15	0.09	0.14	0.09	0.14	0.09	0.14	0.09	0.14	0.09	0.14	1.47	2.22	0.28	0.43																																																																																																																																																																																																																																																																																																																																																																								
TOC										0.16	0.12	0.12	0.09	0.28	0.21	0.06	0.05	0.25	0.39	0.50	0.78	0.50	0.78	0.50	0.78	2.07	3.21	0.25	0.39	0.51	0.82	0.50	0.78	0.50	0.78	0.50	0.78	0.50	0.78	0.50	0.78	8.01	12.96	1.50	2.33																																																																																																																																																																																																																																																																																																																																																																								
Exhaust	0.015	2.10	0.002	0.35	D					0.16	0.12	0.12	0.09	0.28	0.21	0.06	0.05	0.24	0.38	0.49	0.76	0.49	0.76	0.49	0.76	2.04	3.16	0.24	0.38	0.52	0.80	0.49	0.76	0.49	0.76	0.49	0.76	0.49	0.76	8.01	11.98	1.47	2.29																																																																																																																																																																																																																																																																																																																																																																										
Evaporative	0.001	0.09	0.000	0.00	E					0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	-	-																																																																																																																																																																																																																																																																																																																																																																										
Crankcase	0.005	0.09	0.000	0.01	E					0.00	0.00	0.00	0.00	0.06	0.05	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.06	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

* For NOx+NMHC standards, NOx assumed 95% and VOC 5%

Emissions based on AP-42 factor for gasoline

Emissions based on AP-42 factor for diesel (ENG CO2e emissions are shown with GWP of 28 for CH4 and 265 for N2O included in calc)

Emissions based on Tiered Compression Engine 56 ± kw <75

Emissions based on maximum Tier 2 emission rates

Emissions based on maximum emission standard for a Tiered Compression Engine greater than or equal to 75 kw

Annual operation limited to

3,100

hrs per pump engine; not to exceed the HP-Hrs shown above

Annual operation limited to

750

hrs per engine for ENG1 through ENG3 & GEN3

Emission Point**EP-1B****Source Name****Boiler #1****Stack ID: 007**

Capacity (Max)	50,000 lb steam/hr	Stack Flow	20,684 ACFM
Estimated Efficiency	83 %	Stack Ht	35 ft
Net Energy Input	1038.4 Btu/lb	Stack Dia	3.625 ft
Calculated Max Capacity	62.55 MMBTU/hr	Stack Temp	390 F
Fuel BTU Value (Max)	1050 BTU/SCF	Velocity	33.4 ft/sec
Fuel Consumptn (Max)	0.059575 MMSCF/hr		
AP-42 Description	Small Industrial Boiler (10-100 MMBTU/hr)		
Control Equipment	None		

Emissions Calculations - Maximum Rate

	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)	Emissions (lb/hr)	Emissions (tons/yr)
NOx	100.0	0.06	7.1	31.3
SO ₂	2.9	0.06	0.2	0.7
CO	84.0	0.06	6.0	26.3
VOC	5.5	0.06	0.4	1.7
PM/PM10/PM2.5	7.6	0.06	0.54	2.4
Lead	0.0005	0.06	0.0000	0.0002
Hazardous Air Pollutants				
Polycyclic Organic Matter (POM)	0.000088	0.06	0.0000	0.0000
Benzene	0.0021	0.06	0.0002	0.0007
Dichlorobenzene	0.0012	0.06	0.0001	0.0004
Formaldehyde	0.075	0.06	0.0054	0.0235
Hexane	1.8	0.06	0.1287	0.5636
Naphthalene	0.00061	0.06	0.0000	0.0002
Toluene	0.0034	0.06	0.0002	0.0011
TOTAL VOC HAP	1.882	0.06	0.13	0.59
Arsenic	0.0002	0.06	0.0000	0.0001
Beryllium	0.000012	0.06	0.0000	0.0000
Cadmium	0.0011	0.06	0.0001	0.0003
Chromium	0.0014	0.06	0.0001	0.0004
Cobalt	0.000084	0.06	0.0000	0.0000
Managnese	0.00038	0.06	0.0000	0.0001
Mercury	0.00026	0.06	0.0000	0.0001
Nickel	0.0021	0.06	0.0002	0.0007
Selenium	0.000024	0.06	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.06	0.0004	0.0017

* Uncontrolled emissions are the same as listed above for all five criteria pollutants.
Emission levels shown above are based on AP-42 EF and include a 20% safety factor,
except for SO₂. SO₂ emissions are based on 2 grains/100 scf in the natural gas used.

Emission Point**EP-3B****Source Name****Boiler #3****Stack ID: 009**

Capacity (Max)	50,000 lb steam/hr	Stack Flow	20,684 ACFM
Estimated Efficiency	83 %	Stack Ht	35 ft
Net Energy Input	1038.4 Btu/lb	Stack Dia	3.625 ft
Calculated Max Capacity	62.55 MMBTU/hr	Stack Terr	390 F
Fuel BTU Value (Max)	1050 BTU/SCF	Velocity	33.4 ft/sec
Fuel Consumptn (Max)	0.059575 MMSCF/hr		
AP-42 Description	Small Industrial Boiler (10-100 MMBTU/hr)		
Control Equipment	None		

Emissions Calculations - Maximum Rate

	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)	Emissions (lb/hr)	Emissions (tons/yr)
NOx	100.0	0.06	7.1	31.3
SO2	2.9	0.06	0.20	0.9
CO	84.0	0.06	6.0	26.3
VOC	5.5	0.06	0.4	1.7
PM/PM10/PM2.5	7.6	0.06	0.5	2.4
Lead	0.0005	0.06	0.0000	0.0002
Hazardous Air Pollutants				
Polycyclic Organic Matter (POM)	0.000088	0.06	0.0000	0.0000
Benzene	0.0021	0.06	0.0002	0.0007
Dichlorobenzene	0.0012	0.06	0.0001	0.0004
Formaldehyde	0.075	0.06	0.0054	0.0235
Hexane	1.8	0.06	0.1287	0.5636
Naphthalene	0.00061	0.06	0.0000	0.0002
Toluene	0.0034	0.06	0.0002	0.0011
TOTAL VOC HAP	1.882	0.06	0.13	0.59
Arsenic	0.0002	0.06	0.0000	0.0001
Beryllium	0.000012	0.06	0.0000	0.0000
Cadmium	0.0011	0.06	0.0001	0.0003
Chromium	0.0014	0.06	0.0001	0.0004
Cobalt	0.000084	0.06	0.0000	0.0000
Manganese	0.00038	0.06	0.0000	0.0001
Mercury	0.00026	0.06	0.0000	0.0001
Nickel	0.0021	0.06	0.0002	0.0007
Selenium	0.000024	0.06	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.06	0.0004	0.0017

* Uncontrolled emissions are the same as listed above for all five criteria pollutants. Emission levels shown above are based on AP-42 EF and include a 20% safety factor, except for SO2. SO2 emissions are based on 2 grains/100 scf in the natural gas used.

Emission Point		EP-5B		
Source Name		Boiler #5		
Stack ID: 011		Potential Emissions at 8,760 hrs/year		
Capacity (Max)	72,000 lb steam/hr			
Estimated Efficiency	83 %			
Net Energy Input	1038.4 Btu/lb			
Calculated Max Capacity	90.80 MMBTU/hr			
Fuel BTU Value	1000 BTU/SCF			
Fuel Consumptn (Max per hr)	0.0908000 MMSCF/hr			
Fuel Consumptn (Max per yr)	761.0 MMSCF/Year			
AP-42 Description	Small Industrial Boiler (10-100 MMBTU/hr)			
Control Equipment	Low-NOx burners			

Pollutant	Emission Factor	Rate	Emissions	Emissions
		(MMSCF/hr)	(lb/hr)	(tons/yr)
NOx	100.00 lb/MMSCF	0.091	9.55	39.00
SO2 (1 gr/100 scf of gas)	1.4286 lb/MMCF	0.091	0.14	0.56
CO	84.00 lb/MMSCF	0.091	7.82	31.96
VOC	5.50 lb/MMSCF	0.091	0.51	2.09
PM/PM10/PM2.5	7.60 lb/MMSCF	0.091	0.76	2.94
Lead	0.0005 lb/MMSCF	0.091	0.00006	0.00024

Hazardous Air Pollutants

Polycyclic Organic Matter (POM)	0.000088	0.091	0.0000	0.0000
Benzene	0.0021	0.091	0.0002	0.0008
Dichlorobenzene	0.0012	0.091	0.0001	0.0005
Formaldehyde	0.075	0.091	0.0075	0.0293
Hexane	1.800	0.091	0.1798	0.7020
Naphthalene	0.00061	0.091	0.0001	0.0002
Toluene	0.0034	0.091	0.0003	0.0013
TOTAL VOC HAP	1.882	0.091	0.1880	0.7342

Arsenic	0.0002	0.091	0.0000	0.0001
Beryllium	0.000012	0.091	0.0000	0.0000
Cadmium	0.0011	0.091	0.0001	0.0004
Chromium	0.0014	0.09	0.0001	0.0005
Cobalt	0.000084	0.09	0.0000	0.0000
Managnese	0.00038	0.09	0.0000	0.0001
Mercury	0.00026	0.09	0.0000	0.0001
Nickel	0.0021	0.09	0.0002	0.0008
Selenium	0.000024	0.09	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.09	0.0006	0.0022

SO2 emissions shown above are based on 1 grain/100 scf in the natural gas used. Emissions for NOx are based on manufaturer's gurantee of the Zurn Low NOx Burners. Emission levels for all other pollutants shown above are based on AP-42 EF from Chapter 1.4.

Emission Point		EP-7B		
Source Name		Boiler #7		
Stack ID: 7B	Potential Emissions at 7,265 hrs/year			
Capacity (Max)		70,000 lb steam/hr		
Estimated Efficiency		83.7 %		
Calculated Max Capacity		84.93 MMBTU/hr		
Fuel BTU Value		1000 BTU/SCF		
Fuel Consumptn (Max)		0.084930 MMSCF/hr		
Annual Fuel Restriction *		617 MMSCF/yr		
AP-42 Description		Small Industrial Boiler (10-100 MMBTU/hr)		
Control Equipment		Free Jet Ultra Low NOx Burners		
Pollutant	Emission Factor	Rate	Emissions	Emissions
		(MMSCF/hr)	(lb/hr)	(tons/yr)
NOx	0.036 lb/MMBTU	0.085	3.36	12.22
SO2 (1 gr/100 scf of gas)	1.4286 lb/MMCF	0.085	0.12	0.44
CO	0.037 lb/MMBTU	0.085	3.46	12.56
VOC	0.004 lb/MMBTU	0.085	0.37	1.36
PM/PM10/PM2.5	7.6 lb/MMSCF	0.085	0.71	2.58
Lead	0.0005 lb/MMSCF	0.085	0.00005	0.00017
Hazardous Air Pollutants (lb/MMSCF)				
Polycyclic Organic Matter (P	0.000088	0.085	0.0000	0.0000
Benzene	0.0021	0.085	0.0002	0.0007
Dichlorobenzene	0.0012	0.085	0.0001	0.0004
Formaldehyde	0.075	0.085	0.0070	0.0255
Hexane	1.800	0.085	0.1682	0.6108
Naphthalene	0.00061	0.085	0.0001	0.0002
Toluene	0.0034	0.085	0.0003	0.0012
TOTAL VOC HAP	1.882	0.085	0.1759	0.6388
Arsenic	0.0002	0.085	0.0000	0.0001
Beryllium	0.000012	0.085	0.0000	0.0000
Cadmium	0.0011	0.085	0.0001	0.0004
Chromium	0.0014	0.085	0.0001	0.0005
Cobalt	0.000084	0.085	0.0000	0.0000
Managnese	0.00038	0.085	0.0000	0.0001
Mercury	0.00026	0.085	0.0000	0.0001
Nickel	0.0021	0.085	0.0002	0.0007
Selenium	0.000024	0.085	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.085	0.0005	0.0019
SO2 emissions shown above are based on 1 grain/100 scf in the natural gas used. Emissions for NOx, CO, & VOC, are based on manufacturer's guarantee of the Zeeco Free Jet Ultra Low NOx Burners. Emission levels for all other pollutants shown above are based on AP-42 EF from Chapter 1.4.				
* Combined GHG uncontrolled, potential emissions for the two (2) proposed boilers (EP-7B & EP-8B) exceed the 75,000 short ton PSD major source threshold; therefore, Intrepid will restrict annual natural gas combustion in the combined like units to no greater than 1,234 million cubic feet on a consecutive, rolling 12-month basis. Intrepid does not seek annual hourly operation restrictions or gas restrictions on each individual unit to 617 MMSCF, rather Intrepid requests a combined annual fuel restriction of no greater than 1,234 MMSCF.				

Emission Point		EP-8B		
Source Name		Proposed Rentech Boiler (Boiler 8B)		
Stack ID: 8B		Potential Emissions at 7,265 hrs/year		
Capacity (Max)		70,000 lb steam/hr		
Estimated Efficiency		83.7 %		
Calculated Max Capacity		84.93 MMBTU/hr		
Fuel BTU Value		1000 BTU/SCF		
Fuel Consumptn (Max)		0.084930 MMSCF/hr		
Annual Fuel Restriction *		617 MMSCF/yr		
AP-42 Description		Small Industrial Boiler (10-100 MMBTU/hr)		
Control Equipment		Free Jet Ultra Low NOx Burners		
Pollutant	Emission Factor	Rate	Emissions	Emissions
		(MMSCF/hr)	(lb/hr)	(tons/yr)
NOx	0.036 lb/MMBTU	0.085	3.36	12.22
SO2 (1 gr/100 scf of gas)	1.4286 lb/MMCF	0.085	0.12	0.44
CO	0.037 lb/MMBTU	0.085	3.46	12.56
VOC	0.004 lb/MMBTU	0.085	0.37	1.36
PM/PM10/PM2.5	7.6 lb/MMSCF	0.085	0.71	2.58
Lead	0.0005 lb/MMSCF	0.085	0.00005	0.00017
Hazardous Air Pollutants (lb/MMSCF)				
Polycyclic Organic Matter (PO)	0.000088	0.085	0.0000	0.0000
Benzene	0.0021	0.085	0.0002	0.0007
Dichlorobenzene	0.0012	0.085	0.0001	0.0004
Formaldehyde	0.075	0.085	0.0070	0.0255
Hexane	1.800	0.085	0.1682	0.6108
Naphthalene	0.00061	0.085	0.0001	0.0002
Toluene	0.0034	0.085	0.0003	0.0012
TOTAL VOC HAP	1.882	0.085	0.1759	0.6388
Arsenic	0.0002	0.085	0.0000	0.0001
Beryllium	0.000012	0.085	0.0000	0.0000
Cadmium	0.0011	0.085	0.0001	0.0004
Chromium	0.0014	0.085	0.0001	0.0005
Cobalt	0.000084	0.085	0.0000	0.0000
Managnese	0.00038	0.085	0.0000	0.0001
Mercury	0.00026	0.085	0.0000	0.0001
Nickel	0.0021	0.085	0.0002	0.0007
Selenium	0.000024	0.085	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.085	0.0005	0.0019
SO2 emissions shown above are based on 1 grain/100 scf in the natural gas used. Emissions for NOx, CO, & VOC, are based on manufacturer's guarantee of the Zeeco Free Jet Ultra Low NOx Burners. Emission levels for all other pollutants shown above are based on AP-42 EF from Chapter 1.4.				
* Combined GHG uncontrolled, potential emissions for the two (2) proposed boilers (EP-7B & EP-8B) exceed the 75,000 short ton PSD major source threshold; therefore, Intrepid will restrict annual natural gas combustion in the combined like-units to no greater than 1,234 million cubic feet on a consecutive, rolling 12-month basis. Intrepid does not seek annual hourly operation restrictions or gas restrictions on each individual unit to 617 MMSCF, rather Intrepid requests a combined annual fuel restriction of no greater than 1,234 MMSCF.				

Emission Point
Source Name
Stack ID: 001

EP-01
Standard Dryer

Capacity (Max) - Standard 30 MMBTU/hr
 Fuel BTU Value 1020 BTU/SCF
 Standard Fuel Consumption 0.0294 MMSCF/hr

Dryer Flow Rate 23,467 ACFM
 Stack Ht 96 ft
 Stack Dia 3 ft
 Stack Temp 144 F
 Velocity 55.3 ft/sec
 Moisture 24.3 %

PM Test Data-Standard only: 24.1 lb/hr
 NMAC 20.19.109.B.109 Limit: 90 lb/hr
 Federally Enforceable Limit: 50 lb/hr

To satisfy ambient air modeling for PM, the limit had to be lowered to 50 lb/hr in lieu of the allowable rate of 90 lb/hr.

Control Equipment Cyclone/Venturi (Hydronics)
 99% efficiency for PM
 ~ 90% efficiency PM10,PM2.5

Controlled Emissions Calculations

Pollutant	AP-42 Factor (uncontrolled)	Units of EF	Test Data (lb/hr)	Rate (MMSCF/hr)	Limit (gr/DSCF)	755-M5 Federally Enf. Limit (lb/hr)	Calculated Emissions (lb/hr)	Calculated Emissions (tons/yr)	Condensable PM		Total PM, PM10, PM2.5	
									lb/hr	tpy	lb/hr	tpy
PM	---		24.1	---	---	50.0	50.00	219.00	Included		50.00	219.00
PM10	1.34	kg/Mg	---	---	---	---	25.73	112.71	3.97	17.51	29.70	130.22
PM2.5	0.31	kg/Mg	---	---	---	---	5.95	26.07	4.05	17.55	10.00	43.62
NOx	---		---	---	---	---	2.51	11.01				
SO ₂	2.86	(lb/MMSCF)	---	---	---	---	0.08	0.37				
CO	---		---	---	---	---	12.04	52.72				
VOC	5.5	(lb/MMSCF)	---	---	---	---	0.16	0.71				
Lead	0.0005	(lb/MMSCF)	---	---	---	---	0.00001	0.00006				

NOx and CO emission rates calculated using stack test data from Intrepid's West Plant - See Page 2

PM10 & PM2.5 proposed allowable are based on AP-42 plus 20% safety factor. Emission Factors from AP-42, App B-1, pg B.1-28.

Lead and VOC emission factors taken from AP-42, Chapter 1.4, Tables 1.4-1 & 1.4-2. SO₂ emissions are based on 1 grain S/100 scf.

Uncontrolled Emissions Calculations

	AP-42 Factor (lb dust/ton product)		Production (tons/hour)	Uncontrolled Emissions (lb/hr)
PM	66.012		80	5280.96
PM10	2.687		80	214.93
PM2.5	0.627		80	50.17

* Uncontrolled NOx, SO₂, CO and VOC emissions are the same as calculated above.

** Uncontrolled PM emissions calculated using AP-42 factor for potash dryers (33 kg/Mg of total particulate Emission Factor)
 (AP-42, Appendix B-1, page B.1-29) 33kg/Mg * 2.205 lb/kg * 1 Mg/1.1023 tons = 66.012 lbs/ton

Standard Dryer - Emission Point EP-01

CO and NOx Emission Calculations

*The emissions calculated below are based on actual emissions tests performed on the Intrepid-West Plant rotary dryer.

CO

Standard Rotary Dryer exhaust parameters:

20595 ACFM	680.7 mm Hg
150 deg F	18.25 % moisture
	173 ppm CO (based on stack test)
Concentration = 9.7E-06	lb/ft ³
Emissions = 12.0	lb/hr
52.7	tn/yr

NOx

Standard Rotary Dryer exhaust parameters:

20595 ACFM	680.7 mm Hg
150 deg F	18.25 % moisture
	22 ppm NOx (based on stack test)
Concentration = 2.0E-06	lb/ft ³
Emissions = 2.5	lb/hr
11.0	tn/yr

Hazardous Air Pollutants	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)	Emissions (lb/hr)	Emissions (tons/yr)
Polycyclic Organic Matter (POM)	0.000088	0.03	0.0000	0.0000
Benzene	0.0021	0.03	0.0001	0.0003
Dichlorobenzene	0.0012	0.03	0.0000	0.0002
Formaldehyde	0.075	0.03	0.0026	0.0116
Hexane	1.8	0.03	0.0635	0.2783
Naphthalene	0.00061	0.03	0.0000	0.0001
Toluene	0.0034	0.03	0.0001	0.0005
TOTAL VOC HAP	1.882	0.03	0.0664	0.2910
Arsenic	0.0002	0.03	0.0000	0.0000
Beryllium	0.000012	0.03	0.0000	0.0000
Cadmium	0.0011	0.03	0.0000	0.0002
Chromium	0.0014	0.03	0.0000	0.0002
Cobalt	0.000084	0.03	0.0000	0.0000
Managnese	0.00038	0.03	0.0000	0.0001
Mercury	0.00026	0.03	0.0000	0.0000
Nickel	0.0021	0.03	0.0001	0.0003
Selenium	0.000024	0.03	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.03	0.0002	0.0009

- Combustion emissions from dryer are based on AP-42 emission factors from Section 1.4 and have a 20% safety factor added, with the exception of PM.

LOCATION	INTREPID EAST CRYSTALLIZATION PLANT
POINT SOURCE	JOHN DEERE MODEL NO. 6068HF475E 1 ENGINE @ 200 HP
STACK HEIGHT	9.0 FEET
STACK DIAMETER	4 FEET x 2 FEET
USE	EMERGENCY BACKUP ELECTRICAL POWER
COORDINATES	32° 30' 10" N / 103° 46' 42" W
FUEL	DIESEL FUEL
ENGINE RATED CAPACITY	200 HP
PROPOSED MAXIMUM OPERATING SCHEDULE	500 HRS/YR
DIESEL FUEL HEATING VALUE	19300 btu/lb

AIR POLLUTANT	EMISSION FACTOR	POTENTIAL EMISSION RATE	
		LBS/HOUR	TONS/YEAR
TSP	0.0022 lb/hp-hr	0.44	0.11
PM10	0.0022 lb/hp-hr	0.44	0.11
PM2.5	0.0022 lb/hp-hr	0.44	0.11
SULFUR DIOXIDE	0.00205 lb/hp-hr	0.41	0.10
NITROGEN OXIDES	0.031 lb/hp-hr	6.20	1.55
CARBON MONOXIDE	0.00668 lb/hp-hr	1.34	0.33
NON-METHANE VOC	0.00247 lb/hp-hr	0.49	0.12
TOTAL VOC HAP	0.04 lb/1000 gal	0.00	0.00
TOTAL NON-VOC HAP	40.0 LB/ 10 ¹² BTU	0.00	0.00

GREENHOUSE GAS EMISSIONS			
CO2	73.96 KG/MMBTU	81.36	20.34
CH4	0.003 KG/MMBTU	0.003	0.001
N2O	0.0006 KG/MMBTU	0.001	0.000
CO2e	-----	81.64	20.41

Emission factors were taken from AP-42 Section 3.3 for diesel fuel combustion. TSP assumed = PM10 = PM2.5.

GHG emissions are calculated using a Global Warming Potential (GWP) of 1 for CO2, 25 for CH4, and 298 for N2O, as well as a 1.102 metric ton to short ton conversion.

LOCATION	INTREPID EAST CRYSTALLIZATION PLANT
POINT SOURCE	Caterpillar ACERT 1 ENGINE @ 1200 HP
STACK HEIGHT	9.0 FEET
STACK DIAMETER	4 FEET x 2 FEET
USE	EMERGENCY BACKUP ELECTRICAL POWER
COORDINATES	32° 30' 10" N / 103° 46' 42" W
FUEL	DIESEL FUEL
ENGINE RATED CAPACITY	1200 HP
PROPOSED MAXIMUM OPERATING SCHEDULE	500 HRS/YR
DIESEL FUEL HEATING VALUE	19300 btu/lb

7,000 BTU/HP-HR

AIR POLLUTANT	EMISSION FACTOR	POTENTIAL EMISSION RATE	
		LBS/HOUR	TONS/YEAR
TSP	0.0007 lb/hp-hr	0.84	0.21
PM10	0.0007 lb/hp-hr	0.84	0.21
PM2.5	0.0007 lb/hp-hr	0.84	0.21
SULFUR DIOXIDE	0.00001 lb/hp-hr	0.01	0.00
NITROGEN OXIDES	0.024 lb/hp-hr	28.80	7.20
CARBON MONOXIDE	0.00550 lb/hp-hr	6.60	1.65
NON-METHANE VOC	0.00071 lb/hp-hr	0.85	0.21
TOTAL VOC HAP	0.0043 lb/MMBTU	0.04	0.01
TOTAL NON-VOC HAP	N/A	---	---

GREENHOUSE GAS EMISSIONS			
CO2	73.96 KG/MMBTU	81.36	20.34
CH4	0.003 KG/MMBTU	0.003	0.001
N2O	0.0006 KG/MMBTU	0.001	0.000
CO2e	-----	81.64	20.41

Emission factors were taken from AP-42 Section 3.4 for diesel fuel combustion. TSP assumed = PM10 = PM2.5.

GHG emissions are calculated using a Global Warming Potential (GWP) of 1 for CO2, 25 for CH4, and 298 for N2O, as well as a 1.102 metric ton to short ton conversion.

Emission Point **Not Assigned**
Source Name **Emergency Fire Water Pump**

LOCATION	INTREPID EAST CRYSTALLIZATION PLANT
POINT SOURCE	JOHN DEERE MODEL NO. JUGH-VEADNO 1 ENGINE @ 197 HP
STACK HEIGHT	5.0 FEET
STACK DIAMETER	0.5 FEET
USE	EMERGENCY FIRE WATER PUMP
FUEL	DIESEL
COORDINATES	32° 33' 28" N / 103° 44' 15" W
ENGINE RATED CAPACITY	197 HP
PROPOSED MAXIMUM OPERATING SCHEDULE	500 HRS/YR
DIESEL FUEL HEATING VALUE	19300 btu/lb

AIR POLLUTANT	EMISSION FACTOR	POTENTIAL EMISSION RATE	
		LBS/HOUR	TONS/YEAR
TSP	0.0022 lb/hp-hr	0.43	0.11
PM10	0.0022 lb/hp-hr	0.43	0.11
PM2.5	0.0022 lb/hp-hr	0.43	0.11
SULFUR DIOXIDE	0.00205 lb/hp-hr	0.40	0.10
NITROGEN OXIDES	0.031 lb/hp-hr	6.11	1.53
CARBON MONOXIDE	0.00668 lb/hp-hr	1.32	0.33
NON-METHANE VOC	0.00247 lb/hp-hr	0.49	0.12
TOTAL VOC HAP	0.04 lb/1000 gal	0.00	0.00
TOTAL NON-VOC HAP	40.0 LB/ 10 ⁶ BTU	0.00	0.00

GREENHOUSE GAS EMISSIONS			
CO2	73.96 KG/MMBTU	81.36	20.34
CH4	0.003 KG/MMBTU	0.003	0.001
N2O	0.0006 KG/MMBTU	0.001	0.000
CO2e	-----	81.64	20.41

The unit is exempt from NMED permitting requirements per 20.2.72.202.A(4) NMAC; emissions from the engine are not required to be included in the calculation of facility-wide potential emissions.

Emission factors were taken from AP-42 Section 3.3 for diesel fuel combustion. TSP assumed = PM10 = PM2.5.

GHG emissions are calculated using a Global Warming Potential (GWP) of 1 for CO2, 25 for CH4, and 298 for N2O, as well as a 1.102 metric ton to short ton conversion.

Emission Point**Source Name****Stack ID: 005****EP-05****Loadout Screens**

NMAC 20.19.109.D Limit:
 Federally Enforceable Limit:
 Control Equipment:

22.16 lb/hr
 2.5 lb/hr
 Ducon Wet Venturi Scrubber

Gas Flow 26,000 ACFM
 Stack Ht 70 ft
 Stack Dia 2.5 ft
 Stack Temp 70 F
 Velocity 88.3 ft/sec
 Moisture 1.22 %
 Exit Gas 22,000 dscfm

**Controlled
Emissions Calculations**

	AP-42 Factor (lb/MMBTU)	Test Data * (lb/hr)	Rate (MMBTU/hr)	Limit (gr/DSCF)	Emissions at given Flowrate (lb/hr) **	755-M5 Fed. Enf. Emissions (lb/hr)	755-M5 Fed. Enf. Emissions (tons/yr)
PM	---	1.2	---	---	22.16	2.5	10.95
PM10	---	1.2	---	---	---	1.4	6.31
PM2.5	---	---	---	---	---	1.4	6.31
NOx	---	---	---	---	---	0.0	0.0
SO ₂	---	---	---	---	---	0.0	0.0
CO	---	---	---	---	---	0.0	0.0
VOC	---	---	---	---	---	0.0	0.0

* Test by Kramer & Assoc. 10/2010

** Emissions using dscfm and 109.D equation.

PM10 proposed allowable is based on stack test result plus 20% safety factor. PM2.5 is assumed to equal PM10.

Uncontrolled Emissions Calculations

	Assumed Scrubber Efficiency (%)	Uncontrolled Emissions (lb/hr)
PM	98	125

Note 1. NOx, SO₂, CO and VOC are not generated or emitted by this source.

Note 2. Uncontrolled PM emissions were calculated using the maximum allowable emission rate
 and an assumed scrubber efficiency of 98%

Emission Point
Source Name
Stack ID: 013

EP-07
Crusher Scrubber

NMAC 20.2.19.109.D Limit
 Federally Enforceable Permit Limit:
 Control Equipment

6.64 lb/hr
 1 lb/hr
 Wet Venturi

Gas Flow 3,840 ACFM
 Gas Flow 3,152 DSCFM
 Stack Ht 46 ft
 Stack Dia 2.5 ft
 Stack Temp 80 F
 Velocity 13.0 ft/sec

Controlled Emissions Calculations

	AP-42 Factor (lb/MMBTU)	Test Data (lb/hr)	Rate (MMBTU/hr)	Limit (gr/DSCF)	Emissions at given Flowrate (lb/hr)	755-M5 Fed. Enf. Emissions (lb/hr)	755-M5 Allowable Emissions (tons/yr)
PM	---	---	---	---	6.64	1.00	5.00
PM10	---	---	---	---	---	1.00	5.00
PM2.5	---	---	---	---	---	1.00	5.00
NOx	---	---	---	---	---	0	0.0
SO2	---	---	---	---	---	0	0.0
CO	---	---	---	---	---	0	0.0
VOC	---	---	---	---	---	0	0.0

The regulatory allowable emission rate of 6.64 pounds PM per hour was derived from the equation:
 $E = 0.045q^{0.62}$, where E = emissions in lb/hr and q = stack flow in DSCFM. This equation is taken from 20 NMAC 2.19.109.D. A flow of 3,152 DSCFM was assumed to yield 6.64 lb/hr.

PM10 and PM2.5 proposed allowable are assumed to equal Total Particulate Matter emissions.

Uncontrolled Emissions Calculations

	AP-42 Factor (lb dust/ton product)	Production (tons/hour)	Uncontrolled Emissions (lb/hr)
PM	1.2	450	540.00

* NOx, SO₂, CO and VOC are not generated or emitted by this source.

