Dun
13-1975G
039-00023

REGULATION 13
MODIFICATION APPLICATION FOR
MAMMOTH PREPARATION PLANT

Prepared for:

Jack's Branch Coal Company
PO Box 150
Cannelton, West Virginia 25036

Prepared by:

Potesta & Associates, Inc.
7012 MacCorkle Avenue, SE
Charleston, West Virginia 25304
Phone: (304) 342-1400 Fax: (304) 343-9031
Email: potesta@potesta.com

Project No. 0101-14-0046

January 2015

POTESTA

TABLE OF CONTENTS

Attachments not applicable to this submission: H, Q, R, and S.

SECTION I - III

GENERAL APPLICANT INFORMATION

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☒ **CONSTRUCTION** ☒ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☒ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" In order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Jacks Branch Coal Company

2. Federal Employer ID No. ***(FEIN):***
55-0734230

3. Name of facility *(if different from above):*
Mammoth Preparation Plant

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
PO Box 150
Cannelton, WV 25036

5B. Facility's present physical address:
11720 East Dupont Avenue
London, WV 25126

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**

➪ If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**

➪ If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation: Alpha Natural Resources

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

➪ If **YES,** please explain: Owner

➪ If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Coal Preparation Plant

10. North American Industry Classification System **(NAICS)** code for the facility:
212111

11A. DAQ Plant ID No. (for existing facilities only):
039-00023

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-1975F

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- ➪ For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- ➪ For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

Facility is located on U.S. Route 60, approximately 1 mile west of Smithers, West Virginia

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
NA	Montgomery	Kanawha
12.E. UTM Northing (KM): 4,226.123	12F. UTM Easting (KM): 470.03	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
This application is being submitted to consolidate the full facility into one application, to re-calculate the facility potential to emit, and to incorporate as-built changes and replaced equipment into the permit.

14A. Provide the date of anticipated installation or change: New conveyors 2015 ➪ If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: Various equipment 2008-2014	14B. Date of anticipated Start-Up if a permit is granted: Facility is operating

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☒ **YES** ☐ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known)*. A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known)*. Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
➪ Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
➪ Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

➪ For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations	☒ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☒ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	☒ Storage Tanks
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	

☐ General Emission Unit, specify Magnetite Dryer

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☒ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☒ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication as Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE Craig Boggs *(Please use blue ink)* DATE: 1/7/16 *(Please use blue ink)*

35B. Printed name of signee: Craig Boggs		35C. Title: Vice President
35D. E-mail: scboggs@alphanr.com	36E. Phone: (304) 369-8500	36F. FAX: (304) 595-3256
36A. Printed name of contact person (if different from above): Randy Cunningham		36B. Title: Environmental Engineer
36C. E-mail: rcunningham@alphanr.com	36D. Phone: (304) 595-6935	36E. FAX: (304) 595-3256

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ Attachment A: Business Certificate
- ☒ Attachment B: Map(s)
- ☒ Attachment C: Installation and Start Up Schedule
- ☒ Attachment D: Regulatory Discussion
- ☒ Attachment E: Plot Plan
- ☒ Attachment F: Detailed Process Flow Diagram(s)
- ☒ Attachment G: Process Description
- ☐ Attachment H: Material Safety Data Sheets (MSDS)
- ☒ Attachment I: Emission Units Table
- ☒ Attachment J: Emission Points Data Summary Sheet
- ☒ Attachment K: Fugitive Emissions Data Summary Sheet
- ☒ Attachment L: Emissions Unit Data Sheet(s)
- ☒ Attachment M: Air Pollution Control Device Sheet(s)
- ☒ Attachment N: Supporting Emissions Calculations
- ☒ Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans
- ☒ Attachment P: Public Notice
- ☐ Attachment Q: Business Confidential Claims
- ☐ Attachment R: Authority Forms
- ☐ Attachment S: Title V Permit Revision Information
- ☒ Application Fee

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ *Forward 1 copy of the application to the Title V Permitting Group and:*
- ☐ *For Title V Administrative Amendments:*
  - ☐ *NSR permit writer should notify Title V permit writer of draft permit,*
- ☐ *For Title V Minor Modifications:*
  - ☐ *Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,*
  - ☐ *NSR permit writer should notify Title V permit writer of draft permit.*
- ☐ *For Title V Significant Modifications processed in parallel with NSR Permit revision:*
  - ☐ *NSR permit writer should notify a Title V permit writer of draft permit,*
  - ☐ *Public notice should reference both 45CSR13 and Title V permits,*
  - ☐ *EPA has 45 day review period of a draft permit.*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

BUSINESS CERTIFICATE

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE

ISSUED TO:
JACKS BRANCH COAL COMPANY
RT 85
MADISON, WV 25130-0000

BUSINESS REGISTRATION ACCOUNT NUMBER: **1043-1336**

This certificate is issued on: **07/5/2011**

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

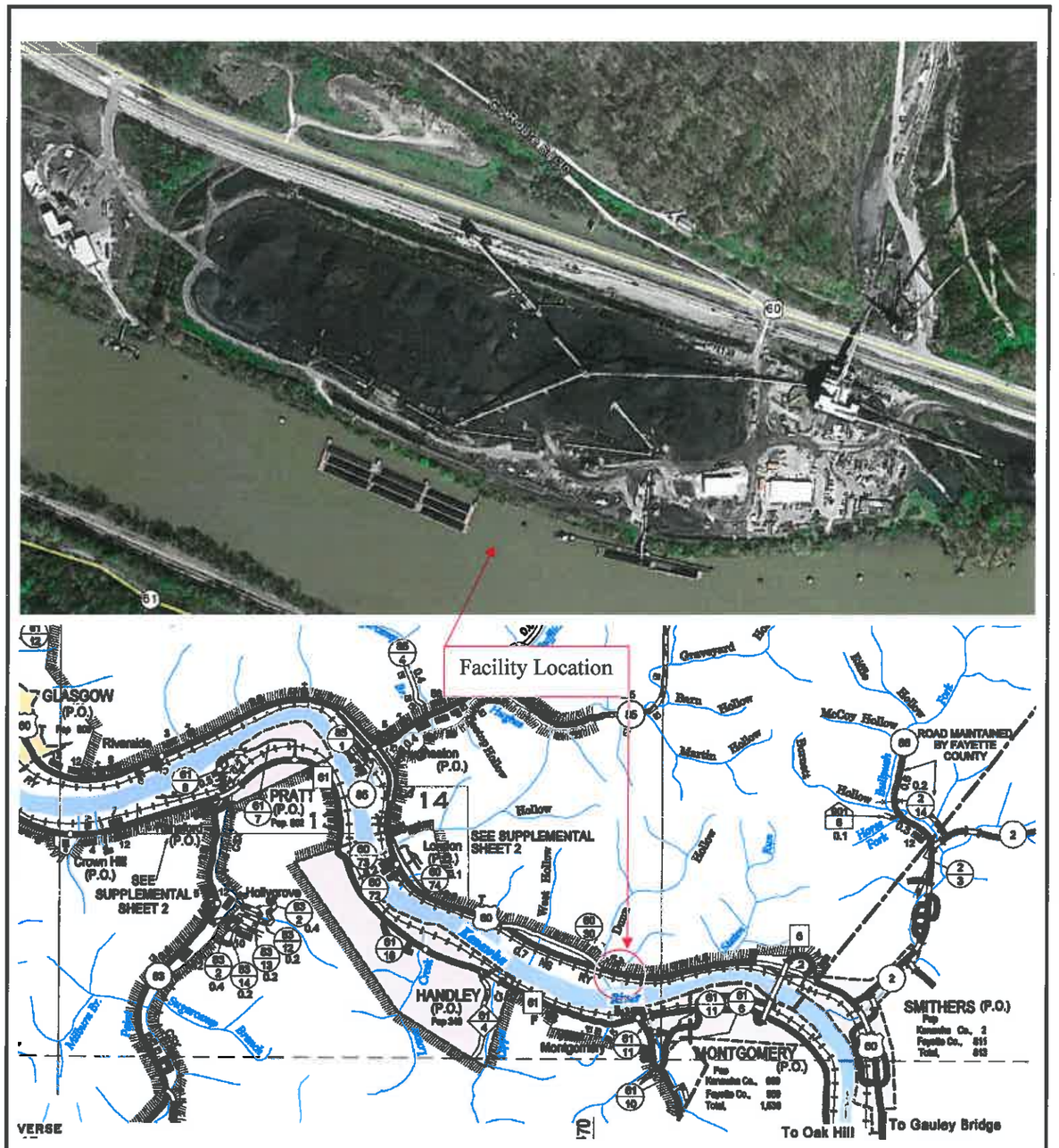
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atf.006 v.4
L1530363008

ATTACHMENT B

AREA MAP



POTESTA

7012 MacCorkle Avenue, S.E
Charleston, West Virginia 25304
Phone: (304) 342-1400
Fax: (304) 343-9031

Jack's Branch Coal Company

Mammoth Preparation Plant

Kanawha County, West Virginia

ATTACHMENT C

INSTALLATION AND START UP SCHEDULE

ATTACHMENT C

INSTALLATION AND START UP SCHEDULE

The facility is operating. The purpose of this application is to incorporate as-built changes and replaced equipment into the permit and to recalculate the potential to emit. The two (2) refuse conveyors, BC10A and BC10B, were installed in May of 2014 and refuse conveyor BC8 was replaced in December 2014.

ATTACHMENT D

REGULATORY DISCUSSION

ATTACHMENT D

REGULATORY DISCUSSION

The facility proposed herein is subject to the following State and Federal regulations based on our review of potential air quality regulations:

State Regulations:

1. 45CSR2 To Prevent and Control Particulate Air Pollution From Combustion of Fuel in Indirect Heat Exchangers.

   45CSR2 establishes emission limitations for smoke and particulate matter which are discharged from fuel burning units.

2. 45CSR5 - To Prevent and Control Air Pollution from the Operation of Coal Preparation Plants, Coal Handling Operations and Coal Refuse Disposal Areas".

   Sets particulate matter mass emission and opacity limitations on coal operations.

3. 45CSR10 - To Prevent and Control Air Pollution from the Emission of Sulfur Oxides.

   The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides.

4. 45CSR13 – "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation".

   The facility is required to obtain a permit prior to the start of construction, modification and/or relocation. This application is being submitted based on the requirements of 45CSR13 to obtain said permit for the proposed modifications.

5. 45CSR16 – "Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60".

   West Virginia adopts and implements the federal requirements of the New Source Performance Standards (NSPS) program.

6. 45CSR30 – "Requirements for Operating Permits".

   The facility will maintain the deferred Title V status and will continue to pay Title V operating fees based on the level of actual air pollutants released.

Federal Regulations:

1. 40CFR60, Subpart Y – "Standards of Performance for Coal Preparation Plants".

   This federal regulation addresses the control of particulate matter from coal preparation plants and sets testing, monitoring, recordkeeping and reporting requirements.

2. 40CFR60, Subpart IIII – "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines".

   The generator set engine (Gen Set 1) appears to be subject to this subpart as referenced by 40CFR63 Subpart ZZZZ.

3. 40CFR63, Subpart ZZZZ – "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines".

   The generator set engine (Gen Set 1) does not have requirements under the subpart but is referenced to 40CFR60 Subpart IIII.

ATTACHMENT E

PLOT PLAN

XREF Files:
IMAGE Files:
File: S:\CAD-Proj-WV\2014\14-0046-MAMMOTH\14-0046-02.dwg
Plot Date/Time: Aug 13, 2014 - 2:17pm
Plotted By: bekeady

PRELIMINARY

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY

ISSUE DATE 08/12/2014

No.	Date	Revision

Drawing No. 1

Title
SITE PLAN
JACK'S BRANCH COAL COMPANY
KANAWHA COUNTY, WV

Client
JACK'S BRANCH COAL COMPANY
KANAWHA COUNTY, WV

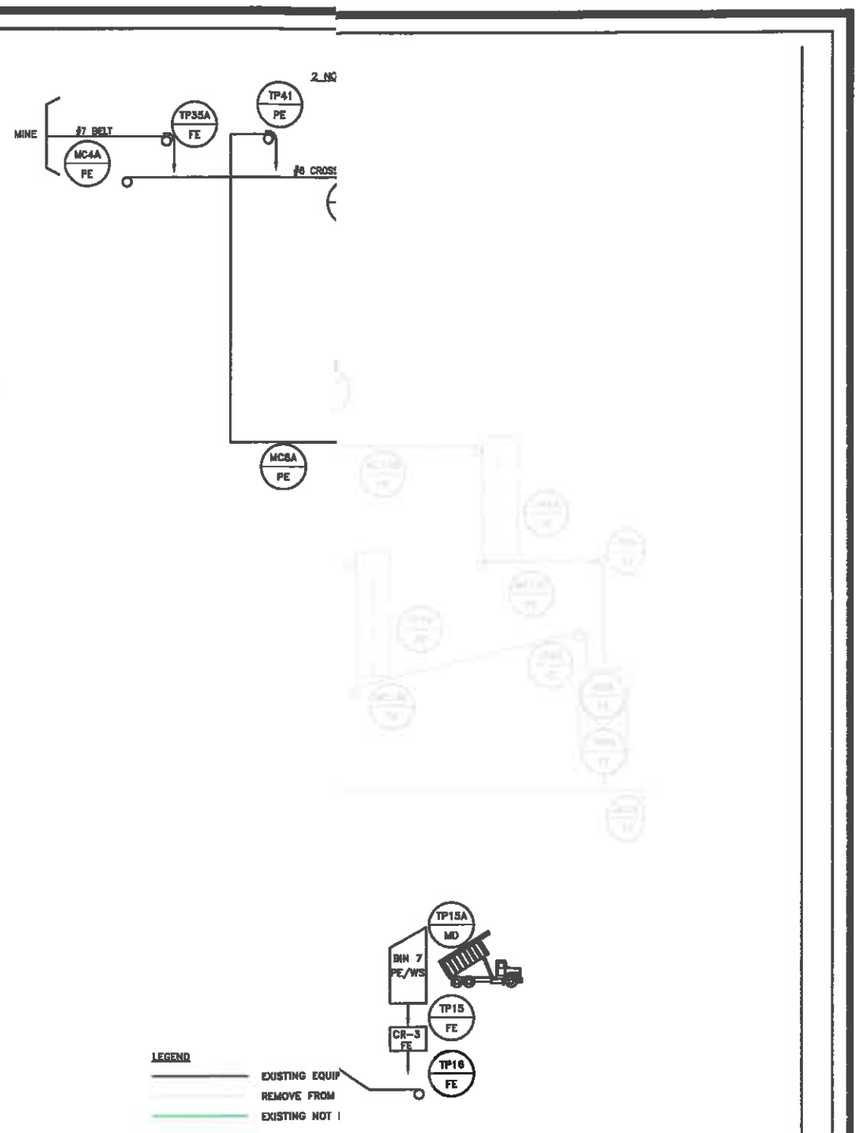
POTESTA

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 343-1400 FAX: (304) 343-9351
E-Mail Address: potesta@potesta.com

CAD File No. -02
BEL Drawn
CCS Checked
CCS Approved
NOT TO SCALE
AUGUST 2014 Date:
14-0046 Project No.

ATTACHMENT F

PROCESS FLOW DIAGRAM



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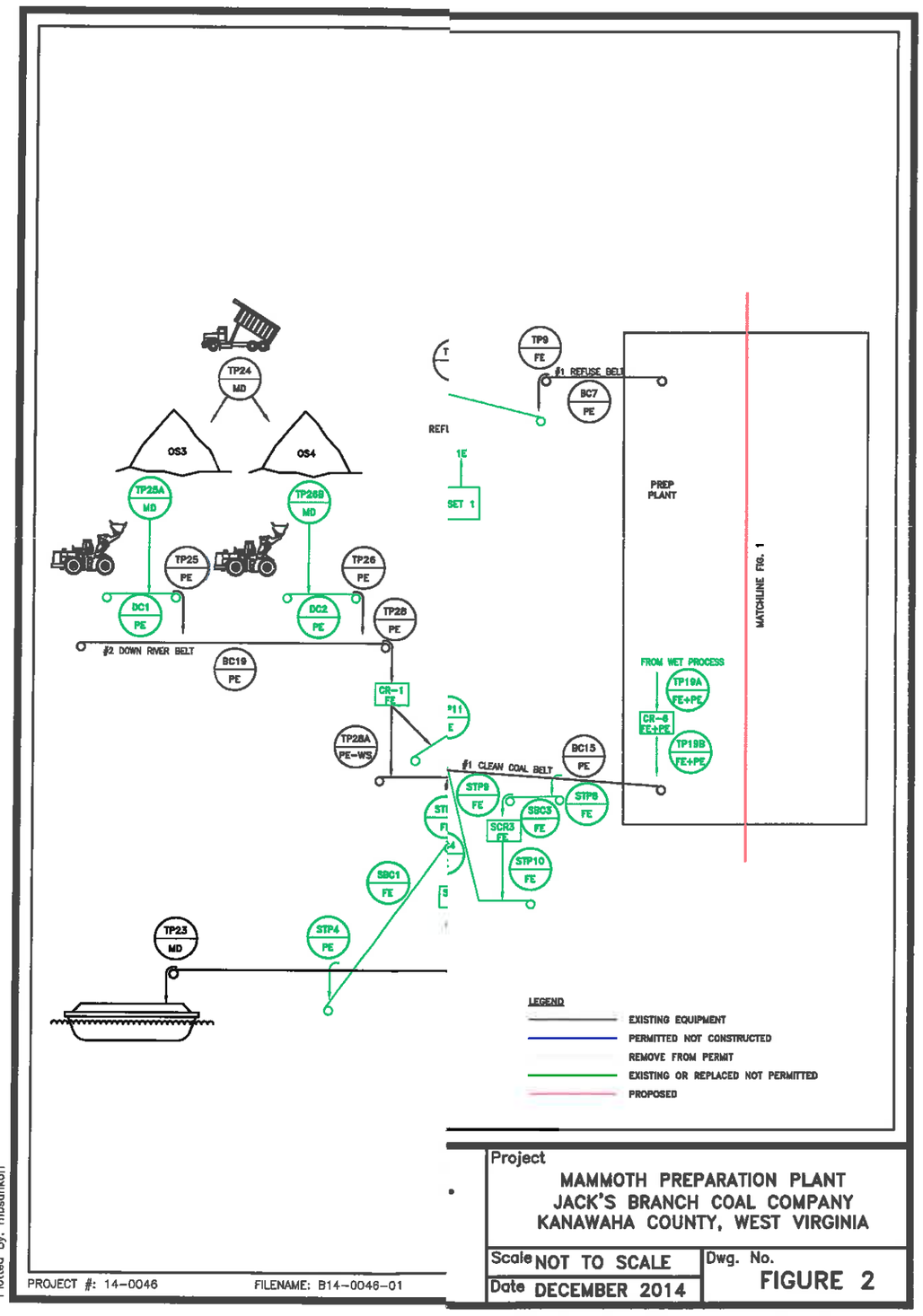
PROJECT #: 14-0046 FILENAME: B14-0046-01

