



Tipane, Frederick <frederick.tipane@wv.gov>

Re: [EXTERNAL] Harrison Power Station Responsible official

1 message

Tipane, Frederick <frederick.tipane@wv.gov>
To: "Lefik, James A" <jlefik@firstenergycorp.com>

Thu, Sep 25, 2025 at 10:19 AM

Send it to dep.airqualityfees@wv.gov

On Thu, Sep 25, 2025 at 10:16 AM Lefik, James A <jlefik@firstenergycorp.com> wrote:

Do we also need to submit another form to notify the DAQ? I wasn't sure if there was a separate form specifically for that purpose.

**James Lefik**

Engineer V

office: 724-838-6136 (350-6136) | cell: 724-672-2621

jlefik@firstenergycorp.com

800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

From: Tipane, Frederick <frederick.tipane@wv.gov>**Sent:** Thursday, September 25, 2025 10:14 AM**To:** Lefik, James A <jlefik@firstenergycorp.com>**Subject:** Re: [EXTERNAL] Harrison Power Station Responsible official

External Sender, use caution with links/attachments. Click 'Report Message' in Outlook if suspicious.

Thanks!

On Thu, Sep 25, 2025 at 10:13 AM Lefik, James A <jlefik@firstenergycorp.com> wrote:

kellys@firstenergycorp.com**James Lefik**

Engineer V

office: 724-838-6136 (350-6136) | cell: 724-672-2621

jlefik@firstenergycorp.com

800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

From: Tipane, Frederick <frederick.tipane@wv.gov>
Sent: Thursday, September 25, 2025 10:10 AM
To: Lefik, James A <jlefik@firstenergycorp.com>
Subject: [EXTERNAL] Harrison Power Station Responsible official

External Sender, use caution with links/attachments. Click 'Report Message' in Outlook if suspicious.

Jim,

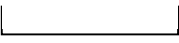
I take it from your comments regarding Sean P. Kelly being the new Director at the the Harrison Plant for the Rule 2 Monitoring Plan, that he is the new Responsible Official. Can you provide me with his email address?

Also, has the DAQ been notified of the change in RO?

Thanks,

Fred

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Frederick Tipane

Division of Air Quality

601 57th Street, SE

Charleston, WV 25304
(304) 414-1910

frederick.tipane@wv.gov

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Tipane, Frederick <frederick.tipane@wv.gov>

Re: [EXTERNAL] Harrison Power Station Responsible official

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Tipane, Frederick <frederick.tipane@wv.gov>
To: "Lefik, James A" <jlefik@firstenergycorp.com>

Thu, Sep 25, 2025 at 10:16 AM

I believe it can be done in a letter.

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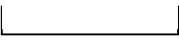
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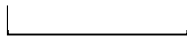
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Tipane, Frederick <frederick.tipane@wv.gov>

Re: Comments to Harrison Pre-Draft

1 message

Tipane, Frederick <frederick.tipane@wv.gov>
 To: "Lefik, James A" <jlefik@firstenergycorp.com>

Thu, Sep 25, 2025 at 9:27 AM

Good Morning Jim,

As we discussed on our telephone conversation yesterday, please find below the responses to your Pre-Draft Comments. The ad for the public comment will most likely be published next week.

Fred

On Wed, Sep 24, 2025 at 7:04 AM Lefik, James A <jlefik@firstenergycorp.com> wrote:

Good morning, Fred,

Here are the suggested revisions that we could see in the pre-draft permit. Thanks for the opportunity to comment ahead of the official draft. I meant to send this to you by yesterday's deadline but forgot, sorry about that!

Page 22 of 118, Condition 3.7.2, Non-Applicable Requirements

Add 40 CFR Part 68, Section 112(r) to the exemption list – There are no substances on site at the Harrison Power Station that exceed the applicable thresholds under the Accidental Release provisions.

Response:

Condition 3.1.8. of the permit is a conditional requirement which states “should this stationary source, as defined in 40 C.F.R. §68.3 become subject to Part 68” (i.e., 40 CFR 68). The language in this condition in the Title V renewal for the Harrison Power Station implies that the facility is not subject to 40 CFR 68 and does not have to submit a risk management plan (RMP). Should the facility trigger the thresholds under Accidental Release and become subject to Part 68 then an RMP is required to be submitted. Additionally, the WVDAQ does not have delegation for Part 68 and therefore does not review applicability or make determinations on whether a facility is subject to Part 68 and must submit an RMP. Therefore, 40 CFR Part 68, Section 112(r) has not been added to the list of requirements in condition 3.7.2.

Page 36 of 118, Condition 4.2.11

This condition references a potential amendment to the MATS rule that is under consideration to be repealed. Language should be added to note this possibility that if the MATS rule and associated revision to PM limits and requirements are repealed, PM CPMS shall continue to be the methodology for filterable PM compliance, and PM CEMS would not be required.

Response:

After much consideration and upon recommendation from the US EPA in a similar request previously submitted from another source, it has been decided not to include additional language in the permit. The Title V permit should contain only the applicable requirements that are currently in effect at the time of issuance of the permit. The permit can be revised to include any changes that may result from a revised MATS Rule.