** Uncontrolled PM emissions calculated using AP-42 factor for mineral crushing operations
 (AP-42, Table 8.23-1(8/82))

Estimated Controlled
 Emissions:

Actual emissions are based on an estimated efficiency of the custom spray chamber scrubber of: 99.77%
 Average tons/year of raw ore processed of: 3,000,500
 At avg tons/hr of process and the above AP-42 EF for PM, the actual PM emissions are estimated to be:

Avg. tons/hr	EF (lb/ton)	Control Eff.	lb/hr	Tons/yr
370.4	1.2	99.77%	1.02	4.14

Round to 1.00 lb/hr and 5.00 tpy

Emission Point:

EP-08

Source Name:

The #1 & #2 Sylvite Compactors

Stack ID: 014

PM/PM10/PM2.5 Emissions from the Sylvite Compactors No. 1 and 2

Emission Point	Source Name	NM Standard	Design	dscfm	Total Particulate Matter		PM10		PM2.5	
					lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
		gr/dscf	gr/dscf							
EP-08	Sylvite Compactors Scrubber	0.04	0.04	23,917	7.40	32.41	0.30	1.32	0.07	0.31

Total Particulate Emissions are based on design grain/dscf loading.

PM10 and PM2.5 proposed allowable are calculated from AP-42 emission factors App B-1, pages B.1-28 thru B.1-30.

Emission Point - EP-09
Source Name: Pellet Drying Process
Stack: 15

Fuel Burning Emissions from Dryer Burner on EP-09

Capacity (Max) - Standard 20 MMBTU/hr
 Fuel BTU Value 1020 BTU/SCF
 Standard Fuel Consumption 0.0196 MMSCF/hr

Pollutant	Natural Gas Burner		Multiplier 20% SF	Uncontrolled Emissions	
	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)		lb/hr	TPY
PM	7.6	0.0196	--	N/A	N/A
NOx	150	0.0196	--	2.94	12.88
SO ₂	2.86	0.0196	--	0.06	0.25
CO	402	0.0196	---	7.882353	34.5
VOC	5.5	0.0196	1.2	0.13	0.57
Lead	0.0005	0.0196	1.2	0.00001	0.00005

included below
 Manuf. Guarantee
 Based on 1 gr S/100 scf of gas used
 Manuf. Guarantee
 AP-42
 AP-42

PM/PM₁₀/PM_{2.5} Emissions from Pellet Drying Process - Scrubber

Emission Unit No.	Pollutant	Description	NM Standard	Design gr/dscf	Stack Flow dscfm	Controlled Emissions PM/PM ₁₀ /PM _{2.5}	
			gr/dscf			lb/hr	TPY
EP-09	TSP	MODIFIED LANGBEINITE	0.10	0.01	13,750	1.18	5.16
	PM10	86%				1.01	4.44
	PM2.5	86%	Assumed equal to PM10			1.01	4.44

0.01 gr/dscf is proposed by Ducon as the design scrubber emission rate.

The PM10 and PM2.5 emissions are based on EPA's AP-42 emission document Appendix B-1 plus 50% conservative.

PM10 = 43% particle size *2 = 86%

PM/PM10/PM2.5 Uncontrolled Emissions From Lang Dryer Stack

	AP-42 Factor (lb dust/ton product)	Production (tons/hour)	Uncontrolled Emissions (lb/hr)
PM	66.012	75	4950.90
PM10	28.385	75	2128.89
PM2.5	11.882	75	891.16

* Uncontrolled PM emissions using AP-42 factor for potassium sulfate dryers
 (AP-42, App B-1, page B.1-30)

EP-09 Lang Pellet Drying Total Emissions (Process plus Burner)			Condensable PM		Total PM, PM10, PM2.5	
	lb/hr	tpy				
			lb/hr	tpy	lb/hr	tpy
Total PM	1.18	5.16	1.70	7.47	2.88	12.63
PM10	1.01	4.44	1.87	8.19	2.88	12.63
PM2.5	1.01	4.44	1.87	8.19	2.88	12.63
NOx	2.94	12.88				
SO ₂	0.06	0.25				
CO	7.88	34.52				
VOC	0.13	0.57				
Lead	0.00001	0.00005				

Emission Point EP-09 (continued)
Langbeinite Pellet Drying Process

Stack ID: 15

Fuel Burning Emissions from Dryer Burner on EP-09

Capacity (Max) - Standard 20 MMBTU/hr
 Fuel BTU Value 1020 BTU/SCF
 Standard Fuel Consumption 0.020 MMSCF/hr

<u>Hazardous Air Pollutants</u>	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)	Emissions (lb/hr)	Emissions (tons/yr)
Polycyclic Organic Matter (POM)	0.000088	0.020	0.0000	0.0000
Benzene	0.0021	0.020	0.0000	0.0002
Dichlorobenzene	0.0012	0.020	0.0000	0.0001
Formaldehyde	0.075	0.020	0.0018	0.0077
Hexane	1.8	0.020	0.0424	0.1855
Naphthalene	0.00061	0.020	0.0000	0.0001
Toluene	0.0034	0.020	0.0001	0.0004
TOTAL VOC HAP	1.882	0.020	0.0443	0.1940
 Arsenic	 0.0002	 0.020	 0.0000	 0.0000
Beryllium	0.000012	0.020	0.0000	0.0000
Cadmium	0.0011	0.020	0.0000	0.0001
Chromium	0.0014	0.020	0.0000	0.0001
Cobalt	0.000084	0.020	0.0000	0.0000
Managnese	0.00038	0.020	0.0000	0.0000
Mercury	0.00026	0.020	0.0000	0.0000
Nickel	0.0021	0.020	0.0000	0.0002
Selenium	0.000024	0.020	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.020	0.0001	0.0006

1. Combustion emissions from dryer are based on AP-42 emission factors from Section 1.4, Natural Gas Combustion.

Emission Point **EP-10**
Source Name **Langbeinite Drying Process**
Stack ID: **010**

Max. net heat requirement 15.2 MMBTU/hr at 75 stph capacity,
nominal heat requirement 10 MMBTU/hr at 55 stph capacity.

Fuel Burning Emissions from Dryer Burner on EP-10B

Capacity (Max) - Standard 20 MMBTU/hr
Fuel BTU Value 1020 BTU/SCF
Standard Fuel Consumption 0.0196 MMSCF/hr

Dryer Flow Rate 20,100 ACFM
Stack Ht 114.6 ft
Stack Dia 2.67 ft
Stack Temp 96 F
Velocity 60.0 ft/sec
Moisture 16.6 %

Pollutant	Natural Gas Burner		Uncontrolled Fuel Burning Emissions	
	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)	lb/hr	TPY
PM/PM10/PM2.5	7.6	0.0196	0.15	0.65
NOx	100	0.0196	2.35	10.31
SO ₂	2.9	0.0196	0.06	0.25
CO	84	0.0196	1.98	8.66
VOC	5.5	0.0196	0.13	0.57
Lead	0.0005	0.0196	0.00001	0.00005

AP-42
AP-42 plus 20%
Based on 1 gr S/100 scf of gas used
AP-42 plus 20%
AP-42 plus 20%
AP-42 plus 20%

15,919.20 dscfm

Process Emissions from Fluidized Bed Dryer Stack EP-10D

Emission Unit No.	Pollutant	Particle Size Distribution	NM Standard	Design Exit Emissions	Stack Flow	Controlled Emissions	
			gr/dscf	gr/dscf	dscfm	lb/hr	TPY
EP-10D	Total PM	100%	0.10	0.01	15,919	1.36	5.98
	PM10	43%				0.59	2.57
	PM2.5	43%	Assumed equal to PM10			0.59	2.57

EP-10 Lang Fluidized Bed Dryer Total Emissions (Process plus Burner)		Condensable PM		Total PM, PM10, PM2.5	
lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Total PM	1.51 6.63	4.51	19.87	6.02	26.50
PM10	0.74 3.22	5.28	23.28	6.02	26.50
PM2.5	0.74 3.22	5.28	23.28	6.02	26.50
NOx	2.35 10.31				
SO ₂	0.06 0.25				
CO	1.98 8.66				
VOC	0.13 0.57				
Lead	0.00001 0.00005				

PM/PM10/PM2.5 Uncontrolled Emissions From Fluidized Bed Dryer Stack

	AP-42 Factor (lb dust/ton product)	Production (tons/hour)	Uncontrolled Emissions (lb/hr)
PM	66.012	75	4950.90
PM10	28.385	75	2128.89
PM2.5	11.882	75	891.16
* Uncontrolled PM emissions using AP-42 factor for potassium sulfate dryers (AP-42, App B-1, page B.1-30)			

FBD Product Conveyor & Fugitive Emission Sources
10Conv

Fugitive F-38 and F-39

		Uncontrolled Emission Factor				Transfer Points	Uncontrolled Emissions					
		Capacity	PM	PM10	PM2.5		PM	PM10	PM2.5	PM	PM10	PM2.5
		Tons/hr	lb/ton	lb/ton	lb/ton		lb/hr	lb/hr	lb/hr	TPY	TPY	TPY
10Conv (Controlled Conveyor E9CV425)	CONVEYOR - FBD DISCHARGE	75	0.003	0.0011	0.000317	1	0.225	0.0825	0.0237805	0.9855	0.3614	0.1042
F-38 (E11BN316)	HOPPER - MAGNETITE	0.1	0.003	0.0011	0.000317	1	0.0003	0.00011	3.171E-05	0.0013	0.0005	0.0001
F-39 (E11CV317)	CONVEYOR - MAGNETITE	0.1	0.003	0.0011	0.000317	1	0.0003	0.00011	3.171E-05	0.0013	0.0005	0.0001

Since EP-10Conv is controlled by being routed to the scrubber serving the Fluid Bed Dryer, the emissions from EP-10Conv are only shown above for informational purposes only.

Emission Point EP-10 (continued)
Langbeinite Drying Process

Stack ID: 010

Fuel Burning Emissions from Dryer Burner on EP-10B

Capacity (Max) - Standard 20 MMBTU/hr
 Fuel BTU Value 1020 BTU/SCF
 Standard Fuel Consumption 0.020 MMSCF/hr

<u>Hazardous Air Pollutants</u>	AP-42 Factor (lb/MMSCF)	Rate (MMSCF/hr)	Emissions (lb/hr)	Emissions (tons/yr)
Polycyclic Organic Matter (POM)	0.000088	0.02	0.0000	0.0000
Benzene	0.0021	0.02	0.0000	0.0002
Dichlorobenzene	0.0012	0.02	0.0000	0.0001
Formaldehyde	0.075	0.02	0.0018	0.0077
Hexane	1.8	0.02	0.0424	0.1855
Naphthalene	0.00061	0.02	0.0000	0.0001
Toluene	0.0034	0.02	0.0001	0.0004
TOTAL VOC HAP	1.882	0.02	0.0443	0.1940
Arsenic	0.0002	0.02	0.0000	0.0000
Beryllium	0.000012	0.02	0.0000	0.0000
Cadmium	0.0011	0.02	0.0000	0.0001
Chromium	0.0014	0.02	0.0000	0.0001
Cobalt	0.000084	0.02	0.0000	0.0000
Manganese	0.00038	0.02	0.0000	0.0000
Mercury	0.00026	0.02	0.0000	0.0000
Nickel	0.0021	0.02	0.0000	0.0002
Selenium	0.000024	0.02	0.0000	0.0000
TOTAL NON-VOC HAP	0.006	0.02	0.0001	0.0006

1. Combustion emissions from dryer are based on AP-42 emission factors from Section 1.4 and have a 20% safety factor added, with the exception of PM.

EP-011 New Scrubber collecting Fugitive Emission Sources F40 through F67
Stack: 16 (Plant ID: P10-9150)

Emission Unit No.	Plant ID	Description	Capacity	Transfer Points	Uncontrolled Emissions						Controlled Emissions (Cyclone => Scrubber)					
			Tons/hr		PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	PM TPy	PM10 TPy	PM2.5 TPy	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	PM TPy	PM10 TPy	PM2.5 TPy
F40	E10BN805	HOPPER - RECLAIM	20	1												
F41	E10FF885	BELT FEEDER - RECLAIM	20	1												
F42	E10CV840	CONVEYOR - RECLAIM	50	1												
F43	E10CV841	BUCKET ELEVATOR - RECLAIM	50	2												
F44	E10CV842	SCREW CONVEYOR - RECLAIM O/S	30	2												
F45	E10CV843	SCREW CONVEYOR - RECLAIM U/S	20	1												
F46	E10CV844	BUCKET ELEVATOR - LANG BIN FEED	20	1												
F47	E10BN806	BIN - LANG FEED	20	1												
F48	E10BN807	BIN - RECYCLE	5.13	1												
F49	E10BN808	BIN - STARCH	0.51	1												
F50	E10FF886	BELT FEEDER - LANG	20	1												
F51	E10FF887	BELT FEEDER - RECYCLE	5.13	1												
F52	E10FF888	BELT FEEDER - STARCH	0.51	1												
F53	E10CV845	SCREW FEEDER - COMBINED NO.1	25.64	1												
F54	E10CV846	BUCKET ELEVATOR - COMBINED	25.64	1												
F55	E10CV847	SCREW FEEDER - COMBINED NO.2	25.64	1												
F56	E10CV848	SCREW FEEDER - MIXER	25.64	1												
F57	E10CV849	BELT CONVEYOR - DRYER FEED	25.64	1												
F58	E10CV850	BELT CONVEYOR - DRYER DISCHARGE	25.64	1												
F59	E10CV851	BUCKET ELEVATOR - DRYER DISCHARGE	25.64	2												
F60	E10CV853	BELT CONVEYOR - PELLET	2.56	1												
F61	E10CV854	SCREW CONVEYOR - RECYCLE O/S	20.51	2												
F62	E10CV855	BUCKET ELEVATOR - PELLET	20.51	2												
F63	E10BN809	BIN - PELLET	20.51	1												
F64	E10CV857	SCREW CONVEYOR - PELLET	20.51	2												
F65	E10CV852	SCREW CONVEYOR - RECYCLE U/S	2.56	2												
F66	E10CV856	SCREW CONVEYOR - RECYCLE	5.13	1												
F67	E10CV858	BUCKET ELEVATOR - RECYCLE	5.13	1												
Totals					38,571.0	3,857.1	1,928.6	168,941	16,894	8447	2.59	0.26	0.26	11.35	1.14	1.14

Emissions from the above fugitive emission sources will be collected by pickup points and routed through an unvented cyclone then to a high efficiency scrubber for control of PM emissions as well as PM10 and PM2.5 emissions. The attached two pages illustrate the projected uncontrolled and controlled emissions as well as particle size distribution.

0.01 gr/dscf is proposed by Ducon as the design scrubber emission rate.

PM = 30,241 dscfm * 0.01 gr/dscf * 60 min/hr / 7,000 gr/lb = 2.59 lb/hr

PM10 = 30,241 dscfm * 0.01 gr/dscf * 60 min/hr / 7,000 gr/lb * 0.10 = 0.26 lb/hr

PM2.5 = Assumed equal to PM10 for conservative purposes = 0.26 lb/hr

Totals only are shown above, since all points are collected and routed to cyclone then scrubber.

PM10 is based on a particle size distribution of 3% (use 10% - conservative purposes) of particles being less than 10 microns.

PM2.5 is based on a particle size distribution of 0.4% (use 10% - conservative purposes) of particles being less than 3 microns.

Emission Point EP-12
Salt Dryer with Cyclone and Baghouse

Emissions for Particulate Matter for Rotary Dryer (Unit 12)

Description	Throughput		Uncontrolled Emissions (a)			Reference	Controls (%)		Overall Control (%)	Hourly and Annual Emission Rates					
			TSP	PM ₁₀	PM _{2.5}					TSP		PM10		PM2.5	
	(TPH)	(ton/yr)	(lb/hr)	(lb/hr)	(lb/hr)		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)			
Rotary Dryer Emissions (Unit 12)	50	250,000	10,000	10,000	10,000	Tarmac	Cyclone 98.25%	99.97%	3.06	7.7	3.06	7.66	3.1	7.66	
							Baghouse 98.25%								

- Notes:**
- (a) Emission factors were provided by vendor, unless otherwise indicated.
 - (b) Potential Hourly Emission Rate (lb/hr) = (Hourly Throughput [TPH]) x (Emission Factor [lb/ton]) x (1 - Control Efficiency [%])
 - (c) Potential Annual Emission Rate (ton/yr) = Annual Throughput [TPY] x (Emission Factor [lb/ton]) ÷ (2000 lb/ton) x (1 - Control Efficiency [%])

Emissions for Fuel Combustion Emissions for Rotary Dryer (Unit 12)

Description	Throughput		Hourly and Annual Emission Rates													
			NOx (a)		CO (a)		VOC		SOx		H ₂ S		Lead		HAPS	
	(TPH)	(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
Rotary Dryer Emissions	50	250,000	2.25	5.63	2.375	5.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Compound	Cited Emission		Source of Data	Note	Final Emission
Particulate Matter	2.72	lb/hr	Manufacturer	Add 12.5% contingency	3.06 lb/hr
Nox	1.8	lb/hr	Manufacturer	Add 25% contingency	2.25 lb/hr
CO	1.9	lb/hr	Manufacturer	Add 25% contingency	2.375 lb/hr
VOC	0	lb/hr	Manufacturer	No adjustment	0 lb/hr
SOx / H2S	0	lb/hr	Natural gas data	No adjustment	0 lb/hr
Lead	0	lb/hr	Natural gas data	No adjustment	0 lb/hr
HAPs	Varies		AP42	No adjustment	Varies

Portable Non-road Engines

[illegible]

Annual operation limited to **3,100** hrs per pump engine; not to exceed the HP-Hrs shown above

Annual operation limited to **1500** hrs per engine for ENG1 through ENG3 & GEN3

Emissions based on AP-42 factor for gasoline

Emissions based on AP-42 factor for diesel (GHG CO₂e emissions)

Emissions based on Tiered Compression Engine 56 ≤ kw <75

Emissions based on maximum Tier 2 emission rates

Emissions based on maximum emission standard for a Tiered Compression Engine greather than or equal to 75 kw

EP-F25 Paved Road Emissions

AP-42 Section 13.2.1 estimates emissions for paved roads based on the following equation:

$$E = k[(sL)^{0.91}] [(W)^{1.02}] [1 - (P/4N)]$$

where:

E = lbs of PM per VMT, VMT = vehicle mile traveled

k = particle size multiplier in lb/VMT

sL = silt loading content of road surface material g/m², AP-42 Table 13.2.1-2 for ADT < 500

W = mean vehicle weight, tons, use 26 tons

P = number of days with at least 0.01 inches of precipitation per year, 70 days. Department Accepted Values for: Aggregate Handling, Storage Pile, and Haul Road Emissions.

N = number of days in averaging period, use 365

Table 6-3 Paved Road Emissions

	k	sL	W	P	N	E	VMT	V/yr	VMT/hr	PM Emissions	
						lbs/VMT	Roundtrip		9 RT/hr	lb/hr	tpy
PM30	0.011	0.6	26	70	365	0.18	1.24	11882	11.16	2.04	1.35
PM10	0.0022	0.6	26	70	365	0.04	1.24	11882	11.16	0.41	0.27
PM2.5	0.00054	0.6	26	70	365	0.01	1.24	11882	11.16	0.10	0.07

For the daily basis, Equation 1 becomes:

$$E_{ext} = [k (sL)^{0.91} \times (W)^{1.02}] (1 - P/4N) \quad (2)$$

where k , sL , W , and S are as defined in Equation 1 and

E_{ext} = annual or other long-term average emission factor in the same units as k ,

P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and

N = number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly).

k = particle size multiplier for particle size range and units of interest (see below),

sL = road surface silt loading (grams per square meter) (g/m²), and

W = average weight (tons) of the vehicles traveling the road.

EP-F26 Unpaved Road Emissions

Table 6-4A: Emissions for Hauling on Unpaved Roads

Description	TSP Emission Rate		PM10 Emission Rate		PM2.5 Emission Rate		Reference
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
Existing Loadout	0.86	0.6	0.22	0.1	0.022	0.014	Table 6-4C
Coarse Salt	4.9	6.7	1.25	1.7	0.125	0.17	Table 6-4D
Non-Routine Hauling	7.3	9.1	1.87	2.3	0.187	0.233	Table 6-4E
Total Unpaved Emissions	13.09	16.43	3.34	4.19	0.33	0.42	

Table 6-4B: Inputs for Emissions Calculations from Unpaved Roads

Description	RT Distanc (VMT)	Vehicle	Hourly Throughput			Annual Throughput		
			(RT/hr)	(VMT/hr)	(tons/hr)	(RT/year)	(VMT/year)	(tpy)
Existing Loadout	0.15	Truck	9	1.36	234	14,000	2,121	350,000
Coarse Salt								
- Haul salt from plant to p	1.33	Truck	5	6.63	130	14,000	18,561	350,000
- Distribute salt on pile	0.28	Loader	20	5.68	440	87,500	24,858	350,000
- Finished product loadout	0.57	Truck	4	2.27	104	14,000	7,955	350,000
- Haul rejects to tailings	0.76	Truck	1	0.76	26	1,400	1,061	35,000
Non-Routine Hauling								
- Haul rail / screen reject	0.34	Truck	4	1.36	104	4,000	1,364	100,000
- Alternate Rail Reject	1.14	Truck	4	4.55	104	4,000	4,545	100,000
- Caliche Hauling	1.16	Truck	2	2.32	52	10,000	11,600	250,000

Table 6-4C: Estimated Emissions from Unpaved Hauling at Existing Loadout

Pollutant	k (lb/VMT)	a	b	Surface Material Silt Content, s (%)	Average Vehicle Weight, W (tons)	Controls (%)	Overall Control (%)	Particulate Emission Factor (lb/VMT)	VMT/hr	Hourly Emission Rate (lb/hr)	VMT/yr	Annual Emission Rate (ton/yr)
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	0.627	1.36	0.86	2,121	0.56
PM ₁₀	1.5	0.9	0.45	4.8	26	Base course	60	0.160	1.36	0.22	2,121	0.14
PM _{2.5}	0.15	0.9	0.45	4.8	26			0.016	1.36	0.022	2,121	0.01

Table 6-4D: Hauling Emissions Calculations for Coarse Salt Project

Pollutant	k (lb/VMT)	a	b	Surface Material Silt Content, s (%)	Average Vehicle Weight, W (tons)	Controls (%)	Overall Control (%)	Particulate Emission Factor (lb/VMT)	VMT/hr	Hourly Emission Rate (lb/hr)	VMT/yr	Annual Emission Rate (ton/yr)
Haul Salt from Plant to Pad												
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	0.251	6.63	1.66	18,561	1.95
PM ₁₀	1.5	0.9	0.45	4.8	26	Chemical Stabilizer	84	0.064	6.63	0.42	18,561	0.50
PM _{2.5}	0.15	0.9	0.45	4.8	26			0.0064	6.63	0.042	18,561	0.05
Grade Salt Pile (Loader)												
TSP	4.9	0.7	0.45	4.8	22	Speed Limit, 10 mph	77	0.233	5.7	1.32	24,858	2.42
PM ₁₀	1.5	0.9	0.45	4.8	22	Chemical Stabilizer	84	0.059	5.7	0.34	24,858	0.62
PM _{2.5}	0.15	0.9	0.45	4.8	22			0.0059	5.7	0.034	24,858	0.06
Trucks for Loadout												
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	0.627	2.3	1.43	7,955	2.08
PM ₁₀	1.5	0.9	0.45	4.8	26	Base course	60	0.160	2.3	0.36	7,955	0.53
PM _{2.5}	0.15	0.9	0.45	4.8	26			0.0160	2.3	0.036	7,955	0.05
Haul Screen Rejects to Tailings Pile												
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	0.627	0.8	0.48	1,061	0.28
PM ₁₀	1.5	0.9	0.45	4.8	26	Base course	60	0.160	0.8	0.12	1,061	0.07
PM _{2.5}	0.15	0.9	0.45	4.8	26			0.0160	0.8	0.012	1,061	0.01

Table 6-4E: Non-Routine Hauling Emissions for Various Scenarios

Pollutant	k (lb/VMT)	a	b	Surface Material Silt Content, s (%)	Average Vehicle Weight, W (tons)	Controls (%)		Overall Control (%)	Particulate Emission Factor (lb/VMT)	VMT/hr	Hourly Emission Rate (lb/hr)	VMT/yr	Annual Emission Rate (ton/yr)
Rail Reject													
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	90.8	0.627	1.4	0.86	1,364	0.36
PM ₁₀	1.5	0.9	0.45	4.8	26	Base course	60		0.160	1.4	0.22	1,364	0.09
PM _{2.5}	0.15	0.9	0.45	4.8	26				0.0160	1.4	0.022	1,364	0.01
Alternate Rail Reject													
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	90.8	0.627	4.5	2.85	4,545	1.19
PM ₁₀	1.5	0.9	0.45	4.8	26	Base course	60		0.160	4.5	0.73	4,545	0.30
PM _{2.5}	0.15	0.9	0.45	4.8	26				0.0160	4.5	0.073	4,545	0.03
Caliche Hauling													
TSP	4.9	0.7	0.45	4.8	26	Speed Limit, 10 mph	77	77.0	1.568	2.3	3.64	11,600	7.60
PM ₁₀	1.5	0.9	0.45	4.8	26				0.400	2.3	0.93	11,600	1.94
PM _{2.5}	0.15	0.9	0.45	4.8	26				0.0400	2.3	0.093	11,600	0.19

- Notes:
- (a) Emission factor is taken from Chapter 13.2.2 of AP-42 (November, 2006), using a silt factor from sand and gravel processing, assuming 60 days per year in which precipitation exceeds 0.01 inches.
- (b) Based on Table 6-6 in the Western Regional Air Partnership's (WRAP) Fugitive Dust Handbook, September 7, 2006. The speed limit control efficiency is based on a linear relationship between the speed (x, mph) and the control efficiency (y, %): $y = -2.2x + 99$.
- (c) Control efficiency for base course is taken from Air Quality Bureau's *Department Accepted Values for Aggregate Handling, Storage Pile, and Haul Road Emissions*, dated January 1, 2017.
- (d) Chemical stability is based on brine application, taken from *WRAP Fugitive Dust Handbook*, Table 6-6.
- (e) Overall Control Efficiency (%) = $100\% - 100\% \times (1 - \text{Control Efficiency}(\%))_1 / 100 \times (1 - \text{Control Efficiency}(\%))_2 / 100$

For Table 6-4C: Existing Loadout:
Note: Yellow line type indicates unpaved path and is included in Table 6-4C. Orange line type indicates paved path and is included in Table 6-3 (Paved Roads).



For Table 6-4D: Haul Routes for Coarse Salt Project



For Table 6-4E: Haul Routes for Non-Routine Hauling



Tank Emissions

Above Ground Storage Tank Description	Tank Capacity (gallons)	Total Working & Breathing Losses (lbs/yr)	Total VOC Emissions (tpy)
Diesel Fuel	9,000	7.08	0.0035
Gear Oil	9,000	0.04	0.0000
Hydraulic Oil	9,000	0.08	0.0000
Unleaded Gasoline	2,000	1324.89	0.6624
Diesel Fuel	600	0.45	0.0002
Diesel Fuel	250	0.19	0.0001
Diesel Fuel	300	0.25	0.0001
Diesel Fuel	525	0.42	0.0002
Gear Oil	600	0.00	0.0000
Hydraulic Oil	600	0.00	0.0000
Total VOC Emissions (tpy)			0.67

Notes:

1. Emissions for the above listed tanks were estimated using EPA developed TANKS 4.0 program.
2. CY2023 facility-wide throughputs for each material were utilized for the basis of emissions estimations. For the smaller tanks, emissions were calculated based on one turnover per month of the tank's capacity. The remainder of the CY2023 material throughput was estimated through the largest tank containing the material.
3. Intrepid's East Plant operates numerous other liquid product storage vessels. Those vessels are non-VOC containing storage vessels, thus they are not included in the emissions estimations shown above. However, CY2023 facility-wide throughputs for some of those materials are shown in Section 2-L of the UA2 forms. Other smaller storage vessels, such as drums, totes, etc, are listed in Attachment 2-1 of the application package.
4. EPA's TANKS program does not list Gear Oil or Hydraulic Oil, therefore, residual oil No. 6 was utilized for emissions estimation purposes.