Project
MAMMOTH PREPARATION PLANT
JACK'S BRANCH COAL COMPANY
KANAWAHA COUNTY, WEST VIRGINIA

Scale NOT TO SCALE
Date AUGUST 2014

Dwg. No.
FIGURE 1



PROJECT #: 14-0046 FILENAME: B14-0046-01

Project
MAMMOTH PREPARATION PLANT
JACK'S BRANCH COAL COMPANY
KANAWAHA COUNTY, WEST VIRGINIA

Scale NOT TO SCALE
Date DECEMBER 2014
Dwg. No. FIGURE 2

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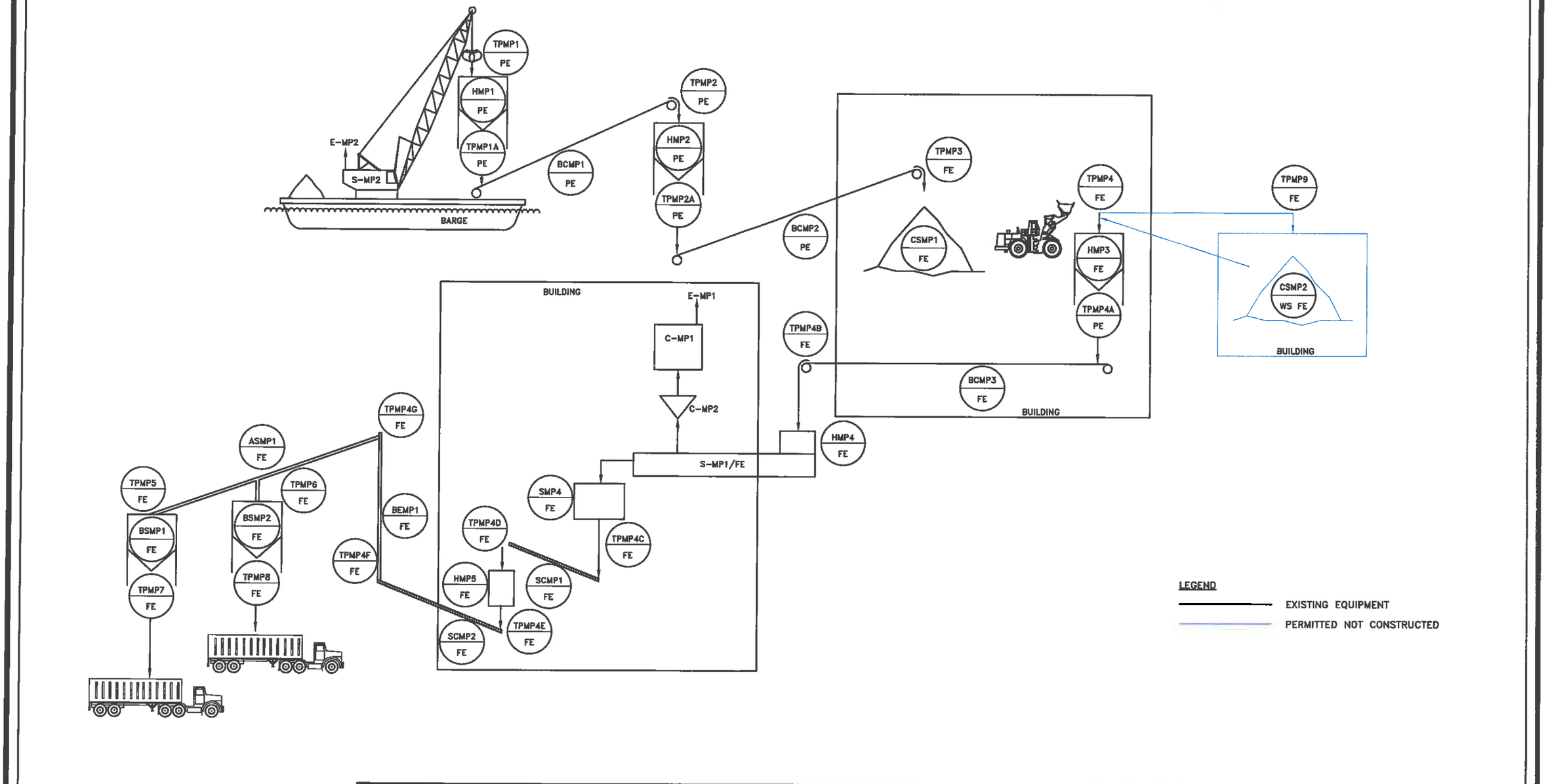

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 343-9031
E-Mail Address: potesta@potesta.com

Project
MAGNETITE PROCESSING PLANT
JACK'S BRANCH COAL COMPANY
KANAWAHA COUNTY, WEST VIRGINIA

Scale NOT TO SCALE
Date AUGUST 2014
Dwg. No. FIGURE 3

PROJECT #: 14-0046
FILENAME: B14-0046-01

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Plot Date/Time: Aug 18, 2014 - 12:00pm
Plotted By: BEleedy

ATTACHMENT G

PROCESS DESCRIPTION

ATTACHMENT G

PROCESS DESCRIPTION

Jack's Branch Coal Company operates the Mammoth Preparation Plant (Mammoth) located on U.S. Route 60 near Montgomery, Kanawha County, West Virginia.

The facility is a typical coal preparation plant that receives raw coal from a deep mine via conveyor and raw and direct ship coal from offsite trucks. The facility ships cleaned and direct ship coal by truck, rail, and barge.

The facility also has a magnetite processing plant that dries and sizes magnetite received by barge. The processed magnetite is shipped off site by truck.

The purpose for this application is to update the potential to emit, increase yearly throughputs on clean coal and refuse, include as-built equipment (screen SC1/FE+PE+WS, crusher CR5/FE+PE, No. 104 Belt, crusher CR6/FE+PE, belt RCBS5/PE, crusher CR4/FE, No. 119 Belt, four [4] coal sample systems, and a diesel generator set), after-the-fact replacement of crusher CR1/FE, belt feeders DC1/PE and DC2/PE, and crusher CR3/FE with a feeder-breaker (keeps the CR3 ID number), after-the-fact replacement of No. 2 refuse belt (BC8/PE), add two (2) refuse conveyors BC10A and BC10B, propose a reconfiguration of the refuse system, remove permitted equipment which has been removed or will not be constructed (see Attachments F, I, and L), and remove synfuel from the permit.

The plant proposes to process up to 8,800,000 tons per year (tpy) of raw coal. Clean coal is requested to increase from the existing 3,200,000 tpy to 5,200,000 tpy. Due to the variability of clean coal recovery, the refuse system needs to be able to convey up to 6,160,000 tpy. We have calculated a 'worst case' emissions estimate for the clean side of the plant, which requests a limit of 5,200,000 tpy of clean coal but only shows 2,640,000 tpy of 'worst case' transfers in the calculations. Added to the 6,160,000 tpy of refuse the maximum coal processed of 8,800,000 tpy is covered through the 'worst case' transfers.

There are no changes proposed for the magnetite system.

Raw Coal (Figure 1)

2 North Area

Raw coal leaves the underground mine on the No. 7 Belt (BC4A/PE) and is transferred (TP35A/FE) to conveyor No. 6 Belt (MC4/PE) and then (TP35B/PE) to stockpile SP1/N or to No. 5 Belt (MC9/PE). Coal is reclaimed from SP1/N (TP38/FE) by conveyor MC7/PE and transferred (TP39/PE) to conveyor MC8A/PE and then back to (TP41/PE) to No. 6 Belt. Raw coal may also be trucked to SP1/N (TP35C).

Overland Conveyor System

Receives raw coal from 2 North on No. 5 Overland Belt (Belt MC9/PE) and transfers (TP42/PE) to No. 4 Overland Belt (MC10A/PE), then to No. 3 Overland Belt (MC10B/PE) (TP43/PE), then No. 2 Overland Belt (MC11A) (TP44/PE), then No. 1 Overland Belt (MC11B) (TP45/PE), to silo MS1/FE. Coal from MS1/FE transfers (TP50/FE) to Reclaim Belt (BC1/PE) of the plant feed system. There are four (4) endloader feed points in the system: TP61/PE, TP62/PE, TP63/PE, and TP64/PE. The following equipment of the overland system will not be constructed and is requested to be removed from the permit: Conveyor MC13/PE, silo MS2/FE, conveyor MC14A/PE, conveyor MC14B/PE, conveyor MC14C/PE conveyor MC16A/PE, conveyor MC16C/PE, and silo MS3/FE.

Marsan System

Raw coal is dumped by truck (TP5A/MD) to stockpile OS5/N. Endloaders load raw coal (TP5B/MD) to bin B5/PE which is transferred (TP5/PE) to No. 123 Belt (BC5/PE), then to screen SD1/PE+MC (TP6/PE+WS). Oversize material from SD1/PE+WS goes to crusher CR4/FE (TP6B/PE) then to No. 119 Belt (BC5A/PE) (TP6C/PE). Pass-through material goes to No. 119 Belt. From No. 119 Belt, coal is transferred (TP6D/PE) to No. 106 Belt (BC3/PE) of the Plant Feed System.

Plant Feed System

The Reclaim Belt (BC1/PE) receives coal from MS1/FE of the Overland Conveyor System and transfers (TP1/FE) to Decline Belt (BC2/PE), then to silos BS1/FE and BS2/FE (TP2/FE). The silos are reclaimed (TP3/FE) by No. 106 Belt (BC3/PE) (which also receives coal from No. 119 Belt of the Marsan System), transferred (TP4/PE) to No. 105 Belt (BC4/PE) then to screen SC1/FE+PE (TP4A/FE+PE). Oversize from the screen is sent to crusher CR5/FE+PE (TP4B/FE+PE). Crushed material from CR5/FE+PE and pass through from SC1/FE+PE transfer to No. 104 Belt (BC4A/FE) (TP4D/FE+PE, TP4C/FE+PE) and then enters the wet circuit (TP4E/FE). Note there is a manually operated sweep arm sampler (SAS) on the No. 104 Belt. Since there are no additional emissions from the operation of the sampler it is not included in the emissions estimate.

Trucks dump (TP15A/MD) raw coal to Bin 7/PE+WS where it is transferred (TP15/FE) to feeder breaker CR3/FE, then to No. 510 Belt (BC13/PE) (TP16/FE) to stockpile OS1/N (TP17/N). Coal from OS1/N is reclaimed (TP18/FE) by No. 530 Belt BC14/PE to Screen SC1/FE+PE and enters the wet circuit as described above.

Clean Coal/Direct Ship Loadout System (Figure 2)

Clean coal exits the wet process (TP19A/FE+PE) to crusher CR6/FE+PE) to No. 1 Clean Coal Belt (BC15/PE) (TP19B/FE+PE) and transfers (TP19/FE) to No. 2 Clean Coal Belt (BC16/PE). Coal is then tripped (TP20/PE) to No. 1 Stacking Tube of stockpile OS2/N or continues on No. 2

Clean Coal Belt to No. 2 Stacking Tube (TP1R/PE) of stockpile ROS1/N or to No. 3 Clean Coal Belt (RBC2/PE) which transfers (TP2R/PE) to No. 3 Stacking Tube of stockpile ROS1/N. OS2/N is reclaimed (TP22/FE) by No. 1 Main River Belt (BC18/PE) which transfers to Barge (TP23/MD). ROS1/N is reclaimed (TP3R/FE) by the reversing No. 1 Train Loadout Belt RBC3/PE and sent either to No. 1 Main River Belt (BC18/PE) (TP7R/PE) or transfers (TP5R/FE) to the batch weigh bin BWBS1/FE then to railcar (TP6R/PE).

Direct ship/clean coal is dumped (TP24/MD) by truck to stockpiles OS3/N and OS4/N. Endloaders transfer the coal to belt feeders DC1/PE (TP25A/MD) and DC2/PE (TP26/PE) which transfer (TP25/PE and TP26/PE respectively) to No. 2 Down River Belt (BC19/PE) which transfers (TP28/PE) to crusher CR1/FE and then to either Direct Coal Bypass Belt (RBC5/PE) or No. 1 Down River Belt (BC20/PE). RBC5/PE feeds (TP8R/PE) ROS1/N or RBC2/PE. BC20/PE feeds (TP29/FE) to No. 1 Main River Belt (BC18/PE).

The are four (4) coal sampling systems: on RBC4/PE which transfers (STP1/FE) to sample pulverizer (SCR1/FE) to screw conveyor SSCREW/FE (STP2/FE) back to RBC4/PE (STP3/FE); on BC18/PE which transfers (STP4/PE) to conveyor SBC1/FE to sample pulverizer SCR2/FE (STP5/FE) to conveyor SBC2/PE (STP6/FE) and back to BC18/PE (STP7/PE); on BC15/PE which transfers (STP8/FE) to conveyor SBC4/FE to sample pulverizer SCR3/FE (STP9/FE) to conveyor SBC5/FE (STP10/FE) and back to BC18/PE (STP11/FE); and on RBC5/PE which transfers (STP12/FE) to conveyor SBC5/FE to sample pulverizer SCR4/FE (STP13/FE) to conveyor SBC6/PE (STP14/FE) to ground (STP15/MD).

Coal is delivered off site from the clean and direct ship stockpiles by endloader to truck (TP30/MD).

Refuse System (Figure 2)

Refuse exits the preparation plant on No. 1 Refuse Belt (BC7/PE) and transfers (TP9/FE) to No. 2 Refuse Belt (BC8/PE) to No. 3 Refuse Belt (BC9/PE) (TP10/FE) to No. 4 Refuse Belt BC10/PE (TP11/FE) which transfers to No. 6 Refuse Belt (MC17/PE), or to No. 9 Refuse Belt (BC10A/PE) (TP12/FE). No. 6 Refuse Belt transfers (TP65/PE) to No. 7 Refuse Belt (MC18/PE) then to Stacker MC19/PE (TP66/PE) to the refuse pile (TP67/MC). No. 9 Refuse Belt transfers (TP/12A/PE) to No. 10 Refuse Belt (BC10B/PE) and then to No. 8 Refuse Belt (TP12B/PE). No. 8 Refuse belt is reversible and can send material to stacker BC24 (TP33/PE) or to stacker BC12 (TP33/PE), then to the refuse pile (TP34/MC, TP14/MC). No. 5 Refuse belt has been removed; however, the ID will be re-used in a proposed reconfiguration of the refuse system. In addition, Mammoth has replaced No. 2 Refuse Belt w/new structure in December 2014. For 2015, No. 3 and No. 4 Refuse Belts are proposed to combine to form the No. 3 - 4 Combined Refuse Belt (BC9A) which transfers (TP11/PE) to the proposed new No. 5 Refuse Belt (BC10C) then to No. 6 or No. 9 Refuse Belts (TP12/FE).

Magnetite Plant (Figure 3)

Magnetite arrives by barge and is off-loaded by a diesel engine powered barge mounted excavator and clam (SMP2). The magnetite is transferred to bin HMP1/PE (TPMP1/1A) then to conveyor BCMP1/PE (TPMP1A), which transfers (TPMP2/PE) to bin HMP2/PE. From HMP2/PE the material is transferred (TPMP2A/PE) to the overland conveyor BCMP2/PE which transfers (TPMP3/FE) to stockpile CSMP1/FE. The magnetite will be transferred (TP-MP4) by endloader to bin HMP3/FE or to stockpile CSMP2/FE+WS (TPMP9/FE). CSMP2/PE+WS is reclaimed by endloader back to HMP3/FE (TP-MP4). HMP3/FE feeds (TPMP4A/PE) conveyor BCMP3/PE to the dryer feed bin HMP4/FE to magnetite dryer SMP1/FE (TP-MP4B). The material will pass through SMP1/FE, with emissions vented to cyclone CMP2 and baghouse CMP1 prior to discharge to the atmosphere (EMP1). Magnetite recovered from the cyclone and baghouse are returned to the process. The dried magnetite will pass through scalping screen SMP4/FE to screw conveyor SCMP1/FE (TPMP4C/FE) to bin HMP5/FE (TPMP4D/FE) to screw conveyor SCMP2/FE (TPMP4E/FE) to bucket elevator BEMP1/FE (TPMP4F) for transfer (TPMP4G) to air slide ASMP1/FE which will feed one of two 300-ton bins BSMP1/FE and BSMP1/FE (TPMP5/FE and TPMP6/FE respectively) for loading into trucks (TPMP7/FE and TPMP8/FE respectively) for transportation to other facilities.

Synfuel

By this application, Mammoth is requesting that references to synfuel and permit conditions relating to synfuel be removed from the permit. The facility will no longer be involved with the processing or transport of synfuel products.