From the draft “Fact Sheet,” Page 5 of 7:

- Conditions 4.1.3.b., 4.1.20.a. (4.1.21.a. CP), 4.2.11. (4.2.12. CP), 4.3.11., 4.3.13. - Updated the language in these conditions to reflect the revised requirements in the current version of 40 CFR 63 Subpart UUUUU.

Response:

See response for page 36 of 118, condition 4.2.11.

Page 40 of 118, Condition 4.3.11

See comment above – possible repeal of current MATS rule should be noted, but draft still references current MATS Rule

To use the results of performance testing to determine compliance with the applicable emission limits in Table 2 to 40 CFR 63 Subpart UUUUU, proceed as in 40 CFR §§63.10007(e)(1) through (3). If you use quarterly performance testing for coal-fired EGUs to measure compliance with PM emissions limit in Table 2 to Subpart UUUUU, you demonstrate continuous compliance by calculating the results of the testing in units of the applicable emissions standard. On or after July 6, 2027, you may not use quarterly performance testing for filterable PM compliance demonstrations.

Response:

See response for page 36 of 118, condition 4.2.11.

Page 38 of 118, Condition 4.3.1

Unit 3 has recently been tested and results are as follows:

Run 1 = 53.01 lbs/hr

Run 2 = 53.76 lbs/hr

Run 3 = 69.88 lbs/hr

Average = 58.88 lbs/hr (WV Reg 2 limit is 316.25 lbs/hr)

Please revise Condition 4.3.1 as follows:

Compliance tests were performed on March 5, 2024, for Unit B1, January 23, 2024, for Unit B2 and **August 5, 2025**, ~~November 9, 2022~~ for Unit B3 and resulted in mass emission rates less than 50% of the weight emission standard for each unit. Test summary page attached to this email FYI.

Response:

At the time of the writing of the Pre-draft permit, the most recent Unit 3 approved test results were included. Since that time, the August 5 tests results have been received by the WVDAQ. Therefore, this condition has been revised as requested.

Page 82 of 118, Appendix A, 45CSR2 and 45CSR10 Monitoring Plan

Revise the Facility Contact from "Gary J. Dinzeo, Director, Harrison Plant" to "**Sean P. Kelly, Director, Harrison Plant**"

Response:

Revised as requested.



James Lefik

Engineer V

office: 724-838-6136 (350-6136) | cell: 724-672-2621

jlefik@firstenergycorp.com

800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

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Tipane, Frederick <frederick.tipane@wv.gov>

Comments to Harrison Pre-Draft

1 message

Lefik, James A <jlefik@firstenergycorp.com>

Wed, Sep 24, 2025 at 7:04 AM

To: "Frederick Tipane (Frederick.Tipane@wv.gov)" <Frederick.Tipane@wv.gov>

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Page 82 of 118, Appendix A, 45CSR2 and 45CSR10 Monitoring Plan

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James Lefik

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Harrison Unit 3 Reg2 fPM Test (8-5-25).docx

16K

SUMMARY OF TEST RESULTS

The following presents the results of the emissions tests performed for Monongahela Power Company at the Harrison Station on Unit 3.

PARTICULATE EMISSIONS METHOD 5B

Run #	Test Date	lb/dscf	lbs/hr	lb/mmBtu
1	8/5/2025	5.01E-07	53.01	0.008
2	8/5/2025	5.15E-07	53.76	0.008
3	8/5/2025	6.74E-07	69.88	0.011
Avg.		5.63E-07	58.88	0.009

The testing was in compliance with West Virginia regulation where sampling follows a wet scrubbing device. The temperature of the primary filter, initial filter tare and over temperature may be adjusted to a maintained temperature of up to 250°F.

VISUAL EMISSIONS

Method 9

Run #	Test Date	Run Time	% Opacity
1	8/5/2025	7:20 - 7:30	8.53%
2	8/5/2025	9:55 - 10:05	8.38%
3	8/5/2025	12:10 - 12:20	9.44%

The complete results can be found on the computer printouts following.



Tipane, Frederick <frederick.tipane@wv.gov>

RE: [EXTERNAL] Harrison Power Station Title V Renewal Pre-Draft/Proposed Permit R30-03300015-2025

1 message

Lefik, James A <jlefik@firstenergycorp.com>
To: "Tipane, Frederick" <frederick.tipane@wv.gov>

Thu, Sep 11, 2025 at 8:58 AM

Good morning, Fred,

Thank you for giving us the opportunity to review this version. I will get back to you with any comments we may have on our end.

Thanks,

Jim

**James Lefik**

Engineer V

office: 724-838-6136 (350-6136) | cell: 724-672-2621

jlefik@firstenergycorp.com

800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

From: Tipane, Frederick <frederick.tipane@wv.gov>**Sent:** Wednesday, September 10, 2025 2:35 PM**To:** Lefik, James A <jlefik@firstenergycorp.com>**Subject:** [EXTERNAL] Harrison Power Station Title V Renewal Pre-Draft/Proposed Permit R30-03300015-2025

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Good afternoon Jim,

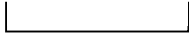
Please find attached, the Pre-Draft/Proposed Title V renewal permit (R30-03300015-2025) and fact sheet for the Harrison Power Plant.

Please let me know if you have any issues, comments or questions as soon as possible but no later than Tuesday, September 23, 2025.