Fugitive Emission Sources (Belts, Conveyors, etc.) - PM2.5 Emissions

AIR QUALITY MODEL I.D.	DESCRIPTION	BEST ENGINEERING PRACTICE	LOCATION	ELEV (FASG)	PM2.5 Emission Factor (lbs/ton)	Max. Hourly Material Throughput (tons/hr)	Annual Material Throughput (tons/yr)	Avg. Hourly PM2.5 (lbs/hr)	Maximum Hourly PM2.5 (lbs/hr)	Annual PM2.5 (tpy)	Maximum Annual PM2.5 (tpy)
F1	RAW ORE BIN 2206 CAP. 50 TON	ENCLOSED	EXTERIOR		3.2E-04	404	2,962,473	0.00	0.00	0.00	0.00
	FEEDER 2207 TO BELT 3105	COVERED	EXTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
F2	BELT 3105 TO BIN 3110 CAP. 50 TON	COVERED	EXTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
F3	ALTERNATE FEED TO BELT 3135	COVERED	EXTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
F4	FEEDER 3150 TO BELT 3130	COVERED	INTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
F5	BELT 3130 TO BELT 3105	COVERED	EXTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
	CRUSHER 3125 TO BELT 3155	ENCLOSED	EXTERIOR		3.2E-04	404	2,962,473	0.00	0.00	0.00	0.00
F6	CRUSHER 3155 TO BIN 3165 CAP. 250 TON	COVERED	EXTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
F7	BIN 3165, FEEDER 3170 & BELT 3172	COVERED	EXTERIOR	15	3.2E-04	404	2,962,473	0.11	0.13	0.47	0.56
F8	ROTARY DRYER DISCHARGE TO BELT 5133	COVERED	EXTERIOR	4	3.2E-04	89	651744	0.02	0.03	0.10	0.12
	DUST COLLECTED AND VENTED TO SCRUBBER	VENTED TO SCRUBBER	EXTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F9	BELT 5133 TO ELEVATOR 5135	COVERED	EXTERIOR	7	3.2E-04	89	651744	0.02	0.03	0.10	0.12
	ELEVATOR 5135 TO SCREW	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREW TO SCREEN 5137	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F10	SCREEN 5137 TO SCREW	COVERED	INTERIOR	40	3.2E-04	89	651744	0.02	0.03	0.10	0.12
F11	SCREW TO SCREEN 5140(3)	SCREENS COVERED	INTERIOR	30	3.2E-04	89	651744	0.02	0.03	0.10	0.12
	SCREEN 5143 TO SCREW	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREW TO ELEVATOR 5147	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	ELEVATOR 5147 TO CHUTE	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	CHUTE TO SCREEN 5133(2)	SCREENS ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F12	SCREEN 5133(2) TO ELEV 5135	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F13	ELEV 5135 TO SCREW 5136	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREW 5136 TO SCREEN 5137	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5137 TO SCREW 5139	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(1) TO SCREW 5143(COARSE)	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(2) TO SCREW 5142 (MEDIUM)	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(3) TO SCREW 5142 (FINE)	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREW TO COARSE BIN (200 TON)	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F14	FEEDERS 5205 TO BELT 5206 (3)	FEEDERS HOODED/BELT OPEN	INTERIOR	15	3.2E-04	89	651744	0.02	0.03	0.10	0.12
F15	BELT 5206 TO MIX SCREW 5208	BELT OPEN/SCREW ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	MIX SCREW 5208 TO BELT 5210	ENCLOSED & COVERED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F16, 17, 18	BELT 5210 TO STORAGE PILE IN WAREHOUSE	ENCLOSED	EXTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	BELT 5220 TO INTERIOR STORAGE PILE	ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	TRIPPER 5225 (REMOVED)	REMOVED	REMOVED		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F19	BELT 5307 TO BELT 5308	UNDERGROUND/ENCLOSED	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F20	BELT 5308 TO EITHER BELT 5432 OR 5435	OPEN/COVERED	INT/EXT	15	3.2E-04	89	651744	0.02	0.03	0.10	0.12
F21	BELT 5432 TO BELT 5435	VENTED TO EP-05 SCRUBBER	EXTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F22	BELT 5435 TO SCREENS 5440(3)	VENTED TO EP-05 SCRUBBER	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREENS 5440(3) TO SCREW	VENTED TO EP-05 SCRUBBER	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREW TO ELEVATOR 5470	VENTED TO EP-05 SCRUBBER	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	ELEVATOR 5407 TO CHUTE TO BIN 5476 (20 TON)	VENTED TO EP-05 SCRUBBER	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F23	SCREENS 5440(3) TO BELT 5445	VENTED TO EP-05 SCRUBBER	INTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F24	BELT 5445 TO TRUCKS OR RAILCARS	VENTED TO EP-05 SCRUBBER	EXTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
	SCREENS 5440(3) TO BELT 5311 TO BAGGING PLANT	VENTED TO EP-05 SCRUBBER	EXTERIOR		3.2E-04	89	651744	0.00	0.00	0.00	0.00
F27	Existing, Not previously listed; Lang Silos 1, 2, & 3 to CV-001	ENCLOSED	EXTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F28	Existing, Not previously listed; CV-001 to CV-002	COVERED	EXTERIOR	8	3.2E-04	250	2036700	0.07	0.08	0.32	0.35
F29	Existing, Not previously listed; CV-002 to L1 or diverted to new CV-003	ENCLOSED	EXTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F30	New CV-003 to L2 or diverted to new CV-004	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F31	New CV-004 to L3	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F32	Existing Mixing Screw 5207 to Existing Belt 5210	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F33	Existing Belt 5210 to new CV-005	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F34	New CV-005 to new CV-006	ENCLOSED	EXTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F35	New CV-006 to S1 or diverted to new CV-007	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F36	New CV-007 to S2 or diverted to new CV-008	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
F37	New CV-008 to S3	ENCLOSED	INTERIOR		3.2E-04	250	2036700	0.00	0.00	0.00	0.00
TOTALS								0.97	1.15	4.23	5.02

NOTES:

- Emission factor for all points taken from AP-42, Table 11.19.2-2, conveyor transfer points for crushed stone processing have been used here to estimate emissions. This factor was used for transfer points and conveyor belts. PM2.5 uncontrolled emission factors are listed as Non-Detect, thus the controlled emission factor was used and divided by the PM10 collection efficiency to determine the uncontrolled emission factor for PM2.5.
- The calculation is as follows: $0.000013 / ((100\% - 95.9\%) / 100) = 3.2 \times 10^{-4}$. We believe the use of this factor for covered belts is very conservative. Some sources have no emissions due to enclosure or a unique feature that prevents the generation of fugitive dust.

Fugitive Emission Sources (Belts, Conveyors, etc.) - PM10 Emissions

AIR QUALITY MODEL I.D.	DESCRIPTION	BEST ENGINEERING PRACTICE	LOCATION	ELEV (FASG)	PM10 Emission Factor (lbs/ton)	Max. Hourly Material Throughput (tons/hr)	Annual Material Throughput (tons/yr)	Avg. Hourly PM10 (lbs/hr)	Maximum Hourly PM10 (lbs/hr)	Annual PM10 (tpy)	Maximum Annual PM10 (tpy)
F1	RAW ORE BIN 2206 CAP. 50 TON	ENCLOSED	EXTERIOR		1.1E-03	404	2,962,473	0.00	0.00	0.00	0.00
	FEEDER 2207 TO BELT 3105	COVERED	EXTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
F2	BELT 3105 TO BIN 3110 CAP. 50 TON	COVERED	EXTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
F3	ALTERNATE FEED TO BELT 3135	COVERED	EXTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
F4	FEEDER 3150 TO BELT 3130	COVERED	INTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
F5	BELT 3130 TO BELT 3105	COVERED	EXTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
	CRUSHER 3125 TO BELT 3155	ENCLOSED	EXTERIOR		1.1E-03	404	2,962,473	0.00	0.00	0.00	0.00
F6	CRUSHER 3155 TO BIN 3165 CAP. 250 TON	COVERED	EXTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
F7	BIN 3165, FEEDER 3170 & BELT 3172	COVERED	EXTERIOR	15	1.1E-03	404	2,962,473	0.37	0.44	1.63	1.95
F8	ROTARY DRYER DISCHARGE TO BELT 5133	COVERED	EXTERIOR	4	1.1E-03	89	651744	0.08	0.10	0.36	0.43
	DUST COLLECTED AND VENTED TO SCRUBBER	VENTED TO SCRUBBER	EXTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F9	BELT 5133 TO ELEVATOR 5135	COVERED	EXTERIOR	7	1.1E-03	89	651744	0.08	0.10	0.36	0.43
	ELEVATOR 5135 TO SCREW	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO SCREEN 5137	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F10	SCREEN 5137 TO SCREW	COVERED	INTERIOR	40	1.1E-03	89	651744	0.08	0.10	0.36	0.43
F11	SCREW TO SCREEN 5140(3)	SCREENS COVERED	INTERIOR	30	1.1E-03	89	651744	0.08	0.10	0.36	0.43
	SCREEN 5143 TO SCREW	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO ELEVATOR 5147	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	ELEVATOR 5147 TO CHUTE	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	CHUTE TO SCREEN 5133(2)	SCREENS ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F12	SCREEN 5133(2) TO ELEV 5135	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F13	ELEV 5135 TO SCREW 5136	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW 5136 TO SCREEN 5137	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5137 TO SCREW 5139	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(1) TO SCREW 5143(COARSE)	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(2) TO SCREW 5142 (MEDIUM)	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(3) TO SCREW 5142 (FINE)	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO COARSE BIN (200 TON)	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F14	FEEDERS 5205 TO BELT 5206 (3)	FEEDERS HOODED/BELT OPEN	INTERIOR	15	1.1E-03	89	651744	0.08	0.10	0.36	0.43
F15	BELT 5206 TO MIX SCREW 5208	BELT OPEN/SCREW ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	MIX SCREW 5208 TO BELT 5210	ENCLOSED & COVERED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F16, 17, 18	BELT 5210 TO STORAGE PILE IN WAREHOUSE	ENCLOSED	EXTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	BELT 5220 TO INTERIOR STORAGE PILE	ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	TRIPPER 5225 (REMOVED)	REMOVED	REMOVED		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F19	BELT 5307 TO BELT 5308	UNDERGROUND/ENCLOSED	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F20	BELT 5308 TO EITHER BELT 5432 OR 5435	OPEN/COVERED	INT/EXT	15	1.1E-03	89	651744	0.08	0.10	0.36	0.43
F21	BELT 5432 TO BELT 5435	VENTED TO EP-05 SCRUBBER	EXTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F22	BELT 5435 TO SCREENS 5440(3)	VENTED TO EP-05 SCRUBBER	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREENS 5440(3) TO SCREW	VENTED TO EP-05 SCRUBBER	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO ELEVATOR 5470	VENTED TO EP-05 SCRUBBER	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	ELEVATOR 5407 TO CHUTE TO BIN 5476 (20 TON)	VENTED TO EP-05 SCRUBBER	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F23	SCREENS 5440(3) TO BELT 5445	VENTED TO EP-05 SCRUBBER	INTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F24	BELT 5445 TO TRUCKS OR RAILCARS	VENTED TO EP-05 SCRUBBER	EXTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
	SCREENS 5440(3) TO BELT 5311 TO BAGGING PLANT	VENTED TO EP-05 SCRUBBER	EXTERIOR		1.1E-03	89	651744	0.00	0.00	0.00	0.00
F27	Existing, Not previously listed; Lang Silos 1, 2, & 3 to CV-001	ENCLOSED	EXTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F28	Existing, Not previously listed; CV-001 to CV-002	COVERED	EXTERIOR	8	1.1E-03	250	2036700	0.26	0.28	1.12	1.20
F29	Existing, Not previously listed; CV-002 to L1 or diverted to new CV-003	ENCLOSED	EXTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F30	New CV-003 to L2 or diverted to new CV-004	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F31	New CV-004 to L3	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F32	Existing Mixing Screw 5207 to Existing Belt 5210	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F33	Existing Belt 5210 to new CV-005	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F34	New CV-005 to new CV-006	ENCLOSED	EXTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F35	New CV-006 to S1 or diverted to new CV-007	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F36	New CV-007 to S2 or diverted to new CV-008	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
F37	New CV-008 to S3	ENCLOSED	INTERIOR		1.1E-03	250	2036700	0.00	0.00	0.00	0.00
TOTALS								3.35	3.97	14.68	17.40

NOTES:

- 1 Emission factor for all points taken from AP-42, Table 11.19.2-2, conveyor transfer points for crushed stone processing have been used here to estimate emissions. This factor was used for transfer points and conveyor belts. We believe the use of this factor for covered belts is very conservative.
- 2 Some sources have no emissions due to enclosure or a unique feature that prevents the generation of fugitive dust

Fugitive Emission Sources (Belts, Conveyors, etc.) - TSP Emissions

AIR QUALITY MODEL I.D.	DESCRIPTION	BEST ENGINEERING PRACTICE	LOCATION	ELEV (FASG)	TSP Emission Factor (lbs/ton)	Max. Hourly Material Throughput (tons/hr)	Annual Material Throughput (tons/yr)	Avg. Hourly TSP (lbs/hr)	Maximum Hourly TSP (lbs/hr)	Avg. Annual TSP (tpy)	Maximum Annual TSP (tpy)
F1	RAW ORE BIN 2206 CAP. 50 TON	ENCLOSED	EXTERIOR		3.0E-03	404	2,962,473	0.00	0.00	0.00	0.00
	FEEDER 2207 TO BELT 3105	COVERED	EXTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
F2	BELT 3105 TO BIN 3110 CAP. 50 TON	COVERED	EXTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
F3	ALTERNATE FEED TO BELT 3135	COVERED	EXTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
F4	FEEDER 3150 TO BELT 3130	COVERED	INTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
F5	BELT 3130 TO BELT 3105	COVERED	EXTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
	CRUSHER 3125 TO BELT 3155	ENCLOSED	EXTERIOR		3.0E-03	404	2,962,473	0.00	0.00	0.00	0.00
F6	CRUSHER 3155 TO BIN 3165 CAP. 250 TON	COVERED	EXTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
F7	BIN 3165, FEEDER 3170 & BELT 3172	COVERED	EXTERIOR	15	3.0E-03	404	2,962,473	1.01	1.21	4.44	5.31
F8	ROTARY DRYER DISCHARGE TO BELT 5133	COVERED	EXTERIOR	4	3.0E-03	89	651744	0.22	0.27	0.98	1.17
	DUST COLLECTED AND VENTED TO SCRUBBER	VENTED TO SCRUBBER	EXTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F9	BELT 5133 TO ELEVATOR 5135	COVERED	EXTERIOR	7	3.0E-03	89	651744	0.22	0.27	0.98	1.17
	ELEVATOR 5135 TO SCREW	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO SCREEN 5137	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F10	SCREEN 5137 TO SCREW	COVERED	INTERIOR	40	3.0E-03	89	651744	0.22	0.27	0.98	1.17
F11	SCREW TO SCREEN 5140(3)	SCREENS COVERED	INTERIOR	30	3.0E-03	89	651744	0.22	0.27	0.98	1.17
	SCREEN 5143 TO SCREW	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO ELEVATOR 5147	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	ELEVATOR 5147 TO CHUTE	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	CHUTE TO SCREEN 5133(2)	SCREENS ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F12	SCREEN 5133(2) TO ELEV 5135	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F13	ELEV 5135 TO SCREW 5136	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW 5136 TO SCREEN 5137	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5137 TO SCREW 5139	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(1) TO SCREW 5143(COARSE)	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(2) TO SCREW 5142 (MEDIUM)	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREEN 5140(3) TO SCREW 5142 (FINE)	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO COARSE BIN (200 TON)	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F14	FEEDERS 5205 TO BELT 5206 (3)	FEEDERS HOODED/BELT OPEN	INTERIOR	15	3.0E-03	89	651744	0.22	0.27	0.98	1.17
	BELT 5206 TO MIX SCREW 5208	BELT OPEN/SCREW ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F15	MIX SCREW 5208 TO BELT 5210	ENCLOSED & COVERED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F16, 17, 18	BELT 5210 TO STORAGE PILE IN WAREHOUSE	ENCLOSED	EXTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	BELT 5220 TO INTERIOR STORAGE PILE	ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	TRIPPER 5225 (REMOVED)	REMOVED	REMOVED		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F19	BELT 5307 TO BELT 5308	UNDERGROUND/ENCLOSED	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F20	BELT 5308 TO EITHER BELT 5432 OR 5435	OPEN/COVERED	INT/EXT	15	3.0E-03	89	651744	0.22	0.27	0.98	1.17
F21	BELT 5432 TO BELT 5435	VENTED TO EP-05 SCRUBBER	EXTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F22	BELT 5435 TO SCREENS 5440(3)	VENTED TO EP-05 SCRUBBER	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREENS 5440(3) TO SCREW	VENTED TO EP-05 SCRUBBER	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREW TO ELEVATOR 5470	VENTED TO EP-05 SCRUBBER	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	ELEVATOR 5407 TO CHUTE TO BIN 5476 (20 TON)	VENTED TO EP-05 SCRUBBER	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F23	SCREENS 5440(3) TO BELT 5445	VENTED TO EP-05 SCRUBBER	INTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F24	BELT 5445 TO TRUCKS OR RAILCARS	VENTED TO EP-05 SCRUBBER	EXTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
	SCREENS 5440(3) TO BELT 5311 TO BAGGING PLANT	VENTED TO EP-05 SCRUBBER	EXTERIOR		3.0E-03	89	651744	0.00	0.00	0.00	0.00
F27	Existing, Not previously listed; Lang Silos 1, 2, & 3 to CV-001	ENCLOSED	EXTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F28	Existing, Not previously listed; CV-001 to CV-002	COVERED	EXTERIOR	8	3.0E-03	250	2036700	0.70	0.75	3.06	3.29
F29	Existing, Not previously listed; CV-002 to L1 or diverted to new CV-003	ENCLOSED	EXTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F30	New CV-003 to L2 or diverted to new CV-004	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F31	New CV-004 to L3	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F32	Existing Mixing Screw 5207 to Existing Belt 5210	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F33	Existing Belt 5210 to new CV-005	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F34	New CV-005 to new CV-006	ENCLOSED	EXTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F35	New CV-006 to S1 or diverted to new CV-007	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F36	New CV-007 to S2 or diverted to new CV-008	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
F37	New CV-008 to S3	ENCLOSED	INTERIOR		3.0E-03	250	2036700	0.00	0.00	0.00	0.00
TOTALS								9.14	10.83	40.03	47.46

- 1 Emission factor for all points taken from AP-42, Table 11.19.2-2, conveyor transfer points for crushed stone processing have been used here to estimate emissions. This factor was used for transfer points and conveyor belts. We believe the use of this factor for covered belts is very conservative.
- 2 Some sources have no emissions due to enclosure or a unique feature that prevents the generation of fugitive dust

F-68/F-69 Materials Handling

Table 6-8: Summary of Emissions for Unit F68/F69

Description	TSP		PM10		PM2.5	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Total Emissions (Table 6-9)	8.19	5.37	4.08	2.67	0.45	0.30

Table 6-9: Materials Handling Emissions for Non-Routine Activities

Description	Material Throughput (TPH)		Uncontrolled Emissions (a)			Emission Factor Reference	Controls (%)	Overall Control (%)	Hourly and Annual Emission Rates					
	(TPH)	(ton/yr)	TSP (lb/ton)	PM ₁₀ (lb/ton)	PM _{2.5} (lb/ton)				TSP (lb/hr) (ton/yr)		PM10 (lb/hr) (ton/yr)		PM2.5 (lb/hr) (ton/yr)	
Drop onto conveyor	279	366,000	0.0051	0.0024	0.00036	1		0.00%	1.42	0.93	0.67	0.44	0.10	0.07
Conveyor into truck	279	366,000	0.0022	0.00110	0.00031	2		0.00%	0.61	0.40	0.31	0.20	0.09	0.06
Screening	279	366,000	0.017	0.0087	0.00059	2		0.00%	4.74	3.11	2.43	1.59	0.16	0.11
Unload rejects	279	366,000	0.0051	0.0024	0.00036	1		0.00%	1.42	0.93	0.67	0.44	0.10	0.07
Emissions for Materials Handling									8.19	5.37	4.08	2.67	0.45	0.30

SUMMARY OF EMISSION FACTORS

	Materials Handling					
	Screens	Salt to Pad	Salt Loadout	Potash Loadout	Pellet Screen	Pellet Rejects
TSP	0.005084	0.000064	0.0046	0.0046	0.0032	0.0013
PM ₁₀	0.002405	0.000030	0.0022	0.0022	0.0015	0.0006
PM _{2.5}	0.000364	0.000005	0.0003	0.0003	0.0002	0.0001

Load Salt from Mill/Tails (g)

Description	Activity	Uncontrolled Emission Factor(a)			Ref-erence	Controls (%)	Control (%)	Overall		
		TSP (lb/ton)	PM ₁₀ (lb/ton)	PM _{2.5} (lb/ton)				TSP (lb/ton)	PM10 (lb/ton)	PM2.5 (lb/ton)
Drop salt into truck	Drop Operation	0.0051	0.0024	0.00036	1		0%	0.005084	0.002405	0.000364

Unload Salt on Pad

Description	Activity	Uncontrolled Emission Factor(a)			Ref-erence	Controls (%)		Control (%)	Overall		
		TSP	PM ₁₀	PM _{2.5}		Moisture	Pre-screened material		TSP	PM ₁₀	PM _{2.5}
		(lb/ton)	(lb/ton)	(lb/ton)					(lb/ton)	(lb/ton)	(lb/ton)
Unload wet product onto pad	Drop Operation	0.0051	0.0024	0.00036	1	>5%	95%	99%	0.000064	0.000030	0.000005

SALT LOADOUT

Description	Activity	Uncontrolled Emission Factor(a)			Ref-erence	Controls (%)		Control (%)	Overall		
		TSP (lb/ton)	PM ₁₀ (lb/ton)	PM _{2.5} (lb/ton)					TSP (lb/ton)	PM10 (lb/ton)	PM2.5 (lb/ton)
Dewatered salt onto conveyor	Drop Operation	0.0051	0.0024	0.00036	1	Pre-screened material	75%	75%	0.001271	0.000601	0.000091
Screen dewatered salt	Screening (controlled)	0.0014	0.00074	0.00005	2	Cover	75%	75%	0.000350	0.000185	0.000013
Screened salt onto conveyor	Drop Operation	0.0051	0.0024	0.00036	1	Pre-screened material	75%	94%	0.000318	0.000150	0.000023
	Cover					Cover	75%				
Screened product onto storage pad	Conveyor Transfer (Controlled)	0.0001	0.00005	0.00001	2	Pre-screened material	75%	75%	0.000020	0.000012	0.000003
Load product	Drop Operation	0.0051	0.0024	0.00036	1	Pre-screened material	75%	75%	0.001271	0.000601	0.000091
Finished product into rail or truck	Conveyor Transfer (Controlled)	0.0001	0.00005	0.00001	2				0.000080	0.000046	0.000013
Screen finished product	Screening (controlled)	0.0014	0.00074	0.00005	2						
Screened salt onto conveyor	Drop Operation	0.0051	0.0024	0.00036	1	Pre-screened material	75%	75%	0.001271	0.000601	0.000091
Emissions for Materials Handling									0.0046	0.0022	0.0003

PELLET SCREENING(h)

Description	Activity	Uncontrolled Emission Factor(a)			Ref- erence	Controls (%)		Control (%)	Overall		
		TSP	PM ₁₀	PM _{2.5}					TSP	PM10	PM2.5
		(lb/ton)	(lb/ton)	(lb/ton)					(lb/ton)	(lb/ton)	(lb/ton)
Pellets onto conveyor	Drop Operation	0.0051	0.0024	0.00036	1	Pre- screened material	75%	75%	0.001271	0.000601	0.000091
Screen Pellets	Screening (controlled)	0.0014	0.00074	0.00005	2	Cover	75%	75%	0.000350	0.000185	0.000013
Screened pellets onto conveyor	Drop Operation	0.0051	0.0024	0.00036	1	Pre- screened material Cover	75% 75%	94%	0.000318	0.000150	0.000023
Screened product onto storage pad	Conveyor Transfer (Controlled)	0.0001	0.00005	0.00001	2	Pre- screened material	75%	75%	0.000020	0.000012	0.000003
Unload product	Drop Operation	0.0051	0.0024	0.00036	1	Pre- screened material	75%	75%	0.001271	0.000601	0.000091
Emissions for Materials Handling									0.0032	0.0015	0.0002

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Pellet Rejects

Description	Activity	Uncontrolled Emission Factor(a)			Ref- erence	Controls (%)		Control (%)	Overall		
		TSP (lb/ton)	PM ₁₀ (lb/ton)	PM _{2.5} (lb/ton)					TSP (lb/ton)	PM10 (lb/ton)	PM2.5 (lb/ton)
Load & Unload rejects onto pad (i)	Drop Operation	0.0051	0.0024	0.00036	1	Pre-screened material	75%	75%	0.001271	0.000601	0.000091

Notes:

- (a) Emission Factors were taken from AP-42, Fifth Edition, with the following additional notes:
- Emission factors for drop operations were taken from Section 13.2.4, Equation 1. Mean speed of 9 miles per hour were used based on average wind speed in Carlsbad, New Mexico.
 - Uncontrolled emission factors for conveyor transfer points, tertiary crushing, and screening in lb/ton were obtained from Section 11.19.2 of AP-42, Compilation of Air Pollutant Emission Factors, August 2004 (Table 11.19.2-2). Uncontrolled PM10 emission factors are directly from Table 11.19.2-2. Table 11.19.2-2 does not provide uncontrolled PM2.5 emission factors for conveyor transfer points, tertiary crushing, and screening; so these were back-calculated using the controlled PM2.5 emission factors and the PM10 control efficiency derived from the PM10 emission factors in the table. This approach is the same as used in AP-42 to calculate PM100 values from the PM10 control efficiency. The TSP factors in Table 11.19.2-2 are for PM100 (see note 'r' after the table). So uncontrolled factors for TSP as PM30 for the calculations above were calculated from the interpolated controlled TSP/PM30 emission factors for each operation and back-calculating to an uncontrolled TSP/PM30 factor with the PM10 control efficiency derived from the uncontrolled and controlled PM10 factors published in Table 11.19.2-2. For truck loading, Table 11.19.2-2 provides only an uncontrolled PM10 factor, so it was assumed that the emissions from a conveyor dropping material into a truck are similar to the emissions from a conveyor transfer point. Therefore, the conveyor transfer point emission factors approach for TSP, PM10, and PM2.5 noted above was applied to truck loading.
- (b) Per AP-42, Section 11.19.2.2, "wet material" contains greater than 1.5% water. In addition, the "controlled" emission factors in Table 11.19.2-2 are based on material with moisture contents ranging from 0.55 to 2.88%. We are estimating emissions based on a conservative 95% control efficiency for the wet material, which is based on a comparison of the controlled to uncontrolled transfer point emission factors in Table 11.19.2-2.
- (c) At 2% moisture content, a control efficiency of 85% was assumed based on footnote (e) above in which 95% control efficiency represents material with moisture contents up to 2.88%.
- (d) As an inherent part of plant process, 90% of fines (Tyler Mesh 4) are removed in producing coarse salt. A control factor of 75% is used to represent plant screening efficiencies, or controlled emission factors are used.
- (e) Potential Hourly Emission Rate (lb/hr) = (Hourly Throughput [TPH]) x (Emission Factor [lb/ton]) x (1 - Control Efficiency [%])
- (f) Potential Annual Emission Rate (ton/yr) = Annual Throughput [TPY] x (Emission Factor [lb/ton]) ÷ (2000 lb/ton) x (1 - Control Efficiency [%])
- (g) Salt hauled from mill during January 2019 only. Salt hauled from tailings area remainder of year. Data from Salt Crew 2019 Spreadsheet (Backup Data Folder).
- (h) Pellets moved from S3 dome to screen, onsize stored in S1, rejects stored SE of product warehouse. Data from Greg Bruce inventory records (See Backup Data Folder).
- (i) Two drops total, one from loader to truck, one from truck to pad.

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 (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO₂e 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 CO₂e 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 CO₂e 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 CO₂ 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)

GHG calculations are shown in Section 6 and provided in spreadsheet UA2. Emissions estimated based on EPA AP-42 Section 3.3 – Gasoline and Diesel Engine emission factors, EPA’s GHG Emissions Factors Hub (1/2025), and the GWPs codified in Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

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.
 - ☒ 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.
 - ☒ If an EPA document or other material is referenced, include a complete copy.
 - ☐ Fuel specifications sheet.
 - ☐ 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.
-

The following references were used in estimating emissions. Copies of each have been included in Attachment B.

AP 42, Fifth Edition, Volume I Chapter 3: Stationary Internal Combustion Sources
3.3 Gasoline and Diesel Industrial Engines (4/2025)

EPA Nonroad Compression-Ignition Engines: Exhaust Emission Standards

EPA Emission Factors for Greenhouse Gas Inventories

AP-42, Fifth Edition, Volume I Chapter 13: Miscellaneous Sources (1/2011)

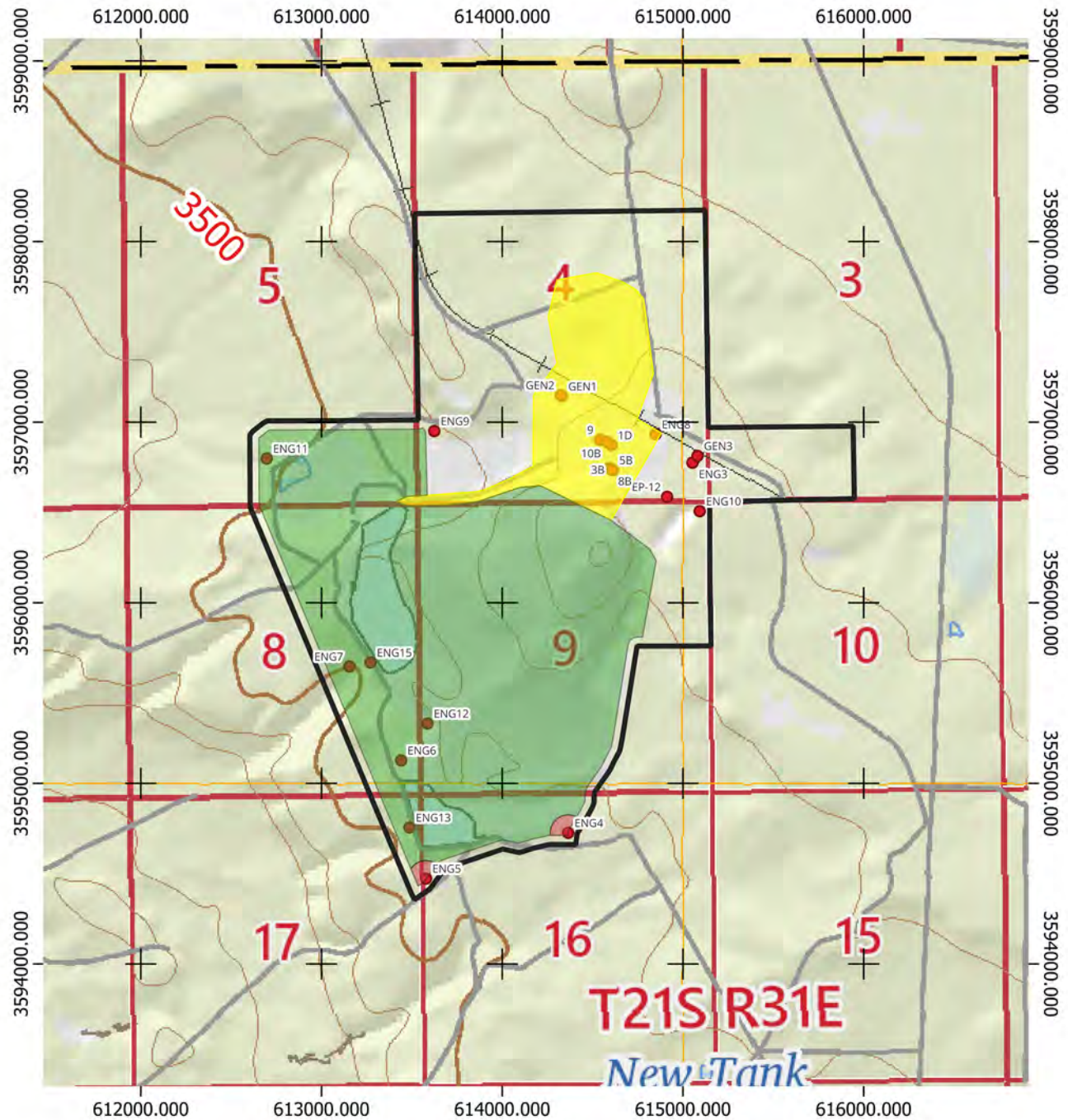
Section 8

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	

See figure on next page.



Restricted Boundary

Eng14A or 14B Flexibility Area

Eng14A and/or 14B Operational Flexibility

Engine 8 Operational Flexibility

Emission Sources



0 250 500 m



WGS84 UTM Zone 13

USGS 100K Topographic Map
Intrepid Potash - New Mexico
East Plant

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”)

☒ 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. ☒ A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
 2. ☒ 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. ☒ A copy of the property tax record (20.2.72.203.B NMAC).
 4. ☒ A sample of the letters sent to the owners of record.
 5. ☒ A sample of the letters sent to counties, municipalities, and Indian tribes.
 6. ☒ A sample of the public notice posted and a verification of the local postings.
 7. ☒ A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
 8. ☒ A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
 9. ☒ 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. ☒ 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. ☒ 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.
-

See Attachment C

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.

Intrepid operates a potash, langbeinite, and salt production plant. In this process, ore is mined from an underground shaft mine, hoisted to the surface, and is put through parallel initial screens and a raw ore crusher, which is permitted as Unit 7. The crushed ore is mixed with brine: from this point, until the material is dried, the process occurs in solution.