ATTACHMENT I

EMISSION UNIT TABLE

Attachment I
Emission Units Table
(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Black = Existing; Green = as-built not in existing permit; Grey = Remove from permit; Red = Proposed

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
2 North Area						
MC4A	MC4A	No. 7 Belt	2005	2,000 tph	No Change	PE
MC4	MC4	No. 6 Cross Hollow Belt	2005	2,000 tph	No Change	PE
MC7	MC7	Reclaim Conveyor	2005	2,000 tph	No Change	PE
SP1	SP1	Open Stockpile	2005	100,000 tons	No Change	N
MC8A	MC8A	Belt Conveyor	2005	2,000 tph	No Change	PE
MC8B	MC8B	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC6	MC6	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC5	MC5	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
Overland Conveyor System						
MC9	MC9	No. 5 Overland Belt	2005	2,000 tph	No Change	PE
MC10A	MC10A	No. 4 Overland Belt	2005	2,000 tph	No Change	PE
MC10B	MC10B	No. 3 Overland Belt	2005	2,000 tph	No Change	PE
MC11A	MC11A	No. 2 Overland Belt	2005	2,000 tph	No Change	PE
MC11B	MC11B	No. 1 Overland Belt	2005	2,000 tph	No Change	PE
MC12A	MC12A	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC12B	MC12B	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MS1	MS1	Raw Coal Silo	2005	20,000 tons	No Change	FE
MC13	MC13	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MS2	MS2	Raw Coal Silo	NOT CONSTRUCTED-REMOVE			
MC14A	MC14A	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC14B	MC14B	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC14C	MC14C	Belt Conveyor	NOT CONSTRUCTED-REMOVE			

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.
*Not yet constructed

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Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
MC16A	MC14A	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC16B	MC14B	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MC16C	MC14C	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
MS3	MS3	Raw Coal Silo	NOT CONSTRUCTED-REMOVE			
MC15	MC15	Belt Conveyor	NOT CONSTRUCTED-REMOVE			
Marsan System						
OS5	OS5	Open Stockpile	2001	25,000 tons	No Change	N
Bin 5	Bin 5	Dump Bin	NA	200 tph	Revise Control	PE
BC5	BC5	No. 123 Belt	2001	200 tph	No Change	PE
SD1	SD1	Single Deck Screen	2001	200 tph	No Change	PE+WS
CR4	CR4	Crusher	2001	200 tph	As-Built	FE
BC5A	BC5A	No. 119 Belt	2001	200 tph	As-Built	PE
Plant Feed System						
BC1	BC1	Reclaim Belt	2001	1,400 tph	As-Built	PE
BC2	BC2	Decline Belt	2001	1,400 tph	No Change	PE
BS1	BS1	Raw Coal Storage Bin	2001	1,000 tons	No Change	FE
BS2	BS2	Raw Coal Storage Bin	2001	1,000 tons	No Change	FE
BC3	BC3	No. 106 Belt	2001	1,400 tph	No Change	PE
BC4	BC4	No. 105 Belt	2001	1,400 tph	No Change	FE
Bin 7	Bin 7	Truck Dump Bin	2001	800 tph	No Change	PE+WS

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Emission Units Table

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Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
CR3	CR3	Feeder-Breaker	Crusher Replaced 2010	800 tph	Replaced	FE
BC13	BC13	No. 510 Belt	2001	800 tph	No Change	PE
OS1	OS1	Open Stockpile	2001	75,000 tons	No Change	N
BC14	BC14	No. 530 Belt	2001	800 tph	No Change	PE
SC1	SC1	Scalping Screen	1996	1,400 tph	As-Built	FE+PE
CR5	CR5	Crusher	1996	1,400 tph	As-Built	FE+PE
BC4A	BC4A	No. 104 Belt	1996	1,400 tph	As-Built	PE
SAS	SAS	Sweep Arm Sampler (manual operation)	NA	NA	As-Built	N
Clean Coal/Direct Ship Loadout						
CR6	CR6	Crusher	1996	900 tph	As-Built	FE+PE
BC15	BC15	No. 1 Clean Coal Belt	2001	900 tph	No Change	PE
BC16	BC16	No. 2 Clean Coal Belt	2001	900 tph	No Change	PE
OS2	OS2	Open Stockpile	2001	312,000 tons	No Change	N
RBC1	RBC1	Belt Conveyor	NOT CONSTRUCTED -REMOVE			
RBC2	RBC2	No. 3 Clean Coal Belt	2007	900 tph	No Change	PE
ROS1	ROS1	Open Stockpile	2007	30,000 tons	No Change	N
RBC3	RBC3	Belt Conveyor	2007	2,900 tph	No Change	PE
RBC4	RBC4	No. 1 Train Loadout Belt	2007	4,500 tph	No Change	PE
BWBS1	BWBS1	Batch Weigh Bin System	2007	4,500 tph	No Change	FE
OS3	OS3	Open Stockpile	2001	468,000 tons	No Change	N
OS4	OS4	Open Stockpile	2009	100,000 tons	No Change	N
DC1	DC1	Belt Feeder	Installed 2001 Replaced 2010	1,200 tph	As-Built	PE

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Emission Units Table

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Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
DC2	DC2	Belt Feeder	2001/2010	1,200 tph	As-Built	PE
BC19	BC19	No. 2 Down River Belt	2001	1,200 tph	No Change	PE
CR1	CR1	Direct Ship Coal Crusher	2001/2010	1,200 tph	No Change	FE
BC20	BC20	No. 1 Down River Belt	2001	1,200 tph	No Change	PE
BC18	BC20	No. 1 Main River Belt	2001	2,900 tph	No Change	PE
SCR1	SCR1	Sample Pulverizer	Jan. 2008	5 tph	As-Built	FE
SBC7	SBC7	Belt Conveyor	Jan. 2008	5 tph	As-Built	FE
SBC1	SBC1	Belt Conveyor	July 2007	5 tph	As-Built	FE
SCR2	SCR2	Sample Pulverizer	July 2007	5 tph	As-Built	FE
SBC2	SBC2	Belt Conveyor	July 2007	5 tph	As-Built	FE
SBC3	SBC3	Belt Conveyor	Nov. 2006	5 tph	As-Built	FE
SCR3	SCR3	Sample Pulverizer	Nov. 2006	5 tph	As-Built	FE
SBC4	SBC4	Belt Conveyor	Nov. 2006	5 tph	As-Built	FE
SBC5	SBC5	Belt Conveyor	Feb. 2012	5 tph	As-Built	FE
SCR4	SCR4	Sample Pulverizer	Feb. 2012	5 tph	As-Built	FE
SBC6	SBC6	Belt Conveyor	Feb. 2012	5 tph	As-Built	FE
Bin 3	Bin 3	Synfuel/Raw Coal Dump Bin	REMOVED			
Bin 4	Bin 4	Synfuel/Raw Coal Dump Bin	REMOVED			
BC6	BC6	Synfuel/CoalBelt Conveyor	REMOVED			

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Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
Refuse System						
BC7	BC7	No. 1 Refuse Belt	2001	500 tph	No Change	FE
BC8	BC8	No. 2 Refuse Belt	December 2014	500 tph	Replaced	PE
BC9	BC9	No. 3 Refuse Belt	2001	500 tph	To be combined with No. 4 2015	PE
BC10	BC10	No. 4 Refuse Belt	2001	500 tph	To be combined with No. 3 2015	PE
BC11	BC11	No. 5 Refuse Belt	REMOVED			
BC12	BC12	Stacker	2001	500 tph	No Change	PE
BC23	BC10	No. 8 Refuse Belt	2001	500 tph	No Change	PE
BC24	BC24	Stacker	2001	500 tph	No Change	FE
MC17	MC17	No. 6 Refuse Belt	2005	500 tph	No Change	PE
MC18	MC17	No. 7 Refuse Belt	2005	500 tph	No Change	PE
MC19	MC17	Stacker	2005	500 tph	No Change	PE
BC10A	BC10A	No. 9 Refuse Belt	May 2014	500 tph	New	PE
BC10B	BC10B	No. 10 Refuse Belt	May 2014	500 tph	New	PE
BC9A	BC9A	No. 3-4 Combined Refuse Belt	2015	500 tph	New	PE
BC10A	BC10A	No. 5 Refuse Belt	2015	500 tph	New	PE
Magnetite Plant						
SMP2	EMP2	Excavator Engine	2008	275 HP	No Change	N
HMP1	HMP1	Dump Bin	2008	75 tph	No Change	PE
BCMP1	BCMP1	Belt Conveyor	2008	75 tph	No Change	PE

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Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
HMP2	HMP2	Transfer Hopper	2008	75 tph	No Change	PE
BCMP2	BCMP2	Belt Conveyor	2008	75 tph	No Change	PE
CSMP1	CSMP1	Enclosed Stockpile	2008	40,000 tons/1,600 ft^2	No Change	FE
HMP3	TP-MP4	Transfer Hopper	2009	30 tons/hr	No Change	FE
BCMP3	TP-MP4A	Magnetite Conveyor	2008	30 tons/hr	No Change	FE
HMP4	HMP4	Feed Bin	2008	30 tons/hr	No Change	FE
SMP1	EMP1	Magnetite Dryer	2008	27.9 mmBtu/hr	No Change	CMP1
SMP4	SMP4	Scalping Screen	2009	30 tons/hr	No Change	FE
SCMP1	SCMP1	Screw Conveyor	2009	30 tons/hr	No Change	FE
HMP5	HMP5	Transfer Hopper	2009	30 tons/hr	No Change	FE
SCMP2	SCMP2	Screw Conveyor	2009	30 tons/hr	No Change	FE
BEMP1	BEMP1	Bucket Elevator	2009	30 tons/hr	No Change	FE
ASMP1	ASMP1	Air Slide	2009	30 tons/hr	No Change	FE
BSMP1	BSMP1	Loadout Bin	2008	300 tons	No Change	FE
BSMP2	BSMP2	Loadout Bin	2008	300 tons	No Change	FE
CSMP2	CSMP2	Enclosed Stockpile	2008	40,000 tons/6,098 ft^2	No Change	FE
SMP2	EMP2	Excavator Engine	2008	275 HP	No Change	N

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Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
Magnetite Plant Continued						
HMP1	HMP1	Dump Bin	2008	75 tph	No Change	PE
BCMP1	BCMP1	Belt Conveyor	2008	75 tph	No Change	PE
HMP2	HMP2	Transfer Hopper	2008	75 tph	No Change	PE
BCMP2	BCMP2	Belt Conveyor	2008	75 tph	No Change	PE
CSMP1	CSMP1	Enclosed Stockpile	2008	40,000 tons/1,600 ft^2	No Change	FE
HMP3	TP-MP4	Transfer Hopper	2009	30 tons/hr	No Change	FE
BCMP3	TP-MP4A	Magnetite Conveyor	2008	30 tons/hr	No Change	FE
HMP4	HMP4	Feed Bin	2008	30 tons/hr	No Change	FE
SMP1	EMP1	Magnetite Dryer	2008	27.9 mmBtu/hr	No Change	CMP1
SMP4	SMP4	Scalping Screen	2009	30 tons/hr	No Change	FE
SCMP1	SCMP1	Screw Conveyor	2009	30 tons/hr	No Change	FE
HMP5	HMP5	Transfer Hopper	2009	30 tons/hr	No Change	FE
SCMP2	SCMP2	Screw Conveyor	2009	30 tons/hr	No Change	FE
BEMP1	BEMP1	Bucket Elevator	2009	30 tons/hr	No Change	FE
ASMP1	ASMP1	Air Slide	2009	30 tons/hr	No Change	FE
BSMP1	BSMP1	Loadout Bin	2008	300 tons	No Change	FE
BSMP2	BSMP2	Loadout Bin	2008	300 tons	No Change	FE
CSMP2	CSMP2	Enclosed Stockpile	2008	40,000 tons/6,098 ft^2	No Change	FE

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ATTACHMENT J

EMISSION POINTS DATA SUMMARY SHEET

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data-COAL PREPARATION PLANT

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
Varies	NA	Varies	Transfer Points	Varies	Varies	NA	NA	PM PM10 PM2.5	68.47 32.60 4.90	103.12 49.10 7.37	26.95 12.83 1.93	39.56 18.83 2.82	Solid Solid Solid	EE	NA
CR4	NA	CR4	Crusher	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	12.00 5.71 0.86	24.00 11.43 1.71	2.00 0.95 0.14	5.00 2.38 0.36	Solid Solid Solid	EE	NA
SD1	NA	SD1	Screen	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	20.00 9.52 1.43	40.00 19.05 2.86	6.00 2.86 0.43	12.00 5.71 0.86	Solid Solid Solid	EE	NA
CR3	NA	CR3	Crusher	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	48.00 22.86 3.43	96.00 45.71 6.86	9.60 4.57 0.69	19.20 9.14 1.37	Solid Solid Solid	EE	NA
CR5	NA	CR5	Crusher	FE+PE	Full + Partial Enclosure	NA	NA	PM PM10 PM2.5	84.00 40.00 6.00	79.20 37.71 5.66	8.40 4.00 0.60	7.92 3.77 0.57	Solid Solid Solid	EE	NA
SC1	NA	SC1	Scalping Screen	FE+PE	Full + Partial Enclosure	NA	NA	PM PM10 PM2.5	140.00 66.67 10.00	440.00 209.52 31.43	14.00 6.67 1.00	44.00 20.95 3.14	Solid Solid Solid	EE	NA
SCR1	NA	SCR1	Sample Pulverizer	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	0.30 0.15 0.02	1.31 0.62 0.09	0.06 0.03 0.01	0.26 0.12 0.02	Solid Solid Solid	EE	NA
SCR2	NA	SCR2	Sample Pulverizer	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	0.30 0.15 0.02	1.31 0.62 0.09	0.06 0.03 0.01	0.26 0.12 0.02	Solid Solid Solid	EE	NA
SCR3	NA	SCR3	Sample Pulverizer	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	0.30 0.15 0.02	1.31 0.62 0.09	0.06 0.03 0.01	0.26 0.12 0.02	Solid Solid Solid	EE	NA
SCR4	NA	SCR4	Sample Pulverizer	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	0.30 0.15 0.02	1.31 0.62 0.09	0.06 0.03 0.01	0.26 0.12 0.02	Solid Solid Solid	EE	NA

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		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
CR1	NA	CR1	Crusher	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	72.00 34.29 5.14	144.00 68.57 10.29	14.40 6.86 1.03	28.80 13.71 2.06	Solid Solid Solid	EE	NA
CR6	NA	CR6	Crusher	FE+PE	Full + Partial Enclosure	NA	NA	PM PM10 PM2.5	54.00 25.71 3.86	156.00 74.29 11.14	5.40 2.57 0.39	15.60 7.43 1.11	Solid Solid Solid	EE	NA
E1	Vert. Stack	Gen Set 1	Diesel Engine	N	NA	NA	NA	PM/PM10/PM2.5 NOx SO2 CO TOC/VOC HAPs	0.01 0.55 0.03 0.12 0.04 0.0005	0.04 2.41 0.13 0.53 0.18 0.0021	0.01 0.55 0.03 0.12 0.04 0.0005	0.04 2.41 0.13 0.53 0.18 0.0021	Solid Vapor Vapor Vapor Vapor Vapor	EE	NA
MAGNETITE PLANT															
Varies	NA	Varies	Transfer Points	Varies	Varies	NA	NA	PM PM10 PM2.5	26.32 12.54 1.88	42.91 20.43 3.06	9.95 4.74 0.71	16.09 7.66 1.15	Solid Solid Solid	EE	NA
SMP4	NA	SMP4	Screen	FE	Full Enclosure	NA	NA	PM PM10 PM2.5	0.75 0.26 0.05	1.25 0.44 0.09	0.15 0.05 0.01	0.25 0.09 0.02	Solid Solid Solid	EE	NA
EMP1	Vert. Stack	SMP1	Dryer Materials Handling	CMP1 CMP2	Baghouse Cyclone	NA	NA	PM PM10 PM2.5	591.00 360.00 42.21	443.25 270.00 31.66	0.59 0.36 0.04	0.44 0.27 0.03	Solid Solid Solid	EE	NA
EMP1	Vert. Stack	SMP1	Dryer Combustion	N	None	NA	NA	PM PM10/PM2.5 NOx SO2 CO TOC/VOC Benzene Toluene Xylenes Formaldehyde	1.43 1.22 4.08 29.38 2.30 0.61 0.0000 6 0.0013 0.0000	1.43 1.22 4.08 29.38 2.30 0.61 0.00006 0.0013 0.00002 0.007	1.43 1.22 4.08 29.38 2.30 0.61 0.0000 6 0.0013 0.0000	1.43 1.22 4.08 29.38 2.30 0.61 0.0000 6 0.0013 0.0000	Solid Solid Vapor Vapor Vapor Vapor Vapor Vapor Vapor Vapor	EE	NA

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data-MAGNETITE PLANT CONTINUED

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions[4]		Maximum Potential Controlled Emissions[5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used[6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
EMP2	Vert. Stack	SMP2	Excavator Engine	N	None	NA	NA	PM/PM10/PM2.5	0.61	0.05	0.61	0.05	Solid	EE	NA
								NOx	8.53	0.64	8.53	0.64	Vapor		
								SO2	0.56	0.04	0.56	0.04	Vapor		
								CO	1.84	0.14	1.84	0.14	Vapor		
								VOC	8.14	0.61	8.14	0.61	Vapor		
								Benzene	0.43	0.03	0.43	0.03	Vapor		
								Toluene	0.15	0.01	0.15	0.01	Vapor		
								Xylenes	0.05	0.004	0.05	0.004	Vapor		
									0.007	0.001	0.007	0.001	Vapor		

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data

Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
EMP1	2	250	12,000	63.7	661	20	4,226.53	469.186
EMP2	NA	NA	NA	NA	615	10	4,226.39	469.251
1E	NA	NA	NA	NA	NA	NA	4,226.53	469.186

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

ATTACHMENT K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☒ Yes ☐ No ☒ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☒ Yes ☐ No ☒ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☐ Yes ☒ No ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☐ Yes ☒ No ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	PM PM10 PM2.5	131.32 26.44 6.48	162.76 32.80 8.04	19.70 3.95 0.97	24.41 4.92 1.21	EE
Unpaved Haul Roads	PM PM10 PM2.5	2,388.91 704.71 70.74	507.58 149.74 15.10	716.67 211.42 21.23	152.27 44.92 4.53	EE
Storage Pile Emissions	PM PM10 PM2.5	1.80 0.86 0.13	7.81 3.72 0.56	0.99 0.47 0.08	4.25 2.02 0.30	EE
Loading/Unloading Operations						
Wastewater Treatment Evaporation & Operations						
Equipment Leaks						
General Clean-up VOC Emissions						
Other						

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, and Noble Gases.

[2] Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[3] Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[4] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

ATTACHMENT L

EMISSIONS UNIT DATA SHEET(S)

Affected Source Sheet

Source Specific Emissions Data: Solid Materials Sizing, Handling and Storage Facilities

Required Information Regarding Dust Control Equipment Measures

1. If water or chemical sprays are to be used on conveyors, transfer points, stockpiles, etc... for dust control, the location of all spray bars or spray systems should be shown on the plot plans and/or line drawings. The following information should be provided for each spray system:

   a. Design water flow through spray bar
   b. Type and amount of chemicals used and the mix ratio of chemical to water used at the sprays.
   c. Methods employed to winterize sprays (e.g. keep sprays from freezing and becoming inoperable during cold weather)

2. A detailed written description should be submitted of dust control measures/programs that will be employed on haul roads and in areas of vehicle activity around material stockpiled. The haulways and areas to be treated should be shown by shading or similar description on the plant plan. The following points should be specifically addressed:

   a. Equipment (e.g. water trucks, fixed spray bars, wheel and truck underbody washers, etc...) that will be used in this dust control program.
   b. Frequency of application of water and chemical to roads and stockpile areas during dry periods.
   c. Amount of chemical suppressants to be used, if applicable, in pounds or gallons per square yard of surface to be treated.
   d. Type of haulroad or haulway surface(s) that will be maintained (e.g. coarse gravel, reddog, etc...)
   e. Approximate maximum length of haulroads (miles or feet).
   f. Maximum daily truck traffic on haulroads (number of trucks).