Feel free to contact me if you wish to discuss any issues.

Fred

--



Frederick Tipane

Division of Air Quality

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(304) 414-1910

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Harrison Power Station Title V Renewal Pre-Draft/Proposed Permit R30-03300015-2025

1 message

Tipane, Frederick <frederick.tipane@wv.gov>
To: James A Lefik <jlefik@firstenergycorp.com>

Wed, Sep 10, 2025 at 2:34 PM

Good afternoon Jim,

Please find attached, the Pre-Draft/Proposed Title V renewal permit (R30-03300015-2025) and fact sheet for the Harrison Power Plant.

Please let me know if you have any issues, comments or questions as soon as possible but no later than Tuesday, September 23, 2025.

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2 attachments



Pre-DPPermit R30-03300015-2025.docx
2394K



Pre-DPFactSheet R30-03300015-2025.docx
96K



Tipane, Frederick <frederick.tipane@wv.gov>

Re: [EXTERNAL] Re: Mon Power Harrison Power Station - Attachment H (CAM Plan) and Revised Application Checklist

1 message

Tipane, Frederick <frederick.tipane@wv.gov>
To: "Lefik, James A" <jlefik@firstenergycorp.com>

Wed, May 7, 2025 at 7:45 AM

No problem with the font. At a quick glance, I can read everything ok. As long as the differences are noted, all three units on the same form are ok since the plan is basically the same for all three. Once I start processing the renewal permit, if I have any questions or run across any problems, I'll let you know.

Fred

On Wed, May 7, 2025 at 7:38 AM Lefik, James A <jlefik@firstenergycorp.com> wrote:

That form was tough to use to get the font sizes to stay consistent – I hope that isn't a problem? I also put all three units on the same form since all three CAM requirements are the same, except for the minimum ESP power levels as indicated.

Thanks!

**James Lefik**

Engineer V

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800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

From: Tipane, Frederick <frederick.tipane@wv.gov>**Sent:** Wednesday, May 7, 2025 7:23 AM**To:** Lefik, James A <jlefik@firstenergycorp.com>**Subject:** [EXTERNAL] Re: Mon Power Harrison Power Station - Attachment H (CAM Plan) and Revised Application Checklist

External Sender, use caution with links/attachments. Click 'Report Message' in Outlook if suspicious.

Received, thank you Jim for your quick response.

Fred

On Tue, May 6, 2025 at 7:27 PM Lefik, James A <jlefik@firstenergycorp.com> wrote:

Fred,

Per your request, attached are Attachment H – Compliance Assurance Monitoring (CAM) Plan, and a revised checklist showing the next to last box checked to indicate the inclusion of this CAM Plan information.

Let me know if you require additional information.

Thank you,

Jim

James Lefik

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800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

From: Tipane, Frederick <frederick.tipane@wv.gov>

Sent: Tuesday, May 6, 2025 7:50 AM

To: Dinzeo, Gary J <gdinzeo@firstenergycorp.com>; Lefik, James A <jlefik@firstenergycorp.com>

Subject: [EXTERNAL] Completeness Determination, Harrison Power Station, Application No. R30-03300015-2025

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Your Title V renewal application for a permit to operate the above referenced facility was received by this Division on May 1, 2025. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield. Although the application is being deemed complete the "Attachment H - Compliance Assurance Monitoring" form for the ESP-1, ESP-2 and ESP-3 was found to be missing. Please submit this form as soon as possible but no later than Tuesday, May 13, 2025.

The applicant has the duty to supplement or correct the application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

The submittal of a complete application shall not affect the requirement that any source have **all preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely

Frederick Tipane

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Frederick Tipane

Division of Air Quality

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To: "Tipane, Frederick" <frederick.tipane@wv.gov>

Tue, May 6, 2025 at 7:27 PM

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Sent: Tuesday, May 6, 2025 7:50 AM

To: Dinzeo, Gary J <gdinzeo@firstenergycorp.com>; Lefik, James A <jlefik@firstenergycorp.com>

Subject: [EXTERNAL] Completeness Determination, Harrison Power Station, Application No. R30-03300015-2025

External Sender, use caution with links/attachments. Click 'Report Message' in Outlook if suspicious.

Your Title V renewal application for a permit to operate the above referenced facility was received by this Division on May 1, 2025. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield. Although the application is being deemed complete the "Attachment H - Compliance Assurance Monitoring" form for the ESP-1, ESP-2 and ESP-3 was found to be missing. Please submit this form as soon as possible but no later than Tuesday, May 13, 2025.

The applicant has the duty to supplement or correct the application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

The submittal of a complete application shall not affect the requirement that any source have all **preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely

Frederick Tipane

--


Frederick Tipane

Division of Air Quality

601 57th Street, SE

Charleston, WV 25304

(304) 414-1910

frederick.tipane@wv.gov

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2 attachments



1a-Renewal Application Completeness Checklist (Rev1).pdf

79K



Attachment H - Harrison CAM Plan.pdf

161K

TITLE V PERMIT APPLICATION CHECKLIST FOR ADMINISTRATIVE COMPLETENESS

A complete application is demonstrated when all the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a Title V permit application. Any submittal will be considered incomplete if the required information is not included.