The deslimed langbeinite is screened on a “Prep Screen”:

- The undersize material from the Prep Screen undergoes separation by hydrocyclone.
 - From the hydrocyclone, the more dense underflow undergoes further refining for recovery of fine langbeinite. The fine langbeinite is dewatered, then dried in a Rotary Dryer (Unit 1D), then conveyed to product storage domes or warehouse.
 - From the hydrocyclone, the less dense overflow is discharged as waste to the tailings impoundment.
- The oversize material from the Prep Screen is then combined with a magnetite slurry and sent to cyclones as part of a dense media separation (“DMS”).
 - From the DMS cyclone, more dense langbeinite and magnetite are discharged in cyclone underflow. The magnetite is separated from the langbeinite for reuse in the DMS circuit. Brine is removed from langbeinite, which is then dried in the Fluidized Bed Dryer (Unit 10). The dried langbeinite is screened into appropriate product size fractions (Unit 8), then conveyed to product storage domes or warehouse.
 - From the DMS cyclone, the less dense salt is discharged in cyclone overflow, which is screened on a “Float Screen.” The oversized material from the Float Screen may be recovered as a coarse salt product or pumped as waste to the tailings impoundment.

Fine langbeinite may be combined with a proprietary binder, as part of a proprietary process to produce a pelletized product. The fugitive emissions from the pelletizing process are collected in a dust control scrubber (Unit 11). The produced pellet is dried in a rotary dryer (Unit 9). The dried pellets are then conveyed to product storage domes or warehouse.

From product storage domes or warehouse, products may be dispatched via conveyor to a series of screens for final sizing, then discharged to truck or rail cars for offsite shipment. The fugitive emissions from the conveyors and screens are collected in a dust control scrubber (Unit 5).

NSR Permit 755-M14 authorized the installation and operation of the following units: In the salt drying area of the East Plant, Intrepid has portable diesel fired non-road engines for a diesel fired generator (GEN3) used to power equipment in the salt drying area, diesel fired mobile salt screen engine (ENG1), light tower gasoline engine (ENG2), and diesel fired air compressor engine (ENG3).

Engine 4 through Engine 7 (ENG4 through ENG7) are diesel fired portable water pump engines used to pump seep water that is collected in pumpback ponds back into the tailings system.

Engine 9 (ENG9) is a diesel fired water pump engine located near Intrepid’s Pond C area to facilitate as needed pumping for water management; Engine 10 (ENG10) is a diesel fired water pump engine located near the fresh water pond pump area to provide critical backup pump capability should our existing electric pumps go out.

Additionally, Intrepid has the flexibility to bring various non-road engines (Noted in NSR Permit 755-M14 as ENG8) on-site totaling no more than 825 HP to perform various tasks that may be required around the plant area.

The tailings ponds at the facility have seeps and periodic breaches that require the water to be managed to prevent releases. ENG14A and ENG14B will be used to manage the water at locations as the needs arise and may be moved to different

locations along the western and southern end of the tailings pile. ENG15 will manage the seep water at the location designated as the "Cavern Sump."

In April 2025, Intrepid received NSR Permit 755-M15 which provided engine flexibility for managing the tailings system water. A permit application request for additional engine flexibility and a correction to permit 755-M14 was submitted in September 2025, with revisions submitted November 2025 to address comments from the NMED Air Quality Bureau during its review of the application. This pending request will be NSR Permit 755-M16.

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):

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.

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☐ Yes ☒ No

C. Make a determination:

✓ 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 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.
- ☒ 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** one of the listed 20.2.74.501 Table I – PSD Source Categories. The “project” emissions for this modification are **not significant. East Plant meets 20.2.74.501.F NMAC, fossil fuel boilers totaling more than 250 million BTU/hr heat input.** The “project” emissions listed below **do** only result from changes described in this permit application, thus no emissions from other **revisions or modifications, past or future** to this facility. Also, specifically discuss whether this project results in “de-bottlenecking”, or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows [see Table 2 in 20.2.74.502 NMAC for a complete list of significance levels]:

- a. NOx: **6.80** TPY
- b. CO: **7.61** TPY
- c. VOC: **2.33** TPY
- d. SOx: **1.90** TPY
- e. PM: **0.61** TPY
- f. PM10: **0.61** TPY
- g. PM2.5: **0.61** TPY
- h. Fluorides: **0** TPY
- i. Lead: **0** TPY
- j. Sulfur compounds (listed in Table 2): **0** TPY
- k. GHG: **1,064.15** TPY

C. Netting **is not required; the project is not significant.**

D. BACT is **not required for this modification, as this application is a minor modification**

E. If this is an existing PSD major source, or any facility with emissions greater than 250 TPY (or 100 TPY for 20.2.74.501 Table 1 – PSD Source Categories), determine whether any permit modifications are related, or could be considered a single project with this action, and provide an explanation for your determination whether a PSD modification is triggered.

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 RELEVANT 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:

<u>State Regulation Citation</u>	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.
20.2.1 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	If subject, this would normally apply to the entire facility. 20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. Title V applications, see exemption at 20.2.3.9 NMAC The TSP NM ambient air quality standard was repealed by the EIB effective November 30, 2018.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This applies to the entire facility.
20.2.19 NMAC	Potash	Yes	Units	Referenced regulation applies to 1D, 5, 7, 8, 9, 10, 11, F1-F24, F27-F37, F38-F39, F40-F67, & F68/69.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	Units	Units covered by this Permit do not have gas burning equipment with heat input of greater than 1,000,000 million British Thermal Units per year per unit.
20.2.34 NMAC	Oil Burning Equipment: NO2	No	Units	Units covered by this Permit do not have gas burning equipment with heat input of greater than 1,000,000 million British Thermal Units per year per unit.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	Facility	This facility does not have natural gas processing plants that use a Sulfur Recovery Unit to reduce sulfur emissions.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.
20.2.38 NMAC	Hydrocarbon Storage Facility	No	Units	Units covered by this Permit do not contain storage tanks that meet the criteria of the referenced regulation.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	Units	Facility does not contain any affected equipment or activity referenced by this regulation.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	Unit	GEN-1, GEN-2, & FWP and units ENG8 through ENG15 are subject to the referenced regulation.
20.2.70 NMAC	Operating Permits	Yes	Facility	Facility's potential to emit (PTE) exceeds 100 tpy or more of any regulated air pollutant other than HAPs.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	Facility is subject to operating permit fees.
20.2.72 NMAC	Construction Permits	Yes	Facility	Facility's potential emission rate (PER) is greater than 10 pph or greater than 25 tpy for any pollutant subject to a state or federal ambient air quality standard (does not include VOCs or HAPs).
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	Facility is permitted for greater than 10 tpy of TSP, PM10, PM2.5, nitrogen oxides, and carbon monoxide; and is subject to emissions inventory requirements.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	Facility is a listed categorical source that is a major PSD source but has never triggered PSD review or BACT.
20.2.75	Construction Permit Fees	Yes	Facility	Facility is subject to construction permit fees.

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.)
NMAC				
20.2.77 NMAC	New Source Performance	Yes	GEN-1, GEN-2, FWP	Permitted units, GEN-1, GEN-2, & FWP, are subject to the referenced regulation. Proposed units ENG14A, ENG14B, & ENG15 are portable non-road engines. Portable or transportable (has wheels, skids, carrying handles, dolly, trailer or platform) engines are not covered by NSPS, i.e., nonroad engine as defined at 40 CFR 1068.30 are not stationary sources.
20.2.78 NMAC	Emission Standards for HAPS	No	Units	This facility emits minimal hazardous air pollutants and is not subject to the requirements of 40 CFR Part 61.
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	Facility is not located in a Non-Attainment Area.
20.2.80 NMAC	Stack Heights	No	Facility	Facility does not contain equipment subject to referenced regulation.
20.2.82 NMAC	MACT Standards for source categories of HAPS	No	Units	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.
20.2.80 NMAC	Stack Heights	No		Facility does not contain equipment subject to referenced regulation.
20.2.82 NMAC	MACT Standards for source categories of HAPS	No	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.

Table for Applicable Federal Regulations (Note: This is not an exhaustive list):

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	If subject, this would normally apply to the entire facility. This applies if you are subject to 20.2.70, 20.2.72, 20.2.74, and/or 20.2.79 NMAC.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	GEN-1, GEN-2, FWP	Referenced regulation applies to GEN-1, GEN-2, & FWP. Proposed units ENG14A, ENG14B, & ENG15 are portable non-road engines. Portable or transportable (has wheels, skids, carrying handles, dolly, trailer or platform) engines are not covered by NSPS, i.e., nonroad engine as defined at 40 CFR 1068.30 are not stationary sources.
NSPS 40 CFR 60.40a, Subpart Da	Subpart Da, Performance Standards for Electric Utility Steam Generating Units	No	N/A	Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR 60.40b Subpart Db	Electric Utility Steam Generating Units	No	N/A	Facility does not contain equipment subject to referenced regulation.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	Existing boilers 5B, 7B and 8B	40 CFR 60 Subparts A & Dc applies to Boilers 5B, 7B, & 8B. 40 CFR 60 Subparts A & Dc does not apply to existing boilers 1B and 3B since they were constructed prior to the effective date of this NSPS. Additionally, no other sources at the facility are subject to this regulation.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	No		Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	No		Facility does not contain equipment subject to referenced regulation.
NSPS	Stationary Gas	No		Facility does not contain equipment subject to referenced regulation.

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 60.330 Subpart GG	Turbines			
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from Onshore Gas Plants	No		Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO₂ Emissions	No		Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR 60 Subpart OOO	Standards of Performance for Non-Metallic Mineral Processing Plants	No		Facility does not contain equipment subject to referenced regulation. Subpart OOO applies to non-metallic mineral processing plants. EPA intentionally left out potash facilities from being subject to NSPS OOO; and potash processing operations do not meet the definitions within 40 CFR 60.671.
NSPS 40 CFR Part 60 Subpart OOOO	NSPS for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No		Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	No		Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	Yes	Units GEN-1, GEN-2 and FWP	Referenced regulation applies to GEN-1, GEN-2, & FWP. ENG1 – ENG10, and GEN3 are portable non-road engines. Portable or transportable (has wheels, skids, carrying handles, dolly, trailer or platform) engines are not covered by NSPS, i.e., nonroad engine as defined at 40 CFR 1068.30 are not stationary sources.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No		Unit ENG2 is a spark ignition engine but it is a portable non-road engine not covered by NSPS.
NSPS 40	Standards of	No		Facility does not contain equipment subject to referenced regulation.

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
CFR 60 Subpart TTTT	Performance for Greenhouse Gas Emissions for Electric Generating Units			
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No		Facility does not contain equipment subject to referenced regulation.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No		Facility does not contain equipment subject to referenced regulation.
NESHAP 40 CFR 61 Subpart A	General Provisions	Potentially Applicable	Facility	Applies if any other Subpart in 40 CFR 61 applies. Currently none apply to Intrepid.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for Mercury	No		The provisions of this subpart are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge. N/A. Intrepid does not perform these processes or operations.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	No		Facility does not contain equipment subject to referenced regulation.
MACT 40 CFR 63, Subpart A	General Provisions	Potentially Applicable	Units Subject to 40 CFR 63	Applies if any other Subpart in 40 CFR 63 applies. Currently none apply to Intrepid.
MACT 40 CFR 63.760 Subpart HH	Oil and Natural Gas Production Facilities	No		N/A. Not in this source category.
MACT 40 CFR 63 Subpart HHH		No		N/A. Not in this source category.
MACT 40 CFR 63 Subpart DDDDD	NESHAP for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No		Intrepid is not a major source of HAPs
MACT 40	NESHAP for Area Sources Industrial,	No	Units 1B	Intrepid's boilers are natural gas fired only units meeting the definition of "gas

<u>Federal Regulation Citation</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
CFR 63 Subpart JJJJJ	Commercial, and Institutional Boilers & Process Heaters		– 8B	fired boiler” and thus are not subject to the Subpart JJJJJ. See 40 CFR 63.11237 and 63.11195(e).
MACT 40 CFR 63 Subpart UUUUU	NESHAP Coal & Oil Fire Electric Utility Steam Generating Unit	No		N/A. Not in this source category.
MACT 40 CFR 63 Subpart ZZZZ	NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	Yes	GEN-1, GEN-2, FWP	GEN-1, GEN-2 and FWP currently listed in the East Plant air permit are subject to requirements of 40 CFR 63 Subpart ZZZZ, but fully comply by complying with the requirements of 40 CFR 60 Subpart IIII. See 40 CFR 63.6590(c). Proposed units ENG14A, ENG14B, and ENG15 are portable non-road engines. Portable or transportable (has wheels, skids, carrying handles, dolly, trailer or platform) engines are not covered by NSPS, i.e., nonroad engine as defined at 40 CFR 1068.30 are not stationary sources.
40 CFR 64	Compliance Assurance Monitoring	Yes	Units	Applies only to Title V Major Sources. Units 1D, 5, 7, 8, 9, 10, 11, and 12 are subject to the CAM requirements.
40 CFR 68	Chemical Accident Prevention	No		If subject, this would normally apply to the entire facility. An owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under §68.115, Intrepid does not have any chemicals in a covered process above the threshold.
Title IV – Acid Rain 40 CFR 72	Acid Rain	No		N/A. Not in this source category.
Title IV – Acid Rain 40 CFR 73	Sulfur Dioxide Allowance Emissions	No		N/A. Not in this source category.
Title IV-Acid Rain 40 CFR 75	Continuous Emissions Monitoring	No		N/A. Not in this source category.
Title IV – Acid Rain 40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program	No		N/A. Not in this source category.
Title VI – 40 CFR 82	Protection of Stratospheric Ozone	Yes	Facility	EPA Guidance Page for 40 CFR 82: https://www.epa.gov/section608 40 CFR 82 may apply if you: (40 CFR 82.1 and 82.100) produce, transform, destroy, import or export a controlled substance or import or export a controlled product; (40 CFR 82.30) if you perform service on a motor vehicle for consideration when this service involves the refrigerant in the motor vehicle air conditioner; (40 CFR 82.80) if you are a department, agency, and instrumentality of the United States subject to Federal procurement requirements; (82.150) if you service, maintain, or repair appliances, dispose of appliances, refrigerant reclaimers, if you are an owner or operator of an appliance , if you are a manufacturer of appliances or of recycling and recovery equipment, if you are an approved recycling and recovery equipment testing organization, and/or if you sell or offer for sell or purchase class I or class I refrigerants.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
				Note: Owners and operators of appliances subject to 40 CFR 82.150 Recycling and Emissions Reduction have recordkeeping and reporting requirements even if the owner/operator is not performing the actual work. Note: Disposal definition in 82.152: Disposal means the process leading to and including: (1) The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water; (2) The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water; or (3) The disassembly of any appliance for reuse of its component parts. "Major maintenance, service, or repair means" any maintenance, service, or repair that involves the removal of any or all of the following appliance components: compressor, condenser, evaporator, or auxiliary heat exchange coil; or any maintenance, service, or repair that involves uncovering an opening of more than four (4) square inches of "flow area" for more than 15 minutes.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

- ☒ **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.
- ☐ **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: https://www.env.nm.gov/aqb/permit/aqb_pol.html. 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).

None

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.	X
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.
- ☐ 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.
- ☒ Attached in UA4 is a **modeling report for some** pollutants from the facility.
- ☐ No modeling is required.

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.

To save paper and to standardize the application format, delete this sentence and the samples in the Compliance Test History Table, and begin your submittal for this attachment on this page.

Compliance Test History Table

Unit No.	Test Description	Test Date
EP-1D, EP-5, EP-7, EP-8	Tested in accordance with Title V Permit No. P009 / NSR Permit No. 755	2009, and annually thereafter
EP-9, EP-10, and EP-11	Tested in accordance with Title V Permit No. P009 / NSR Permit No. 755	2012, and annually thereafter
Boilers 1B through 8B	Tested in accordance with Title V Permit No. P009 / NSR Permit No. 755	4/2013 and semi- annually thereafter

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.

Non-road engines proposed around the tailings pond are based upon the sizes that may be needed for the anticipated functions. Within the non-road engine flexibility area proposed, the emissions were based on the engines being a Tier 3 engine or above to be included in the rental contract. Based on the size category, the engines will have a maximum emissions factor as summarized below.

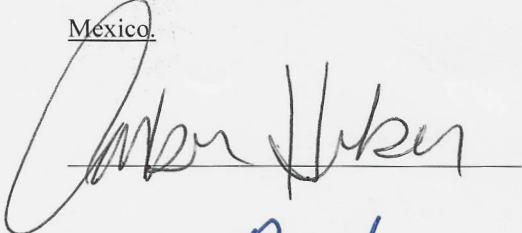
Rated Power (kW)	Upper (kW)	HP	Tier	Model Year	NMHC (g/kW-hr)	NMHC + NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)
kW < 8	8	10.7	2	2005-2007	-	7.5	-	0.80	8.0
8 ≤ kW < 19	19	25.5	2	2005-2007	-	7.5	-	0.80	6.6
37 ≤ kW < 56	56	75.1	3	2008-2011	-	4.7	-	0.40	5.0
56 ≤ kW < 75	75	100.5	3	2008-2011	-	4.7	-	0.40	5.0
75 ≤ kW < 130	130	174.3	3	2007-2011	-	4.0	-	0.30	5.0
130 ≤ kW < 225	225	301.6	3	2006-2010	-	4.0	-	0.20	3.5
225 ≤ kW < 450	450	603.2	3	2006-2010	-	4.0	-	0.20	3.5
450 ≤ kW < 560	560	750.7	3	2006-2010	-	4.0	-	0.20	3.5
560 ≤ kW < 900	746	1000.0	2	2006-2010	-	6.4	-	0.20	3.5

Section 22: Certification

Company Name: Intrepid Potash – New Mexico, LLC

I, Roy Torres, 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.

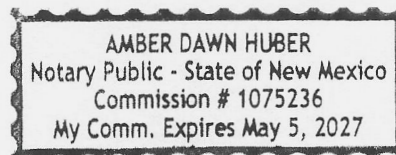
Signed this 28 day of AUGUST, 2025, upon my oath or affirmation, before a notary of the State of New Mexico.



Roy Torres
*Signature

Roy Torres

Printed Name



8-28-2025
Date

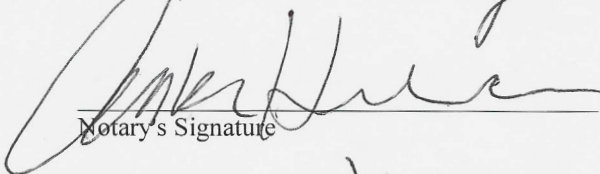
General Manager – IPNM Mining & Minerals

Title

Scribed and sworn before me on this 28 day of AUGUST, 2025.

My authorization as a notary of the State of New Mexico expires on the

May 5th day of May, 2027.



Notary's Signature

8-28-2025
Date

Amber Huber

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.

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:	East Plant
2	Name of company:	Intrepid Potash – New Mexico, LLC
3	Current Permit number:	0755-M15
4	Name of applicant's modeler:	Bruce Ferguson
5	Phone number of modeler:	601-824-1860
6	E-mail of modeler:	bferguson@fce-engineering.com

16-B: Brief

1	Was a modeling protocol submitted and approved?	Yes ☐	No ☒
2	Why is the modeling being done?	Adding New Equipment	
3	Describe the permit changes relevant to the modeling.		
	Addition of non-road engines and revision of the restricted boundary area. Intrepid is proposing to expand the restricted boundary along the western and southern side of the tailings ponds. One additional 199 hp engine (ENG15) is being proposed at a fixed location and two 199 hp engines (ENG14A & ENG14B) are proposed as “floating” locations to address needs as they arise. The “floating” location engines will be located at a minimum distance from the restricted area boundary of 50 meters, and only one engine will be located within 100 meters of ENG4 or within 100 meters of ENG5. These restrictions are illustrated by the shaded regions in the plot plan presented in Section 5 of the application.		
4	What geodetic datum was used in the modeling?	NAD83	

5	How long will the facility be at this location?		Indefinite	
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		155	
8	List the PSD baseline dates for this region (minor or major, as appropriate).			
	NO2	February 8, 1988		
	SO2	January 6, 1975		
	PM10	January 6, 1975		
	PM2.5	October 20, 2010		
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).			
	None			
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.			
	None			

16-C: Modeling History of Facility

1	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).			
	Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
	CO	755-M15	April 14, 2025	
	NO ₂	755-M15	April 14, 2025	
	SO ₂	755-M15	April 14, 2025	
	H ₂ S			
	PM2.5	755-M15	April 14, 2025	
	PM10			
	Lead			
	Ozone (PSD only)			

	NM Toxic Air Pollutants (20.2.72.402 NMAC)			
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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 ₂ S	☐	☐	☐	☐	☒
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.					
	None					
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

16-F: Modeling options

1	Was the latest version of AERMOD used with regulatory default options? If not explain below.	Yes ☒	No ☐
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16-G: Surrounding source modeling

1	Date of surrounding source retrieval	6/9/2025
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

16-H: Building and structure downwash

1	How many buildings are present at the facility?	61 structures were included in the historical BPIP analysis. Proposed engines are not within the influence of buildings.	
2	How many above ground storage tanks are present at the facility?		
3	Was building downwash modeled for all buildings and tanks? If not explain why below.	Yes ☐	No ☒
	The area evaluated is approximately 2 km from facility structures.		
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.					
	Access to the East Plant is restricted by fencing, gates, signage, and/or rugged undeveloped terrain.					
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 or center of facility	End distance from restricted area or center of facility	Comments

	Discrete	Circle	100 m	0	6 km	
	Discrete	Circle	250 m	6 km	11.5 km	
5	Describe receptor spacing along the fence line.					
	50 m					
6	Describe the PSD Class I area receptors.					
	N/A					

16-J: Modeling Scenarios N/A

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).											
2	Which scenario produces the highest concentrations? Why?											
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-K: NO₂ Modeling

1	Which types of NO ₂ modeling were used? Check all that apply.		
	☒	ARM2	
	☐	100% NO _x to NO ₂ conversion	
	☐	PVMRM	
	☐	OLM	
	☐	Other:	
2	Describe the NO ₂ modeling.		
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: High eighth high			
Annual One Year Annual Average:			

16-L: Ozone Analysis

1	NMED has performed a generic analysis that demonstrates sources that are minor with respect to PSD do not cause or contribute to any violations of ozone NAAQS. The analysis follows. The basis of the ozone SIL is documented in Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program, EPA, April 17, 2018 and associated documents. NMED accepts this SIL basis and incorporates it into this permit record by reference. Complete documentation of the ozone concentration analysis using MERPS is included in the New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines.		
2	The MERP values presented in Table 10 and Table 11 of the NM AQB Modeling Guidelines that produce the highest concentrations indicate that facilities emitting no more than 250 tons/year of NO_x and no more than 250 tons/year of VOCs will cause less formation of O₃ than the O₃ significance level. $[O_3]_{8-hour} = \left(\frac{250 \frac{ton}{yr}}{340_{MERP_{NOX}}} + \frac{250 \frac{ton}{yr}}{4679_{MERP_{VOC}}} \right) \times 1.96 \mu g/m^3$ =1.546 μg/m³, which is below the significance level of 1.96 μg/m³. Sources that produce ozone concentrations below the ozone SIL do not cause or contribute to air contaminant levels exceeding the ozone NAAQS.		

3	Does the facility emit at least 250 tons per year of NO _x or at least 250 tons per year of VOCs? Sources that emit at least 250 tons per year of NO _x or at least 250 tons per year of VOCs are covered by the analysis above and require an individual analysis.				Yes ☐	No ☒
5	For new PSD Major Sources or PSD major modifications, if MERPs were used to account for ozone fill out the information below. If another method was used describe below.					
	NO _x (ton/yr)	MERP _{NOX}	VOCs (ton/yr)	MERP _{VOC}	[O ₃] _{8-hour}	

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.					
	Pollutant	NO _x	SO ₂		[PM2.5] _{24-hour}	
	MERP _{annual}	26780	14978		0.037645 µg/m ³	
	MERP _{24-hour}	7331	1981		[PM2.5] _{annual}	
	Emission rate (ton/yr)	192.16	10.22		0.001572 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.	
	The facility is requesting the ability to add nonroad engines up to a total of 398 hp at the south and western boundary of the tailings with a maximum engine size of 199 hp. Engines will operate no closer than 50 meters from the restricted boundary, and only one engine will be located within 100 meters of ENG4 or within 100 meters of ENG5. These restrictions are illustrated by the shaded regions in the plot plan presented in Section 5 of the application.	
	The worst case location of the "floating" engines was assumed to be when the two new engines are located beside existing engines; ENG11, ENG7 ENG6, ENG13, ENG5 & ENG4. Both engines could not be placed beside ENG4 and ENG5 without modeled exceedances. One floating engine was placed beside ENG4 and ENG5 with the second "floating" engine placed upwind from the highest impact at 100 meters from the existing engine location. The various locations are represented with the source groups A through F.	
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	
	8			X		
	7B			X	X	
	8B			X	X	
	10D			X	X	
	EP-09			X		
	EP-11			X	X	
	(F40-F67)			X		
	Dryer	X	X	X	X	
	F-38 & F-39			X	X	
	F-25/26			X	X	
	F-68/69			X	X	
	ENG1-ENG15	X	X	X	X	
	GEN3	X	X	X	X	
5	PSD increment description for sources. (for unusual cases, i.e., baseline unit expanded emissions after baseline date).			Source "208C1, Intrepid - East Plant, Krebbs Scrubber Compactor - Rmv'd" included in NMED inventory expands PM10 increment.		
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**(N/A)**

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)

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?	Yes ☒	No ☐
	If not please explain how increment consumption status is determined for the missing installation dates below.		
There were no volume sources for the project.			
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: N/A			
	NO ₂ : N/A			
	PM2.5: Hobbs-Jefferson (350450019)			
	PM10: Hobbs-Jefferson (350250008)			
	SO ₂ : N/A			
	Other:			
	Comments:			
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 ☐
	Artesia 2018			
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.			

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?		
http://www.webgis.com/ , downloaded through Lakes Environmental AERMOD-View GUI.			

16-U: Modeling Files

1	Describe the modeling files:		
	File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
	SIA/CO.zip	CO	ROI/SIA
	SIA/NOx.zip	NOx	ROI/SIA
	SIA/PM.zip	PM _{2.5} /PM ₁₀	ROI/SIA
	SIA/SO ₂ .zip	SO ₂	ROI/SIA
	CIA/NOx.zip	NOx	Cumulative NAAQS and PSD
	CIA/PM25.zip	PM _{2.5}	Cumulative NAAQS and PSD
	CIA/SO ₂ .zip	SO ₂	Cumulative NAAQS and PSD
	CIA/PM10.zip	PM ₁₀	Cumulative NAAQS and PSD

16-V: PSD New or Major Modification Applications**(N/A)**

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.		
4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
5	If required, have ozone and secondary PM _{2.5} ambient impacts analyses been completed? If so describe below.	Yes ☐	No ☐

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/m ³)	Modeled Concentration with Surrounding Sources (µg/m ³)	Secondary PM (µg/m ³)	Background Concentration (µg/m ³)	Cumulative Concentration (µg/m ³)	Value of Standard (µg/m ³)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
CO 1-hr SIL	221.36052	N/A	N/A	N/A	221.36052	2000	11.1%	614414.6	3594722.7	1078.55
CO 8-hr SIL	112.78880	N/A	N/A	N/A	112.78880	500	22.6%	614430.0	3594746.7	1078.98
PM ₁₀ 24-hr PSD	7.73467	8.0075	N/A	N/A	8.0075	30	26.7%	614414.6	3594722.7	1078.55
PM ₁₀ Annual PSD	1.58216	2.26838	N/A	N/A	2.26838	17	13.3%	614430.0	3594746.7	1078.98
PM ₁₀ 24-hr NAAQS	7.73467	7.73892	N/A	37.3	45.03892	150	30.0%	614414.6	3594722.7	1078.55
SO ₂ 3-hr PSD	60.40889	60.4740	N/A	N/A	60.4740	512	11.8%	614414.6	3594722.7	1078.55
SO ₂ 24-hr PSD	19.13520	19.21402	N/A	N/A	19.21402	91	21.1%	614430.0	3594746.7	1078.98
SO ₂ Annual PSD	2.84991	3.08586	N/A	N/A	3.08586	20	15.4%	614430.0	3594746.7	1078.98
SO ₂ 1-hr NAAQS	77.08253	77.10400	N/A	N/A	77.10400	196.4	39.3%	614414.6	3594722.7	1078.55
PM _{2.5} 24-hr NAAQS	4.66268	4.75283	0.03765	16.5	21.29048	35	60.8%	614430.0	3594746.7	1078.98
PM _{2.5} Annual NAAQS	1.26381	1.33259	0.00157	5.9	7.23416	9	80.4%	612621.3	3596951.3	1059.09
PM _{2.5} 24-hr PSD	6.20618	6.23729	0.03765	N/A	6.27494	9	69.7%	614430.0	3594746.7	1078.98
PM _{2.5} Annual PSD	1.26381	1.4146	0.00157	N/A	1.42247	4	35.4%	612621.3	3596951.3	1059.09
NO ₂ Annual PSD	12.16291	14.13199	N/A	N/A	14.13199	25	56.5%	612621.3	3596951.3	1059.09
NO ₂ Annual NMAAQs	12.16291	14.13643	N/A	N/A	14.13643	94.02	15.0%	612621.3	3596951.3	1059.09
NO ₂ 1-hr NAAQS	140.6833	141.4633	N/A	N/A	141.4633	188.03	75.2%	613615.8	3594438.2	1069.28

16-X: Summary/conclusions

	A statement that modeling requirements have been satisfied and that the permit can be issued.
1	The facility was modeled following the NMED Air Quality Modeling Guideline, revised June 2024. The significance analyses for CO, PM, SO ₂ , and NO ₂ included the new proposed sources. Various locations were modeled for the two proposed portable engines to identify max impacts. CO was determined to be below the significance levels. PM ₁₀ , PM _{2.5} , SO ₂ , and NO ₂ were evaluated for cumulative impacts. All the impacts were found to be compliant with the NMAAQs, NAAQS and PSD increment. The proposed sources will, therefore, not cause or contribute to a violation of the ambient standards and the permit can be issued.

ATTACHMENT A

INTREPID EAST PLANT AIR EMISSIONS CALCULATIONS SPECIFIC TO THE REQUESTED CHANGES

Portable Non-road Engines

* For NOx+NMHC standards, NOx assumed 95% and VOC 5%

Annual operation limited to 3,100 hrs per pump engine; not to exceed the HP-Hrs shown above

Annual operation limited to	1500	hrs per engine for ENG1 through ENG3 & GEN3
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Emissions based on Tiered Compression Engine 56 ≤ kw <75

Emissions based on maximum Tier 2 emission rates

Emissions based on maximum emission standard for a Tiered

Emissions based on maximum emission standard for a Tiered

ATTACHMENT B

**INTREPID EAST EMISSION SUPPORTING
DOCUMENTATION**

Table 3.3-1. EMISSION FACTORS FOR UNCONTROLLED GASOLINE
AND DIESEL INDUSTRIAL ENGINES^a

Pollutant	Gasoline Fuel (SCC 20200301, 20300301) Emission Factor (lb/hp-hr) (power output)	Gasoline Fuel (SCC 20200301, 20300301) Emission Factor (lb/MMBtu) (fuel input)	Diesel Fuel (SCC 20200102, 20300101) Emission Factor (lb/hp- hr) (power output)	Diesel Fuel (SCC 20200102, 20300101) Emission Factor (lb/MMBtu) (fuel input)	Emission Factor Rating
NO _x	0.011	1.63	0.031	4.41	D
CO	6.96 E-03 ^d	0.99 ^d	6.68 E-03	0.95	D
SO _x	5.91 E-04	0.084	2.05 E-03	0.29	D
PM-10 ^b	7.21 E-04	0.10	2.20 E-03	0.31	D
CO ₂ ^c	1.08	154	1.15	164	B
Aldehydes	4.85 E-04	0.07	4.63 E-04	0.07	D
TOC - Exhaust	0.015	2.10	2.47 E-03	0.35	D
TOC - Evaporative	6.61 E-04	0.09	0.00	0.00	E
TOC - Crankcase	4.85 E-03	0.69	4.41 E-05	0.01	E
TOC - Refueling	1.08 E-03	0.15	0.00	0.00	E

^a References 2,5-6,9-14. When necessary, an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr was used to convert from lb/MMBtu to lb/hp-hr. To convert from lb/hp-hr to kg/kw-hr, multiply by 0.608. To convert from lb/MMBtu to ng/J, multiply by 430. SCC = Source Classification Code. TOC = total organic compounds.