3. If full or partial enclosures are to be used to minimize dust entrainment, a drawing of each such enclosure should be submitted (for example at truck dump bins, breakers, conveyor transfer points).0

4. If particulate control devices such as baghouses or scrubbers are to be used, complete an appropriate Air Pollution Control Device Sheet and furnish a drawing showing details of enclosures and ductwork associated with these control systems.

AFFECTED SOURCE SHEET

Source Specific Emissions Data: Solid Materials Sizing, Handling, and Storage Facilities

Plot Plan(s) and Line Drawing(s)

a. Finish the plot plan(s) of the plant area which contains sufficient detail to show the scaled layout of the equipment involved in each materials handling system (e.g. conveyors, transfer points, crushers, screens, bins, stockpiles, truck dump bins, etc...). Show equipment or buildings described in other sections of this application on the plot plan as appropriate. The guidelines for Plot Plans should be followed to the extent possible.

b. Furnish the line drawing(s) or schematic(s) showing each component or facet of each materials handling system (e.g. conveyors, transfer points, stockpiles, crushers, screens, bins etc...). Show process equipment described in other sections of this application as needed for clarity.

c. On the line drawing(s) or schematic(s) furnished in accordance with item (b) assign an ID number to each conveyor, transfer point (including truck, barge and rail car loading/unloading etc...), storage structure, stockpile, crusher, and screening unit. If any equipment is shown on the line drawing(s) which was described in other sections of this application, use the ID numbers assigned to the equipment in those other sections and indicate equipment name or type (e.g. rotary dryer, vertical kiln etc...)

d. To the extent possible, note the numbers assigned for equipment and storage facilities as per item (c) on the Plot Plans(s).

e. The assigned ID numbers for equipment and transfer points must be used to complete Tables 1, 2, and 3 following.

Table 1: Affected Storage Activity

ID Number	SP1	OS1	OS2	OS3	OS4
Affected Source Name	2 North Raw Stockpile	Raw Stockpile	Clean Stockpile	Raw/Clean/ Direct Ship Stockpile	Raw/Clean/ Direct Ship Stockpile
Type Storage[1]	OS	OS	OS	OS	OS
Material Stored	Raw Coal	Raw Coal	Clean Coal	Raw/Clean/ Direct Ship Coal	Raw/Clean/ Direct Ship Coal
Typical Moisture Content (%)	5	5	6	Varies	Varies
Avg % of material passing 200 mesh sieve	10	10	10	10	10
Maximum Total Yearly Throughput in storage (tons)	5,600,000	3,200,000	5,200,000	4,800,000	
Maximum Quantity of Material in Storage[2] (tons)	100,000	75,000	312,000	468,000	100,000
Maximum Stockpile Base Area (sq. ft.)	75,000	56,192	320,000	480,000	80,150
Maximum Stockpile height (ft)	75	75	75	75	75
Type dust controls during storage[3]	N	N	N	N	N
Method of material load-in to bin or stockpile[4]	SS/TD	SS	SS	TD	TD
Type dust controls during load-in[5]	PE/MD	PE	PE	MD	MD
Method of material load-out to bin or stockpile[4]	UC	UC	UC	FE	FE
Type dust controls during load-out[5]	FE	FE	FE	MD	MD

Table 1: Affected Storage Activity Continued

ID Number	OS5	ROS1	CSMP1	CSMP2
Affected Source Name	Raw Stockpile	Loadout Stockpile	Magnetite Stockpile	Magnetite Stockpile
Type Storage[1]	OS	OS	SB	E
Material Stored	Raw Coal	Clean/Direct Ship Coal	Raw Magnetite	Raw Magnetite
Typical Moisture Content (%)	5	6	10	10
Avg % of material passing 200 mesh sieve	10	10	84.82	84.82
Maximum Total Yearly Throughput in storage (tons)	800,000	10,000,000	100,000	
Maximum Quantity of Material in Storage[2] (tons)	25,000	30,000	40,000	40,000
Maximum Stockpile Base Area (sq. ft.)	58,750	62,800	3,750	6,000
Maximum Stockpile height (ft)	30	75	25	25
Type dust controls during storage[3]	N	N	FE	FE+WS
Method of material load-in to bin or stockpile[4]	TD	SS	SS	FE
Type dust controls during load-in[5]	MD	PE	FE	FE
Method of material load-out to bin or stockpile[4]	FE	UC	FE	FE
Type dust controls during load-out[5]	MD	FE	FE	FE

Table 1: Affected Storage Activity Continued

ID Number	MS1	MS2	MS3	BS1	BS2
Affected Source Name	MS1	REMOVE	REMOVE	BS1	BS2
Type Storage[1]	B	B	B	B	B
Material Stored	Raw Coal	Raw Coal	Raw Coal	Raw Coal	Raw Coal
Typical Moisture Content (%)	6	6	6	6	6
Avg % of material passing 200 mesh sieve	10	10	10	10	10
Maximum Total Yearly Throughput in storage (tons)	5,600,000	5,600,000	5,600,000	5,600,000	
Maximum Quantity of Material in Storage[2] (tons)	20,000	20,000	20,000	1,000	1,000
Maximum Stockpile Base Area (sq. ft.)					
Maximum Stockpile height (ft)					
Type dust controls during storage[3]	FE	FE	FE	FE	FE
Method of material load-in to bin or stockpile[4]	SS	SS	SS	SS	SS
Type dust controls during load-in[5]	FE	FE	FE	FE	FE
Method of material load-out to bin or stockpile[4]	UC	UC	UC	UC	UC
Type dust controls during load-out[5]	FE	FE	FE	FE	FE

Table 1: Affected Storage Activity Continued

ID Number	BS5	BS7	BWBS1	HMP1	HMP2
Affected Source Name	Dump Bin	Truck Dump Bin	Batch Weigh Bin	Dump Bin	Transfer Hopper
Type Storage[1]	B	B	B	B	B
Material Stored	Raw Coal	Raw Coal	Clean/Direct Ship Coal	Raw Magnetite	Raw Magnetite
Typical Moisture Content (%)	6	6	6	10	10
Avg % of material passing 200 mesh sieve	10	10	10	84.82	84.82
Maximum Total Yearly Throughput in storage (tons)	800,000	3,200,000	5,200,000	100,000	100,000
Maximum Quantity of Material in Storage[2] (tons)	NA	NA	370	NA	NA
Maximum Stockpile Base Area (sq. ft.)					
Maximum Stockpile height (ft)					
Type dust controls during storage[3]	PE	PE+WS	FE	PE	PE
Method of material load-in to bin or stockpile[4]	FE	TD	SS	SS	SS
Type dust controls during load-in[5]	MD	MD	FE	PE	PE
Method of material load-out to bin or stockpile[4]	UC	OT	TC	UC	UC
Type dust controls during load-out5	PE	PE	PE	PE	PE

OT = Transfer to Crusher

Table 1: Affected Storage Activity Continued

ID Number	HMP3	HMP4	HMP5	BSMP1	BSMP2
Affected Source Name	Transfer Hopper	Feed Bin	Transfer Hopper	Loadout Bin	Loadout Bin
Type Storage[1]	B	B	B	B	B
Material Stored	Raw Magnetite	Raw Magnetite	Dried Magnetite	Dried Magnetite	Dried Magnetite
Typical Moisture Content (%)	10	10	0.5	0.5	0.5
Avg % of material passing 200 mesh sieve	84.82	84.82	84.82	84.82	84.82
Maximum Total Yearly Throughput in storage (tons)	100,000	100,000	100,000	100,000	
Maximum Quantity of Material in Storage[2] (tons)	NA	NA	NA	300	300
Maximum Stockpile Base Area (sq. ft.)					
Maximum Stockpile height (ft)					
Type dust controls during storage[3]	FE	FE	FE	FE	FE
Method of material load-in to bin or stockpile[4]	FE	SS	OT1	OT2	OT2
Type dust controls during load-in[5]	FE	FE	FE	FE	FE
Method of material load-out to bin or stockpile[4]	UC	OT3	OT1	TC	TC
Type dust controls during load-out[5]	FE	FE	FE	FE	FE

OT1 = Screw Conveyor
OT2 = Air Slide
OT3 = Transfer to Magnetite Dryer

Table 2: Conveying and Transfer

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
Conveyors						
MC4A	BC	2"	2,000	5,600,000	PE	6
MC4	BC	2"	2,000	5,600,000	PE	6
MC7	BC	2"	2,000	5,600,000	PE	6
MC8A	BC	2"	2,000	5,600,000	PE	6
MC9	BC	2"	2,000	5,600,000	PE	6
MC10A	BC	2"	2,000	5,600,000	PE	6
MC10B	BC	2"	2,000	5,600,000	PE	6
MC11A	BC	2"	2,000	5,600,000	PE	6
MC11B	BC	2"	2,000	5,600,000	PE	6
MC12A	BC	NOT CONSTRUCTED-REMOVE				
MC12B	BC	NOT CONSTRUCTED-REMOVE				
MC13	BC	NOT CONSTRUCTED-REMOVE				
MC14A	BC	NOT CONSTRUCTED-REMOVE				
MC14B	BC	NOT CONSTRUCTED-REMOVE				
MC14C	BC	NOT CONSTRUCTED-REMOVE				
MC16A	BC	NOT CONSTRUCTED-REMOVE				
MC16B	BC	NOT CONSTRUCTED-REMOVE				
MC16C	BC	NOT CONSTRUCTED-REMOVE				
MC15	BC	NOT CONSTRUCTED-REMOVE				
BC5	BC	+2"	200	800,000	PE	6
BC5A	BC	2"	200	800,000	PE	6
BC1	BC	2"	1,400	5,600,000	PE	6
BC2	BC	2"	1,400	5,600,000	PE	6
BC3	BC	2"	1,400	5,600,000	PE	6

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
BC4	BC	2"	1,400	5,600,000	FE	6
BC13	BC	2"	800	3,200,000	PE	6
BC14	BC	2"	800	3,200,000	PE	6
BC15	BC	-2"	900	5,200,000	PE	6
BC16	BC	-2"	900	5,200,000	PE	6
BC18	BC	-2"	2,900	10,000,000	PE	6
DC1	BC	-2"	1,200	4,800,000	PE	6
DC2	BC	-2"	1,200	4,800,000	PE	6
BC19	BC	-2"	1,200	4,800,000	PE	6
BC20	BC	-2"	1,200	4,800,000	PE	6
RBC1	BC	NOT CONSTRUCTED-REMOVE				
RBC2	BC	-2"	900	5,200,000	PE	6
RBC3	BC	-2"	2,900	10,000,000	PE	6
RBC4	BC	-2"	4,500	5,200,000	PE	6
RBC5	BC	-2"	1,200	4,800,000	PE	6
SSCREW	SC	-2"	5	43,800	FE	6
SBC1	BC	-2"	5	43,800	FE	6
SBC2	BC	-2"	5	43,800	FE	6
SBC3	BC	-2"	5	43,800	FE	6
SBC4	BC	-2"	5	43,800	FE	6
SBC5	BC	-2"	5	43,800	FE	6
SBC6	BC	-2"	5	43,800	FE	6
BC7	BC	2"	500	6,160,000	FE	6

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
BC8	BC	2"	500	6,160,000	PE	6
BC9	BC	2"	500	6,160,000	PE	6
BC10	BC	2"	500	6,160,000	PE	6
BC11	BC	REMOVE				
BC12	BC	2"	500	6,160,000	PE	6
BC12A	BC	2"	500	6,160,000	PE	6
BC12B	BC	2"	500	6,160,000	PE	6
BC23	BC	2"	500	6,160,000	PE	6
BC24	BC	2"	500	6,160,000	FE	6
BC9A	BC	2"	500	6,160,000	PE	6
BC10A	BC	2"	500	6,160,000	FE	6
MC17	BC	2"	500	6,160,000	PE	6
MC18	BC	2"	500	6,160,000	PE	6
MC19	BC	2"	500	6,160,000	PE	6
BCMP1	BC	Magnetite	75	100,000	PE	10
BCMP2	BC	Magnetite	75	100,000	PE	10
BCMP3	BC	Magnetite	30	100,000	FE	10
SCMP1	SC	Magnetite	30	100,000	FE	0.5
SCMP2	SC	Magnetite	30	100,000	FE	0.5
BEMP1	BE	Magnetite	30	100,000	FE	0.5
ASMP1	AS	Magnetite	30	100,000	FE	0.5

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
Transfer Points						
TP35A	01	2"	2,000	5,600,000	FE	6
TP35B	OTH1	2"	2,000	5,600,000	PE	6
TP36	REMOVE					
TP37	REMOVE					
TP38	OTH2	2"	2,000	5,600,000	FE	6
TP39	01	2"	2,000	5,600,000	PE	6
TP42	01	2"	2,000	5,600,000	PE	6
TP43	01	2"	2,000	5,600,000	PE	6
TP44	01	2"	2,000	5,600,000	PE	6
TP45	01	2"	2,000	5,600,000	PE	6
TP46	REMOVE					
TP47	REMOVE					
TP48	06/01	2"	2,000	5,600,000	FE	6
TP49	REMOVE					
TP50	OTH2	2"	2,000	5,600,000	PE	6
TP51	REMOVE					
TP52	REMOVE					
TP53	REMOVE					
TP54	REMOVE					
TP55	REMOVE					
TP56	REMOVE					
TP57	REMOVE					
TP58	REMOVE					

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
TP59	REMOVE					
TP60	REMOVE					
TP61	OTH3	2"	2,000	5,600,000	FE	6
TP62	OTH3	2"	2,000	5,600,000	FE	6
TP63	OTH3	2"	2,000	5,600,000	FE	6
TP64	OTH3	2"	2,000	5,600,000	FE	6
TP5A	06	2"	200	800,000	MD	6
TP5B	OTH3	2"	200	800,000	MD	6
TP5	OTH2	+2"	200	800,000	PE	6
TP6	OTH4	+2"	200	800,000	WS	6
TP6A	OTH5	2"	200	800,000	PE	6
TP6B	OTH6	+2"	200	800,000	PE	6
TP6C	OTH5	2"	200	800,000	PE	6
TP6D	01	2"	200	800,000	PE	6
TP1	01	2"	1,400	5,600,000	FE	6
TP2	03	2"	1,400	5,600,000	FE	6
TP3	OTH2	2"	1,400	5,600,000	FE	6
TP4	01	2"	1,400	5,600,000	PE	6
TP4A	OTH4	2"	1,400	5,600,000	FE+PE	6
TP4B	OTH6	2"	1,400	5,600,000	FE+PE	6
TP4C	OTH5	2"	1,400	5,600,000	FE+PE	6
TP4D	OTH5	2"	1,400	5,600,000	FE+PE	6
TP4E	OTH12	2"	1,400	5,600,000	FE+PE	6

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
TP15A	07	+2"	800	3,200,000	MD	6
TP15	OTH6	+2"	800	3,200,000	FE	6
TP16	OTH5	2"	800	3,200,000	FE	6
TP17	OTH5	2"	800	3,200,000	PE	6
TP18	OTH5	2"	800	3,200,000	FE	6
TP19A	OTH4	2"	900	5,200,000	FE	6
TP19B	OTH5	2"	900	5,200,000	FE	6
TP19	01	2"	900	5,200,000	FE	6
TP20	OTH1/01	2"	900	5,200,000	PE	6
TP22	OTH2	2"	2,900	5,200,000	FE	6
TP23	OTH7	2"	2,900	10,000,000	MD	6
TP24	06	2"	1,200	4,800,000	MD	6
TP25A	OTH3	2"	1,200	4,800,000	MD	6
TP25	01	2"	1,200	4,800,000	PE	6
TP26B	OTH3	2"	1,200	4,800,000	MD	6
TP26	01	2"	1,200	4,800,000	PE	6
TP28	01	2"	1,200	4,800,000	PE	6
TP28A	01	2"	1,200	4,800,000	PE	6
TP29	01	2"	1,200	4,800,000	FE	6
TP1R	OTH1/01	2"	900	5,200,000	PE	6
TP2R	OTH1	2"	900	5,200,000	PE	6

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures 5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
TP3R	OTH2	2"	2,900	10,000,000	FE	6
TP4R	01	2"	4,500	5,200,000	FE	6
TP5R	03	2"	4,500	5,200,000	FE	6
TP6R	15	2"	4,500	5,200,000	FE	6
TP7R	01	2"	2,900	10,000,000	PE	6
TP8R	01	2"	900	4,800,000	PE	6
STP1	OTH4	2"	5	43,800	FE	6
STP2	OTH5	-2"	5	43,800	FE	6
STP3	01	-2"	5	43,800	FE	6
STP4	01	2"	5	43,800	PE	6
STP5	OTH4	2"	5	43,800	FE	6
STP6	OTH5	-2"	5	43,800	FE	6
STP7	01	-2"	5	43,800	PE	6
STP8	01	2"	5	43,800	FE	6
STP9	OTH4	2"	5	43,800	FE	6
STP10	OTH5	-2"	5	43,800	FE	6
STP11	01	-2"	5	43,800	FE	6
STP12	01	2"	5	43,800	FE	6
STP13	OTH4	2"	5	43,800	FE	6
STP14	OTH5	-2"	5	43,800	FE	6
STP15	01	-2"	5	43,800	FE	6
TP9	01	2"	500	6,160,000	FE	6
TP10	01	2"	500	6,160,000	FE	6
TP11	01	2"	500	6,160,000	FE	6

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures 5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
TP12	01	2"	500	6,160,000	FE	6
TP12A	01	2"	500	6,160,000	PE	6
TP12B	01	2"	500	6,160,000	PE	6
TP13	REMOVE					
TP14	OTH1	2"	500	6,160,000	MC	6
TP33	01	2"	500	6,160,000	PE	6
TP34	OTH1	2"	500	6,160,000	MC	6
TP65	01	2"	500	6,160,000	PE	6
TP66	01	2"	500	6,160,000	PE	6
TP67	OTH1	2"	500	6,160,000	PE	6
TPMP1	OTH3	Magnetite	75	100,000	PE	10
TPMP1A	OTH2	Magnetite	75	100,000	PE	10
TPMP2	03	Magnetite	75	100,000	PE	10
TPMP2A	OTH2	Magnetite	75	100,000	PE	10
TPMP3	OTH1	Magnetite	75	100,000	FE	10
TPMP4	OTH3	Magnetite	30	100,000	FE	10
TPMP4A	OTH2	Magnetite	30	100,000	FE	10
TPMP4B	OTH8	Magnetite	30	100,000	FE	10
TPMP4C	OTH5	Magnetite	30	100,000	FE	0.5
TPMP4D	03	Magnetite	30	100,000	FE	0.5
TPMP4E	OTH2	Magnetite	30	100,000	FE	0.5
TPMP4F	OTH9	Magnetite	30	100,000	FE	0.5
TPMP4G	OTH10	Magnetite	30	100,000	FE	0.5