X	Application signed by a Responsible Official as defined in 45CSR§30-2.38 (“ <i>Section 6: Certification of Information</i> ” page signed and dated)
X	Table of Contents (should be included, but not required for administrative completeness)
X	Facility information
X	Description of process and products, including NAICS and SIC codes, and including alternative operating scenarios
X	Area map showing plant location
X	Plot plan showing buildings and process areas
X	Process flow diagram(s), showing all emission units, control equipment, emission points, and their relationships
X	Identification of all applicable requirements with a description of the compliance status, the methods used for demonstrating compliance, and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the source is not in compliance
X	Listing of all active permits and consent orders (if applicable)
X	Facility-wide emissions summary
X	Identification of Insignificant Activities
X	ATTACHMENT D - Title V Equipment Table completed for all emission units at the facility except those designated as insignificant activities
X	ATTACHMENT E - Emission Unit Form completed for each emission unit listed in the Title V Equipment Table (ATTACHMENT D) and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the emission unit is not in compliance
X	ATTACHMENT G - Air Pollution Control Device Form completed for each control device listed in the Title V Equipment Table (ATTACHMENT D)
X	ATTACHMENT H – Compliance Assurance Monitoring (CAM) Plan Form completed for each control device for which the “Is the device subject to CAM?” question is answered “Yes” on the Air Pollution Control Device Form (ATTACHMENT G)
☐	Confidential Information submitted in accordance with 45CSR31

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at <http://www.epa.gov/ttn/emc/cam.html>

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

- a. The PSEU is located at a major source that is required to obtain a Title V permit;
- b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is **NOT** exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
 - Stratospheric Ozone Protection Requirements.
 - Acid Rain Program Requirements.
 - Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
 - An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).
- c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;
 - d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND
 - e. The PSEU is **NOT** an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

- ☒ **RENEWAL APPLICATION.** **ALL** PSEUs for which a CAM plan has **NOT** yet been approved need to be addressed in this CAM plan submittal.
- ☐ **INITIAL APPLICATION** (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.
- ☐ **SIGNIFICANT MODIFICATION TO LARGE PSEUs.** **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, **Only** address the appropriate monitoring requirements affected by the significant modification.

3) " BACKGROUND DATA AND INFORMATION					
Complete the following table for all PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	^b EMISSION LIMITATION or STANDARD	^c MONITORING REQUIREMENT
Unit B1	Coal-fired Boiler 1 (Stack 1)	fPM	ESP-1	45CSR2-4.1.a; 316.25 lbs/hr	45CSR30-5.1.c; TVOP Condition 4.2.1 ESP secondary voltage and current measured and recorded continuously Calculate & record sum of total power input
Unit B2	Coal-fired Boiler 2 (Stack 2)	fPM	ESP-2	45CSR2-4.1.a; 316.25 lbs/hr	45CSR30-5.1.c; TVOP Condition 4.2.1 ESP secondary voltage and current measured and recorded continuously Calculate & record sum of total power input
Unit B3	Coal-fired Boiler 3 (Stack 3)	fPM	ESP-3	45CSR2-4.1.a; 316.25 lbs/hr	45CSR30-5.1.c; TVOP Condition 4.2.1 ESP secondary voltage and current measured and recorded continuously Calculate & record sum of total power input
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

^a If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

^b Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

^c Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for **EACH** indicator selected for **EACH** PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. If more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation:	4b) Pollutant:	4c) ^a Indicator No. 1:	4d) ^a Indicator No. 2:
Unit B1, B2, and B3	fPM	ESP total secondary power input	
5a) GENERAL CRITERIA Describe the <u>MONITORING APPROACH</u> used to measure the indicators:		ESP secondary voltage and current are measured continuously. The total power (P) input to the ESP = sum of the products of secondary voltage and current in each field.	
^b Establish the appropriate <u>INDICATOR RANGE</u> or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		An excursion will be defined as a three-hour block average ESP secondary power less than 127 kW (Unit B1), 118 kW (Unit B2); 104 kW (Unit B3)	
5b) PERFORMANCE CRITERIA Provide the <u>SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA</u> , such as detector location, installation specifications, and minimum acceptable accuracy:		The secondary voltage and current for each ESP field are directly measured using voltmeters and ammeters instrumentation integrated in the ESP unit.	
^c For new or modified monitoring equipment, provide <u>VERIFICATION PROCEDURES</u> , including manufacturer's recommendations, <u>TO CONFIRM THE OPERATIONAL STATUS</u> of the monitoring:		N/A	
Provide <u>QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES</u> that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		Calibrate, maintain, and operate instrumentation in accordance with manufacturer's specifications.	
^d Provide the <u>MONITORING FREQUENCY</u> :		Secondary voltage/current measured and recorded no less than four times per hour.	
Provide the <u>DATA COLLECTION PROCEDURES</u> that will be used:		The total secondary ESP power input (in kW) is calculated and recorded in an electronic data acquisition system.	
Provide the <u>DATA AVERAGING PERIOD</u> for the purpose of determining whether an excursion or exceedance has occurred:		3-hour block averages	

^a Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

^b Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

^c The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

^d Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for EACH PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:

Units B1, B2 and B3

6b) Regulated Air Pollutant:

Filterable particulate matter (fPM)

7) **INDICATORS AND THE MONITORING APPROACH:** Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Continuously measure and record, no less than four (4) times per hour, the sum of the secondary power calculated from the products of voltage and current measured in the ESP. Minimum power levels were established during TEOM 7000 testing in order to establish the minimum secondary power levels in each unit as follows: Unit B1 = 127 kW; Unit B2 = 118 kW, and Unit B3 = 104 kW. These minimum levels indicate the level at above which the emissions of fPM remain in compliance with the 316.25 lbs/hr limit. An excursion, as defined in 40 CFR Part 64 (CAM), will be defined as any 3-hour block average that falls below these unit-specific total secondary power limits. All instances of excursions will be reported to the Department, as well as periodic reports of results of this continuous monitoring.