^b PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be # 1 µm in size.

^c Assumes 99% conversion of carbon in fuel to CO₂ with 87 weight % carbon in diesel, 86 weight % carbon in gasoline, average BSFC of 7,000 Btu/hp-hr, diesel heating value of 19,300 Btu/lb, and gasoline heating value of 20,300 Btu/lb.

^d Instead of 0.439 lb/hp-hr (power output) and 62.7 lb/mmBtu (fuel input), the correct emissions factors values are 6.96 E-03 lb/hp-hr (power output) and 0.99 lb/mmBtu (fuel input), respectively. This is an editorial correction. March 24, 2009.

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES^a

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene ^b	9.33 E-04
Toluene ^b	4.09 E-04
Xylenes ^b	2.85 E-04
Propylene ^d	2.58 E-03
1,3-Butadiene ^{b,c}	<3.91 E-05
Formaldehyde ^b	1.18 E-03
Acetaldehyde ^b	7.67 E-04
Acrolein ^b	<9.25 E-05
Naphthalene ^b	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzo(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,i)perylene	<4.89 E-07
TOTAL PAH	1.68E-04

^a Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-03-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.

^b Hazardous air pollutant listed in the *Clean Air Act*.

^c Based on data from 1 engine.

^d The footnote indicating that Propylene is a CAA HAP compound was deleted on 10/27/2006. This is an editorial correction.

Nonroad Compression-Ignition Engines: Exhaust Emission Standards

	Rated Power (kW)	Tier	Model Year	NMHC (g/kW-hr)	NMHC + NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)	Smoke ^a (Percentage)	Useful Life (hours /years) ^b	Warranty Period (hours /years) ^b
Federal	kW < 8	1	2000-2004	-	10.5	-	1.0	8.0	20/15/50	3,000/5	1,500/2
		2	2005-2007	-	7.5	-	0.80	8.0			
		4	2008+	-	7.5	-	0.40 ^c	8.0			
	8 ≤ kW < 19	1	2000-2004	-	9.5	-	0.80	6.6		3,000/5	1,500/2
		2	2005-2007	-	7.5	-	0.80	6.6			
		4	2008+	-	7.5	-	0.40	6.6			
	19 ≤ kW < 37	1	1999-2003	-	9.5	-	0.80	5.5		5,000/7 ^d	3,000/5 ^e
		2	2004-2007	-	7.5	-	0.60	5.5			
		4	2008-2012	-	7.5	-	0.30	5.5			
			2013+	-	4.7	-	0.03	5.5			
	37 ≤ kW < 56	1	1998-2003	-	-	9.2	-	-		8,000/10	3,000/5
		2	2004-2007	-	7.5	-	0.40	5.0			
		3 ^f	2008-2011	-	4.7	-	0.40	5.0			
		4 (Option 1) ^g	2008-2012	-	4.7	-	0.30	5.0			
		4 (Option 2) ^g	2012	-	4.7	-	0.03	5.0			
		4	2013+	-	4.7	-	0.03	5.0			
	56 ≤ kW < 75	1	1998-2003	-	-	9.2	-	-			
		2	2004-2007	-	7.5	-	0.40	5.0			
		3	2008-2011	-	4.7	-	0.40	5.0			
		4	2012-2013 ^h	-	4.7	-	0.02	5.0			
			2014+ ⁱ	0.19	-	0.40	0.02	5.0			
	75 ≤ kW < 130	1	1997-2002	-	-	9.2	-	-			
		2	2003-2006	-	6.6	-	0.30	5.0			
		3	2007-2011	-	4.0	-	0.30	5.0			
		4	2012-2013 ^h	-	4.0	-	0.02	5.0			
			2014+	0.19	-	0.40	0.02	5.0			

Continued

	Rated Power (kW)	Tier	Model Year	NMHC (g/kW-hr)	NMHC + NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)	Smoke ^a (Percentage)	Useful Life (hours /years) ^b	Warranty Period (hours /years) ^b
Federal	130 ≤ kW < 225	1	1996-2002	1.3 ^j	-	9.2	0.54	11.4	20/15/50	8,000/10	3,000/5
		2	2003-2005	-	6.6	-	0.20	3.5			
		3	2006-2010	-	4.0	-	0.20	3.5			
		4	2011-2013 ^h	-	4.0	-	0.02	3.5			
			2014+ ⁱ	0.19	-	0.40	0.02	3.5			
	225 ≤ kW < 450	1	1996-2000	1.3 ^j	-	9.2	0.54	11.4			
		2	2001-2005	-	6.4	-	0.20	3.5			
		3	2006-2010	-	4.0	-	0.20	3.5			
		4	2011-2013 ^h	-	4.0	-	0.02	3.5			
			2014+ ⁱ	0.19	-	0.40	0.02	3.5			
	450 ≤ kW < 560	1	1996-2001	1.3 ^j	-	9.2	0.54	11.4			
		2	2002-2005	-	6.4	-	0.20	3.5			
		3	2006-2010	-	4.0	-	0.20	3.5			
		4	2011-2013 ^h	-	4.0	-	0.02	3.5			
			2014+ ⁱ	0.19	-	0.40	0.02	3.5			
	560 ≤ kW < 900	1	2000-2005	1.3 ^j	-	9.2	0.54	11.4			
		2	2006-2010	-	6.4	-	0.20	3.5			
		4	2011-2014	0.40	-	3.5	0.10	3.5			
			2015+ ⁱ	0.19	-	3.5 ^k	0.04 ^l	3.5			
	kW > 900	1	2000-2005	1.3 ^j	-	9.2	0.54	11.4			
		2	2006-2010	-	6.4	-	0.20	3.5			
		4	2011-2014	0.40	-	3.5 ^k	0.10	3.5			
			2015+ ⁱ	0.19	-	3.5 ^k	0.04 ^l	3.5			

Notes on following page.

Notes:

- For Tier 1, 2, and 3 standards, exhaust emissions of nitrogen oxides (NO_x), carbon monoxide (CO), hydrocarbons (HC), and non-methane hydrocarbons (NMHC) are measured using the procedures in 40 Code of Federal Regulations (CFR) Part 89 Subpart E. For Tier 1, 2, and 3 standards, particulate matter (PM) exhaust emissions are measured using the California Regulations for New 1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines.
- For Tier 4 standards, engines are tested for transient and steady-state exhaust emissions using the procedures in 40 CFR Part 1039 Subpart F. Transient standards do not apply to engines below 37 kilowatts (kW) before the 2013 model year, constant-speed engines, engines certified to Option 1, and engines above 560 kW.
- Tier 2 and later model naturally aspirated nonroad engines shall not discharge crankcase emissions into the atmosphere unless these emissions are permanently routed into the exhaust. This prohibition does not apply to engines using turbochargers, pumps, blowers, or superchargers.
- In lieu of the Tier 1, 2, and 3 standards for NO_x, NMHC + NO_x, and PM, manufacturers may elect to participate in the averaging, banking, and trading (ABT) program described in 40 CFR Part 89 Subpart C.
- a Smoke emissions may not exceed 20 percent during the acceleration mode, 15 percent during the lugging mode, and 50 percent during the peaks in either mode. Smoke emission standards do not apply to single-cylinder engines, constant-speed engines, or engines certified to a PM emission standard of 0.07 grams per kilowatt-hour (g/kW-hr) or lower. Smoke emissions are measured using procedures in 40 CFR Part 86 Subpart I.
- b Useful life and warranty period are expressed hours and years, whichever comes first.
- c Hand-startable air-cooled direct injection engines may optionally meet a PM standard of 0.60 g/kW-hr. These engines may optionally meet Tier 2 standards through the 2009 model years. In 2010 these engines are required to meet a PM standard of 0.60 g/kW-hr.
- d Useful life for constant speed engines with rated speed 3,000 revolutions per minute (rpm) or higher is 5 years or 3,000 hours, whichever comes first.
- e Warranty period for constant speed engines with rated speed 3,000 rpm or higher is 2 years or 1,500 hours, whichever comes first.
- f These Tier 3 standards apply only to manufacturers selecting Tier 4 Option 2. Manufacturers selecting Tier 4 Option 1 will be meeting those standards in lieu of Tier 3 standards.
- g A manufacturer may certify all their engines to either Option 1 or Option 2 sets of standards starting in the indicated model year. Manufacturers selecting Option 2 must meet Tier 3 standards in the 2008-2011 model years.
- h These standards are phase-out standards. Not more than 50 percent of a manufacturer's engine production is allowed to meet these standards in each model year of the phase out period. Engines not meeting these standards must meet the final Tier 4 standards.
- i These standards are phased in during the indicated years. At least 50 percent of a manufacturer's engine production must meet these standards during each year of the phase in. Engines not meeting these standards must meet the applicable phase-out standards.
- j For Tier 1 engines the standard is for total hydrocarbons.
- k The NO_x standard for generator sets is 0.67 g/kW-hr.
- l The PM standard for generator sets is 0.03 g/kW-hr.

Citations: Code of Federal Regulations (CFR) citations:

- 40 CFR 89.112 = Exhaust emission standards
- 40 CFR 1039.101 = Exhaust emission standards for after 2014 model year
- 40 CFR 1039.102 = Exhaust emission standards for model year 2014 and earlier
- 40 CFR 1039 Subpart F = Exhaust emissions transient and steady state test procedures
- 40 CFR 86 Subpart I = Smoke emission test procedures
- 40 CFR 1065 = Test equipment and emissions measurement procedures



Emission Factors for Greenhouse Gas Inventories

Last Modified: January 15, 2025

Blue text indicates an update from the 2024 version of this document.

Typically, greenhouse gas emissions are reported in units of carbon dioxide equivalent (CO₂e). Gases are converted to CO₂e by multiplying by their global warming potential (GWP). In most cases, the emission factors listed in this document generally have not been converted to CO₂e. To do so, multiply the emissions by the corresponding GWP listed in the table below.

Gas	100-Year GWP
CH ₄	28
N ₂ O	265

Source: Intergovernmental Panel on Climate Change (IPCC).
Fifth Assessment Report (AR5), 2013.
See the source note to Table 1 for further explanation.

Table 1 Stationary Combustion								
Fuel Type	Heat Content (HHV) mmBtu per short ton	CO ₂ Factor kg CO ₂ per mmBtu	CH ₄ Factor g CH ₄ per mmBtu	N ₂ O Factor g N ₂ O per mmBtu	CO ₂ Factor kg CO ₂ per short ton	CH ₄ Factor g CH ₄ per short ton	N ₂ O Factor g N ₂ O per short ton	
Coal and Coke								
Anthracite	25.09	103.69	11	1.6	2,602	276	40	
Bituminous	24.93	93.28	11	1.6	2,323	274	40	
Sub-bituminous	17.25	97.17	11	1.6	1,676	190	28	
Lignite	14.21	97.72	11	1.6	1,389	156	23	
Mixed (Commercial Sector)	21.39	94.27	11	1.6	2,016	235	34	
Mixed (Electric Power Sector)	19.73	85.52	11	1.6	1,885	217	32	
Mixed (Industrial Sector)	26.28	93.90	11	1.6	2,468	289	42	
Mixed (Industrial Sector)	22.35	94.67	11	1.6	2,116	245	36	
Coal Coke	24.80	113.67	11	1.6	2,810	273	40	
Other Fuels - Solid								
Municipal Solid Waste	9.95	60.70	32	4.2	902	318	42	
Petroleum Coke (Solid)	30.00	102.41	32	4.2	3,073	860	126	
Plastics	38.00	75.00	32	4.2	2,850	1,215	160	
Tires	28.00	85.97	32	4.2	2,407	896	118	
Biomass Fuels - Solid								
Agricultural Byproducts	8.25	118.17	32	4.2	975	264	35	
Peat	8.00	111.84	32	4.2	895	256	34	
Solid Byproducts	10.39	105.51	32	4.2	1,096	332	44	
Wood and Wood Residuals	17.48	93.60	2.2	0.6	1,640	120	13	
	mmBtu per scf	kg CO ₂ per mmBtu	g CH ₄ per mmBtu	g N ₂ O per mmBtu	kg CO ₂ per scf	g CH ₄ per scf	g N ₂ O per scf	
Natural Gas								
Natural Gas	0.001026	53.06	1.0	0.10	0.05444	0.00103	0.00010	
Other Fuels - Gaseous								
Blast Furnace Gas	0.000092	274.32	0.022	0.10	0.02524	0.000002	0.000009	
Coke Oven Gas	0.000599	46.85	0.48	0.10	0.02806	0.000288	0.000060	
Fuel Gas	0.001388	59.00	3.0	0.60	0.08189	0.004184	0.000833	
Propane Gas	0.002516	61.46	3.0	0.60	0.15463	0.007548	0.001510	
Biomass Fuels - Gaseous								
Landfill Gas	0.000485	52.07	3.2	0.63	0.025254	0.001552	0.000306	
Other Biomass Gases	0.000655	52.07	3.2	0.63	0.034106	0.002096	0.000413	
	mmBtu per gallon	kg CO ₂ per mmBtu	g CH ₄ per mmBtu	g N ₂ O per mmBtu	kg CO ₂ per gallon	g CH ₄ per gallon	g N ₂ O per gallon	
Petroleum Products								
Asphalt and Road Oil	0.158	75.36	3.0	0.60	11.91	0.47	0.09	
Aviation Gasoline	0.120	69.25	3.0	0.60	8.31	0.36	0.07	
Bitumen	0.103	64.77	3.0	0.60	6.67	0.31	0.06	
Butylene	0.105	69.72	3.0	0.60	7.22	0.32	0.06	
Crude Oil	0.138	74.54	3.0	0.60	10.29	0.41	0.08	
Distillate Fuel Oil No. 1	0.139	73.25	3.0	0.60	10.18	0.42	0.08	
Distillate Fuel Oil No. 2	0.139	73.96	3.0	0.60	10.21	0.41	0.08	
Distillate Fuel Oil No. 4	0.146	75.04	3.0	0.60	10.96	0.44	0.09	
Ethane	0.068	59.60	3.0	0.60	4.05	0.20	0.04	
Ethylene	0.068	65.96	3.0	0.60	3.53	0.17	0.03	
Heavy Gas Oils	0.148	74.95	3.0	0.60	11.09	0.44	0.09	
Isobutane	0.099	64.94	3.0	0.60	6.43	0.30	0.06	
Isobutylene	0.103	68.86	3.0	0.60	7.09	0.31	0.06	
Kerosene	0.135	75.20	3.0	0.60	10.15	0.41	0.08	
Kerosene-Type Jet Fuel	0.135	72.22	3.0	0.60	9.75	0.41	0.08	
Liquefied Petroleum Gases (LPG)	0.092	61.71	3.0	0.60	5.68	0.28	0.06	
Lubricants	0.144	74.27	3.0	0.60	10.69	0.43	0.09	
Motor Gasoline	0.125	70.22	3.0	0.60	8.78	0.38	0.08	
Naphtha (<401 deg F)	0.125	68.02	3.0	0.60	8.50	0.38	0.08	
Natural Gasoline	0.110	66.88	3.0	0.60	7.36	0.33	0.07	
Other Oil (>401 deg F)	0.139	75.22	3.0	0.60	10.50	0.42	0.08	
Petrolanes Plus	0.110	70.02	3.0	0.60	7.70	0.33	0.07	
Petrochemical Feedstocks	0.125	71.02	3.0	0.60	8.88	0.38	0.08	
Propane	0.091	62.87	3.0	0.60	5.72	0.27	0.05	
Propylene	0.091	67.77	3.0	0.60	6.17	0.27	0.05	
Residual Fuel Oil No. 5	0.140	72.93	3.0	0.60	10.21	0.42	0.08	
Residual Fuel Oil No. 6	0.150	75.10	3.0	0.60	11.27	0.45	0.09	
Special Naphtha	0.125	72.34	3.0	0.60	9.64	0.38	0.08	
Unrefined Oils	0.139	74.54	3.0	0.60	10.36	0.42	0.08	
Used Oil	0.138	74.00	3.0	0.60	10.21	0.41	0.08	
Biomass Fuels - Liquid								
Biodiesel (100%)	0.128	73.84	1.1	0.11	9.45	0.14	0.01	
Ethanol (100%)	0.084	68.44	1.1	0.11	5.75	0.09	0.01	
Rendered Animal Fat	0.125	71.06	1.1	0.11	8.89	0.14	0.01	
Vegetable Oil	0.120	81.55	1.1	0.11	9.79	0.13	0.01	
Biomass Fuels - Kraft Pulping Liquor, by Wood Furnish								
North American Softwood		94.4	1.9	0.42				
North American Hardwood		93.7	1.9	0.42				
Basswood		95.5	1.9	0.42				
Bamboo		93.7	1.9	0.42				
Straw		95.1	1.9	0.42				

Source: Federal Register EPA; 40 CFR Part 98; e-CFR, (see link below), Table C-1 and Table C-2 (78 FR 71950, Nov. 29, 2013, as amended at 81 FR 89292, Dec. 9, 2016), Table AA-1 (78 FR 71965, Nov. 29, 2013), <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98>

Notes:
Emission factors are per unit of heat content using higher heating values (HHV). If heat content is available from the fuel supplier, it is preferable to use that value. If not, default heat contents are provided.
All CO₂ emission factors assume that 100 percent of the carbon content of the fuel is oxidized to CO₂, as is recommended by the Intergovernmental Panel on Climate Change (IPCC).
The CH₄ and N₂O emission factors provided represent emissions in terms of fuel type and by end-use sector (i.e., residential, commercial, industrial, electricity generation).
Please see the Center for Corporate Climate Leadership's guidance document on Direct Emissions from Stationary Combustion Sources for guidance on how to include biomass fuels in an organization's greenhouse gas inventory.
<https://www.epa.gov/sites/default/files/2025-12/documents/stationaryemissions.pdf>

The factors represented in the table above represent combustion emissions only and do not represent upstream emissions.

13.2.1 Paved Roads

13.2.1.1 General

Particulate emissions occur whenever vehicles travel over a paved surface such as a road or parking lot. Particulate emissions from paved roads are due to direct emissions from vehicles in the form of exhaust, brake wear and tire wear emissions and resuspension of loose material on the road surface. In general terms, resuspended particulate emissions from paved roads originate from, and result in the depletion of, the loose material present on the surface (i.e., the surface loading). In turn, that surface loading is continuously replenished by other sources. At industrial sites, surface loading is replenished by spillage of material and trackout from unpaved roads and staging areas. Figure 13.2.1-1 illustrates several transfer processes occurring on public streets.

Various field studies have found that public streets and highways, as well as roadways at industrial facilities, can be major sources of the atmospheric particulate matter within an area.¹⁻⁹ Of particular interest in many parts of the United States are the increased levels of emissions from public paved roads when the equilibrium between deposition and removal processes is upset. This situation can occur for various reasons, including application of granular materials for snow and ice control, mud/dirt carryout from construction activities in the area, and deposition from wind and/or water erosion of surrounding unstabilized areas. In the absence of continuous addition of fresh material (through localized track out or application of antiskid material), paved road surface loading should reach an equilibrium value in which the amount of material resuspended matches the amount replenished. The equilibrium surface loading value depends upon numerous factors. It is believed that the most important factors are: mean speed of vehicles traveling the road; the average daily traffic (ADT); the number of lanes and ADT per lane; the fraction of heavy vehicles (buses and trucks); and the presence/absence of curbs, storm sewers and parking lanes.¹⁰

The particulate emission factors presented in a previous version of this section of AP-42, dated October 2002, implicitly included the emissions from vehicles in the form of exhaust, brake wear, and tire wear as well as resuspended road surface material. EPA included these sources in the emission factor equation for paved roads since the field testing data used to develop the equation included both the direct emissions from vehicles and emissions from resuspension of road dust.

This version of the paved road emission factor equation only estimates particulate emissions from resuspended road surface material²⁸. The particulate emissions from vehicle exhaust, brake wear, and tire wear are now estimated separately using EPA's MOVES²⁹ model. This approach eliminates the possibility of double counting emissions. Double counting results when employing the previous version of the emission factor equation in this section and MOVES to estimate particulate emissions from vehicle traffic on paved roads. It also incorporates the decrease in exhaust emissions that has occurred since the paved road emission factor equation was developed. Earlier versions of the paved road emission factor equation includes estimates of emissions from exhaust, brake wear, and tire wear based on emission rates for vehicles in the 1980 calendar year fleet. The amount of PM released from vehicle exhaust has decreased since 1980 due to lower new vehicle emission standards and changes in fuel characteristics.

13.2.1.2 Emissions And Correction Parameters

Dust emissions from paved roads have been found to vary with what is termed the "silt loading" present on the road surface. In addition, the average weight and speed of vehicles traveling the road influence road dust emissions. The term silt loading (sL) refers to the mass of silt-size material (equal to or less than 75 micrometers [μm] in physical diameter) per unit area of the travel surface. The total road surface dust loading consists of loose material that can be collected by broom sweeping and vacuuming of the traveled portion of the paved road. The silt fraction is determined by measuring the proportion of the loose dry surface dust that passes through a 200-mesh screen, using the ASTM-C-136 method. Silt loading is the product of the silt fraction and the total loading, and is abbreviated "sL". Additional details on the sampling and analysis of such material are provided in AP-42 Appendices C.1 and C.2.

The surface sL provides a reasonable means of characterizing seasonal variability in a paved road emission inventory. In many areas of the country, road surface loadings¹¹⁻²¹ are heaviest during the late winter and early spring months when the residual loading from snow/ice controls is greatest. As noted earlier, once replenishment of fresh material is eliminated, the road surface loading can be expected to reach an equilibrium value, which is substantially lower than the late winter/early spring values.

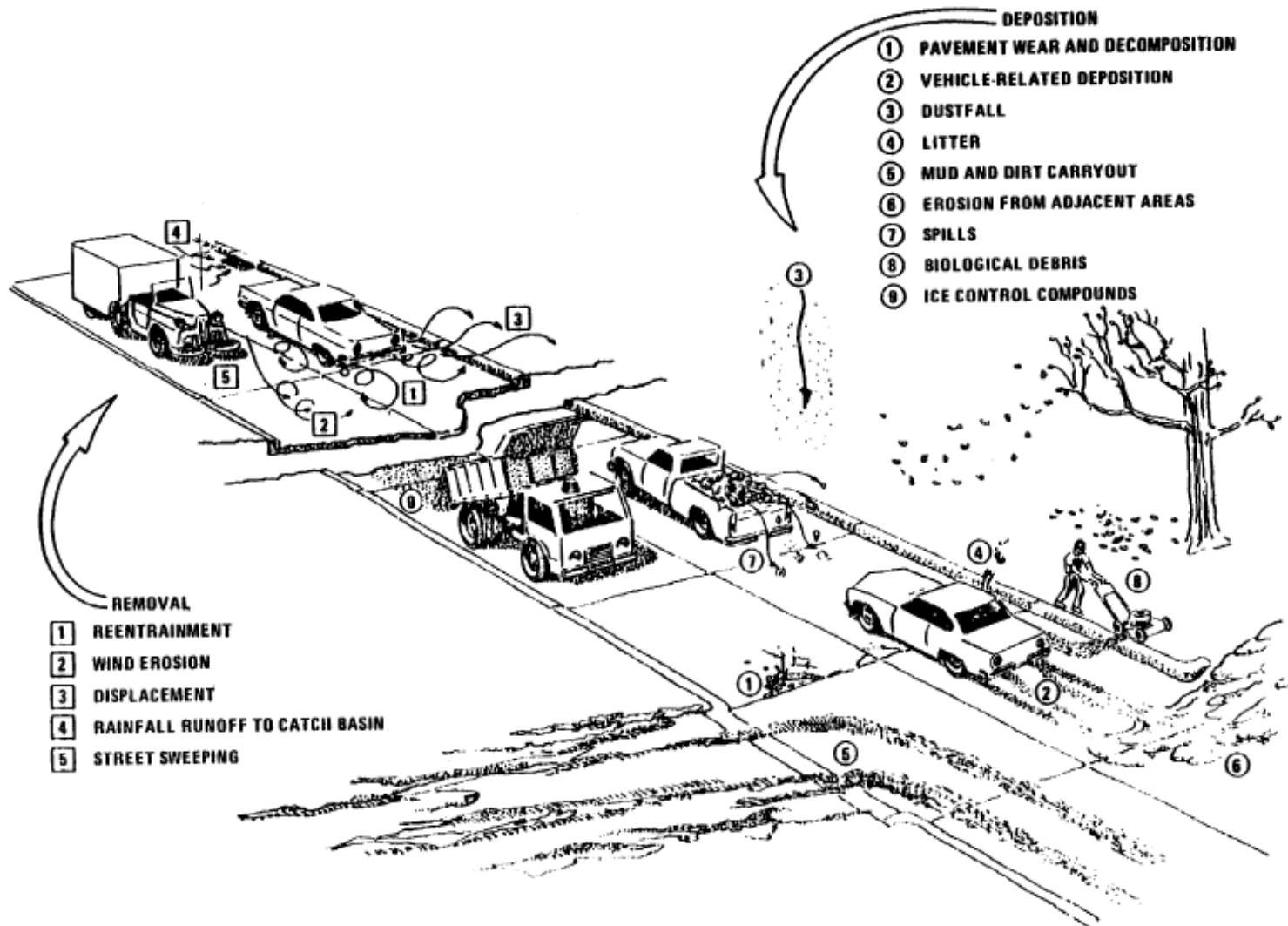


Figure 13.2.1-1. Deposition and removal processes.

13.2.1.3 Predictive Emission Factor Equations^{10,29}

The quantity of particulate emissions from resuspension of loose material on the road surface due to vehicle travel on a dry paved road may be estimated using the following empirical expression:

$$E = k (sL)^{0.91} \times (W)^{1.02} \quad (1)$$

where: E = particulate emission factor (having units matching the units of k),
 k = particle size multiplier for particle size range and units of interest (see below),
 sL = road surface silt loading (grams per square meter) (g/m^2), and
 W = average weight (tons) of the vehicles traveling the road.

It is important to note that Equation 1 calls for the average weight of all vehicles traveling the road. For example, if 99 percent of traffic on the road are 2 ton cars/trucks while the remaining 1 percent consists of 20 ton trucks, then the mean weight "W" is 2.2 tons. More specifically, Equation 1 is *not* intended to be used to calculate a separate emission factor for each vehicle weight class. Instead, only one emission factor should be calculated to represent the "fleet" average weight of all vehicles traveling the road.

The particle size multiplier (k) above varies with aerodynamic size range as shown in Table 13.2.1-1. To determine particulate emissions for a specific particle size range, use the appropriate value of k shown in Table 13.2.1-1.

To obtain the total emissions factor, the emissions factors for the exhaust, brake wear and tire wear obtained from either EPA's MOBILE6.2²⁷ or most recent MOVES²⁹ software model should be added to the emissions factor calculated from the empirical equation.

Table 13.2.1-1. PARTICLE SIZE MULTIPLIERS FOR PAVED ROAD EQUATION

Size range ^a	Particle Size Multiplier k^b		
	g/VKT	g/VMT	lb/VMT
PM-2.5 ^c	0.15	0.25	0.00054
PM-10	0.62	1.00	0.0022
PM-15	0.77	1.23	0.0027
PM-30 ^d	3.23	5.24	0.011

^a Refers to airborne particulate matter (PM-x) with an aerodynamic diameter equal to or less than x micrometers.

^b Units shown are grams per vehicle kilometer traveled (g/VKT), grams per vehicle mile traveled (g/VMT), and pounds per vehicle mile traveled (lb/VMT). The multiplier k includes unit conversions to produce emission factors in the units shown for the indicated size range from the mixed units required in Equation 1.

^c The k -factors for PM_{2.5} were based on the average PM_{2.5}:PM₁₀ ratio of test runs in Reference 30.

^d PM-30 is sometimes termed "suspendable particulate" (SP) and is often used as a surrogate for TSP.

Equation 1 is based on a regression analysis of 83 tests for PM-10.^{3, 5-6, 8, 27-29, 31-36} Sources tested include public paved roads, as well as controlled and uncontrolled industrial paved roads. The majority of tests involved freely flowing vehicles traveling at constant speed on relatively level roads. However, 22 tests of slow moving or "stop-and-go" traffic or vehicles under load were available for inclusion in the data base.³²⁻³⁶ Engine exhaust, tire wear and break wear were subtracted from the emissions measured in the test programs prior to stepwise regression to determine Equation 1.^{37, 39} The equations retain the quality rating of A (D for PM-2.5), if applied within the range of source conditions that were tested in developing the equation as follows:

Silt loading:	0.03 - 400 g/m ² 0.04 - 570 grains/square foot (ft ²)
Mean vehicle weight:	1.8 - 38 megagrams (Mg) 2.0 - 42 tons
Mean vehicle speed:	1 - 88 kilometers per hour (kph) 1 - 55 miles per hour (mph)

The upper and lower 95% confidence levels of equation 1 for PM₁₀ is best described with equations using an exponents of 1.14 and 0.677 for silt loading and an exponents of 1.19 and 0.85 for weight. Users are cautioned that application of equation 1 outside of the range of variables and operating conditions specified above, e.g., application to roadways or road networks with speeds above 55 mph and average vehicle weights of 42 tons, will result in emission estimates with a higher level of uncertainty. In these situations, users are encouraged to consider an assessment of the impacts of the influence of extrapolation to the overall emissions and alternative methods that are equally or more plausible in light of local emissions data and/or ambient concentration or compositional data.

To retain the quality rating for the emission factor equation when it is applied to a specific paved road, it is necessary that reliable correction parameter values for the specific road in question be determined. With the exception of limited access roadways, which are difficult to sample, the collection and use of site-specific silt loading (sL) data for public paved road emission inventories are strongly recommended. The field and laboratory procedures for determining surface material silt content and surface dust loading are summarized in Appendices C.1 and C.2. In the event that site-specific values cannot be obtained, an appropriate value for a paved public road may be selected from the values in Table 13.2.1-2, but the quality rating of the equation should be reduced by 2 levels.