Table 2: Conveying and Transfer Continued

ID Number	Type Conveyor or Transfer Point6	Material Handled [(Note nominal size of material transferred]7	Material Conveying or Transfer Rate		Type Dust Control Measures 5	Approximate Material Moisture Content (%)
			Max. TPH	Max. TPY		
TPMP5	OTH11	Magnetite	30	100,000	FE	0.5
TPMP6	OTH11	Magnetite	30	100,000	FE	0.5
TPMP7	09	Magnetite	30	100,000	FE	0.5
TPMP8	09	Magnetite	30	100,000	FE	0.5
TPMP9	OTH3	Magnetite	75	100,000	FE	0.5

OTH1: Conveyor to Stockpile	OTH11: Air Slide to Bin
OTH2: Stockpile/Bin to Conveyor	OTH12: Conveyor to Wet Process
OTH3 Endloader/Clamshell to Conveyor/Bin/Stockpile	
OTH4 Conveyor to Screen/Crusher	
OTH5 Screen/Crusher to Conveyor	
OTH6 Screen/Bin to Crusher	
OTH7: Conveyor to Barge	
OTH8: Conveyor to Dryer	
OTH9: Conveyor to Bucket Elevator	
OTH10: Bucket Elevator to Air Slide	

Table 3: Crushing and Screening

ID Number		CR4	SD1	CR3	SC1
Type Crusher or Screen[8]		Crusher	SD	Feeder-Breaker	SD
Material Sized		Raw Coal	Raw Coal	Raw Coal	Raw Coal
Maximum Material Throughput	Tons/hour	200	200	800	1,400
	Tons/year	800,000	800,000	3,200,000	8,800,000
Material sized from/to:[9]		+2"/2" x 0"	+2"/2" x 0"	+2"/2" x 0"	+2"/2" x 0"
Typical moisture content as crushed or screened (%)		6	6	6	6
Type dust control		FE	FE+WS	FE	FE+PE+WS
Stack Parameters	height (ft)				
	diameter (ft)				
	Volume (ACFM)				
	Temp (°F)				
Maximum Operating Schedule	hour/day	24	24	24	24
	day/year	365	365	365	365
	hour/year	8,760	8,760	8,760	8,760
Approximate Percentage of Operation from:	Jan-Mar	25	25	25	25
	April-June	25	25	25	25
	July-Sept	25	25	25	25
	Oct-Dec	25	25	25	25
Maximum Particulate Emissions	lb/hour	12.00 Uncontrolled 2.00 Controlled	20.00 Uncontrolled 4.00 Controlled	48.00 Uncontrolled 10.00 Controlled	140.00 Uncontrolled 14.00 Controlled
	Ton/year	24.00 Uncontrolled 5.00 Controlled	40.00 Uncontrolled 8.00 Controlled	96.00 Uncontrolled 19.00 Controlled	440.00 Uncontrolled 44.00 Controlled

Describe method of determining emissions and dust control efficiencies (if by test on a similar unit provide report, if by emission factor reference emission factors): Emission Factors from Air Pollution Engineering Manual and References.

Table 3: Crushing and Screening Continued

ID Number		CR5	CR6	CR1	SCR1
Type Crusher or Screen[8]		Crusher	Crusher	Crusher	Sample Pulverizer
Material Sized		Raw Coal	Clean Coal	Direct Ship Coal	Clean/Direct Ship Coal
Maximum Material Throughput	Tons/hour	1,400	900	1,200	5
	Tons/year	5,600,000	5,200,000	4,800,000	43,800
Material sized from/to:[9]		+2"/2" x 0"	+2"/2" x 0"	+2"/2" x 0"	2" x 0"/-2"
Typical moisture content as crushed or screened (%)		6	6	6	6
Type dust control		FE+PE	FE+PE	FE	FE
Stack Parameters	height (ft)				
	diameter (ft)				
	Volume (ACFM)				
	Temp (°F)				
Maximum Operating Schedule	hour/day	24	24	24	24
	day/year	365	365	365	365
	hour/year	8,760	8,760	8,760	8,760
Approximate Percentage of Operation from:	Jan-Mar	25	25	25	25
	April-June	25	25	25	25
	July-Sept	25	25	25	25
	Oct-Dec	25	25	25	25
Maximum Particulate Emissions	lb/hour	84.00 Uncontrolled 8.00 Controlled	54.00 Uncontrolled 5.40 Controlled	72.00 Uncontrolled 14.40 Controlled	0.30 Uncontrolled 0.06 Controlled
	Ton/year	264.00 Uncontrolled 26.00 Controlled	108.00 Uncontrolled 10.80 Controlled	144.00 Uncontrolled 28.80 Controlled	1.31 Uncontrolled 0.26 Controlled

Describe method of determining emissions and dust control efficiencies (if by test on a similar unit provide report, if by emission factor reference emission factors): Emission Factors from Air Pollution Engineering Manual and References.

Table 3: Crushing and Screening Continued

ID Number		SCR2	SCR3	SCR4	SMP4
Type Crusher or Screen[8]		Sample Pulverizer	Sample Pulverizer	Sample Pulverizer	Scalping Screen
Material Sized		Clean/Direct Ship Coal	Clean/Direct Ship Coal	Clean/Direct Ship Coal	Magnetite
Maximum Material Throughput	Tons/hour	5	5	5	30
	Tons/year	43,800	43,800	43,800	100,000
Material sized from/to:[9]		2" x 0"/-2"	2" x 0"/-2"	2" x 0"/-2"	Removes Debris
Typical moisture content as crushed or screened (%)		6	6	6	0.5
Type dust control		FE	FE	FE	FE
Stack Parameters	height (ft)				
	diameter (ft)				
	Volume (ACFM)				
	Temp (°F)				
Maximum Operating Schedule	hour/day	24	24	24	24
	day/year	365	365	365	365
	hour/year	8,760	8,760	8,760	8,760
Approximate Percentage of Operation from:	Jan-Mar	25	25	25	25
	April-June	25	25	25	25
	July-Sept	25	25	25	25
	Oct-Dec	25	25	25	25
Maximum Particulate Emissions	lb/hour	0.30 Uncontrolled 0.06 Controlled	0.30 Uncontrolled 0.06 Controlled	0.30 Uncontrolled 0.06 Controlled	0.75 Uncontrolled 0.15 Controlled
	Ton/year	1.31 Uncontrolled 0.26 Controlled	1.31 Uncontrolled 0.26 Controlled	1.31 Uncontrolled 0.26 Controlled	1.25 Uncontrolled 0.25 Controlled

Describe method of determining emissions and dust control efficiencies (if by test on a similar unit provide report, if by emission factor reference emission factors): Emission Factors from Air Pollution Engineering Manual and References.

1 Type Storage - Code as follows: (Note capacity of each bin, building or enclosure)

OS -	Open Stockpile
B -	Bin or Storage Silo (full enclosure)
SB -	Storage Building (full enclosure)
E-	Enclosure (walls but no top)
SWF-	Stockpiles with wind fences
OTH-	Other - Specify in footnote or attachment

2. Give maximum and average quantity of material in storage at any given time (e.g. silo capacity, stockpile size, etc...)

3. TYPE DUST CONTROLS DURING STORAGE
If storage is by other than by bin or full enclosure Code as follows:

N -	None
WS-	Water Sprays
C-	Spraying with chemical surfactant
OTH-	Other - Specify in footnote or attachment

4. METHOD OF PLACING MATERIAL ONTO STOCKPILE OR INTO BINS OR LOADING OUT FROM STOCKPILES OR BINS - Code as follows:

C-	Clamshell
TD-	Truck Dumping
FE-	Front Endloader
ST-	Stacking Tubes
MS-	Mobile Conveyor - Stacker
SS-	Stationary Conveyor - Stacker
P-	Pneumatic Conveyor - Stacker
FC-	Fixed Height Chute from bins
TC-	Telescoping Chute from bins
UC-	Under-pole or under-bin reclaim conveyor
RC-	Reclaim Conveyor (rake or bucket reclaim conveyor reclaiming from surface of stockpile)
OTH-	Other - Describe in a footnote or attachment

5. TYPE DUST CONTROLS - Code as follows:

N–	None
WS-	Water Sprays
WSA-	Water Sprays with Wetting Agents
CS-	Chemical Dust Suppressant (sprays, etc...)
FE-	Full Enclosures
PE-	Partial Enclosures
MD-	Minimization of material drop height
EM-	Enclosure and evacuation to mechanical collector
EB-	Enclosure and evacuation to baghouse
ES-	Enclosure and evacuation to scrubber
OTH-	Other - describe in footnote or attachment

6. TYPE CONVEYOR OR TRANSFER POINT - Code as follows:Conveyors

BC- Belt Conveyor
VC- Vibrating Conveyor
SC- Screw Conveyor
DL- Drag-link conveyor
BE- Bucket Elevator
PS- Pneumatic System
OTH- Other describe in footnote or attachment

Transfer Points

01- Conveyor to Conveyor
02- Conveyor to Bucket Elevator
03- Conveyor to Hopper or Bin
04- Bucket Elevator to Hopper or Bin
05- Pneumatic conveyor to bin
06- Truck Dumping onto ground
07- Truck Dumping into hopper
08- Loading trucks through stationary chute
09- Loading trucks through telescoping chute
10- Loading Trucks by endloader
11- Railcar unloading-side or bottom dumping
12- Railcar unloading-rotary unloader
13- Railcar loading /unloading by pneumatic system
14- Railcar loading through stationary source
15- Railcar loading through telescopic chute
16- Railcar loading by front end-loader
17- Railcar loading by railcar
18- Barge loading/unloading by clamshell
19- Barge unloading - bucket ladder unloader
20- Barge unloading - from a fixed-height conveyor or stationary chute
21- Barge loading - variable height conveyor or telescoping chute
22- Other - describe in footnote or attachment

7. If more than one material is handled by the listed conveyor or transfer point list each material and furnish the requested data in the table for each material.

8. Describe type of unit such as hammermill, ball mill, double-deck (DD) screen, double roll (DR) crusher, etc...

9. Describe nominal size reduction, example 2"/ -⅜.

Attachment L
FUGITIVE EMISSIONS FROM UNPAVED HAULROADS

UNPAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

		PM	PM-10
k =	Particle size multiplier	4.9	1.5
s =	Silt content of road surface material (%)	10	10
p =	Number of days per year with precipitation >0.01 in.	157	157

Item Number	Description	Number of Wheels	Mean Vehicle Weight (tons)	Mean Vehicle Speed (mph)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1	Raw/Direct Ship (Downstream)	18	37.5	10	0.45	27	106,667	WT	70
2	Clean Coal (Downstream)	18	37.5	10	0.45	27		WT	70
3	2 North	18	37.5	10	4.0	45	11,111	WT	70
4	Endloader	4	105	10	1.0	1	8,760	WT	70
5									
6									
7									

Source: *AP-42 Fifth Edition – 13.2.2 Unpaved Roads*

$E = k \times 5.9 \times (s \div 12) \times (S \div 30) \times (W \div 3)^{0.7} \times (w \div 4)^{0.5} \times ((365 - p) \div 365) =$ lb/Vehicle Mile Traveled (VMT)

Where:

		PM	PM-10
k =	Particle size multiplier	4.9	1.5
s =	Silt content of road surface material (%)	10	10
S =	Mean vehicle speed (mph)	10	10
W =	Mean vehicle weight (tons)	Varies	Varies
w =	Mean number of wheels per vehicle	Varies	Varies
p =	Number of days per year with precipitation >0.01 in.	157	157

For lb/hr: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] = lb/hr

For TPY: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] × [Ton ÷ 2000 lb] = Tons/year

SUMMARY OF UNPAVED HAULROAD EMISSIONS

Item No.	PM				PM-10/PM2.5			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	93.07	183.84	27.92	55.15	27.46/2.79	54.24/5.52	8.24/0.82	16.27/1.66
2	93.07		27.92		27.46/2.79		8.24/0.82	
3	2,190.60	270.44	657.18	81.13	646.20/64.80	79.78/8.00	193.86/19.44	23.93/2.40
4	12.17	53.30	3.65	15.99	3.59/0.36	15.72/1.58	1.08/0.11	4.72/0.47
5								
6								
7								
TOTALS	2,388.91	507.58	716.67	152.27	707.71/70.74	149.74/15.10	211.42/21.23	44.92/4.53

FUGITIVE EMISSIONS FROM PAVED HAULROADS

INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

I =	Industrial augmentation factor (dimensionless)	
n =	Number of traffic lanes	
s =	Surface material silt content (%)	
L =	Surface dust loading (lb/mile)	

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1	Raw Coal (Upstream)	37.5	0.70	22	88,889	WT/WC	85
2	Raw/Direct (Downstream)	37.5	0.57	27	106,667	WT/WC	85
3	Clean Coal	37.5	0.57	27		WT/WC	85
4	Magnetite	37.5	0.28	10	2,000	WT/WC	85
5							
6							
7							

Source: *AP-42 Fifth Edition – 11.2.6 Industrial Paved Roads*

$E = 0.077 \times I \times (4 \div n) \times (s \div 10) \times (L \div 1000) \times (W \div 3)^{0.7}$ = lb/Vehicle Mile Traveled (VMT)

Where:

I =	Industrial augmentation factor (dimensionless)	
n =	Number of traffic lanes	
s =	Surface meterial silt content (%)	
L =	Surface dust loading (lb/mile)	
W =	Average vehicle weight (tons)	

For lb/hr: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] = lb/hr

For TPY: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] × [Ton ÷ 2000 lb] = Tons/year

SUMMARY OF PAVED HAULROAD EMISSIONS PM/PM10/PM2.5

Item No.	Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY
1	40.50/8.16/2.00	81.82/16.49/4.04	6.08/1.22/0.30	12.27/2.47/0.61
2	40.48/8.16/2.00	79.95/16.11/3.95	6.07/1.22/0.30	11.99/2.42/0.59
3	40.48/8.16/2.00		6.07/1.22/0.30	
4	9.86/1.96/0.48	0.99/0.20/0.05	1.48/0.29/0.07	0.15/0.03/0.01
5				
6				
7				
TOTALS	131.32/26.44/6.48	162.76/32.80/8.04	19.70/3.95/0.97	24.41/4.92/1.21

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): SMP1

1. Name or type and model of proposed affected source:

   Standard Havens Direct Heat Dryer with Hauck Model SJ-150 Starjet Burner - 27.9 MMBtu/hr

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

   30 tons/hr magnetite 10% moisture

4. Name(s) and maximum amount of proposed material(s) produced per hour:

   30 tons/hr magnetite 0.5% moisture

5. Give chemical reactions, if applicable, that will be involved in the generation of air

   NA

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural Gas at 27,400 cfh or No. 2 Fuel Oil at 204 gallons/hour

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

Natural gas is pipeline quality provided by Mountaineer Gas

Typical No. 2 Fuel Oil

(c) Theoretical combustion air requirement (ACF/unit of fuel):

10,994 acfm @ 2,900 °F and psia.

(d) Percent excess air: 8%

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

Hauck Model SJ-150 Starjet Burner – 27.9 MMBtu/hr

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: 27.9 $\times 10^6$ BTU/hr.

7. Projected operating schedule: Note: Operations limited to 2000 hr/yr

Hours/Day	12	Days/Week	5	Weeks/Year	52

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

No. 2 Fuel Oil

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

Typical No. 2 Fuel Oil less than 0.05% S

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

NA

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: 27.9 × 10^6 BTU/hr.