8) **INDICATOR RANGES:** Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how EACH indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.
- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.
- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

In an ESP, electric fields are established by applying direct-current voltage across a pair of electrodes, a discharge electrode and a collection electrode. Particulate matter suspended in the gas stream is electrically charged by passing through the electric field around each discharge electrode (the negatively charged electrode). The negatively charged particles then migrate toward the positively charged collection electrodes. The particulate matter is separated from the gas stream by retention on the collection electrode. Particulate matter is removed from the collection plates by shaking or rapping the plates. As a general rule, ESP performance improves as total power input increases. This relationship is true when particulate matter and gas stream properties (such as PM concentration, size distribution, resistivity, and gas flow rate) remain stable and all equipment components (such as rappers, plates, wires, hoppers, and transformer-rectifiers) operate satisfactorily. The secondary voltage drops when a malfunction, such as grounded electrodes, occurs in the ESP. When secondary voltage drops, less particulate is collected. Also, the secondary voltage can remain high but fail to perform its function if the collection plates are not cleaned, or rapped, appropriately. If the collection plates are not cleaned, the current drops. Thus, since the power is the product of the voltage and the current, monitoring power input will provide a reasonable assurance that the ESP is functioning properly. Problems that would be detected by monitoring other parameters individually also will be manifested in the power input. A calculated 3-hour block average ESP power level less than the minimum acceptable level established during the CAM testing will constitute an excursion of the CAM plan. An excursion does not mean that an emission limit violation has occurred; just that the calculated value is outside the established indicator range. In the event of an excursion, a station operator will evaluate the occurrence and determine the procedures necessary to correct the condition. In addition to correction the condition, the operator will also ensure that the following record keeping and reporting requirements are met:

Time of day and duration of any CAM plan excursion and resulting corrective actions will be recorded.

A list of all CAM plan excursions, their durations and corrective actions will be reported in the applicable annual deviation reports as required by the Title V permit. These deviation reports are to be submitted to the Department.



Tipane, Frederick <frederick.tipane@wv.gov>

Completeness Determination, Harrison Power Station, Application No. R30-03300015-2025

1 message

Tipane, Frederick <frederick.tipane@wv.gov>

Tue, May 6, 2025 at 7:50 AM

To: "Gary J. Dinzeo" <gdinzeo@firstenergycorp.com>, James A Lefik <jlefik@firstenergycorp.com>

Your Title V renewal application for a permit to operate the above referenced facility was received by this Division on May 1, 2025. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield. Although the application is being deemed complete the "Attachment H - Compliance Assurance Monitoring" form for the ESP-1, ESP-2 and ESP-3 was found to be missing. Please submit this form as soon as possible but no later than Tuesday, May 13, 2025.

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If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely

Frederick Tipane

--



Frederick Tipane

Division of Air Quality

601 57th Street, SE

9/25/25, 2:00 PM

State of West Virginia Mail - Completeness Determination, Harrison Power Station, Application No. R30-03300015-2025

Charleston, WV 25304
(304) 414-1910
frederick.tipane@wv.gov

Tipane, Frederick <frederick.tipane@wv.gov>

RE: [EXTERNAL] Email address - Harrison Application

1 message

Lefik, James A <jlefik@firstenergycorp.com>
To: "Tipane, Frederick" <frederick.tipane@wv.gov>

Mon, May 5, 2025 at 4:25 PM

Thanks Fred, I assumed that's what happened somewhere.

**James Lefik**

Engineer V

office: 724-838-6136 (350-6136) | cell: 724-672-2621

jlefik@firstenergycorp.com

800 Cabin Hill Drive, Greensburg, PA 15601 | mailstop: G-CH / Greensburg Corporate Center

From: Tipane, Frederick <frederick.tipane@wv.gov>
Sent: Monday, May 5, 2025 3:49 PM
To: Lefik, James A <jlefik@firstenergycorp.com>
Subject: [EXTERNAL] Email address - Harrison Application

External Sender, use caution with links/attachments. Click 'Report Message' in Outlook if suspicious.

Jim,

Just a heads up... I just noticed that you did omit the "g" in your email mail address on the application submittal cover form from where Stephanie probably copied it. When I checked your email address earlier, I had looked at the application "General Form" where it did appear correctly.