Equation 1 may be extrapolated to average uncontrolled conditions (but including natural mitigation) under the simplifying assumption that annual (or other long-term) average emissions are inversely proportional to the frequency of measurable (> 0.254 mm [0.01 inch]) precipitation by application of a precipitation correction term. The precipitation correction term can be applied on a daily or an hourly basis^{26, 38}.

For the daily basis, Equation 1 becomes:

$$E_{ext} = [k (sL)^{0.91} \times (W)^{1.02}] (1 - P/4N) \quad (2)$$

where k , sL , W , and S are as defined in Equation 1 and

E_{ext} = annual or other long-term average emission factor in the same units as k ,

P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and

N = number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly).

Note that the assumption leading to Equation 2 is based on analogy with the approach used to develop long-term average unpaved road emission factors in Section 13.2.2. However, Equation 2 above incorporates an additional factor of "4" in the denominator to account for the fact that paved roads dry more quickly than unpaved roads and that the precipitation may not occur over the complete 24-hour day.

For the hourly basis, equation 1 becomes:

$$E_{ext} = [k (sL)^{0.91} \times (W)^{1.02}] (1 - 1.2P/N) \quad (3)$$

where k , sL , W , and S are as defined in Equation 1 and

E_{ext} = annual or other long-term average emission factor in the same units as k ,
 P = number of hours with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and
 N = number of hours in the averaging period (e.g., 8760 for annual, 2124 for season 720 for monthly)

Note: In the hourly moisture correction term $(1 - 1.2P/N)$ for equation 3, the 1.2 multiplier is applied to account for the residual mitigative effect of moisture. For most applications, this equation will produce satisfactory results. Users should select a time interval to include sufficient "dry" hours such that a reasonable emissions averaging period is evaluated. For the special case where this equation is used to calculate emissions on an hour by hour basis, such as would be done in some emissions modeling situations, the moisture correction term should be modified so that the moisture correction "credit" is applied to the first hours following cessation of precipitation. In this special case, it is suggested that this 20% "credit" be applied on a basis of one hour credit for each hour of precipitation up to a maximum of 12 hours.

Note that the assumption leading to Equation 3 is based on analogy with the approach used to develop long-term average unpaved road emission factors in Section 13.2.2.

Figure 13.2.1-2 presents the geographical distribution of "wet" days on an annual basis for the United States. Maps showing this information on a monthly basis are available in the *Climatic Atlas of the United States*²³. Alternative sources include other Department of Commerce publications (such as local climatological data summaries). The National Climatic Data Center (NCDC) offers several products that provide hourly precipitation data. In particular, NCDC offers *Solar and Meteorological Surface Observation Network 1961-1990* (SAMSON) CD-ROM, which contains 30 years worth of hourly meteorological data for first-order National Weather Service locations. Whatever meteorological data are used, the source of that data and the averaging period should be clearly specified.

It is emphasized that the simple assumption underlying Equations 2 and 3 has not been verified in any rigorous manner. For that reason, the quality ratings for Equations 2 and 3 should be downgraded one letter from the rating that would be applied to Equation 1.

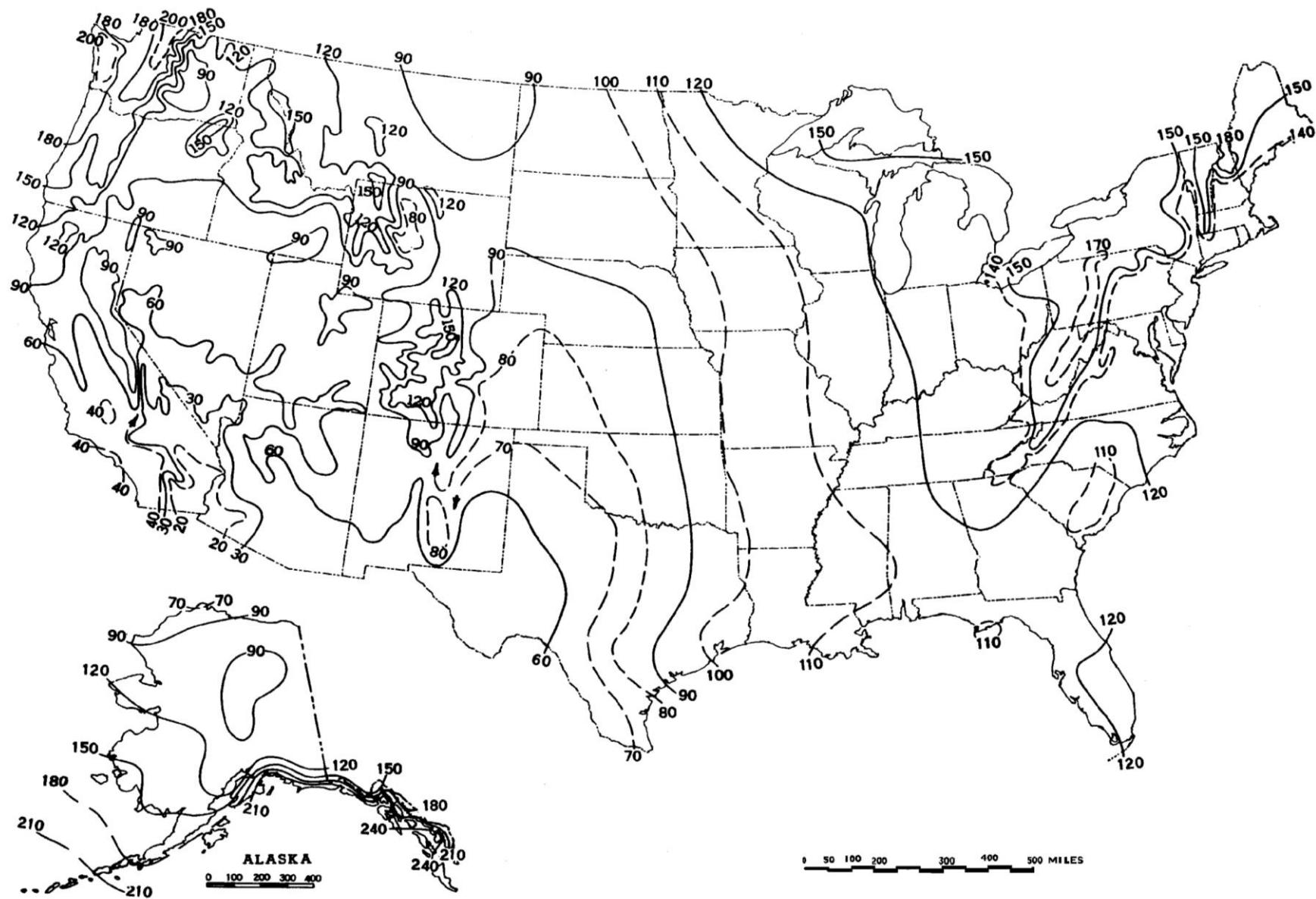


Figure 13.2.1-2. Mean number of days with 0.01 inch or more of precipitation in the United States.

Table 13.2.1-2 presents recommended default silt loadings for normal baseline conditions and for wintertime baseline conditions in areas that experience frozen precipitation with periodic application of antiskid material²⁴. The winter baseline is represented as a multiple of the non-winter baseline, depending on the ADT value for the road in question. As shown, a multiplier of 4 is applied for low volume roads (< 500 ADT) to obtain a wintertime baseline silt loading of $4 \times 0.6 = 2.4 \text{ g/m}^2$.

Table 13.2.1-2. Ubiquitous Silt Loading Default Values with Hot Spot Contributions from Anti-Skid Abrasives (g/m^2)

ADT Category	< 500	500-5,000	5,000-10,000	> 10,000
Ubiquitous Baseline g/m^2	0.6	0.2	0.06	0.03 0.015 limited access
Ubiquitous Winter Baseline Multiplier during months with frozen precipitation	X4	X3	X2	X1
Initial peak additive contribution from application of antiskid abrasive (g/m^2)	2	2	2	2
Days to return to baseline conditions (assume linear decay)	7	3	1	0.5

It is suggested that an additional (but temporary) silt loading contribution of 2 g/m^2 occurs with each application of antiskid abrasive for snow/ice control. This was determined based on a typical application rate of 500 lb per lane mile and an initial silt content of 1 % silt content. Ordinary rock salt and other chemical deicers add little to the silt loading, because most of the chemical dissolves during the snow/ice melting process.

To adjust the baseline silt loadings for mud/dirt trackout, the number of trackout points is required. It is recommended that in calculating PM_{10} emissions, six additional miles of road be added for each active trackout point from an active construction site, to the paved road mileage of the specified category within the county. In calculating $\text{PM}_{2.5}$ emissions, it is recommended that three additional miles of road be added for each trackout point from an active construction site.

It is suggested the number of trackout points for activities other than road and building construction areas be related to land use. For example, in rural farming areas, each mile of paved road would have a specified number of trackout points at intersections with unpaved roads. This value could be estimated from the unpaved road density (mi/sq. mi.).

The use of a default value from Table 13.2.1-2 should be expected to yield only an order-of-magnitude estimate of the emission factor. Public paved road silt loadings are dependent

upon: traffic characteristics (speed, ADT, and fraction of heavy vehicles); road characteristics (curbs, number of lanes, parking lanes); local land use (agriculture, new residential construction) and regional/seasonal factors (snow/ice controls, wind blown dust). As a result, the collection and use of site-specific silt loading data is highly recommended. In the event that default silt loading values are used, the quality ratings for the equation should be downgraded 2 levels.

Limited access roadways pose severe logistical difficulties in terms of surface sampling, and few silt loading data are available for such roads. Nevertheless, the available data do not suggest great variation in silt loading for limited access roadways from one part of the country to another. For annual conditions, a default value of 0.015 g/m^2 is recommended for limited access roadways.^{9,22} Even fewer of the available data correspond to worst-case situations, and elevated loadings are observed to be quickly depleted because of high traffic speeds and high ADT rates. A default value of 0.2 g/m^2 is recommended for short periods of time following application of snow/ice controls to limited access roads.²²

The limited data on silt loading values for industrial roads have shown as much variability as public roads. Because of the variations of traffic conditions and the use of preventive mitigative controls, the data probably do not reflect the full extent of the potential variation in silt loading on industrial roads. However, the collection of site specific silt loading data from industrial roads is easier and safer than for public roads. Therefore, the collection and use of site-specific silt loading data is preferred and is highly recommended. In the event that site-specific values cannot be obtained, an appropriate value for an industrial road may be selected from the mean values given in Table 13.2.1-3, but the quality rating of the equation should be reduced by 2 levels.

The predictive accuracy of Equation 1 requires thorough on-site characterization of road silt loading. Road surface sampling is time-consuming and potentially hazardous because of the need to block traffic lanes. In addition, large number of samples is required to represent spatial and temporal variations across roadway networks. Mobile monitoring is a new alternative silt loading or road dust emission characterization method for either paved or unpaved roads. It utilizes a test vehicle that generates and monitors its own dust plume concentration (mass basis) at a fixed sampling probe location. A calibration factor is needed for each mobile monitoring configuration (test vehicle and sampling system), to convert the relative dust emission intensity to an equivalent silt loading or emission factor. Typically, portable continuous particle concentration monitors do not comply with Federal Reference Method (FRM) standards. Therefore, a controlled study must be performed to correlate the portable monitor response to the road silt loading or size specific particle concentration measured with an approved FRM sampling system. In the calibration tests, multiple test conditions should be performed to provide an average correlation with known precision and to accommodate variations in road silt loading, vehicle speed, road dust characteristics and other road conditions that may influence mobile monitoring measurements or emissions characteristics. Because the paved road dust emissions are also dependent on the average vehicle weight for the road segment, it is important that the weight of the test vehicle correspond closely to the average vehicle weight for the road segment or be adjusted using the average vehicle weight relationship in Equation 1. In summary, it is believed that the Mobile Monitoring Method will provide improved capabilities to provide reliable temporally and spatially resolved silt loading or emissions factors with increased coverage, improved safety, reduced traffic interference and decreased cost.^{40, 41, 42}

Table 13.2.1-3 (Metric And English Units). TYPICAL SILT CONTENT AND LOADING VALUES FOR PAVED ROADS AT INDUSTRIAL FACILITIES ^a

Industry	No. of Sites	No. Of Samples	Silt Content (%)		No. of Travel Lanes	Total Loading x 10 ⁻³			Silt Loading (g/m ²)	
			Range	Mean		Range	Mean	Units ^b	Range	Mean
Copper smelting	1	3	15.4-21.7	19.0	2	12.9 - 19.5 45.8 - 69.2	15.9 55.4	kg/km lb/mi	188-400	292
Iron and steel production	9	48	1.1-35.7	12.5	2	0.006 - 4.77 0.020 -16.9	0.495 1.75	kg/km lb/mi	0.09-79	9.7
Asphalt batching	1	3	2.6 - 4.6	3.3	1	12.1 - 18.0 43.0 - 64.0	14.9 52.8	kg/km lb/mi	76-193	120
Concrete batching	1	3	5.2 - 6.0	5.5	2	1.4 - 1.8 5.0 - 6.4	1.7 5.9	kg/km lb/mi	11-12	12
Sand and gravel processing	1	3	6.4 - 7.9	7.1	1	2.8 - 5.5 9.9 - 19.4	3.8 13.3	kg/km lb/mi	53-95	70
Municipal solid waste landfill	2	7	-	-	2	-	-	-	1.1-32.0	7.4
Quarry	1	6	-	-	2	-	-	-	2.4-14	8.2
Corn wet mills	3	15	-	-	2	-	-	-	0.05 – 2.9	1.1

^a References 1-2,5-6,11-13. Values represent samples collected from *industrial* roads. Public road silt loading values are presented in Table-13.2.1-2. Dashes indicate information not available.^b Multiply entries by 1000 to obtain stated units; kilograms per kilometer (kg/km) and pounds per mile (lb/mi).

13.2.1.4 Controls^{6,25}

Because of the importance of the silt loading, control techniques for paved roads attempt either to prevent material from being deposited onto the surface (preventive controls) or to remove from the travel lanes any material that has been deposited (mitigative controls). Covering of loads in trucks, and the paving of access areas to unpaved lots or construction sites, are examples of preventive measures. Examples of mitigative controls include vacuum sweeping, water flushing, and broom sweeping and flushing. Actual control efficiencies for any - of these techniques can be highly variable. Locally measured silt loadings before and after the application of controls is the preferred method to evaluate controls. It is particularly important to note that street sweeping of gutters and curb areas may actually increase the silt loading on the traveled portion of the road. Redistribution of loose material onto the travel lanes will actually produce a short-term increase in the emissions.

In general, preventive controls are usually more cost effective than mitigative controls. The cost-effectiveness of mitigative controls falls off dramatically as the size of an area to be treated increases. The cost-effectiveness of mitigative measures is also unfavorable if only a short period of time is required for the road to return to equilibrium silt loading condition. That is to say, the number and length of public roads within most areas of interest preclude any widespread and routine use of mitigative controls. On the other hand, because of the more limited scope of roads at an industrial site, mitigative measures may be used quite successfully (especially in situations where truck spillage occurs). Note, however, that public agencies could make effective use of mitigative controls to remove sand/salt from roads after the winter ends.

Because available controls will affect the silt loading, controlled emission factors may be obtained by substituting controlled silt loading values into the equation. (Emission factors from controlled industrial roads were used in the development of the equation.) The collection of surface loading samples from treated, as well as baseline (untreated), roads provides a means to track effectiveness of the controls over time. The use of Mobile Monitoring Methodologies provide an improved means to track progress in controlling silt loading values.

13.2.1.5 Changes since Fifth Edition

The following changes were made since the publication of the Fifth Edition of AP-42:

October 2002

- 1) The particle size multiplier for $PM_{2.5}$ was revised to 25% of PM_{10} . The approximately 55% reduction was a result of emission testing using FRM monitors. The monitoring was specifically intended to evaluate the PM-2.5 component of the emissions.
- 2) Default silt loading values were included in Table 13.2.1-2 replacing the Tables and Figures containing silt loading statistical information.
- 3) Editorial changes within the text were made indicating the possible causes of variations in the silt loading between roads within and among different locations. The uncertainty of using the default silt loading value was discussed.

- 4) Section 13.2.1.1 was revised to clarify the role of dust loading in resuspension. Additional minor text changes were made.
- 5) Equations 2 and 3, Figure 13.2.1-2, and text were added to incorporate natural mitigation into annual or other long-term average emission factors.

December 2003

- 1) The emission factor equation was adjusted to remove the component of particulate emissions- from exhaust, brake wear, and tire wear. A parameter C representing these emissions was included in the predictive equation. The parameter C varied with aerodynamic size range of the particulate matter. Table 13.2.1-2 was added to present the new coefficients.
- 2) The default silt loading values in Table 13.2.1-3 were revised to incorporate the results from a recent analysis of silt loading data.

November 2006

- 1) The PM_{2.5} particle size multiplier was revised to 15% of PM₁₀ as the result of wind tunnel studies of a variety of dust emitting surface materials.
- 2) References were rearranged and renumbered.

January 2011

- 1) The empirical predictive equation was revised. The revision is based upon stepwise regression of 83 profile emissions tests and an adjustment of individual test data for the exhaust; break wear and tire wear emissions prior to regression of the data.
- 2) The C term is removed from the empirical predictive equation and Table 13.2.1-2 with the C term values is removed since the exhaust; break wear and tire wear emissions were no longer part of the regressed data.
- 3) The PM_{2.5} particle size multiplier was revised to 25% of PM₁₀ since the PM₁₀ test data used to develop the equation did not meet the necessary PM₁₀ concentrations for a ratio of 15%.
- 4) The lower speed of the vehicle speed range supported by the empirical predictive equation was revised to 1 mph.
- 5) Information was added on an improved methodology to develop spatially and temporally resolved silt loadings or emissions factors by Mobile Monitoring Methodologies.

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13.2.2 Unpaved Roads

13.2.2.1 General

When a vehicle travels an unpaved road, the force of the wheels on the road surface causes pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

The particulate emission factors presented in the previous draft version of this section of AP-42, dated October 2001, implicitly included the emissions from vehicles in the form of exhaust, brake wear, and tire wear as well as resuspended road surface material²⁵. EPA included these sources in the emission factor equation for unpaved public roads (equation 1b in this section) since the field testing data used to develop the equation included both the direct emissions from vehicles and emissions from resuspension of road dust.

This version of the unpaved public road emission factor equation only estimates particulate emissions from resuspended road surface material^{23, 26}. The particulate emissions from vehicle exhaust, brake wear, and tire wear are now estimated separately using EPA's MOBILE6.2²⁴. This approach eliminates the possibility of double counting emissions. Double counting results when employing the previous version of the emission factor equation in this section and MOBILE6.2 to estimate particulate emissions from vehicle traffic on unpaved public roads. It also incorporates the decrease in exhaust emissions that has occurred since the unpaved public road emission factor equation was developed. The previous version of the unpaved public road emission factor equation includes estimates of emissions from exhaust, brake wear, and tire wear based on emission rates for vehicles in the 1980 calendar year fleet. The amount of PM released from vehicle exhaust has decreased since 1980 due to lower new vehicle emission standards and changes in fuel characteristics.

13.2.2.2 Emissions Calculation And Correction Parameters¹⁻⁶

The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. Field investigations also have shown that emissions depend on source parameters that characterize the condition of a particular road and the associated vehicle traffic. Characterization of these source parameters allow for "correction" of emission estimates to specific road and traffic conditions present on public and industrial roadways.

Dust emissions from unpaved roads have been found to vary directly with the fraction of silt (particles smaller than 75 micrometers [μm] in diameter) in the road surface materials.¹ The silt fraction is determined by measuring the proportion of loose dry surface dust that passes a 200-mesh screen, using the ASTM-C-136 method. A summary of this method is contained in Appendix C of AP-42. Table 13.2.2-1 summarizes measured silt values for industrial unpaved roads. Table 13.2.2-2 summarizes measured silt values for public unpaved roads. It should be noted that the ranges of silt content vary over two orders of magnitude. Therefore, the use of data from this table can potentially introduce considerable error. Use of this data is strongly discouraged when it is feasible to obtain locally gathered data.

Since the silt content of a rural dirt road will vary with geographic location, it should be measured for use in projecting emissions. As a conservative approximation, the silt content of the parent soil in the area can be used. Tests, however, show that road silt content is normally lower than in the surrounding parent soil, because the fines are continually removed by the vehicle traffic, leaving a higher percentage of coarse particles.

Other variables are important in addition to the silt content of the road surface material. For example, at industrial sites, where haul trucks and other heavy equipment are common, emissions are highly correlated with vehicle weight. On the other hand, there is far less variability in the weights of cars and pickup trucks that commonly travel publicly accessible unpaved roads throughout the United States. For those roads, the moisture content of the road surface material may be more dominant in determining differences in emission levels between, for example a hot, desert environment and a cool, moist location.

The PM-10 and TSP emission factors presented below are the outcomes from stepwise linear regressions of field emission test results of vehicles traveling over unpaved surfaces. Due to a limited amount of information available for PM-2.5, the expression for that particle size range has been scaled against the result for PM-10. Consequently, the quality rating for the PM-2.5 factor is lower than that for the PM-10 expression.

Table 13.2.2-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL
ON INDUSTRIAL UNPAVED ROADS^a

Industry	Road Use Or Surface Material	Plant Sites	No. Of Samples	Silt Content (%)	
				Range	Mean
Copper smelting	Plant road	1	3	16 - 19	17
Iron and steel production	Plant road	19	135	0.2 - 19	6.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
	Material storage area	1	1	-	7.1
Stone quarrying and processing	Plant road	2	10	2.4 - 16	10
	Haul road to/from pit	4	20	5.0-15	8.3
Taconite mining and processing	Service road	1	8	2.4 - 7.1	4.3
	Haul road to/from pit	1	12	3.9 - 9.7	5.8
Western surface coal mining	Haul road to/from pit	3	21	2.8 - 18	8.4
	Plant road	2	2	4.9 - 5.3	5.1
	Scraper route	3	10	7.2 - 25	17
	Haul road (freshly graded)	2	5	18 - 29	24
Construction sites	Scraper routes	7	20	0.56-23	8.5
Lumber sawmills	Log yards	2	2	4.8-12	8.4
Municipal solid waste landfills	Disposal routes	4	20	2.2 - 21	6.4

^aReferences 1,5-15.

The following empirical expressions may be used to estimate the quantity in pounds (lb) of size-specific particulate emissions from an unpaved road, per vehicle mile traveled (VMT):

For vehicles traveling on unpaved surfaces at industrial sites, emissions are estimated from the following equation:

$$E = k (s/12)^a (W/3)^b \quad (1a)$$

and, for vehicles traveling on publicly accessible roads, dominated by light duty vehicles, emissions may be estimated from the following:

$$E = \frac{k (s/12)^a (S/30)^d}{(M/0.5)^c} - C \quad (1b)$$

where k , a , b , c and d are empirical constants (Reference 6) given below and

- E = size-specific emission factor (lb/VMT)
- s = surface material silt content (%)
- W = mean vehicle weight (tons)
- M = surface material moisture content (%)
- S = mean vehicle speed (mph)
- C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

The source characteristics s , W and M are referred to as correction parameters for adjusting the emission estimates to local conditions. The metric conversion from lb/VMT to grams (g) per vehicle kilometer traveled (VKT) is as follows:

$$1 \text{ lb/VMT} = 281.9 \text{ g/VKT}$$

The constants for Equations 1a and 1b based on the stated aerodynamic particle sizes are shown in Tables 13.2.2-2 and 13.2.2-4. The PM-2.5 particle size multipliers (k -factors) are taken from Reference 27.

Table 13.2.2-2. CONSTANTS FOR EQUATIONS 1a AND 1b

Constant	Industrial Roads (Equation 1a)			Public Roads (Equation 1b)		
	PM-2.5	PM-10	PM-30*	PM-2.5	PM-10	PM-30*
k (lb/VMT)	0.15	1.5	4.9	0.18	1.8	6.0
a	0.9	0.9	0.7	1	1	1
b	0.45	0.45	0.45	-	-	-
c	-	-	-	0.2	0.2	0.3
d	-	-	-	0.5	0.5	0.3
Quality Rating	B	B	B	B	B	B

*Assumed equivalent to total suspended particulate matter (TSP)

“-“ = not used in the emission factor equation

Table 13.2.2-2 also contains the quality ratings for the various size-specific versions of Equation 1a and 1b. The equation retains the assigned quality rating, if applied within the ranges of source conditions, shown in Table 13.2.2-3, that were tested in developing the equation:

Table 13.2.2-3. RANGE OF SOURCE CONDITIONS USED IN DEVELOPING EQUATION 1a AND 1b

Emission Factor	Surface Silt Content, %	Mean Vehicle Weight		Mean Vehicle Speed		Mean No. of Wheels	Surface Moisture Content, %
		Mg	ton	km/hr	mph		
Industrial Roads (Equation 1a)	1.8-25.2	1.8-260	2-290	8-69	5-43	4-17 ^a	0.03-13
Public Roads (Equation 1b)	1.8-35	1.4-2.7	1.5-3	16-88	10-55	4-4.8	0.03-13

^a See discussion in text.

As noted earlier, the models presented as Equations 1a and 1b were developed from tests of traffic on unpaved surfaces. Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall or watering, because of traffic-enhanced natural evaporation. (Factors influencing how fast a road dries are discussed in Section 13.2.2.3, below.) The quality ratings given above pertain to the mid-range of the measured source conditions for the equation. A higher mean vehicle weight and a higher than normal traffic rate may be justified when performing a worst-case analysis of emissions from unpaved roads.

The emission factors for the exhaust, brake wear and tire wear of a 1980's vehicle fleet (C) was obtained from EPA's MOBILE6.2 model ²³. The emission factor also varies with aerodynamic size range

as shown in Table 13.2.2-4

Table 13.2.2-4. EMISSION FACTOR FOR 1980'S VEHICLE FLEET
EXHAUST, BRAKE WEAR AND TIRE WEAR

Particle Size Range ^a	C, Emission Factor for Exhaust, Brake Wear and Tire Wear ^b lb/VMT
PM _{2.5}	0.00036
PM ₁₀	0.00047
PM ₃₀ ^c	0.00047

^a Refers to airborne particulate matter (PM-x) with an aerodynamic diameter equal to or less than x micrometers.

^b Units shown are pounds per vehicle mile traveled (lb/VMT).

^c PM-30 is sometimes termed "suspendable particulate" (SP) and is often used as a surrogate for TSP.

It is important to note that the vehicle-related source conditions refer to the average weight, speed, and number of wheels for all vehicles traveling the road. For example, if 98 percent of traffic on the road are 2-ton cars and trucks while the remaining 2 percent consists of 20-ton trucks, then the mean weight is 2.4 tons. More specifically, Equations 1a and 1b are *not* intended to be used to calculate a separate emission factor for each vehicle class within a mix of traffic on a given unpaved road. That is, in the example, one should *not* determine one factor for the 2-ton vehicles and a second factor for the 20-ton trucks. Instead, only one emission factor should be calculated that represents the "fleet" average of 2.4 tons for all vehicles traveling the road.

Moreover, to retain the quality ratings when addressing a group of unpaved roads, it is necessary that reliable correction parameter values be determined for the road in question. The field and laboratory procedures for determining road surface silt and moisture contents are given in AP-42 Appendices C.1 and C.2. Vehicle-related parameters should be developed by recording visual observations of traffic. In some cases, vehicle parameters for industrial unpaved roads can be determined by reviewing maintenance records or other information sources at the facility.

In the event that site-specific values for correction parameters cannot be obtained, then default values may be used. In the absence of site-specific silt content information, an appropriate mean value from Table 13.2.2-1 may be used as a default value, but the quality rating of the equation is reduced by two letters. Because of significant differences found between different types of road surfaces and between different areas of the country, use of the default moisture content value of 0.5 percent in Equation 1b is discouraged. The quality rating should be downgraded two letters when the default moisture content value is used. (It is assumed that readers addressing industrial roads have access to the information needed to develop average vehicle information in Equation 1a for their facility.)

The effect of routine watering to control emissions from unpaved roads is discussed below in Section 13.2.2.3, "Controls". However, all roads are subject to some natural mitigation because of rainfall and other precipitation. The Equation 1a and 1b emission factors can be extrapolated to annual

average uncontrolled conditions (but including natural mitigation) under the simplifying assumption that annual average emissions are inversely proportional to the number of days with measurable (more than 0.254 mm [0.01 inch]) precipitation:

$$E_{\text{ext}} = E [(365 - P)/365] \quad (2)$$

where:

E_{ext} = annual size-specific emission factor extrapolated for natural mitigation, lb/VMT

E = emission factor from Equation 1a or 1b

P = number of days in a year with at least 0.254 mm (0.01 in) of precipitation (see below)

Figure 13.2.2-1 gives the geographical distribution for the mean annual number of “wet” days for the United States.

Equation 2 provides an estimate that accounts for precipitation on an annual average basis for the purpose of inventorying emissions. It should be noted that Equation 2 does not account for differences in the temporal distributions of the rain events, the quantity of rain during any event, or the potential for the rain to evaporate from the road surface. In the event that a finer temporal and spatial resolution is desired for inventories of public unpaved roads, estimates can be based on a more complex set of assumptions. These assumptions include:

1. The moisture content of the road surface material is increased in proportion to the quantity of water added;
2. The moisture content of the road surface material is reduced in proportion to the Class A pan evaporation rate;
3. The moisture content of the road surface material is reduced in proportion to the traffic volume; and
4. The moisture content of the road surface material varies between the extremes observed in the area. The CHIEF Web site (<http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html>) has a file which contains a spreadsheet program for calculating emission factors which are temporally and spatially resolved. Information required for use of the spreadsheet program includes monthly Class A pan evaporation values, hourly meteorological data for precipitation, humidity and snow cover, vehicle traffic information, and road surface material information.

It is emphasized that the simple assumption underlying Equation 2 and the more complex set of assumptions underlying the use of the procedure which produces a finer temporal and spatial resolution have not been verified in any rigorous manner. For this reason, the quality ratings for either approach should be downgraded one letter from the rating that would be applied to Equation 1.

13.2.2.3 Controls¹⁸⁻²²

A wide variety of options exist to control emissions from unpaved roads. Options fall into the following three groupings:

1. Vehicle restrictions that limit the speed, weight or number of vehicles on the road;

2. Surface improvement, by measures such as (a) paving or (b) adding gravel or slag to a dirt road; and
3. Surface treatment, such as watering or treatment with chemical dust suppressants.

Available control options span broad ranges in terms of cost, efficiency, and applicability. For example, traffic controls provide moderate emission reductions (often at little cost) but are difficult to enforce. Although paving is highly effective, its high initial cost is often prohibitive. Furthermore, paving is not feasible for industrial roads subject to very heavy vehicles and/or spillage of material in transport. Watering and chemical suppressants, on the other hand, are potentially applicable to most industrial roads at moderate to low costs. However, these require frequent reapplication to maintain an acceptable level of control. Chemical suppressants are generally more cost-effective than water but not in cases of temporary roads (which are common at mines, landfills, and construction sites). In summary, then, one needs to consider not only the type and volume of traffic on the road but also how long the road will be in service when developing control plans.