7. Projected operating schedule:

Hours/Day	12	Days/Week	7	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ 200 °F and psia

a.	NO_X	8.53	lb/hr	grains/ACF
b.	SO_2	0.56	lb/hr	grains/ACF
c.	CO	1.84	lb/hr	grains/ACF
d.	PM_{10}	0.61	lb/hr	grains/ACF
e.	Hydrocarbons	NA	lb/hr	grains/ACF
f.	VOCs	8.14	lb/hr	grains/ACF
g.	Pb		lb/hr	grains/ACF
h.	Specify other(s)			
	Benzene Ethylbenzene Toluene Xylene	0.43 0.007 0.15 0.05	lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.
(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
There are no changes proposed	There are no changes proposed
REPORTING	**TESTING**
There are no changes proposed	There are no changes proposed

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

NA

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): Gen Set 1 (1E)

1. Name or type and model of proposed affected source:

   Caterpillar Model D25-6 Generator Set
   Diesel Engine: Perkins 2450/1800, EPA Engine Family 7PKXL03.DC1

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

   NA

4. Name(s) and maximum amount of proposed material(s) produced per hour:

   NA

5. Give chemical reactions, if applicable, that will be involved in the generation of air

   Typical diesel engine fuel burning

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Diesel fuel

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

Typical diesel fuel less than 0.05% S

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

NA

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: NA $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ 200 °F and psia

a.	NO_x	0.55	lb/hr	grains/ACF
b.	SO_2	0.03	lb/hr	grains/ACF
c.	CO	0.12	lb/hr	grains/ACF
d.	PM_{10}	0.01	lb/hr	grains/ACF
e.	Hydrocarbons	NA	lb/hr	grains/ACF
f.	VOCs	0.04	lb/hr	grains/ACF
g.	Pb		lb/hr	grains/ACF
h.	Specify other(s)			
	Total HAPs (see Attachment N for speciated list)	0.0021	lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.
(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
None Proposed	None Proposed
REPORTING	**TESTING**
None Proposed	None Proposed

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

NA

ATTACHMENT M

AIR POLLUTION CONTROL DEVICE(S)

Attachment M
Air Pollution Control Device Sheet
(BAGHOUSE)

Control Device ID No. (must match Emission Units Table): CMP1

Equipment Information and Filter Characteristics

1. Manufacturer: Airlanco
   Model No. 240ATD10

2. Total number of compartments: 1

3. Number of compartment online for normal operation: 1

4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

5. Baghouse Configuration: (check one)
   ☐ Open Pressure ☐ Closed Pressure ☒ Closed Suction
   ☐ Electrostatically Enhanced Fabric
   ☐ Other, Specify

6. Filter Fabric Bag Material:
   ☒ Nomex nylon ☐ Wool
   ☐ Polyester ☐ Polypropylene
   ☐ Acrylics ☐ Ceramics
   ☐ Fiber Glass
   ☐ Cotton Weight oz./sq.yd
   ☐ Teflon Thickness in
   ☐ Others, specify

7. Bag Dimension:
   Diameter 6 in.
   Length 10 ft.

8. Total cloth area: 3,936 ft^2

9. Number of bags: 240

10. Operating air to cloth ratio: 3.3:1 ft/min

11. Baghouse Operation: ☒ Continuous ☐ Automatic ☐ Intermittent

12. Method used to clean bags:
    ☐ Mechanical Shaker ☐ Sonic Cleaning ☒ Reverse Air Jet
    ☐ Pneumatic Shaker ☐ Reverse Air Flow ☐ Other:
    ☐ Bag Collapse ☒ Pulse Jet
    ☐ Manual Cleaning ☐ Reverse Jet

13. Cleaning initiated by:
    ☒ Timer ☐ Frequency if timer actuated
    ☐ Expected pressure drop range in. of water ☐ Other

14. Operation Hours: Max. per day: 12
    Max. per yr: 3,120

15. Collection efficiency: Rating: 99.99 %
    Guaranteed minimum: 99.9 %

Gas Stream Characteristics

16. Gas flow rate into the collector: 13,000 ACFM at 250 °F and -0.5053 PSIA
    ACFM: Design: 12,000 PSIA Maximum: -0.6136 PSIA Average Expected: -0.5053 PSIA

17. Water Vapor Content of Effluent Stream: lb. Water/lb. Dry Air

18. Gas Stream Temperature: 250°F

19. Fan Requirements: 75 hp
    OR ft^3/min

20. Stabilized static pressure loss across baghouse. Pressure Drop: High 6 in. H_2O
    Low 0.5 in. H_2O

21. Particulate Loading: Inlet: Approx. 30 grain/scf Outlet: 0.02 grain/scf

22. Type of Pollutant(s) to be collected (if particulate give specific type):
Particulate matter - magnetite

23. Is there any SO_3 in the emission stream? ☒ No ☐ Yes SO_3 content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

	IN		OUT	
Pollutant	**lb/hr**	**grains/acf**	**lb/hr**	**grains/acf**
PM	985		1.21	
PM_{10}	600		0.8	

25. Complete the table:

	Particle Size Distribution at Inlet to Collector	**Fraction Efficiency of Collector**
Particulate Size Range (microns)	**Weight % for Size Range**	**Weight % for Size Range**
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?
- ☐ Continuous Opacity
- ☒ Pressure Drop
- ☐ Alarms-Audible to Process Operator
- ☐ Visual opacity readings, Frequency:
- ☐ Other, specify:

27. Describe any recording device and frequency of log entries:

28. Describe any filter seeding being performed:

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

30. Describe the collection material disposal system:
Collected magnetite is returned to the process as a finished material. Cloth filters will be properly disposed as a solid waste when replaced.

31. Have you included ***Baghouse Control Device*** in the Emissions Points Data Summary Sheet?

32. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:	RECORDKEEPING:
There are no changes proposed	There are no changes proposed
REPORTING:	**TESTING:**
There are no changes proposed	There are no changes proposed

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.

99.9% on 2 micron and larger particulate

34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.

99.9% on 2 micron and larger particulate

35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.

12,000 CFM @ "W.C. airflow – 0.5 – 6" Differential Pressure indicated on magnahelic gauge

Attachment M
Air Pollution Control Device Sheet
(MECHANICAL COLLECTOR-CYCLONE)

Control Device ID No. (must match Emission Units Table): CMP2

Equipment Information

1. Manufacturer: NA

   Model No. NA

2. Method: ☐ Wet ☐ Dry
   ☐ Single-stage
   ☐ Multiple: number
   ☐ In series: number

3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

4. Provide a diagram of the proposed simple cyclone or multicyclone system with examples of the parameters identified below:

5. Simple cyclone system (show units):

Major cylinder diameter:	in.
Major cylinder length:	in.
Cone length:	in.
Gas outlet diameter:	in.
Gas outlet length:	in.
Gas inlet height:	in.
Gas inlet weight:	in.
Dust outlet diameter:	in.
Pressure drop across the cyclone:	in. H_2O

Describe the collected dust discharge valves and system:

6. Multicyclone system (show units):

Major cylinder diameter:	in.
Major cylinder length:	in.
Cone length:	in.
Gas outlet diameter:	in.
Gas outlet length:	in.
Gas inlet height:	in.
Gas inlet weight:	in.
Dust outlet diameter:	in.
Pressure drop across the system:	in. H_2O
Number of tubes:	
Tube diameter:	in.
Tube length:	in.

Describe the collected dust discharge valves and system:

7. More than one cyclone:

   Number of cyclones:

   Arrangement: ☐ Parallel ☐ Series

   Pressure drop across the system: in. H_2O

8. On a separate sheet answer the following questions for each cyclone and attach:

Major cylinder diameter:	in.
Major cylinder length:	in.
Cone length:	in.
Gas outlet diameter:	in.
Gas outlet length:	in.
Gas inlet weight:	in.
Dust outlet diameter:	in.
Pressure drop across the system:	in. H_2O
Number of tubes:	
Tube diameter:	in.

Describe the collected dust discharge valves and systems:

9. Guaranteed collection efficiency:

   Minimum: %

10. Efficiency of cyclone:

    At design maximum: %

    At average Operation: %

11. Method of handling material removed: Vents to baghouse CMP1

Gas Stream Characteristics

12. Particle characteristics (for particulate matter):
    - Type of material: Magnetite
    - Particle density:
    - Emission rate at collector outlet: lb/hr
      grains/ACF
    - Particulate matter inlet rate to device: lb/hr
      grains/ACF

13. Total flow rate:
    - Design maximum: acfm
    - Average expected: acfm

14. Gas Stream Temperature:
    - Inlet: °F
    - Outlet: °F

15. Gas flow rate into collector: acfm at °F and PSIA

16. Viscosity of gas stream at the above temperature and pressure: lb/sec-ft

17. Inlet gas velocity: ft/sec

18. Particulate Grain Loading in grains/scf:
    - Inlet:
    - Outlet:

19. Supply a curve showing particulate collection efficiency versus gas volume from 25 to 100 percent of design rating of collector.

Particulate Distribution

20. Complete the table:

Particulate Size Range (microns)	Particle Size Distribution at Inlet to Collector Weight % for Size Range	Fraction Efficiency of Collector Weight % for Size Range
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

21. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

22. Describe the collection material disposal system:

23. Have you included ***Mechanical Collector (Cyclone) Control Device*** in the Emissions Points Data Summary Sheet?

24. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING: There are no changes proposed	RECORDKEEPING: There are no changes proposed
REPORTING: There are no changes proposed	TESTING: There are no changes proposed

MONITORING:	Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

25. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.
NA

26. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
NA

27. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
NA

ATTACHMENT N

SUPPORTING EMISSIONS CALCULATIONS

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Facility Emissions

Source Description	Regulated Air Pollutant	Uncontrolled Emissions		Controlled Emissions	
		lb/hour	tpy	lb/hour	tpy
Transfer Points	PM	94.79	146.03	36.90	55.65
	PM10	45.14	69.53	17.57	26.49
	PM2.5	6.78	10.43	2.64	3.97
Crushing	PM	271.95	505.69	40.19	77.81
	PM10	129.40	240.65	19.12	37.02
	PM2.5	19.43	36.12	2.87	5.56
Screening	PM	751.00	923.25	20.59	56.44
	PM10	436.19	498.57	9.88	26.94
	PM2.5	53.64	65.95	1.47	4.03
Dryer	PM	591.00	443.25	0.59	0.44
	PM10	360.00	270.00	0.36	0.27
	PM2.5	42.21	31.66	0.04	0.03
Combustion	NO_x	13.16	7.13	13.16	7.13
	SO_2	29.97	29.55	29.97	29.55
	CO	4.26	2.97	4.26	2.97
	PM	1.44	2.07	1.44	2.07
	PM10/PM2.5	3.67	1.31	3.67	1.31
	TOC/VOC	8.79	1.40	8.79	1.40
	Benzene	0.43	0.03	0.43	0.03
	Toluene	0.15	0.01	0.15	0.01
	Xylenes	0.05	0.004	0.05	0.004
	1,3-Butadiene	0.00001	0.00005	0.00001	0.00005
	Formaldehyde	0.0068	0.0071	0.00683	0.00713
	Acetaldehyde	0.0001	0.0004	0.00010	0.00040
	Acrolein	0.00001	0.00004	0.00001	0.00004
	Naphthalene	0.00001	0.00004	0.00001	0.00004
	Ethylbenzene	0.0067	0.0005	0.00674	0.00051
Total Point Source	PM	1,710.18	2,020.29	99.72	**192.42**
	PM10	974.40	1,080.06	50.60	**92.03**
	PM2.5	125.73	145.47	10.69	14.90
Open Stockpiles	PM	1.80	7.81	0.99	4.25
	PM10	0.86	3.72	0.47	2.02
	PM2.5	0.13	0.56	0.08	0.30
Vehicle Activity Unpaved	PM	2,388.91	507.58	716.67	152.27
	PM10	704.71	149.74	211.42	44.92
	PM2.5	70.74	15.10	21.23	4.53
Vehicle Activity Paved	PM	131.32	162.76	19.70	24.41
	PM10	26.44	32.80	3.95	4.92
	PM2.5	6.48	8.04	0.97	1.21
Total Fugitive Source	PM	2,522.03	678.15	737.36	180.93
	PM10	732.01	186.26	215.84	51.86
	PM2.5	77.35	23.70	22.28	6.04
Total Facility	PM	4,232.21	2,698.44	837.08	373.35
	PM10	1,706.41	1,266.32	266.44	143.89
	PM2.5	203.08	169.17	32.97	20.94
	NO_x	13.16	7.13	13.16	7.13
	SO_2	29.97	29.55	29.97	29.55
	CO	4.26	2.97	4.26	2.97
	TOC/VOC	8.79	1.40	8.79	1.40
	Benzene	0.4347	0.0330	0.4347	0.0330
	Toluene	0.1548	0.0132	0.1548	0.0132
	Xylenes	0.0537	0.0044	0.0537	0.0044
	1,3-Butadiene	0.00001	0.00005	0.00001	0.00005
	Formaldehyde	0.0068	0.0071	0.0068	0.0071
	Acetaldehyde	0.0001	0.0004	0.0001	0.0004
	Acrolein	0.00001	0.00004	0.00001	0.00004
	Naphthalene	0.00001	0.00004	0.00001	0.00004
	Ethylbenzene	0.0067	0.0005	0.0067	0.0005
	Total HAPs	0.66	0.06	0.66	0.06

By: CCS
Date: 08/07/2014

By: PEW
Date: DRAFT

Coal Plant Emissions

Source Description	Regulated Air Pollutant	Uncontrolled Emissions		Controlled Emissions	
		lb/hour	tpy	lb/hour	tpy
Transfer Points	PM	68.47	103.12	26.95	39.56
	PM10	32.60	49.10	12.83	18.83
	PM2.5	4.90	7.37	1.93	2.82
Crushing	PM	271.20	504.44	40.04	77.56
	PM10	129.14	240.21	19.07	36.93
	PM2.5	19.37	36.03	2.86	5.54
Screening	PM	160.00	480.00	20.00	56.00
	PM10	76.19	228.57	9.52	26.67
	PM2.5	11.43	34.29	1.43	4.00
Gen Set	NO_x	0.55	2.41	0.55	2.41
	SO_2	0.03	0.13	0.03	0.13
	CO	0.12	0.53	0.12	0.53
	PM	0.01	0.04	0.01	0.04
	PM_{10}/PM2.5	1.84	0.04	1.84	0.04
	TOC/VOC	0.04	0.18	0.04	0.18
	Benzene	0.0001	0.0004	0.00	0.00
	Toluene	0.0001	0.0004	0.0001	0.0004
	Xylenes	0.0001	0.0004	0.0001	0.0004
	1,3-Butadiene	0.00001	0.00005	0.00001	0.00005
	Formaldehyde	0.0001	0.0004	0.00010	0.00040
	Acetaldehyde	0.0001	0.0004	0.00010	0.00040
	Acrolein	0.00001	0.00004	0.00001	0.00004
	Naphthalene	0.00001	0.00004	0.00001	0.00004
Total Point Source	PM	499.68	1,087.60	87.00	173.16
	PM10	239.77	517.92	43.26	82.47
	PM2.5	37.54	77.73	8.06	12.40
Open Stockpiles	PM	1.80	7.81	0.99	4.25
	PM10	0.86	3.72	0.47	2.02
	PM2.5	0.13	0.56	0.08	0.30
Vehicle Activity Unpaved	PM	2,388.91	507.58	716.67	152.27
	PM10	704.71	149.74	211.42	44.92
	PM2.5	70.74	15.10	21.23	4.53
Vehicle Activity Paved	PM	121.46	161.77	18.22	24.26
	PM10	24.48	32.60	3.66	4.89
	PM2.5	6.00	7.99	0.90	1.20
Total Fugitive Source	PM	2,512.17	677.16	735.88	180.78
	PM10	730.05	186.06	215.55	51.83
	PM2.5	76.87	23.65	22.21	6.03
Total Coal	PM	3,011.85	1,764.76	822.88	353.94
	PM10	969.82	703.98	258.81	134.30
	PM2.5	114.41	101.38	30.27	18.43
	NO_x	0.55	2.41	0.55	2.41
	SO_2	0.03	0.13	0.03	0.13
	CO	0.12	0.53	0.12	0.53
	TOC/VOC	0.04	0.18	0.04	0.18
	Benzene	0.0001	0.0004	0.0001	0.0004
	Toluene	0.0001	0.0004	0.0001	0.0004
	Xylenes	0.0001	0.0004	0.0001	0.0004
	1,3-Butadiene	0.00001	0.00005	0.00001	0.00005
	Formaldehyde	0.0001	0.0004	0.0001	0.0004
	Acetaldehyde	0.0001	0.0004	0.0001	0.0004
	Acrolein	0.00001	0.00004	0.00001	0.00004
	Naphthalene	0.00001	0.00004	0.00001	0.00004
	Total HAPs	0.001	0.002	0.001	0.002

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

2 North System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:
e = 0.0008 lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities[1]		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP35A	2,000	5,600,000	0.0008	FE	80	1.60	2.24	0.32	0.45
TP35B	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
TP36	Removed								
TP37	Removed								
TP38	2,000	5,600,000	0.0008	FE	80	1.60	2.24	0.32	0.45
TP39	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
TP40	Removed								
TP41	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
					PM	8.00	11.20	3.04	4.26
					PM10	3.81	5.33	1.45	2.03
					PM2.5	0.57	0.80	0.22	0.30

Notes:
1. Transfer points that are set to zero avoid double counting emissions.
2. PM10 and PM2.5 emissions prorated based on the following:

Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor		2.1	14

Overland System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:
e = 0.0008 lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities[1]		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP42	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
TP43	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
TP44	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
TP45	2,000	5,600,000	0.0008	PE	50	1.60	2.24	0.80	1.12
TP46	Removed								
TP47	Removed								
TP48	2,000	5,600,000	0.0008	FE	80	1.60	2.24	0.32	0.45
TP49	Removed								
TP50	2,000	5,600,000	0.0008	FE	80	1.60	2.24	0.32	0.45
TP51	Removed								
TP52	Removed								
TP53	Removed								
TP54	Removed								
TP55	Removed								
TP56	Removed								
TP57	Removed								
TP58	Removed								
TP59	Removed								
TP60	Removed								
TP61	0	0	0.0008	PE	50	0	0	0	0
TP62	0	0	0.0008	PE	50	0	0	0	0
TP63	0	0	0.0008	PE	50	0	0	0	0
TP64	0	0	0.0008	PE	50	0	0	0	0
					PM	9.60	13.44	3.84	5.38
					PM10	4.57	6.40	1.83	2.56
					PM2.5	0.69	0.96	0.27	0.38

Notes:
1. Transfer points that are set to zero avoid double counting emissions.
2. PM10 and PM2.5 emissions prorated based on the following:
Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

PM	PM10	PM2.5

Mammoth Preparation Plant
Jacks Branch Coal Company

POTESTA & ASSOCIATES, INC.
Project No. 0101-14-0046

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Overland System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:
e = 0.0008 lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities[1]		e	Control		Emissions			
				Device		Uncontrolled		Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
	0.74	0.35	0.053						
Conversion Factor		2.1	14						

Mammoth Preparation Plant
Jacks Branch Coal Company

POTESTA & ASSOCIATES, INC.
Project No. 0101-14-0046

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Marsan System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below: Rounding to = 2
e = 0.0008 lb/ton or (as shown) 2

ID	Transfer Capacities[1]		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP5A	200	800,000	0.0008	MD	0	0.16	0.32	0.16	0.32
TP5B	200	800,000	0.0008	MD	0	0.16	0.32	0.16	0.32
TP5	200	800,000	0.0008	FE	80	0.16	0.32	0.03	0.06
TP6	200	800,000	0.0008	PE+WS	70	0.16	0.32	0.05	0.10
TP6A	200	0	0.0008	PE	50	0.16	0	0.08	0
TP6B	200	800,000	0.0008	PE	50	0.16	0.32	0.08	0.16
TP6C	200	800,000	0.0008	PE	50	0.16	0.32	0.08	0.16
TP6D	200	800,000	0.0008	PE	50	0.16	0.32	0.08	0.16
					PM	1.28	2.24	0.72	1.28
					PM10	0.61	1.07	0.34	0.61
					PM2.5	0.09	0.16	0.05	0.09

Crushing

ID	Capacity		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tons/hour	tons/year	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CR4	200	800,000	0.06	FE	80	12.00	24.00	2.00	5.00
					PM	12.00	24.00	2.00	5.00
					PM10	5.71	11.43	0.95	2.38
					PM2.5	0.86	1.71	0.14	0.36

Screening Rounding to = 2

ID	Capacity		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tons/hour	tons/year	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
SD1	200	800,000	0.10	PE+WS	70	20.00	40.00	6.00	12.00
					PM	20.00	40.00	6.00	12.00
					PM10	9.52	19.05	2.86	5.71
					PM2.5	1.43	2.86	0.43	0.86

Notes:
1. Transfer points that are set to zero avoid double counting emissions.
2. Crushing and screening emission factors taken from DAQ Guidance of 12/5/2000 & General Permits Doc: i.e. Air Pollution Engineering Manual and References.
3. PM10 and PM2.5 emissions prorated based on the following:
Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