Have a good day,

Fred

--

Frederick Tipane

Division of Air Quality

[601 57th Street, SE](#)

9/25/25, 2:00 PM

State of West Virginia Mail - RE: [EXTERNAL] Email address - Harrison Application

Charleston, WV 25304
(304) 414-1910

frederick.tipane@wv.gov

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Tipane, Frederick <frederick.tipane@wv.gov>

Fwd: WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station

1 message

Tipane, Frederick <frederick.tipane@wv.gov>
To: Stephanie R Mink <stephanie.r.mink@wv.gov>

Mon, May 5, 2025 at 3:37 PM

As a follow up, I just noticed that James had left the "g" out of his email address on the application submittal form. Please disregard the previous email.

Sorry for any confusion,
Fred

----- Forwarded message -----

From: **Tipane, Frederick** <frederick.tipane@wv.gov>

Date: Mon, May 5, 2025 at 3:22 PM

Subject: Re: WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station

To: Mink, Stephanie R <stephanie.r.mink@wv.gov>

Hi Stephanie,

I just talked to James Lefik. He was inquiring about whether or not we received the Harrison renewal application because he had not heard anything from us. I told him that you had sent the email out this afternoon. I forwarded it to him since he had not received it. After receiving it (the one I forwarded) and during our conversation, he noticed that the "g" in "energy" was omitted in his email address on the email that you had sent.

I told him that I would touch base with you so that you could update your address book.

Thanks,
Fred

On Mon, May 5, 2025 at 12:30 PM Mink, Stephanie R <stephanie.r.mink@wv.gov> wrote:

RE: Application Status

Monongahela Power Company

Harrison Power Station

Facility ID No. 033-00015

Application No. R30-03300015-2025

Dear Mr. Dinzeo,

Your application for a Title V Permit Renewal for Monongahela Power Company's Harrison Power Station was received by this Division on May 1, 2025, and was assigned to Fred Tipane.

Should you have any questions, please contact the assigned permit writer, Fred Tipane, at 304-926-0499, extension 41910, or Frederick.Tipane@wv.gov.

--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281



Tipane, Frederick <frederick.tipane@wv.gov>

Fwd: WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station

1 message

Tipane, Frederick <frederick.tipane@wv.gov>
To: James A Lefik <jlefik@firstenergycorp.com>

Mon, May 5, 2025 at 3:01 PM

----- Forwarded message -----

From: **Mink, Stephanie R** <stephanie.r.mink@wv.gov>

Date: Mon, May 5, 2025 at 12:30 PM

Subject: WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station

To: <gdinzeo@firstenergycorp.com>, <jlefik@firstenergycorp.com>

Cc: Carrie McCumbers <carrie.mccumbers@wv.gov>, Frederick Tipane <frederick.tipane@wv.gov>

RE: Application Status**Monongahela Power Company****Harrison Power Station****Facility ID No. 033-00015****Application No. R30-03300015-2025**

Dear Mr. Dinzeo,

Your application for a Title V Permit Renewal for Monongahela Power Company's Harrison Power Station was received by this Division on May 1, 2025, and was assigned to Fred Tipane.

Should you have any questions, please contact the assigned permit writer, Fred Tipane, at 304-926-0499, extension 41910, or Frederick.Tipane@wv.gov.

--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281



Mink, Stephanie R <stephanie.r.mink@wv.gov>

WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station

9 messages

Mink, Stephanie R <stephanie.r.mink@wv.gov>

Mon, May 5, 2025 at 12:29 PM

To: gdinzeo@firstenergycorp.com, jlefik@firstenergycorp.com

Cc: Carrie McCumbers <carrie.mccumbers@wv.gov>, Frederick Tipane <frederick.tipane@wv.gov>

RE: Application Status**Monongahela Power Company****Harrison Power Station****Facility ID No. 033-00015****Application No. R30-03300015-2025**

Dear Mr. Dinzeo,

Your application for a Title V Permit Renewal for Monongahela Power Company's Harrison Power Station was received by this Division on May 1, 2025, and was assigned to Fred Tipane.

Should you have any questions, please contact the assigned permit writer, Fred Tipane, at 304-926-0499, extension 41910, or Frederick.Tipane@wv.gov.

--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281

Dinzeo, Gary J <gdinzeo@firstenergycorp.com>

Mon, May 5, 2025 at 12:32 PM

To: "stephanie.r.mink@wv.gov" <stephanie.r.mink@wv.gov>

Your message

To: Dinzeo, Gary J

Subject: [EXTERNAL] WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station

Sent: Monday, May 5, 2025 4:29:56 PM (UTC) Coordinated Universal Time

was read on Monday, May 5, 2025 4:31:50 PM (UTC) Coordinated Universal Time.

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Tipane, Frederick <frederick.tipane@wv.gov>
To: stephanie.r.mink@wv.gov

Mon, May 5, 2025 at 12:47 PM

Your message

To: Tipane, Frederick
Subject: WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station
Sent: 5/5/25, 12:29:56 PM EDT

was read on 5/5/25, 12:47:00 PM EDT

McCumbers, Carrie <carrie.mccumbers@wv.gov>
To: stephanie.r.mink@wv.gov

Mon, May 5, 2025 at 2:00 PM

Your message

To: McCumbers, Carrie
Subject: WV DAQ Permit Application Status for Monongahela Power Company; Harrison Power Station
Sent: 5/5/25, 12:29:56 PM EDT

was read on 5/5/25, 2:00:40 PM EDT

Tipane, Frederick <frederick.tipane@wv.gov>
To: "Mink, Stephanie R" <stephanie.r.mink@wv.gov>

Mon, May 5, 2025 at 3:22 PM

Hi Stephanie,

I just talked to James Lefik. He was inquiring about whether or not we received the Harrison renewal application because he had not heard anything from us. I told him that you had sent the email out this afternoon. I forwarded it to him since he had not received it. After receiving it (the one I forwarded) and during our conversation, he noticed that the "g" in "energy" was omitted in his email address on the email that you had sent.