Vehicle restrictions. These measures seek to limit the amount and type of traffic present on the road or to lower the mean vehicle speed. For example, many industrial plants have restricted employees from driving on plant property and have instead instituted bussing programs. This eliminates emissions due to employees traveling to/from their worksites. Although the heavier average vehicle weight of the busses increases the base emission factor, the decrease in vehicle-miles-traveled results in a lower overall emission rate.

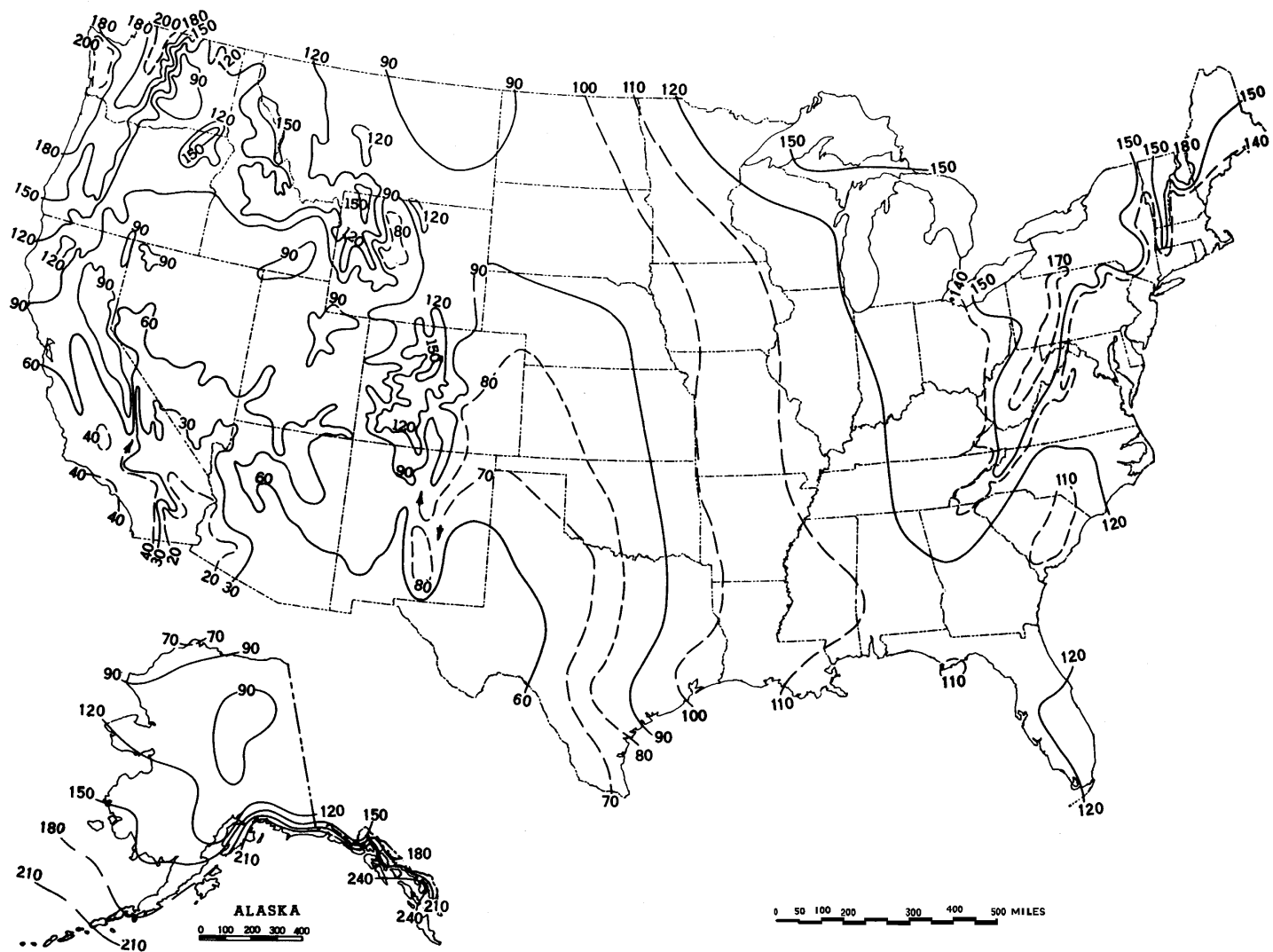


Figure 13.2.2-1. Mean number of days with 0.01 inch or more of precipitation in United States.

Surface improvements. Control options in this category alter the road surface. As opposed to the “surface treatments” discussed below, improvements are relatively “permanent” and do not require periodic retreatment.

The most obvious surface improvement is paving an unpaved road. This option is quite expensive and is probably most applicable to relatively short stretches of unpaved road with at least several hundred vehicle passes per day. Furthermore, if the newly paved road is located near unpaved areas or is used to transport material, it is essential that the control plan address routine cleaning of the newly paved road surface.

The control efficiencies achievable by paving can be estimated by comparing emission factors for unpaved and paved road conditions. The predictive emission factor equation for paved roads, given in Section 13.2.1, requires estimation of the silt loading on the traveled portion of the paved surface, which in turn depends on whether the pavement is periodically cleaned. Unless curbing is to be installed, the effects of vehicle excursion onto unpaved shoulders (berms) also must be taken into account in estimating the control efficiency of paving.

Other improvement methods cover the road surface with another material that has a lower silt content. Examples include placing gravel or slag on a dirt road. Control efficiency can be estimated by comparing the emission factors obtained using the silt contents before and after improvement. The silt content of the road surface should be determined after 3 to 6 months rather than immediately following placement. Control plans should address regular maintenance practices, such as grading, to retain larger aggregate on the traveled portion of the road.

Surface treatments refer to control options which require periodic reapplication. Treatments fall into the two main categories of (a) “wet suppression” (i. e., watering, possibly with surfactants or other additives), which keeps the road surface wet to control emissions and (b) “chemical stabilization/treatment”, which attempts to change the physical characteristics of the surface. The necessary reapplication frequency varies from several minutes for plain water under summertime conditions to several weeks or months for chemical dust suppressants.

Watering increases the moisture content, which conglomerates particles and reduces their likelihood to become suspended when vehicles pass over the surface. The control efficiency depends on how fast the road dries after water is added. This in turn depends on (a) the amount (per unit road surface area) of water added during each application; (b) the period of time between applications; (c) the weight, speed and number of vehicles traveling over the watered road during the period between applications; and (d) meteorological conditions (temperature, wind speed, cloud cover, etc.) that affect evaporation during the period.

Figure 13.2.2-2 presents a simple bilinear relationship between the instantaneous control efficiency due to watering and the resulting increase in surface moisture. The moisture ratio "M" (i.e., the x-axis in Figure 13.2.2-2) is found by dividing the surface moisture content of the watered road by the surface moisture content of the uncontrolled road. As the watered road surface dries, both the ratio M and the predicted instantaneous control efficiency (i.e., the y-axis in the figure) decrease. The figure shows that between the uncontrolled moisture content and a value twice as large, a small increase in moisture content results in a large increase in control efficiency. Beyond that, control efficiency grows slowly with increased moisture content.

Given the complicated nature of how the road dries, characterization of emissions from watered roadways is best done by collecting road surface material samples at various times between water truck passes. (Appendices C.1 and C.2 present the sampling and analysis procedures.) The moisture content measured can then be associated with a control efficiency by use of Figure 13.2.2-2. Samples that reflect average conditions during the watering cycle can take the form of either a series of samples between water applications or a single sample at the midpoint. It is essential that samples be collected during periods with active traffic on the road. Finally, because of different evaporation rates, it is recommended that samples be collected at various times during the year. If only one set of samples is to be collected, these must be collected during hot, summertime conditions.

When developing watering control plans for roads that do not yet exist, it is strongly recommended that the moisture cycle be established by sampling similar roads in the same geographic area. If the moisture cycle cannot be established by similar roads using established watering control plans, the more complex methodology used to estimate the mitigation of rainfall and other precipitation can be used to estimate the control provided by routine watering. An estimate of the maximum daytime Class A pan evaporation (based upon daily evaporation data published in the monthly Climatological Data for the state by the National Climatic Data Center) should be used to insure that adequate watering capability is available during periods of highest evaporation. The hourly precipitation values in the spreadsheet should be replaced with the equivalent inches of precipitation (where the equivalent of 1 inch of precipitation is provided by an application of 5.6 gallons of water per square yard of road). Information on the long term average annual evaporation and on the percentage that occurs between May and October was published in the Climatic Atlas (Reference 16). Figure 13.2.2-3 presents the geographical distribution for "Class A pan evaporation" throughout the United States. Figure 13.2.2-4 presents the geographical distribution of the percentage of this evaporation that occurs between May and October. The U. S. Weather Bureau Class A evaporation pan is a cylindrical metal container with a depth of 10 inches and a diameter of 48 inches. Periodic measurements are made of the changes of the water level.

The above methodology should be used only for prospective analyses and for designing watering programs for existing roadways. The quality rating of an emission factor for a watered road that is based on this methodology should be downgraded two letters. Periodic road surface samples should be collected and analyzed to verify the efficiency of the watering program.

As opposed to watering, chemical dust suppressants have much less frequent reapplication requirements. These materials suppress emissions by changing the physical characteristics of the existing road surface material. Many chemical unpaved road dust suppressants form a hardened surface that binds particles together. After several applications, a treated road often resembles a paved road except that the surface is not uniformly flat. Because the improved surface results in more grinding of small particles, the silt content of loose material on a highly controlled surface may be substantially higher than when the surface was uncontrolled. For this reason, the models presented as Equations 1a and 1b cannot be used to estimate emissions from chemically stabilized roads. Should the road be allowed to return to an

uncontrolled state with no visible signs of large-scale cementing of material, the Equation 1a and 1b emission factors could then be used to obtain conservatively high emission estimates.

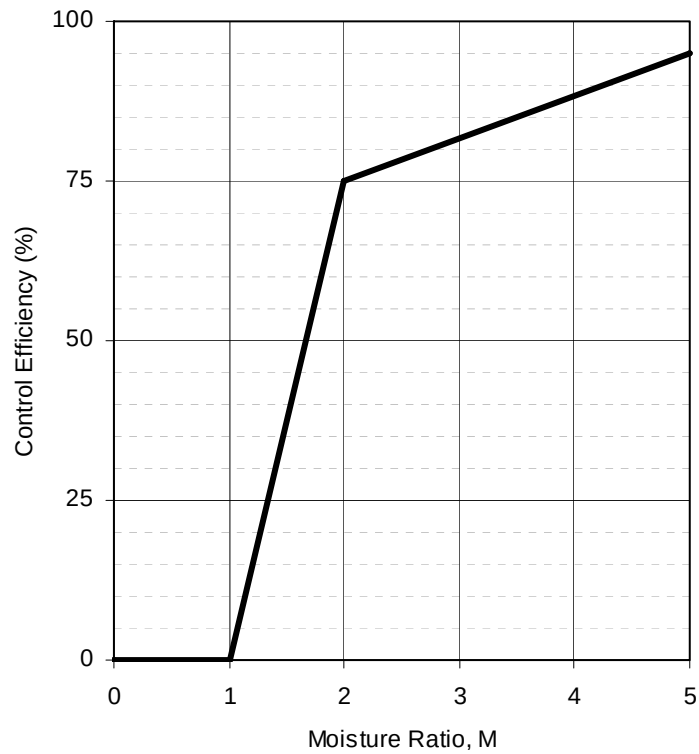


Figure 13.2.2-2. Watering control effectiveness for unpaved travel surfaces

The control effectiveness of chemical dust suppressants appears to depend on (a) the dilution rate used in the mixture; (b) the application rate (volume of solution per unit road surface area); (c) the time between applications; (d) the size, speed and amount of traffic during the period between applications; and (e) meteorological conditions (rainfall, freeze/thaw cycles, etc.) during the period. Other factors that affect the performance of dust suppressants include other traffic characteristics (e. g., cornering, track-on from unpaved areas) and road characteristics (e. g., bearing strength, grade). The variabilities in the above factors and differences between individual dust control products make the control efficiencies of chemical dust suppressants difficult to estimate. Past field testing of emissions from controlled unpaved roads has shown that chemical dust suppressants provide a PM-10 control efficiency of about 80 percent when applied at regular intervals of 2 weeks to 1 month.

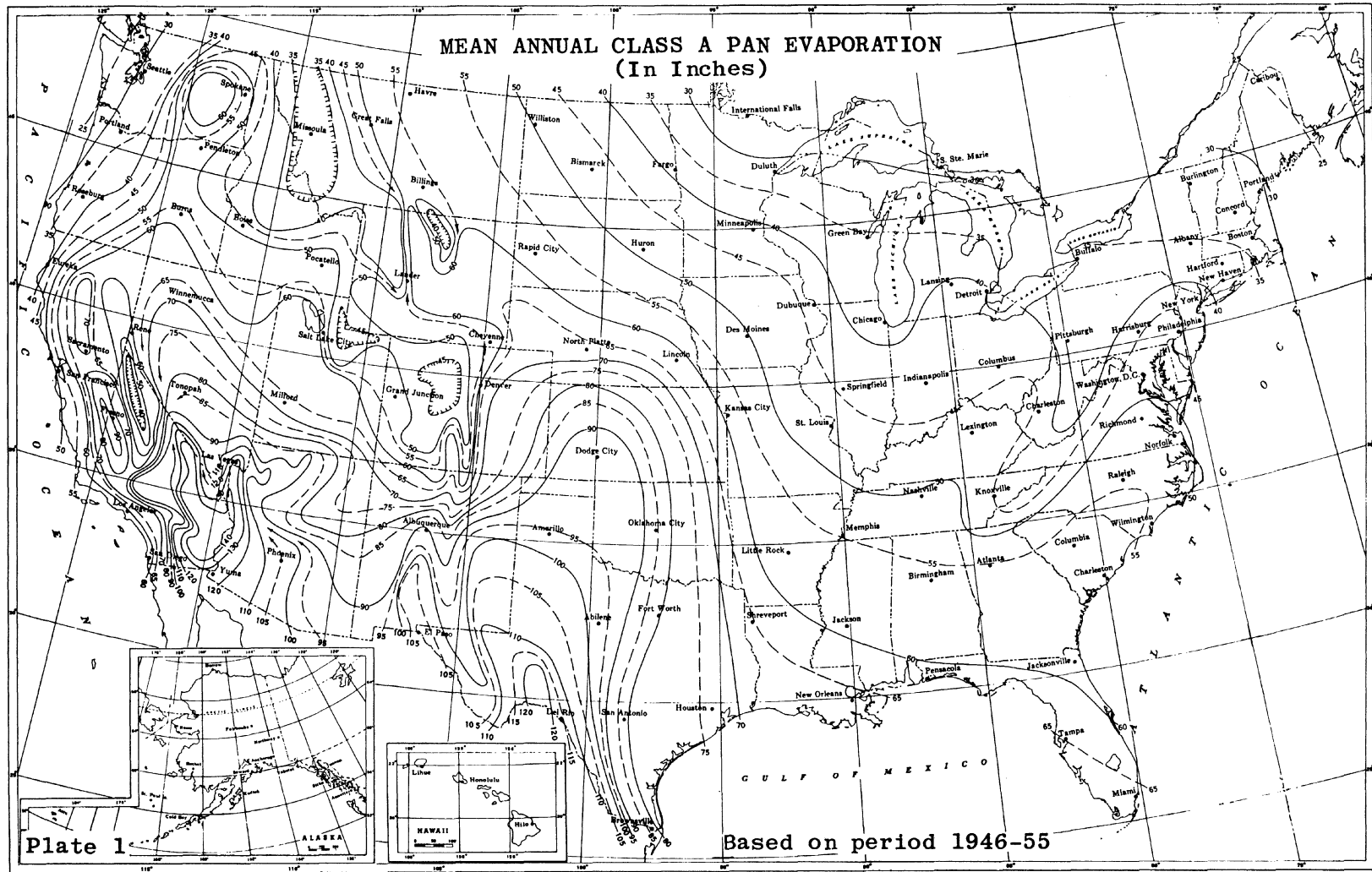


Figure 13.2.2-3. Annual evaporation data.

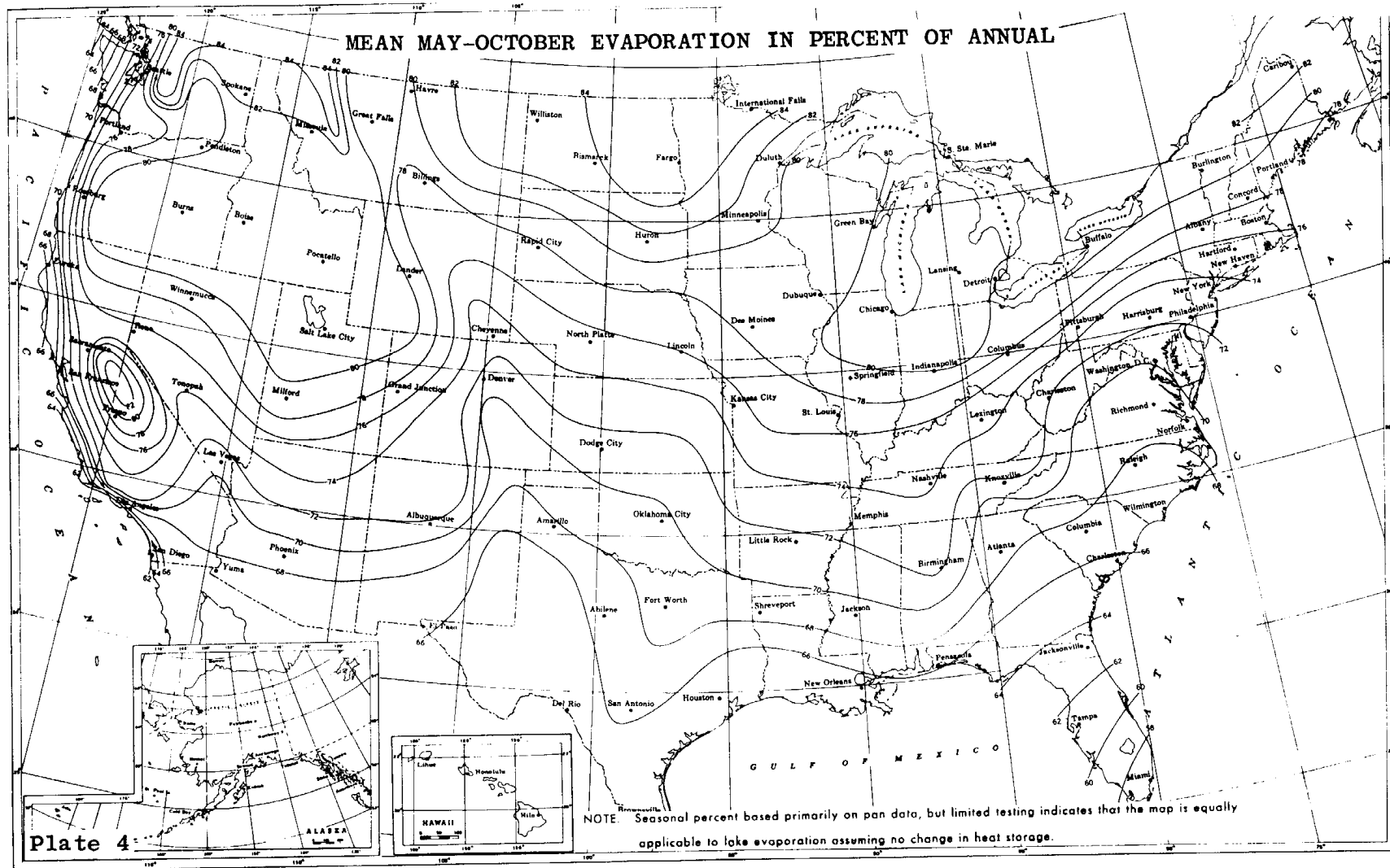


Figure 13.2.2-4. Geographical distribution of the percentage of evaporation occurring between May and October.

Petroleum resin products historically have been the dust suppressants (besides water) most widely used on industrial unpaved roads. Figure 13.2.2-5 presents a method to estimate average control efficiencies associated with petroleum resins applied to unpaved roads.²⁰ Several items should be noted:

1. The term "ground inventory" represents the total volume (per unit area) of petroleum resin concentrate (*not solution*) applied since the start of the dust control season.
2. Because petroleum resin products must be periodically reapplied to unpaved roads, the use of a time-averaged control efficiency value is appropriate. Figure 13.2.2-5 presents control efficiency values averaged over two common application intervals, 2 weeks and 1 month. Other application intervals will require interpolation.
3. Note that zero efficiency is assigned until the ground inventory reaches 0.05 gallon per square yard (gal/yd²). Requiring a minimum ground inventory ensures that one must apply a reasonable amount of chemical dust suppressant to a road before claiming credit for emission control. Recall that the ground inventory refers to the amount of petroleum resin concentrate rather than the total solution.

As an example of the application of Figure 13.2.2-5, suppose that Equation 1a was used to estimate an emission factor of 7.1 lb/VMT for PM-10 from a particular road. Also, suppose that, starting on May 1, the road is treated with 0.221 gal/yd² of a solution (1 part petroleum resin to 5 parts water) on the first of each month through September. Then, the average controlled emission factors, shown in Table 13.2.2-5, are found.

Table 13.2.2-5. EXAMPLE OF AVERAGE CONTROLLED EMISSION FACTORS
FOR SPECIFIC CONDITIONS

Period	Ground Inventory, gal/yd ²	Average Control Efficiency, % ^a	Average Controlled Emission Factor, lb/VMT
May	0.037	0	7.1
June	0.073	62	2.7
July	0.11	68	2.3
August	0.15	74	1.8
September	0.18	80	1.4

^a From Figure 13.2.2-5, $\leq 10 \mu\text{m}$. Zero efficiency assigned if ground inventory is less than 0.05 gal/yd².
1 lb/VMT = 281.9 g/VKT. 1 gal/yd² = 4.531 L/m².

Besides petroleum resins, other newer dust suppressants have also been successful in controlling emissions from unpaved roads. Specific test results for those chemicals, as well as for petroleum resins and watering, are provided in References 18 through 21.

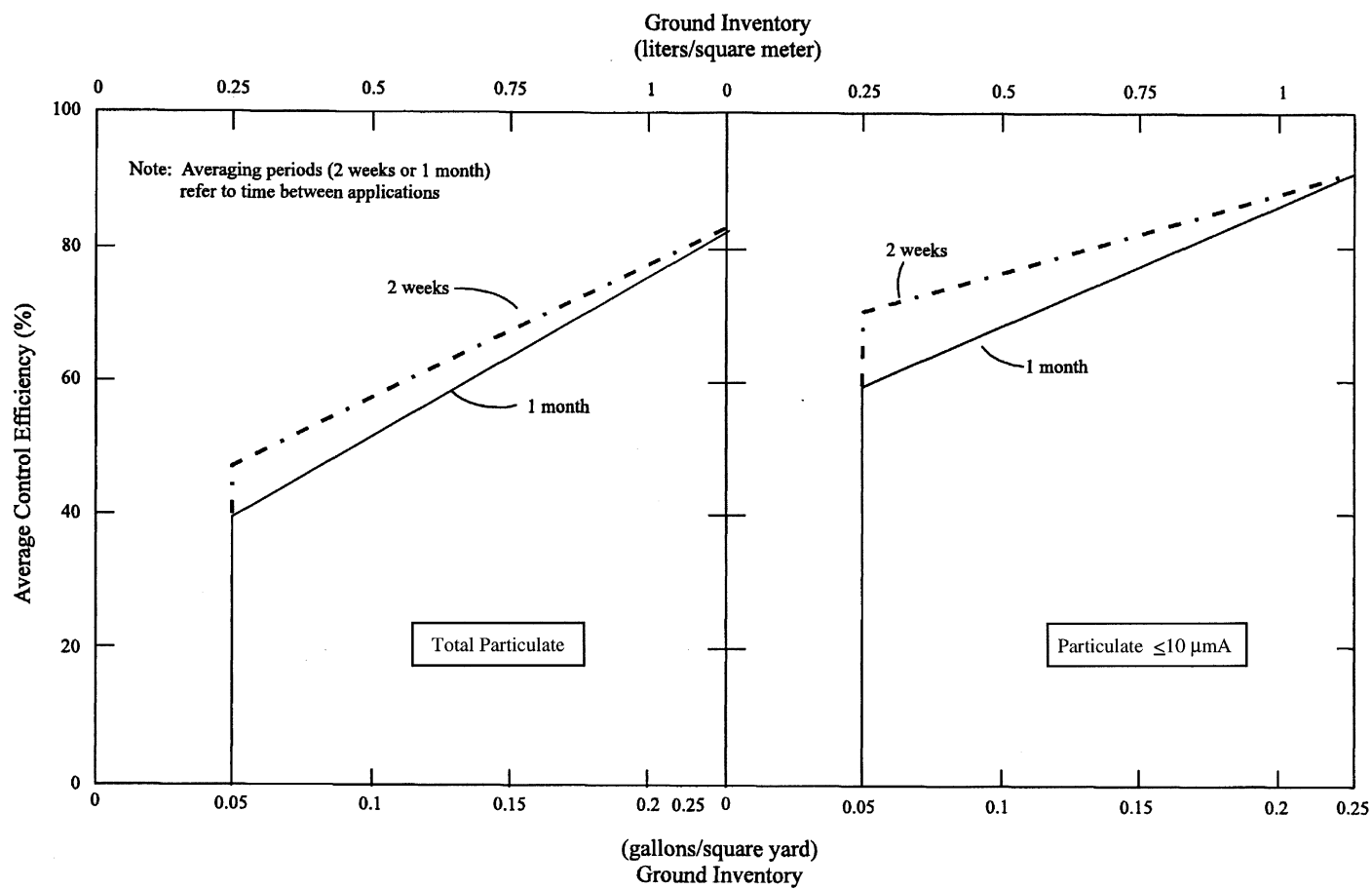


Figure 13.2.2-5. Average control efficiencies over common application intervals.

13.2.2.4 Updates Since The Fifth Edition

The Fifth Edition was released in January 1995. Revisions to this section since that date are summarized below. For further detail, consult the background report for this section (Reference 6).

October 1998 (Supplement E)– This was a major revision of this section. Significant changes to the text and the emission factor equations were made.

October 2001 – Separate emission factors for unpaved surfaces at industrial sites and publicly accessible roads were introduced. Figure 13.2.2-2 was included to provide control effectiveness estimates for watered roads.

December 2003 – The public road emission factor equation (equation 1b) was adjusted to remove the component of particulate emissions from exhaust, brake wear, and tire wear. The parameter *C* in the new equation varies with aerodynamic size range of the particulate matter. Table 13.2.2-4 was added to present the new coefficients.

January 2006 – The PM-2.5 particle size multipliers (i.e., factors) in Table 13.2.2-2 were modified and the quality ratings were upgraded from C to B based on the wind tunnel studies of a variety of dust emitting surface materials.

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ATTACHMENT C

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Certified Mail Fee	\$ 5.30
Extra Services & Fees (check box, add fee as appropriate)	\$ 4.40
☒ Return Receipt (hardcopy)	\$
☐ Return Receipt (electronic)	\$
☐ Certified Mail Restricted Delivery	\$
☐ Adult Signature Required	\$
☐ Adult Signature Restricted Delivery	\$
Postage	\$ 1.63
Total Postage and Fees	\$ 11.33
Sent To NM SLO Street and Apt. No., or PO Box No. 310 Old Santa Fe Trail City, State, ZIP+4® Santa Fe, NM 87504	
PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions	



9589 0710 5270 1673 1644 31

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only	
For delivery information, visit our website at www.usps.com ®.	
OFFICIAL USE	
Certified Mail Fee	\$ 5.30
Extra Services & Fees (check box, add fee as appropriate)	\$ 4.40
☒ Return Receipt (hardcopy)	\$
☐ Return Receipt (electronic)	\$
☐ Certified Mail Restricted Delivery	\$
☐ Adult Signature Required	\$
☐ Adult Signature Restricted Delivery	\$
Postage	\$ 1.63
Total Postage and Fees	\$ 11.33
Sent To LEA COUNTY MGR. ATTN: COREY NEEDHAM Street and Apt. No., or PO Box No. 100 N. MAIN, 2ND FLOOR City, State, ZIP+4® LOVINGTON, NM 88260	
PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions	



Section 9
Proof of Public Notice
Item 2
List of Public Notice Posting Locations

List of Public Notice Posting Locations

Intrepid Potash – New Mexico, LLC has posted public notices containing the geographic locations of the facilities and describing the proposed modification at the following locations:

- The Intrepid Potash East Plant Entrance
- Brewer Shell, located at 713 North Canal in Carlsbad, NM
- The Carlsbad Public Library, at 101 South Halagueno in Carlsbad, NM
- La Tienda Thriftway, at 1301 S. Canal Street in Carlsbad, NM

Section 9

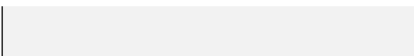
Proof of Public Notice

Item 3

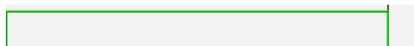
Copy of Property Tax Record (20.2.72.203.B NMAC)

East Plant Tax Records

Account: R101107 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

Location		Owner Information	Assessment History
Account Number R101107		Owner Name INTREPID POTASH NEW MEXICO LLC	Actual Value (2015) \$0
Situs Address RED CLOUD ROAD		Owner Address 1001 17TH STREET SUITE 1050	No taxable value types
Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)		DENVER, CO 80202	
Parcel Number 4-184-121-134-737			
Legal Summary Quarter: SW S: 3 T: 21S R: 31E S2SW (PATENT# 30-2014-0010) MP# 208-3-2			
LOC-E OF 210 RED CLOUD RD STATE ASSESSED			
Map Number			
Parcel Size			
Tax History		Images	
Tax Year	Taxes	GIS	
*2026	\$0.00		
2025	No Tax Values		
* Estimated			

Account: R101108 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

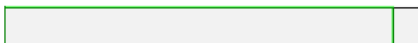
Location		Owner Information	Assessment History
Account Number R101108		Owner Name INTREPID POTASH NEW MEXICO LLC	Actual Value (2015) \$0
Situs Address RED CLOUD ROAD		Owner Address 1001 17TH STREET SUITE 1050	No taxable value types
Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)		DENVER, CO 80202	
Parcel Number 4-183-121-396-398			
Legal Summary Quarter: NE S: 4 T: 21S R: 31E LOTS 9,10,15,16 (E2S2N2) PATENT# 30-2014-0010 MAP# 208-4-2 LOC-E OF 171 RED CLOUD RD STATE ASSESSED			
Map Number			
Parcel Size			
Tax History		Images	
Tax Year	Taxes	GIS	
*2026	\$0.00		
2025	No Tax Values		
* Estimated			

Account: R101111 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

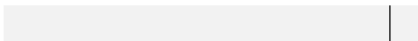
Location		Owner Information		Assessment History	
Account Number R101111		Owner Name INTREPID POTASH NEW MEXICO LLC		Actual Value (2015)	
Situs Address LOUIS WHITLOCK		Owner Address 1001 17TH STREET SUITE 1050		No taxable value types	
Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)		DENVER, CO 80202			
Parcel Number 4-183-122-261-134					
Legal Summary Quarter: NE S: 9 T: 21S R: 31E Quarter: NW S: 9 T: 21S R: 31E N2 (PATENT# 30-2014-0010) MAP# 208-9-1 LOC W OF LOUIS WHITLOCK ROAD STATE ASSESSED					
Map Number					
Parcel Size					
Tax History			Images		
Tax Year		Taxes	GIS		
*2026		\$0.00			
2025		No Tax Values			
* Estimated					

East Plant Tax Records (Continued)

Account: R101109 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

Location		Owner Information	Assessment History
Account Number R101109		Owner Name INTREPID POTASH NEW MEXICO LLC	Actual Value (2015) \$0
Situation Address 171 RED CLOUD ROAD		Owner Address 1001 17TH STREET SUITE 1050	No taxable value types
Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)		DENVER, CO 80202	
Parcel Number 4-183-121-131-398			
Legal Summary Quarter: NW S: 4 T: 21S R: 31E LOTS 11,12,13,14 (W2S2N2) PATENT# 30-2014-0010 MAP# 208-4-3 LOC 171 RED CLOUD RD STATE ASSESSED			
Map Number			
Parcel Size			
Tax History		Images	
Tax Year	Taxes	GIS	
*2026	\$0.00		
2025	No Tax Values		
* Estimated			

Account: R101110 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

Location		Owner Information		Assessment History	
Account Number R101110		Owner Name INTREPID POTASH NEW MEXICO LLC		Actual Value (2015)	
Situation Address RED CLOUD ROAD		Owner Address 1001 17TH STREET SUITE 1050		\$0	
Tax Area CO_Nr - CARLSBAD-OUT (Nonresidential)		DENVER, CO 80202		No taxable value types	
Parcel Number 4-182-121-391-728					
Legal Summary Quarter: SE S: 5 T: 21S R: 31E S2SE (PATENT #30-2014-0010) MAP# 208-5-2					
LOC W OF 210 RED CLOUD RD STATE ASSESSED					
Map Number					
Parcel Size					
Tax History			Images		
Tax Year		Taxes	GIS		
*2026		\$0.00			
2025		No Tax Values			
* Estimated					

Account: C200353 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

Location		Owner Information	Assessment History
Account Number C200353		Owner Name INTREPID POTASH NEW MEXICO LLC	Actual Value (2021) \$0
Situa Address 210 RED CLOUD ROAD		Owner Address 1001 17TH STREET SUITE 1050	No taxable value types
Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)		DENVER, CO 80202	
Parcel Number 4-183-121-264-666			
Legal Summary Quarter: SW S: 4 T: 21S R: 31E Quarter: SE S: 4 T: 21S R: 31E S2			
Map Number 208-4-5			
Parcel Size			
Tax History		Images	
Tax Year	Taxes		
*2026	\$0.00		
2025	No Tax Values		
* Estimated			

Section 9

Proof of Public Notice

Items 4 & 5

Sample of Letter Sent to Owners of Record, Counties, and Municipalities



Intrepid Potash – New Mexico, LLC
Post Office Box 101
Carlsbad, NM 88221

CERTIFIED MAIL 9589 0710 5270 1673 6044 00
RETURN RECEIPT REQUESTED

August 26, 2025

Bureau of Land Management
Carlsbad Field Office
Attention: Mr. Cody Layton
620 E. Greene St.
Carlsbad, NM 88220

Dear Mr. Layton:

Intrepid Potash – New Mexico LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its potash facility nonroad engines. The expected date of application submittal to the Air Quality Bureau is **August 31, 2025**.