PM	PM10	PM2.5

Mammoth Preparation Plant
Jacks Branch Coal Company

POTESTA & ASSOCIATES, INC.
Project No. 0101-14-0046

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Marsan System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):

e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)

e = Emissions factor, pound per ton, (lb/ton)

k = Particle size multiplier from AP-42 for particle size < 30 microns

U = Mean wind speed (mph)

M = Material moisture content (%)

Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:

e =	0.0008	lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities[1]		e	Control		Emissions			
				Device		Uncontrolled		Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
	0.74	0.35	0.053						
Conversion Factor		2.1	14						

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Plant Feed System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:
e = 0.0008 lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities[1]		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP1	1,400	5,600,000	0.0008	FE	80	1.12	2.24	0.22	0.45
TP2	1,400	5,600,000	0.0008	FE	80	1.12	2.24	0.22	0.45
TP3	1,400	5,600,000	0.0008	FE	80	1.12	2.24	0.22	0.45
TP4	1,400	5,600,000	0.0008	PE	50	1.12	2.24	0.56	1.12
TP4A	1,400	8,800,000	0.0008	FE+PE	90	1.12	3.52	0.11	0.35
TP4B	1,400	8,800,000	0.0008	FE+PE	90	1.12	3.52	0.11	0.35
TP4C	0	0	0.0008	FE+PE	90	0	0	0	0
TP4D	1,400	8,800,000	0.0008	FE+PE	90	1.12	3.52	0.11	0.35
TP4E	1,400	8,800,000	0.0008	FE+PE	90	1.12	3.52	0.11	0.35
TP15A	800	3,200,000	0.0008	MD	0	0.64	1.28	0.64	1.28
TP15	800	3,200,000	0.0008	FE	80	0.64	1.28	0.13	0.26
TP16	800	3,200,000	0.0008	FE	80	0.64	1.28	0.13	0.26
TP17	800	3,200,000	0.0008	WS	70	0.64	1.28	0.19	0.38
TP18	800	3,200,000	0.0008	FE	80	0.64	1.28	0.13	0.26
					PM	12.16	29.44	2.88	6.31
					PM10	5.79	14.02	1.37	3.00
					PM2.5	0.87	2.10	0.21	0.45

Crushing

ID	Capacity		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tons/hour	tons/year	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CR3	800	3,200,000	0.06	FE	80	48.00	96.00	9.60	19.20
CR5	1,400	2,640,000	0.06	FE+PE	90	84.00	79.20	8.40	7.92
					PM	132.00	175.20	18.00	27.12
					PM10	62.86	83.43	8.57	12.91
					PM2.5	9.43	12.51	1.29	1.94

Plant Feed Crushed = 30%

Screening

Rounding to = 2

ID	Capacity		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tons/hour	tons/year	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
SC1	1,400	8,800,000	0.10	FE+PE+WS	90	140.00	440.00	14.00	44.00
					PM	140.00	440.00	14.00	44.00
					PM10	66.67	209.52	6.67	20.95
					PM2.5	10.00	31.43	1.00	3.14

Plant Feed Screened= 100%

Notes:
1. Transfer points that are set to zero avoid double counting emissions.
2. Crushing and screening emission factors taken from DAQ Guidance of 12/5/2000 & General Permits Doc: i.e. Air Pollution Engineering Manual and References.
3. PM10 and PM2.5 emissions prorated based on the following:
Particle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor		2.1	14

By: CCS **By: PEW**
Date: 12/19/2014 **Date: 01/07/15**

Loadout/Shipment System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:
e = 0.0008 lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP19A	900	2,640,000	0.0008	FE+PE	90	0.72	1.06	0.07	0.11
TP19B	900	2,640,000	0.0008	FE+PE	90	0.72	1.06	0.07	0.11
TP19	900	2,640,000	0.0008	FE	80	0.72	1.06	0.14	0.21
TP20	900	0	0.0008	PE	50	0.72	0.00	0.36	0.00
TP22	2,900	0	0.0008	FE	80	2.32	0.00	0.46	0.00
TP23	2,900	7,440,000	0.0008	MD	0	2.32	2.98	2.32	2.98
TP24	1,200	4,800,000	0.0008	MD	0	0.96	1.92	0.96	1.92
TP25A	1,200	4,800,000	0.0008	MD	0	0.96	1.92	0.96	1.92
TP25	1,200	4,800,000	0.0008	PE	50	0.96	1.92	0.48	0.96
TP26B	1,200	0	0.0008	MD	0	0.96	0.00	0.96	0.00
TP26	1,200	0	0.0008	PE	50	0.96	0.00	0.48	0.00
TP28	1,200	4,800,000	0.0008	PE	50	0.96	1.92	0.48	0.96
TP28A	1,200	4,800,000	0.0008	PE+WS	70	0.96	1.92	0.29	0.58
TP29	1,200	0	0.0008	FE	80	0.96	0.00	0.19	0.00
TP1R	900	2,640,000	0.0008	PE	50	0.72	1.06	0.36	0.53
TP2R	1,200	2,640,000	0.0008	PE	50	0.96	1.06	0.48	0.53
TP3R	2,900	4,800,000	0.0008	FE	80	2.32	1.92	0.46	0.38
TP4R	4,500	2,640,000	0.0008	FE	80	3.60	1.06	0.72	0.21
TP5R	4,500	2,640,000	0.0008	FE	80	3.60	1.06	0.72	0.21
TP6R	4,500	2,640,000	0.0008	PE	50	3.60	1.06	1.80	0.53
TP7R	2,900	4,800,000	0.0008	PE	50	2.32	1.92	1.16	0.96
TP8R	1,200	4,800,000	0.0008	PE	50	0.96	1.92	0.48	0.96
STP1	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP2	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP3	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP4	5	43,800	0.0008	PE	50	0.01	0.02	0.01	0.01
STP5	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP6	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP7	5	43,800	0.0008	PE	50	0.01	0.02	0.01	0.01
STP8	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP9	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP10	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP11	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP12	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP13	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP14	5	43,800	0.0008	FE	80	0.01	0.02	0.01	0.01
STP15	5	43,800	0.0008	MD	0	0.01	0.02	0.01	0.02
					PM	33.43	27.12	14.55	14.22
					PM10	15.92	12.91	6.93	6.77
					PM2.5	2.39	1.94	1.04	1.02

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Loadout/Shipment System

Crushing

ID	Capacity		e	Control Device		Emissions			
						Uncontrolled		Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
SCR1	5	43,800	0.06	FE	80	0.30	1.31	0.06	0.26
SCR2	5	43,800	0.06	FE	80	0.30	1.31	0.06	0.26
SCR3	5	43,800	0.06	FE	80	0.30	1.31	0.06	0.26
SCR4	5	43,800	0.06	FE	80	0.30	1.31	0.06	0.26
CR1	1,200	4,800,000	0.06	FE	80	72.00	144.00	14.40	28.80
CR6	900	5,200,000	0.06	FE+PE	90	54.00	156.00	5.40	15.60
					PM	127.20	305.24	20.04	45.44
					PM10	60.57	145.35	9.54	21.64
					PM2.5	9.09	21.80	1.43	3.25

Notes:

1. Transfer points that are set to zero avoid double counting emissions.
2. Crushing and screening emission factors taken from DAQ Guidance of 12/5/2000 & General Permits Doc: i.e. Air Pollution Engineering Manual and References.
3. PM10 and PM2.5 emissions prorated based on the following:

Particle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor		2.1	14

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Refuse System

Batch or Continuous Drops

Emission Equation AP-42 Section 13.2.4, Aggregate Handling and Storage Piles (January 1995):
e = k * (0.0032)[(U/5)1.3/(M/2)1.4] (lbs/ton)
e = Emissions factor, pound per ton, (lb/ton)
k = Particle size multiplier from AP-42 for particle size < 30 microns
U = Mean wind speed (mph)
M = Material moisture content (%)
Defining transfer point empirical expression variables, where:

e =	?	lb/ton
k =	0.74	dimensionless
U =	7	mph
M =	6.0	%

Calculating transfer point emission factor using equation below:
e = 0.0008 lb/ton

Rounding to = 2
or (as shown) 2

ID	Transfer Capacities[1]		e	Control Device		Emissions Uncontrolled		Emissions Controlled	
	tph	tpy	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP9	500	6,160,000	0.0008	FE	80	0.40	2.46	0.08	0.49
TP10	500	6,160,000	0.0008	FE	80	0.40	2.46	0.08	0.49
TP11	500	6,160,000	0.0008	FE	80	0.40	2.46	0.08	0.49
TP12	500	6,160,000	0.0008	FE	80	0.40	2.46	0.08	0.49
TP12A	500	6,160,000	0.0008	PE	50	0.40	2.46	0.20	1.23
TP12B	500	6,160,000	0.0008	PE	50	0.40	2.46	0.20	1.23
TP13	REMOVED								
TP14	0	0	0.0008	MC	0	0.00	0	0.00	0
TP33	500	6,160,000	0.0008	PE	50	0.40	2.46	0.20	1.23
TP34	500	6,160,000	0.0008	MC	0	0.40	2.46	0.40	2.46
TP65	0	0	0.0008	PE	50	0.00	0	0.00	0
TP66	500	0	0.0008	PE	50	0.40	0	0.20	0
TP67	500	0	0.0008	MC	0	0.40	0	0.40	0
					PM	4.00	19.68	1.92	8.11
					PM10	1.90	9.37	0.91	3.86
					PM2.5	0.29	1.41	0.14	0.58

Notes:
1. Transfer points that are set to zero avoid double counting emissions.
2. PM10 and PM2.5 emissions prorated based on the following:
Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor		2.1	14

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Caterpillar D25-6 Generator Set (Gen Set 1)
Perkins 2450/1800 engine

Fuel Usage	2.44	gallons/hour	Calculated
	17.6	lbs/hr	EPA[2]
	7.2	lbs/gal Diesel Fuel	Constant
Assumed Heating Value of Diesel Fuel:	133,332	Btu/gallon	Constant
HP/hr ×	2,547	= Btu	Constant[(1)]
Maximum Horsepower:	47	hp	EPA[2]
Maximum Fuel Input:	0.12	MMBtu/hour	Calculated
	0.75	kW/hp	Constant
Engine Power	35.05	kW	Calculated
	453.59	gram/lb	Constant

Hours Per Year = 8,760

Regulated Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (g/kW-hr)	Hourly Emissions (lbs/hour)	Annual Emissions (tons/year)
NO_X[2]		7.12	0.55	2.41
CO[2]		1.56	0.12	0.53
SO_X	0.29		0.03	0.13
$PM/PM_{10}/PM_{2.5}$[2]		0.167	0.01	0.04
TOC (VOC)	0.36		0.04	0.18

Hazardous Air Pollutants (HAPS)				
Benzene	9.33E-04		0.0001	0.0004
Toluene	4.09E-04		0.0001	0.0004
Xylenes	2.85E-04		0.0001	0.0004
1,3-Butadiene	3.91E-05		0.00001	0.00005
Formaldehyde	1.18E-03		0.0001	0.0004
Acetaldehyde	7.67E-04		0.0001	0.0004
Acrolein	9.25E-05		0.00001	0.00004
Naphthalene	8.48E-05		0.00001	0.00004
Total HAPS			0.0005	0.0021

Notes:
Emission factors from AP-42 Table 3.3-1(Criteria Pollutants) Table 3.3-2 (HAPS) unless noted.
1. Constant equation from the Field Engineer's Manual Table 3-13.
2. EPA Early Large Engine (Non-road Compression Ignition (NRCI) and On-Highway Heavy Duty - Diesel and Gasoline. 2011 and Earlier) 2007 MY (zip file) Engine Family 7PKXL03.3DC1.
http://www.epa.gov/otaq/certdata.htm#largeng

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Magnetite Plant Emissions

Source Description	Regulated Air Pollutant	Uncontrolled Emissions		Controlled Emissions	
		lb/hour	tpy	lb/hour	tpy
Transfer Points	PM	26.32	42.91	9.95	16.09
	PM10	12.54	20.43	4.74	7.66
	PM2.5	1.88	3.06	0.71	1.15
Screen	PM	0.75	1.25	0.15	0.25
	PM10	0.26	0.44	0.05	0.09
	PM2.5	0.05	0.09	0.01	0.02
Dryer	PM	591.00	443.25	0.59	0.44
	PM10	360.00	270.00	0.36	0.27
	PM2.5	42.21	31.66	0.04	0.03
Total Material Handling	PM	618.07	487.41	10.69	16.79
	PM10	372.80	290.87	5.15	8.02
	PM2.5	44.15	34.81	0.76	1.20

	Pollutant	Uncontrolled Emissions		Controlled Emissions	
		lb/hour	tpy	lb/hour	tpy
Combustion	NO_x	12.61	4.72	12.61	4.72
	SO_2	29.94	29.42	29.94	29.42
	CO	4.14	2.44	4.14	2.44
	PM	1.43	2.03	1.43	2.03
	PM_{10}	1.83	1.27	1.83	1.27
	TOC/VOC	8.75	1.22	8.75	1.22
	Benzene	0.4346	0.0326	0.4346	0.0326
	Toluene	0.1547	0.0128	0.1547	0.0128
	Xylenes	0.0536	0.0040	0.0536	0.0040
	Formaldehyde	0.0067	0.0067	0.0067	0.0067
	Ethylbenzene	0.0067	0.0005	0.0067	0.0005

Vehicle Activity Paved	PM	9.86	0.99	1.48	0.15
	PM10	1.96	0.20	0.29	0.03
	PM2.5	0.48	0.05	0.07	0.01

Magnetite Plant calculations are from the application for permit R13-1975D except for PM2.5 which was added by POTESTA.

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Magnetite System
Materials Handling Operations

Material Transfer before Thermal Dryer[1]

Based on Engineering Estimate

$$E = \frac{k(0.0018)(s/5)(u/5)(H/5)}{(M/2)^2(Y/6)^{0.33}}$$

Where
- k = particle size multiplier
  - = 1
- s = material silt content
  - = 84.82% based on supplier specifications
- u = mean wind speed
  - = 7 mph based on DEP allowance in nonmetallic minerals general permit
- H = drop height
  - = 3 ft for TP-MP1
  - = 1 ft for TP-MP1A, TP-MP2, and TP-MP2A
  - = 5 ft for TP-MP3
  - = 2.5ft for TP-MP4
  - = 0.5 ft for TP-MP4A
  - = 2 ft for TP-MP4B
- M = material moisture content
  - = 10% based on supplier specifications
  - = 1% after dryer
- Y = dumping device capacity
  - = 3 yd for TP-MP1
  - = 0.2 yd for TP-MP2 through TP-MP8

E for TP-MP1= $\frac{1*0.0018*(84.82/5)(7/5)(3/5)}{(10/2)^2(3/6)^{0.33}}$
= $\frac{0.02565}{19.88841}$
= 0.00129 lb/ton

E for TP-MP1A, MP2, & MP2A= $\frac{1*0.0018*(84.82/5)(7/5)(1/5)}{(10/2)^2(0.2/6)^{0.33}}$
= $\frac{0.00855}{8.110537}$
= 0.001054 lb/ton

E for TP-MP3= $\frac{1*0.0018*(84.82/5)(7/5)(10/5)}{(10/2)^2(0.2/6)^{0.33}}$
= $\frac{0.042749}{8.110537}$
= 0.005271 lb/ton

E for TP-MP4= $\frac{1*0.0018*(84.82/5)(7/5)(2.5/5)}{(10/2)^2(0.2/6)^{0.33}}$
= $\frac{0.021375}{8.110537}$
= 0.002635 lb/ton

E for TP-MP4A= $\frac{1*0.0018*(84.82/5)(7/5)(0.5/5)}{(10/2)^2(0.2/6)^{0.33}}$
= $\frac{0.004275}{8.110537}$
= 0.000527 lb/ton

E for TP-MP4B= $\frac{1*0.0018*(84.82/5)(7/5)(2/5)}{(10/2)^2(0.2/6)^{0.33}}$
= $\frac{0.0171}{8.110537}$
= 0.002108 lb/ton

E for TP-MP9 = $\frac{1*0.0018*(84.82/5)(7/5)(3/5)}{(10/2)^2(0.2/6)^{0.33}}$
= $\frac{0.02565}{8.110537}$
= 0.003162 lb/ton

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Magnetite System
Materials Handling Operations

Material Transfer before Thermal Dryer[1]
Material Transfer after Thermal Dryer[1]
E for TP-MP4C to TP-MP8 based on AP-42 - Chapter 11.24 - Metallic Minerals Processing, Table 11.24-2, Low Moisture Ore

Emission Summary

ID	Transfer Rate (ton/hr)	Emission Factor (lb/ton)	Emissions Uncontrolled (lb/hr)	Emissions Uncontrolled (TPY)[2]	Emissions Controlled (lb/hr)	Emissions Controlled (TPY)[2]
TPMP1	75	0.0013	0.10	0.06	0.05	0.032
TPMP1A	75	0.0011	0.08	0.05	0.04	0.026
TPMP2	75	0.0011	0.08	0.05	0.04	0.026
TPMP2A	75	0.0011	0.08	0.05	0.04	0.026
TPMP3	75	0.0053	0.40	0.26	0.08	0.053
TPMP4	30	0.0026	0.08	0.13	0.02	0.026
TPMP4A	30	0.0005	0.02	0.03	0.01	0.005
TPMP4B	30	0.0021	0.06	0.11	0.01	0.021
TPMP4C	30	0.12	3.60	6.00	0.72	1.20
TPMP4D	30	0.12	3.60	6.00	0.72	1.20
TPMP4E	30	0.12	3.60	6.00	0.72	1.20
TPMP4F	30	0.12	3.60	6.00	3.60	6.00
TPMP4G	30	0.12	3.60	6.00	3.60	6.00
TPMP5	30	0.12	3.60	6.00	0.04	0.06
TPMP6						
TPMP7	30	0.12	3.60	6.00	0.04	0.06
TPMP8						
TPMP9	75	0.0032	0.24	0.16	0.24	0.16
Total Transfer Emissions PM			26.32	42.91	9.95	16.09
PM10			12.54	20.43	4.74	7.66
PM2.5			1.88	3.06	0.71	1.15