I told him that I would touch base with you so that you could update your address book.

Thanks,
Fred

[Quoted text hidden]

Tipane, Frederick <frederick.tipane@wv.gov>
To: Stephanie R Mink <stephanie.r.mink@wv.gov>

Mon, May 5, 2025 at 3:37 PM

As a follow up, I just noticed that James had left the "g" out of his email address on the application submittal form.

Please disregard the previous email.

Sorry for any confusion,
Fred

[Quoted text hidden]

Mail Delivery Subsystem <mailer-daemon@googlemail.com>
To: stephanie.r.mink@wv.gov

Tue, May 6, 2025 at 1:39 PM



Delivery incomplete

There was a temporary problem delivering your message to **jlefik@firstenergycorp.com**. Gmail will retry for 46 more hours. You'll be notified if the delivery fails permanently.

[LEARN MORE](#)

The response was:

The recipient server did not accept our requests to connect. For more information, go to <https://support.google.com/mail/answer/7720> [firstenergycorp.com 192.198.80.149: timed out]

Final-Recipient: rfc822; jlefik@firstenergycorp.com

Action: delayed

Status: 4.4.1

Diagnostic-Code: smtp; The recipient server did not accept our requests to connect. For more information, go to <https://support.google.com/mail/answer/7720>

[firstenergycorp.com 192.198.80.149: timed out]

Last-Attempt-Date: Tue, 06 May 2025 10:39:54 -0700 (PDT)

Will-Retry-Until: Thu, 08 May 2025 09:30:33 -0700 (PDT)

 **noname**
3K

Mail Delivery Subsystem <mailer-daemon@googlemail.com>
To: stephanie.r.mink@wv.gov

Wed, May 7, 2025 at 5:40 PM

Delivery incomplete



There was a temporary problem delivering your message to **jlefik@firstenergycorp.com**. Gmail will retry for 18 more hours. You'll be notified if the delivery fails permanently.

[LEARN MORE](#)

The response was:

The recipient server did not accept our requests to connect. For more information, go to <https://support.google.com/mail/answer/7720> [firstenergycorp.com 95.211.189.151: timed out]

Final-Recipient: rfc822; jlefik@firstenergycorp.com

Action: delayed

Status: 4.4.1

Diagnostic-Code: smtp; The recipient server did not accept our requests to connect. For more information, go to <https://support.google.com/mail/answer/7720> [firstenergycorp.com 95.211.189.151: timed out]

Last-Attempt-Date: Wed, 07 May 2025 14:40:23 -0700 (PDT)

Will-Retry-Until: Thu, 08 May 2025 09:30:33 -0700 (PDT)

 **noname**
3K

Mail Delivery Subsystem <mailer-daemon@googlemail.com>
To: stephanie.r.mink@wv.gov

Thu, May 8, 2025 at 1:22 PM



Message not delivered

There was a problem delivering your message to **jlefik@firstenergycorp.com**. See the technical details below.

[LEARN MORE](#)

The response was:

The recipient server did not accept our requests to connect. For more information, go to <https://support.google.com/mail/answer/7720> [firstenergycorp.com 95.211.189.152: timed out]

Final-Recipient: rfc822; jlefik@firstenergycorp.com

Action: failed

Status: 4.4.1

Diagnostic-Code: smtp; The recipient server did not accept our requests to connect. For more information, go to <https://support.google.com/mail/answer/7720> [firstenergycorp.com 95.211.189.152: timed out]

Last-Attempt-Date: Thu, 08 May 2025 10:22:17 -0700 (PDT)

 **noname**
3K

Electronic – Email Transmittal
WVDEP Division of Air Quality Email Reports
(DEPAirQualityPermitting@wv.gov)

May 1, 2025

Laura M. Crowder, Director
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

RE: Monongahela Power Company
Harrison Power Station
Title V Renewal Application
Title V Operating Permit #R30-03300015-2020

Dear Ms. Crowder,

Included with this electronic submittal, please find Title V permit application forms and supporting calculation spreadsheets for the Monongahela Power Company's renewal of Title V Operating Permit No. R30-03300015-2020 issued on November 17, 2020, and subsequent Title V Operating Permit #R30-03300015-2020 (MM01) modified on March 14, 2022, for the Harrison Power Station, located in Haywood, West Virginia. The current Title V permit for the Harrison Power Station will expire on November 17, 2025.

If you have any questions or require additional information, please contact me at (724) 838-6136 or by email at jlefik@firstenergycorp.com.