The exact location for the proposed facility known as, **Intrepid Potash – New Mexico East Plant**, is at **210 Red Cloud Road, Carlsbad, NM 88220**, latitude **32.505522** dec deg North and longitude **-103.782518** dec deg West. The approximate location of this facility is **4.4** miles southwest of **the intersection of US Route 62 and New Mexico State Road 176** in **Eddy County**.

The proposed **modification** consists of the addition of three non-road engines and request for engine operational flexibility.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and may change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
PM 10	64.00	236.00
PM 2.5	34.00	130.00
Sulfur Dioxide (SO ₂)	8.50	15.00
Nitrogen Oxides (NO _x)	72.00	217.00
Carbon Monoxide (CO)	84.00	269.00
Volatile Organic Compounds (VOC)	12.50	26.00
Total sum of all Hazardous Air Pollutants (HAPs)	1.14	5.00
Green House Gas Emissions as Total CO ₂ e	n/a	238,000.00

The standard and maximum operating schedules of the facility will be 24 hrs. a day, 7 days a week and a maximum of 52 weeks per year

Owners and operators of the facility include **Intrepid Potash – New Mexico LLC**.



Intrepid Potash – New Mexico, LLC
Post Office Box 101
Carlsbad, NM 88221

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.

Atención

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 505-629-7748.

Sincerely,

Roy Torres, IPNM Manager – Mining & Minerals
Intrepid Potash New Mexico, LLC
P.O. Box 101
Carlsbad, NM 88221

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.

Section 9

Proof of Public Notice

Item 6

**Sample of Public Notice Posted
Verification of the Local Postings**

NOTICE

Intrepid Potash – New Mexico LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its potash facility nonroad engines. The expected date of application submittal to the Air Quality Bureau is **August 31, 2025**.

The exact location for the proposed facility known as, **Intrepid Potash – New Mexico East Plant**, is at **210 Red Cloud Road, Carlsbad, NM 88220**, latitude **32.505522** dec deg North and longitude - **103.782518** dec deg West. The approximate location of this facility is **4.4** miles southwest of **the intersection of US Route 62 and New Mexico State Road 176** in **Eddy** county.

The proposed **modification** consists of the addition of three non-road engines and request for engine operational flexibility.

The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and may change slightly during the course of the Department’s review:

Pollutant:	Pounds per hour	Tons per year
PM ₁₀	64.00	236.00
PM _{2.5}	34.00	130.00
Sulfur Dioxide (SO ₂)	8.50	15.00
Nitrogen Oxides (NO _x)	72.00	217.00
Carbon Monoxide (CO)	84.00	269.00
Volatile Organic Compounds (VOC)	12.50	26.00
Total sum of all Hazardous Air Pollutants (HAPs)	1.14	5.00
Green House Gas Emissions as Total CO ₂ e	n/a	238,000.00

The standard and maximum operating schedules of the facility will be 24 hrs. a day, 7 days a week and a maximum of 52 weeks per year

Owners and operators of the facility include Intrepid Potash – New Mexico LLC.

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 site 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.

General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau’s website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

Atención

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 505-629-7748.

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.

General Posting of Notices – Certification

I, Robin Hughes, the undersigned, certify that on **August 28, 2025** posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **Carlsbad of Eddy** County, State of New Mexico on the following dates:

1. Intepid East Plant Entrance August 28, 2025
2. TimeWise Shell, located at 713 North Canal August 28, 2025
3. The Carlsbad Public Library, at 101 South Halagueno August 28, 2025
4. La Tienda Thriftway, at 1301 S. Canal Street August 28, 2025

Signed this 29th day of August, 2025

Robin Hughes
Signature

8/29/25
Date

Robin Hughes
Printed Name

East Plant NSR 755-M15 Application
Section 9 Public Notice
Proof of Posting at East Plant Entrance
August 28, 2025

Environmental Technician
Title



Section 9
Proof of Public Notice
Item 7
List of Notified Parties

LIST OF NOTIFIED PARTIES

PUBLIC NOTICE LETTERS

Addressee	Date of Certified Mail Posting
County Manager Attn: Mike Gallagher Eddy County Administration Complex 101 W Greene Street Suite 312 Carlsbad, NM 88220	August 28, 2025
Bureau of Land Management-CFO Attn: Cody Layton 620 E. Greene St. Carlsbad, NM 88220	August 28, 2025
NM State Land Office 310 Old Santa Fe Trail Santa Fe, NM 87504	August 28, 2025
County Manager Attn: Corey Needham Lea County 100 North Main, 2nd Floor Lovington, NM 88260	August 28, 2025

Section 9

Proof of Public Notice

Item 8

Copy of Public Service Announcement

Documentary Proof of Submittal

Submittal of Public Service Announcement - Certification

PUBLIC SERVICE ANNOUNCEMENT

Intrepid Potash Notice of Application for Modification of Air Quality Permit

Intrepid Potash – New Mexico, LLC announces its intent to apply to the New Mexico Environment Department for an application to modify the East Plant New Source Review Permit No. 755-M15. The modification consists of the addition of 3 non-road engines and request for engine operational flexibility.

The East Plant is located at 210 Red Cloud Road, in Eddy County, approximately 29 miles east-northeast of Carlsbad, NM by US Highway 62 East / US Highway 180.

Intrepid has posted complete notices containing the geographic locations of the facilities and describing the proposed modification at the following locations:

- The Intrepid Potash East Plant
- TimeWise Shell located at 713 North Canal
- The Carlsbad Public Library at 101 South Halagueno
- La Tienda Thriftway at 1301 S Canal Street in Carlsbad

If you have any comments about this proposed modification and you want your comments to be made as part of the permit review process, you must submit your comments in writing to:

New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico 87505-1816

The Department may be contacted by telephone at (505) 476-4300 or (800) 224-7009.

CARLSBAD RADIO, INC
PO Box 1538
CARLSBAD, NM 88221

Order #: 2573-00069
Description: East NSR Permit Modification
Date Entered: 8/19/2025
P.O.#:
Salesperson: Thomas, Debbie
Invoice Frequency:

Intrepid Potash - New Mexico, LLC
Accounts Payaable
P O Box 101
Carlsbad, NM 88221

Other (Non-Spot) Charges

	Start Date	End Date	Station	Description of Charge	Repeated	Qty		Rate	Total
1	8/19/2025	8/19/2025	KCDY-FM	East NSR Permit Modification	Monthly	1		500.00	500.00

On-Air Schedule

	Start Date	End Date	Station	Scheduled Time/Event	Repeated	Length	Qty	Rate	Total	M	Tu	W	Th	F	Sa	Su
1	8/21/2025	8/21/2025	KATK-FM	11:00:00a to 01:00:00p	Weekly	1:30	1	0.00	0.00	0	0	0	1	0	0	0
2	8/21/2025	8/21/2025	KCDY-FM	11:00:00a to 01:00:00p	Weekly	1:30	1	0.00	0.00	0	0	0	1	0	0	0

Order Start Date: 8/19/2025	Order End Date: 8/21/2025	Spots: 2	Total Charges:	\$500.00
			Total Sales Tax	\$36.97
			Total Net:	\$536.97

Projected Calendar Month Billing Totals for Intrepid Potash - New Mexico, LLC / 2573-00069 :

		Spot Count	Net Billing
August	2025	2	\$500.00

Confirmed & Accepted for CARLSBAD RADIO, INC By:

Accepted for Intrepid Potash - New Mexico, LLC By:

Please Sign and Return One Copy

Submittal of Public Service Announcement – Certification

I, Robin Hughes, the undersigned, certify that on **August 18, 2025** submitted a public service announcement to **Carlsbad Radio Inc.** that serves the City of **Carlsbad, Eddy County, New Mexico**, in which the source is located and that **CARLSBAD RADIO RESPONDED THAT IT WOULD AIR THE ANNOUNCEMENT.**

Signed this 29th day of August, 2025

Robin Hughes
Signature

8/29/25
Date

Robin Hughes
Printed Name

Environmental Technician
Title

Section 9

Proof of Public Notice

Items 9 & 10

Copy of Legal Ad & Copy of Display Ad

Carlsbad Current Argus

08/23/2025

CARLSBAD SPORTS CALENDAR

Riverwalk hosts recreational workouts

Current-Argus Staff Report

Here is a look at forthcoming and ongoing sporting events around Carlsbad.

Fitness classes are held regularly at the Riverwalk Recreation Center at 400 Riverwalk Drive.

Call 575-887-2702.

Ongoing
New Mexico Trout Challenge

The New Mexico Department of Game and Fish invites casters to catch Cutthroat Trout, Rainbow Trout, Brown Trout, Brook Trout and Gila Trout. Earn a bragworthy

coin for completing the challenge. Call 888-248-6866.

Wrestling Tryouts

Carlsbad kids interested in learning the finer points of amateur wrestling are encouraged to join the Carlsbad Combat Challenge Wrestling Club.

More information at 575-703-0255.

New Mexico Bass Challenge

The New Mexico Department of Game and Fish invites anglers to participate in the New Mexico Bass Challenge. Catch four species of bass in New Mexico and you could win a special reward and be included in the

online records of successful New Mexico Bass Challenge anglers.

More information at 888-248-6866.

Upcoming
Lake Carlsbad Golf Tournaments

Aug. 23 Chamber of Commerce Three Person Scramble Entry Fee-\$400 for three-person scramble.

More information at 575-885-5444.

Sept. 4-6 Potash Open. Registration at potashopen.com.

Sept. 27 September Showdown Two person scramble Entry Fee-\$100 per team.

Aggie named to Earl Campbell Watch List

Information and photo
provided by NM State
Athletics

The Earl Campbell Tyler Rose Award announced its 13th annual watch list on Wednesday and sophomore wide receiver TJ Pride is one of 102 players from nine conferences and one independent that has been recognized. He is also one of just 29 receivers to be selected to the exclusive list.

The Earl Campbell Tyler Rose Award recognizes the top offensive player in Division I football who also exhibits the enduring characteristics that define Earl Campbell: integrity, performance, teamwork, sportsmanship, drive, community and tenacity; specifically, tenacity to persist and determination to overcome adversity and injury in pursuit of reaching goals. In addition, the nominee must meet one or more of



NM State's TJ Pride begins his second season in Las Cruces.

the following criteria: Played four-year college.

Pride, a native of Midlothian, Texas, begins his second year with the program after a freshman campaign in which he finished the year as the Aggies leader in both receptions and yards on his way to being named

to the All-CUSA Freshman Offensive Team. Pride also finished the year second among Aggie wide receivers in touchdown receptions with two.

With nearly 400 receiving yards, Pride finished the year ranked first in receiving yards among true freshman in Conference USA. He was also the only true freshman in the league to finish the year among the top 25 in receiving yards this season. In total, Pride paced the Aggies in receptions in five games this season, including leading the way in the final game of the season when he recorded a career-high in both catches (6) and receiving yards (81).

Pride and the Aggies will kickoff the season on Saturday, August 30, when Bryant visits Las Cruces for the season opener. The first game of the season is scheduled to begin at 7 p.m. MT.

NOTICE OF AIR QUALITY PERMIT APPLICATION

Intrepid Potash – New Mexico LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its potash facility nonroad engines. The expected date of application submittal to the Air Quality Bureau is **August 31, 2025**.

The exact location for the proposed facility known as, **Intrepid Potash – New Mexico East Plant**, is at 210 Red Cloud Road, Carlsbad, NM 88220, latitude **32.505522** dec deg North and longitude **-103.782518** dec deg West. The approximate location of this facility is **4.4 miles southwest of the intersection of US Route 62 and New Mexico State Road 176 in Eddy county**.

The proposed modification consists of the addition of three non-road engines and request for engine operational flexibility. The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and may change slightly during the course of the Department’s review:

Pollutant:	Pounds per hour	Tons per year
PM 10	64.00	236.00
PM 2.5	34.00	130.00
Sulfur Dioxide (SO2)	8.50	15.00
Nitrogen Oxides (NOx)	72.00	217.00
Carbon Monoxide (CO)	84.00	269.00
Volatile Organic Compounds (VOC)	12.50	26.00
Total sum of all Hazardous Air Pollutants (HAPs)	1.14	5.00
Green House Gas Emissions as Total CO2e	n/a	238,000.00

The standard and maximum operating schedules of the facility will be 24 hrs. a day, 7 days a week and a maximum of 52 weeks per year

Owners and operators of the facility include Intrepid Potash – New Mexico LLC.

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 site 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.

General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau’s website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

Atención
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 505-629-7748.

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.

Six Red Raiders named players to watch for 2026 Senior Bowl

Information and photo
provided by Texas
Tech Athletics Media

The Panini Senior Bowl, formerly Reese’s Senior Bowl, revealed on Wednesday morning its Top 300 players to watch heading into the 2026 edition of the annual collegiate all-star game, which included Texas Tech with six players recognized.

The Top 300 is its first-ever such list, after identifying “the Best of the Best,” according to the Senior Bowl scouting department, comprised entirely of former NFL scouts, who have been evaluating over 2,000 prospects from all levels of college football since last February.

The Red Raiders identified on Wednesday were quarterback Behren Morton, wide receivers Caleb Douglas and Reggie Virgil, defensive lineman Lee Hunter, and edge rushers David Bailey and Romello Height.

“We decided to trim our watch list from 850 to 300 to raise the bar and truly spotlight the top-tier talent across the country,” says Senior Bowl Executive Director Drew Fabianich. “Our staff has been working rigorously to identify the top talent in this year’s draft class, and the players on this list have stood out so far, but this is just



Texas Tech quarterback Behren Morton is on the Panini Senior Bowl.

the beginning. This season is the most valuable part of our process, and there is still plenty of football to be played. Our scouts will be on the road every week, tracking how these players perform and who continues to rise.”

The move from an 850-player watch list to a Top 300 list highlights the 300 most promising prospects for this upcoming draft cycle. However, just because a player is listed on the Top 300 does not guarantee that individual an invitation, nor if a player is not currently on the list, does it mean he will not be evaluated with the same expertise and attention to detail as the players currently on

the list. It is possible, and likely, that multiple players not on the Top 300 will earn an invitation to the Panini Senior Bowl depending on how well they perform during the 2025 season.

Texas Tech and Baylor shared the Big 12 lead with six players selected, respectively. Overall, the Red Raiders were one of 16 FBS programs that owned six selections or greater. LSU led the country with 14 players tabbed to the Top 300.

The 2026 Panini Senior Bowl will take place on Saturday, Jan. 31, 2026, at 1:30 p.m. CT at South Alabama’s Hancock Whitney Stadium.

Fishing,

Continued from B1

Along the Pecos River, fishing for trout was slow using a variety of dry flies.

In Albuquerque, fishing for catfish was slow to fair using magic bait, chicken liver and dough bait.

This fishing report, provided by the Department of Game and Fish, has been generated from the best information available from area officers and anglers. Conditions encountered after the report is compiled may differ, as stream, lake and weather conditions alter fish and angler activities.



Carl Ortiz caught a tiger muskie using a small, light blue spinner on a boat near the dam on Aug. 13 at Bluewater Lake.

CURRENT-ARGUS

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All classifieds are subject to applicable rate card, copies of which are available from our Advertising Dept. All ads are subject to approval before publication. Current-Argus reserves the right to edit, refuse, reject, classify or cancel any at any time. Errors must be reported in the first day of publication. Current Argus shall not be liable for any loss or expense that results from an error in or omission of an advertisement. No refunds for early cancellations of order.

Announcements

Displays

Announcements

NOTICE!!!
FREE AD!
Call 888-986-9877.

-If you have an item, asking less than \$500, we will publish it in the paper for four weeks for free.
-Five lines or less.
-Must include price and phone number. No websites.
-You may also email: classifieds@currentargus.com
-Private party ads only (no commercial, business, service or pet ads)
-This offer is subject to change without prior notice.

Auction Displays

Garage Sales

Church Rummage Sale Fund-raiser
New Song Christian Fellowship
1105 Pate St. Thurs-Fri, August 28-29, 8am-4pm. Please use 6th Street Door.

BUSINESS & SERVICES

Tree Services

ROADRUNNERS TREE SERVICES. Fully insured. Quality work. Free estimates. 575-703-1604.

PUBLIC NOTICE

Public Notices

FIFTH JUDICIAL DISTRICT COURT
COUNTY OF EDDY
STATE OF NEW MEXICO
No. D-503-PB-2025-00088
IN THE MATTER OF THE ESTATE OF
DICK A. BLENDE
Deceased.

NOTICE TO CREDITORS

NOTICE IS HEREBY GIVEN that the undersigned has been appointed Personal Representative of the above-referenced estate. All persons having claims against the estate are required to present their claims within four months after the date of the first publication of this Notice, or the claims will be forever barred. Claims must be presented either to the undersigned Personal Representative, 6321 88th Street, Lubbock, Texas 79424, or filed with the District Court.

/s/ W Humphrey
Wendy Humphrey
Personal Representative of the Estate of
Dick A. Blenden, deceased
6321 88th Street
Lubbock, TX 79424

575 LAW GROUP, LLC
/s/ Roxanne R. Rodriguez
310 N. Canyon
Carlsbad, NM 88220
(575) 628-8248
(575) 628-0016 Fax
roxanne@575lawgroup.com

Published in the Carlsbad Current-Argus August 9, 16 & 23, 2025.
#58140

Hide While You Seek! Our "Blind Boxes" protect your privacy.

Public Notices

Public Notices

FIFTH JUDICIAL DISTRICT COURT
COUNTY OF EDDY
STATE OF NEW MEXICO

IN THE MATTER OF THE ESTATE
OF No. D-503-PB-2025-00087
JEFFIE DAVIS TALLEY, Deceased.

NOTICE OF HEARING BY PUBLICATION

TO: Unknown heirs of Jeffie Davis Talley, deceased, and all unknown persons who have or claim any interest in the Estate of Jeffie Davis Talley, or in the matter being litigated in the hereinafter mentioned hearing:

You are hereby notified that a hearing on the Petition For Formal Probate of Will and for Formal Appointment of Personal Representative filed by Leon Talley with the Court on August 1, 2025, requesting formal probate of the Decedent's Will, dated February 22, 1999, and the formal appointment of Leon Talley as the Personal Representative of the Decedents Estate, without bond in an unsupervised administration, and the issuance of Letters Testamentary to Leon Talley, will be held in the Fifth Judicial District Court of Eddy County in the Eddy County Courthouse in Carlsbad, New Mexico, on September 25, 2025 at 9:00 a.m. The hearing may be attended virtually by Google Meets at the following link meet.google.com/bub-dhke-heu. You may obtain additional information regarding this matter by contacting counsel for Petitioner.

SANDERS, BRUIN, COLL & WORLEY, P.A.
Kelly Mack Cassels
701 W. Country Club Road
Roswell, New Mexico 88201
575-622-5440
kmc@sbcw.com
Attorneys for the Petitioner
58960-Published in Carlsbad Current-Argus Aug 16, 23, 30, 2025.



Looking for a Garage Sale?

Check your local classified listings everyday!

Classified shoppers aren't desperate... just smart consumers that like to save money.

Classified shoppers aren't desperate... just smart consumers that like to save money.

Public Notices

Public Notices

TO: Wesley Keith Roberts, Randall Wray Jenkins Jr., Jean Millman, and John Millman, or your heirs, devisees, successors, or assigns; Mewbourne Oil Company has filed an application with the New Mexico Oil Conservation Division requesting compulsory pooling, as follows:

Case No. 25573: Application of Mewbourne Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant has filed an application with the Oil Conservation Division for an order pooling all uncommitted mineral interest owners in the Bone Spring formation underlying a horizontal spacing unit comprised of the S/2S/2 of Section 9 and the S/2S/2 of Section 8, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico (the Unit). Applicant proposes to drill the following wells in the Unit to test the Bone Spring formation: The Sandlot 9/8 Well Nos. 527H and 557H, with first take points in the SE/4SE/4 of Section 9 and last take points in the SW/4SW/4 of Section 8.

Also to be considered will be the cost of drilling, completing, testing, and equipping the wells, and the allocation of the cost thereof among the wells working interest owners, designation of Applicant as operator of the wells and the Unit, approval of actual operating charges and costs charged for supervision, together with a provision adjusting the rates pursuant to the COPAS accounting procedure, and setting a 200% charge for the risk involved in drilling, completing, testing, and equipping the wells in the event a working interest owner elects not to participate in the wells.

This matter is scheduled for hearing at 9:00 a.m. on Thursday, September 11, 2025. The hearing may be attended (a) in person in Pecos Hall of the Wendell Chino Building, First Floor, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, or (b) via the Divisions virtual meeting platform. To view the hearing docket and determine how to participate in an electronic hearing, go to <https://www.emnrd.nm.gov/ocd/hearing-info/> or contact Freya Tschantz at Freya.Tschantz@emnrd.nm.gov. You are not required to attend the hearing, but an owner of an interest affected by the application may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from contesting this matter at a later date. A party appearing in a Division case is required to file a Pre-Hearing Statement with the

NOTICE OF AIR QUALITY PERMIT APPLICATION

Intrepid Potash – New Mexico LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its potash facility nonroad engines. The expected date of application submittal to the Air Quality Bureau is **August 31, 2025**.

The exact location for the proposed facility known as, **Intrepid Potash – New Mexico East Plant**, is at 210 Red Cloud Road, Carlsbad, NM 88220, latitude **32.505522** dec deg North and longitude **-103.782518** dec deg West. The approximate location of this facility is **4.4 miles southwest of the intersection of US Route 62 and New Mexico State Road 176** in Eddy county.

The proposed modification consists of the addition of three non-road engines and request for engine operational flexibility. The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and may change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
PM 10	64.00	236.00
PM 2.5	34.00	130.00
Sulfur Dioxide (SO2)	8.50	15.00
Nitrogen Oxides (NOx)	72.00	217.00
Carbon Monoxide (CO)	84.00	269.00
Volatile Organic Compounds (VOC)	12.50	26.00
Total sum of all Hazardous Air Pollutants (HAPs)	1.14	5.00
Green House Gas Emissions as Total CO2e	n/a	238,000.00

The standard and maximum operating schedules of the facility will be 24 hrs. a day, 7 days a week and a maximum of 52 weeks per year

Owners and operators of the facility include Intrepid Potash – New Mexico LLC.

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 site 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.

General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau's website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

Atención
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59450-Published in Carlsbad Current Argus Aug 23, 2025.

City of Carlsbad

Employment Opportunities

101 N. Halagueno, Carlsbad, NM 88220

575-887-1191

www.cityofcarlsbadnm.com

Open until filled (unless otherwise posted)

Patrol Officer, uncertified

Patrol Officer, certified

Waste Water Foreman

Transit Driver, on-call

Telecommunicator

Firefighter/EMT

Recreation Center Attendant, on-call

Vactor Operator

Community Service/

Law Enforcement Officer Transition

Electrician

Sports & Recreation Attendant

Code Enforcement Officer (Closes August 27, 2025)

Fire Inspector (Closes August 27, 2025)

Fire Hydrant Maintenance Technician (Closes August 28, 2025)

\$28.77 per hour

\$32.38 per hour DOQ

\$31.44 - \$36.95 per hour DOQ

\$20.93 per hour

\$25.01-\$33.76 per hour DOQ

\$67,393 - \$84,534 annually DOQ

\$20.93 per hour

\$30.92 per hour

\$25.90 per hour

\$42.05 per hour

\$20.93 per hour

\$28.71 per hour

\$28.71 per hour

\$27.83 per hour

Apply by sending applications to hr@cityofcarlsbadnm.com

Open until filled

City Attorney

\$163,279-\$177-974

Please send applications/resumes/questions to andykancel@governmentresource.com or call (817)994-6295

Excellent Benefits – vacation, sick leave, 13 paid holidays, PERA retirement plan, health insurance (medical, dental, vision).

Detailed job descriptions and applications are available online at www.cityofcarlsbadnm.com/employment-opportunities.

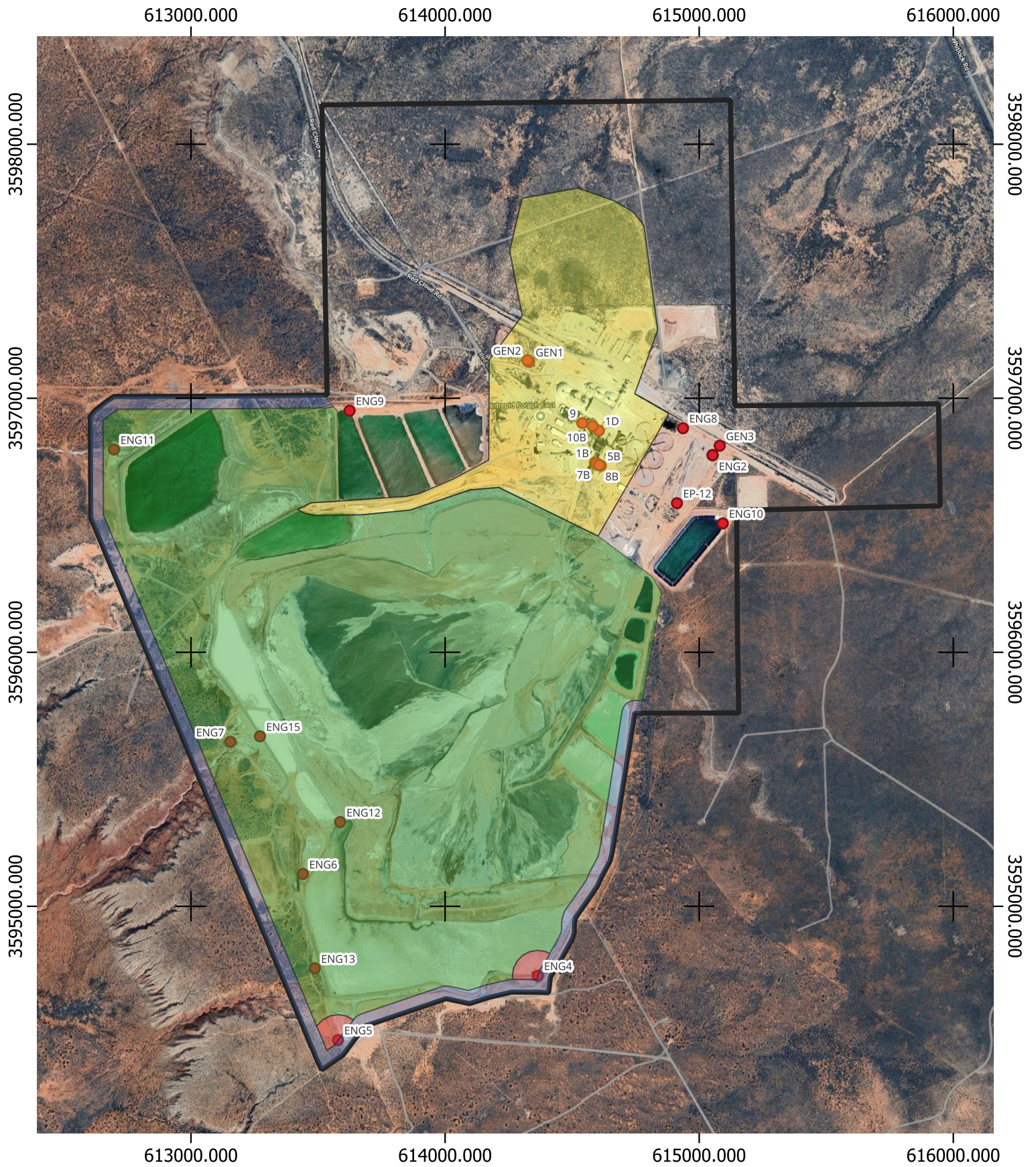
EOE M/F/V/D

Section 9

Proof of Public Notice

Item 11

Map Showing Facility & Surrounding Area



Restricted Boundary

Restricted Boundary Buffer

Eng14A and/or 14B Operational Flexibility

Eng14A or 14B Flexibility Area

Engine 8 Operational Flexibility

Emission Sources



0 250 500 m



WGS84 UTM Zone 13

Engine Flexibility Intrepid Potash - New Mexico East Plant