1. Consideration was also given to the use of Table 11.24-2 of AP-42, which sets forth a C-Rated emission factor of 0.01 lb/ton based on high-moisture ore for metallic minerals. However, high-moisture ore is defined as 4% weight or greater, whereas the magnetite will have a moisture content of 10%. If a 4% moisture is substituted into the formula above, then the emission factors are very close to 0.01 lb/ton. The use of the formula also accommodates the small drop height to be employed to lower fugitive emissions.
2. Based on 100,000 TPY
3. Worksheet from the applications for R13-1975E & F except for PM10/PM2.5 emissions which were added by Potesta..
4. PM10 and PM2.5 emissions prorated based on the following:
   Particle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
Conversion Factor	0.74	0.35	0.053
		2.1	14

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Magnetite Screening SMP4

e[1] lb/T	
PM	PM10
0.025	0.0087

Rounding to = 2

ID	Capacity		Control Device		Emissions			
					Uncontrolled		Controlled	
	tons/hour	tons/year	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	30	100,000	FE	80	0.75	1.25	0.15	0.25
PM10	30	100,000	FE	80	0.26	0.44	0.05	0.09
				PM2.5	0.05	0.09	0.01	0.02

Notes:
1. Screening emission factors for PM and PM10 from AP42 Fifth Edition Table 11.19.2-2.
2.PM2.5 emissions prorated based on the following:
Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor	2.1	14	

Mammoth Preparation Plant
Jacks Branch Coal Company

POTESTA & ASSOCIATES, INC.
Project No. 0101-14-0046

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Magnetite Dryer Burning No. 2 Fuel Oil

Pollutant	Fuel Usage (gal/hr)	Emission Factor (lb/gal)	Emissions (lb/hr)	Emissions (TPY)[1]
NO_x	204	0.02	4.08	4.08
SO_2	204	0.144	29.38	29.38
CO	204	0.005	1.02	1.02
PM	204	0.007	1.43	1.43
PM_{10}	204	0.006	1.22	1.22
TOC/VOC	204	0.003	0.61	0.61
Benzene	204	2.14E-07	0.00004	0.00004
Toluene	204	6.20E-06	0.0013	0.0013
Xylenes	204	1.09E-07	0.00002	0.00002
Formaldehyde	204	3.30E-05	0.007	0.007

PM Emissions from Material Processed in magnetite Dryer

Pollutant	Throughput (ton/hr)	Emission Factor (lb/ton)	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions (TPY)[1]	Controlled Emissions (lb/hr)	Controlled Emissions (TPY)[1]
PM	30	19.7	591.00	443.25	0.59	0.44
PM_{10}	30	12	360.00	270.00	0.36	0.27
$PM_{2.5}$	30		42.21	31.66	0.04	0.03

204 gal/hr * 7.1 lb/gal * 0.0193 mmBtu/lb = 27.9 mmBtu/hr+A1

[1] Based on 2,000 hours per year

Emission Factor Sources:

AP-42, Chapter 1.3 - Fuel Oil Combustion, Tables 1.3.-1, 1.3-4, and
AP-42 - Chapter 11.24 - Metallic Minerals Processing, Table 11.24-2

3. Worksheet from the application for R13-1975D except for PM2.5 emissions which were added by Potesta.
4. PM2.5 emissions prorated based on the following:

Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor		2.1	14

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Thermal Dryer Burning Natural Gas

Pollutant	Maximum Design Heat Input (MMBtu/hr)	Fuel Usage (10^6 ft^3/hr)	Emission Factor at 100% Load (lb/10^6 ft^3)	Emissions (lb/hr)	Emissions (TPY)[1]
NO_X	27.9	0.0274	100	2.74	2.740
CO	27.9	0.0274	84	2.30	2.30
VOC	27.9	0.0274	5.5	0.15	0.15
SO_2	27.9	0.0274	0.6	0.02	0.02
PM_{10}	27.9	0.0274	7.6	0.21	0.21
TOC	27.9	0.0274	11	0.30	0.30
Formaldehyde	27.9	0.0274	0.075	0.002	0.002
Benzene	27.9	0.0274	0.0021	0.00006	0.00006
Butane	27.9	0.0274	2.1	0.06	0.06
Toluene	27.9	0.0274	0.0034	0.0001	0.0001
Pentane	27.9	0.0274	2.6	0.07	0.07

PM Emissions from Material Processed in Thermal Dryer

Pollutant	Throughput (ton/hr)	Emission Factor (lb/ton)	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions (TPY)[1]	Controlled Emissions (lb/hr)	Controlled Emissions (TPY)[1]
PM	30	19.7	591.00	443.25	0.59	0.44
PM_{10}	30	12	360.00	270.00	0.36	0.27
PM2.5	30		42.21	31.66	0.04	0.03

[1] Based on 2,000 hours per year

Emission Factor Sources:

AP-42, Chapter 3.2 - Natural Gas Combustion, Tables .3.-1 and 3.3-2
AP-42 - Chapter 11.24 - Metallic Minerals Processing, Table 11.24-2

3. Worksheet from the application for R13-1975D except for PM2.5 emissions which were added by Potesta.
4. PM2.5 emissions prorated based on the following:

Partlicle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

PM	PM10	PM2.5
0.74	0.35	0.053
Conversion Factor	2.1	14

By: CCS
Date: 05/16/12

By: PEW
Date: DRAFT

Excavator Diesel Engine SMP2

Pollutant	Maximum Horsepower (hp)	Emission Factor at 100% Load (lb/hp-hr)	Emissions (lb/hr)	Emissions (TPY)[1]
NO_X	275	0.031	8.53	0.64
CO	275	0.00668	1.84	0.14
VOC	275	0.0296	8.14	0.61
SO_2	275	0.00205	0.56	0.04
PM_{10}	275	0.0022	0.61	0.05
Aldehydes	275	0.000463	0.13	0.01
Benzene	275	0.00158	0.43	0.03
Ethylbenzene	275	0.0000245	0.007	0.001
Toluene	275	0.000558	0.15	0.01
Xylene	275	0.000195	0.05	0.004

1 Based on 150 hours per year
150 hr* 750 ton/hr = 112,500 tons, which exceeds 100,000 tons needed.
1) Worksheet from the application for R13-1975D.

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Stockpiles
Defining open stockpile empirical expression variables for equation below, where:

	Coal	
e =	?	lb/day/acre
s =	1	%
p =	157	days
f =	10	%
e =	**0.67**	lb/day/acre

E = 1.7(s/1.5)(365-p/235)(f/15)

Magnetite

Where
- s = material silt content
  - = 84.82% based on supplier specifications for magnetite
  - = 1% for coal according to prior permit applications
- p = number of days with ≥ 0.01 in of precipitation per year
  - = 157 based on DEP allowance in nonmetallic minerals general permit
- f = percentage of time unobstructed wind speed > 12 mph at mean pile height
  - = 20%

E = 1.7*(84.82/1.5)(365-157/5)(20/15)
= 113.45 lb/day/acre for magnetite

Rounding to = 2

Stockpile ID	Area	Control Device		Emissions			
				Uncontrolled		Controlled	
	(square feet)	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
SP1	75,000	N	0	0.05	0.21	0.05	0.21
OS1	56,192	N	0	0.04	0.16	0.04	0.16
OS2	320,000	N	0	0.21	0.90	0.21	0.90
OS3	480,000	N	0	0.31	1.35	0.31	1.35
OS4	80,150	N	0	0.05	0.22	0.05	0.22
OS5	58,750	N	0	0.04	0.16	0.04	0.16
ROS1	62,800	N	0	0.04	0.18	0.04	0.18
CSMP1	3,750	FE	80	0.41	1.78	0.09	0.36
CSMP2	6,000	WS-FE	75	0.65	2.85	0.16	0.71
			PM	1.80	7.81	0.99	4.25
			PM10	0.86	3.72	0.47	2.02
			PM2.5	0.13	0.56	0.08	0.30

Emission Equation AP-42 Section 11.2.3, Fugitive Emissions (May 1983):

e = 1.7 (s/1.5) ((365-p)/235) (f/15)
e = Emissions factor, pound per day per acre, (lb/day/acre)
s = Silt content of stockpiled material (%)
p = Number of days with at least 0.254 mm (0.01 in.) of precipitation per year
f = Time wind speed exceeds 12 mph (%)

Particle size multipliers (k) AP-42 Section 13.2.4-4 (11/06).

	PM	PM10	PM2.5
	0.74	0.35	0.053
Conversion Factor	2.1	14	

Mammoth Preparation Plant
Jacks Branch Coal Company

POTESTA & ASSOCIATES, INC.
Project No. 0101-14-0046

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Vehicular Activity
Unpaved Haulroads

Emission factor equation:
$E = k(s/12)^a (W/3)^b((365-p)/365)$
From *AP-42 Fifth Edition*, Section 13.2.2, Fugitive Sources

	PM	PM10	PM2.5	
E =	?	?	?	lb/VMT
k =	4.9	1.5	0.15	particle size multiplier
a =	0.7	0.9	0.9	constant
b =	0.45	0.45	0.45	constant
s =	10	10	10	% silt in road surface
Wraw =	37.5	37.5	37.5	mean vehicle weight
Wclean =	37.5	37.5	37.5	mean vehicle weight
Wendloader =	105.0	105.0	105.0	mean vehicle weight
p =	157	157	157	# days with 0.01" rain
E_{raw} =	**7.66**	**2.26**	**0.23**	lb/VMT
E_{clean} =	**7.66**	**2.26**	**0.23**	lb/VMT
$E_{endloader}$ =	**12.17**	**3.59**	**0.36**	lb/VMT

Coal Trucks			
	Vehicle Wt	Gross Wt	Load Wt
Raw Coal (Upstream)	15	60	45
Raw/Direct Coal (Downstream)	15	60	45
Clean Coal (Downstream)	15	60	45
2 North	15	60	45
Endloader	100	110	10
		Tons/Hr	Tons/Yr
Raw Coal (Upstream)		1,000	4,000,000
Raw/Direct Coal (Downstream)		1,200	4,800,000
Clean Coal (Downstream)		1,200	
2 North		2,000	500,000
Endloader		2,600	5,600,000
		Rounding to =	2

Vehicular Traffic ID	Miles/Trip (miles)	Number of Trips/Hour (trips/hour)	Number of Trips/Year (trips/year)	Control Device Type	Control Device Effic(%)	PM Uncontrolled (lb/hr)	PM Uncontrolled (tpy)	PM Controlled (lb/hr)	PM Controlled (tpy)
Raw/Direct Coal	0.45	27	106,667	HR-WS	70	93.07	183.84	27.92	55.15
Clean Coal (Downstream)	0.45	27	0	HR-WS	70	93.07	0.00	27.92	0.00
2 North	4.0	45	11,111	HR-WS	70	2,190.60	270.44	657.18	81.13
Endloader	1.0	1	8,760	HR-WS	70	12.17	53.30	3.65	15.99
					Total	2,388.91	507.58	716.67	152.27

Vehicular Traffic ID	Miles/Trip (miles)	Number of Trips/Hour (trips/hour)	Number of Trips/Year (trips/year)	Control Device Type	Control Device Effic(%)	PM10 Uncontrolled (lb/hr)	PM10 Uncontrolled (tpy)	PM10 Controlled (lb/hr)	PM10 Controlled (tpy)
Raw/Direct Coal	0.45	27	106,667	HR-WS	70	27.46	54.24	8.24	16.27
Clean Coal (Downstream)	0.45	27	0	HR-WS	70	27.46	0	8.24	0
2 North	4.0	45	11,111	HR-WS	70	646.20	79.78	193.86	23.93
Endloader	1.0	1	8,760	HR-WS	70	3.59	15.72	1.08	4.72
					Total	704.71	149.74	211.42	44.92

Vehicular Traffic ID	Miles/Trip (miles)	Number of Trips/Hour (trips/hour)	Number of Trips/Year (trips/year)	Control Device Type	Control Device Effic(%)	PM2.5 Uncontrolled (lb/hr)	PM2.5 Uncontrolled (tpy)	PM2.5 Controlled (lb/hr)	PM2.5 Controlled (tpy)
Raw/Direct Coal	0.45	27	106,667	HR-WS	70	2.79	5.52	0.84	1.66
Clean Coal (Downstream)	0.45	27	0	HR-WS	70	2.79	0	0.84	0
2 North	4.0	45	11,111	HR-WS	70	64.80	8.00	19.44	2.40
Endloader	1.0	1.0	8,760	HR-WS	70	0.36	1.58	0.11	0.47
					Total	70.74	15.10	21.23	4.53

Note: Raw/Direct and clean coal will not exceed 4,800,000 tons combined.

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

Vehicular Activity
Paved Haulroads

Source	Number of Trucks/Hour	Number of Trucks/Year	Miles Per Trip	Emission Factor [1] (lb/VMT)	Control Device	Control Efficiency (%)	PM Uncontrolled (lb/hr)	PM Uncontrolled (tpy)	PM Controlled (lb/hr)	PM Controlled (tpy)
Raw Coal (Upstream)	22	88,889	0.70	2.63	WT/WC	85	40.50	81.82	6.08	12.27
Raw /Direct (Downstream)	27	106,667	0.57	2.63	WT/WC	85	40.48	79.95	6.07	11.99
Clean	27	0	0.57	2.63	WT/WC	85	40.48	0	6.07	0
Magnetite	10	2,000	0.28	3.52	WT/WC	85	9.86	0.99	1.48	0.15
						Total	131.32	162.76	19.70	24.41

Source	Number of Trucks/Hour	Number of Trucks/Year	Miles Per Trip	Emission Factor [1] (lb/VMT)	Control Device	Control Efficiency (%)	PM10 Uncontrolled (lb/hr)	PM10 Uncontrolled (tpy)	PM10 Controlled (lb/hr)	PM10 Controlled (tpy)
Raw Coal (Upstream)	22	88,889	0.70	0.53	WT/WC	85	8.16	16.49	1.22	2.47
Raw /Direct (Downstream)	27	106,667	0.57	0.53	WT/WC	85	8.16	16.11	1.22	2.42
Clean	27	0	0.57	0.53	WT/WC	85	8.16	0	1.22	0
Magnetite	10	2,000	0.28	0.70	WT/WC	85	1.96	0.20	0.29	0.03
						Total	26.44	32.80	3.95	4.92

Source	Number of Trucks/Hour	Number of Trucks/Year	Miles Per Trip	Emission Factor [1] (lb/VMT)	Control Device	Control Efficiency (%)	PM2.5 Uncontrolled (lb/hr)	PM2.5 Uncontrolled (tpy)	PM2.5 Controlled (lb/hr)	PM2.5 Controlled (tpy)
Raw Coal (Upstream)	22	88,889	0.70	0.13	WT/WC	85	2.00	4.04	0.30	0.61
Raw /Direct (Downstream)	27	106,667	0.57	0.13	WT/WC	85	2.00	3.95	0.30	0.59
Clean	27	0	0.57	0.13	WT/WC	85	2.00	0	0.30	0
Magnetite	10	2,000	0.28	0.17	WT/WC	85	0.48	0.05	0.07	0.01
						Total	6.48	8.04	0.97	1.21

Emission Factors[1]

	TSP	PM_{10}	$PM_{2.5}$	
k =	0.011	0.0022	0.00054	dimensionless, particle size multiplier
sL =	8	8	8	surface material silt content (g/m^2)
$W_{raw/direct/clean}$ =	37.5	37.5	37.5	tons, mean vehicle weight
W_{mag}	50	50	50	tons, mean vehicle weight
P =	157	157	157	no. days/year with 0.01 in of rain
N =	365	365	365	days/year
$e_{raw/direct/clean}$ =	**2.63**	**0.53**	**0.13**	**lb/VMT truck**
e_{mag} =	**3.52**	**0.70**	**0.17**	**lb/VMT truck**

E = [k * (sL)^0.91 * (W)^1.02] * (1 - (P/4*N) = lb / Vehicle Mile Traveled (VMT)
1. AP42, 13.2.1.
2. Magnetite information from the application for R13-1975D.

By: CCS
Date: 12/19/2014

By: PEW
Date: 01/07/15

FCA Storage Tank

From TABLE 45-13B, DE MINIMIS SOURCES:

58. Storage vessels having less than 10,567 gallons capacity containing petroleum or organic liquids with a vapor pressure of 1.5 psia or less at storage temperature, provided that the emissions from all such organic liquid storage tanks, in the aggregate, are less than 2 tons per year for hazardous air pollutants or VOCs.

The freeze control agent (FCA) storage tank will contain a maximum 10,000 gallons of Freedom Industries FCA-2500 or FCA-1000 freeze-proofing agents. FCA-2500 contains up to 10 wt% diethylene glycol and/or propylene glycol (VOC). FCA-1000 contains no VOC

By Freedom Industries MSDS (FCA-2500 and FCA-1000 see Attachment D):

Vapor Pressure =	17.5	mmHg @ 68°F	×	0.0193	psi/mmHg	=	0.34	psia

Spraying of Freeze Control Agents

Freeze control agents (FCA) are applied to coal being loaded per contract with the receiver. FCA-2500 contains 1-10% diethylene glycol and/or propylene glycol in water and glycerin. The spraying method used does not employ spray atomization nozzles (as coatings are applied) and for FCA-2500 the vapor pressures of the VOC ingredients (propylene glycol = 0.0025 psia @ 77°F; diethylene glycol = 0.019 psia @ 198°F) and evaporation rates are very low. VOC emissions are expected to be negligible. There are no regulated components which cause air emissions in FCA-1000.

ATTACHMENT O

MONITORING, RECORDKEEPING, REPORTING, AND TESTING PLANS

ATTACHMENT O

MONITORING, RECORDKEEPING, REPORTING AND TESTING PLANS

There are no changes requested to the existing monitoring, recordkeeping, reporting, and testing as required by permit R13-1975F.

ATTACHMENT P

PUBLIC NOTICE

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Jack's Branch Coal Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality to modify Permit R13-1975F for the Mammoth Coal Preparation Plant to include as-built equipment changes, proposed refuse conveyors, and to recalculate the facility potential to emit. The facility is located off of U.S. Route 60 near Montgomery, in Kanawha County, West Virginia. The latitude and longitude coordinates are: 38.1825, -81.3422.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be: PM of 373.35 tons per year (tpy) of which 180.93 tpy are fugitive; PM10 of 143.89 tpy of which 51.86 tpy are fugitive; PM2.5 of 20.94 tpy of which 6.04 tpy are fugitive; NOx of 7.13 tpy; CO of 2.97 tpy; SOx of 29.55 tpy; VOC of 1.40 tpy; and Total HAPs of 0.06 tpy.

The facility is operational. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the **(Insert Date)** day of January, 2015.

By: Jack's Branch Coal Company
Craig Boggs
Vice President
PO Box 150
Charleston, West Virginia 25036