Sincerely,



James A. Lefik

Engineer V, Environmental

Attachments (via email)

Division of Air Quality Permit Application Submittal

Please find attached a permit application for :

[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only):
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only):

- Type of NSR Application (check all that apply):

- ☐ Construction
- ☐ Modification
- ☐ Class I Administrative Update
- ☐ Class II Administrative Update
- ☐ Relocation
- ☐ Temporary
- ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:

- ☐ Title V Initial
- ☒ Title V Renewal
- ☐ Administrative Amendment**
- ☐ Minor Modification**
- ☐ Significant Modification**
- ☐ Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

- Payment Type:

☒ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)

☐ Check (Make checks payable to: WVDEP – Division of Air Quality)

Mail checks to:

WVDEP – DAQ – Permitting

Attn: NSR Permitting Secretary

601 57th Street, SE

Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):

☒ Responsible Official/Authorized Representative

• Name:

• Email:

• Phone Number:

☒ Company Contact

• Name:

• Email:

• Phone Number:

☐ Consultant

• Name:

• Email:

• Phone Number:

TITLE V PERMIT APPLICATION CHECKLIST FOR ADMINISTRATIVE COMPLETENESS

A complete application is demonstrated when all the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a Title V permit application. Any submittal will be considered incomplete if the required information is not included.

X	Application signed by a Responsible Official as defined in 45CSR§30-2.38 (“ <i>Section 6: Certification of Information</i> ” page signed and dated)
X	Table of Contents (should be included, but not required for administrative completeness)
X	Facility information
X	Description of process and products, including NAICS and SIC codes, and including alternative operating scenarios
X	Area map showing plant location
X	Plot plan showing buildings and process areas
X	Process flow diagram(s), showing all emission units, control equipment, emission points, and their relationships
X	Identification of all applicable requirements with a description of the compliance status, the methods used for demonstrating compliance, and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the source is not in compliance
X	Listing of all active permits and consent orders (if applicable)
X	Facility-wide emissions summary
X	Identification of Insignificant Activities
X	ATTACHMENT D - Title V Equipment Table completed for all emission units at the facility except those designated as insignificant activities
X	ATTACHMENT E - Emission Unit Form completed for each emission unit listed in the Title V Equipment Table (ATTACHMENT D) and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the emission unit is not in compliance
X	ATTACHMENT G - Air Pollution Control Device Form completed for each control device listed in the Title V Equipment Table (ATTACHMENT D)
☐	ATTACHMENT H – Compliance Assurance Monitoring (CAM) Plan Form completed for each control device for which the “Is the device subject to CAM?” question is answered “Yes” on the Air Pollution Control Device Form (ATTACHMENT G)
☐	Confidential Information submitted in accordance with 45CSR31

**TITLE V OPERATING PERMIT
RENEWAL APPLICATION**

**MONONGAHELA POWER COMPANY
HARRISON POWER STATION**

TITLE V OPERATING PERMIT #R30-03300015-2020

**Date of Application Submittal:
May 1, 2025**

Table of Contents

Title V Permit Application – Signed General Form

Facility Area Map Attachment A

Facility Plot Plan Attachment B

Process Flow Diagrams Attachment C

- Material Flow Diagram
- Material Flow Diagram Table
- Coal Handling System
- Lime Handling #1
- DSI Lime Handling
- Lime Slurry Handling
- Absorber Sludge Handling
- Lime Handling #2
- Fly Ash Handling

Emission Unit Tables Attachment D

Emission Unit Forms Attachment E

- Combustion Sources (including emergency generators)
- Materials Handling
- Miscellaneous Sources
- Insignificant Storage Tanks

Air Pollution Control Device Forms Attachment G

Emissions Calculations FilesAppendix A

- Facility Combustion Sources
- Fugitive Particulate Matter Emission Sources
- Fugitive Emission Calculations – Materials Handling
- Miscellaneous Sources



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL
PROTECTION

DIVISION OF AIR QUALITY

601 57th Street SE

Charleston, WV 25304

Phone: (304) 926-0475

www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. Name of Applicant (As registered with the WV Secretary of State's Office): Monongahela Power Company		2. Facility Name or Location: Harrison Power Station	
3. DAQ Plant ID No.: 033-00015		4. Federal Employer ID No. (FEIN): 23-3020481	
5. Permit Application Type: ☐ Initial Permit ☒ Permit Renewal ☐ Update to Initial/Renewal Permit Application When did operations commence? 1972 What is the expiration date of the existing permit? 11/17/2025			
6. Type of Business Entity: ☒ Corporation ☐ Partnership ☐ Governmental Agency ☐ Limited Partnership ☐ LLC		7. Is the Applicant the: ☐ Owner ☐ Operator ☒ Both If the Applicant is not both the owner and operator, please provide the name and address of the other party.	
8. Number of onsite employees: 227			
9. Governmental Code: ☒ Privately owned and operated; 0 ☐ Federally owned and operated; 1 ☐ State government owned and operated; 2 ☐ County government owned and operated; 3 ☐ Municipality government owned and operated; 4 ☐ District government owned and operated; 5			
10. 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.			

11. Mailing Address		
Street or P.O. Box: 800 Cabin Hill Drive		
City: Greensburg	State: Pennsylvania	Zip: 15601
Telephone Number: 724-838-3000		Fax Number: 234-678-2384

12. Facility Location (Physical Address)		
Street: Route 20	City: Haywood	County: Harrison
UTM Easting: 557.392 km	UTM Northing: 4,359.489 km	Zone: ☒ 17 or ☐ 18
Directions: From the junction of State Route 20 and US Route 19 near Haywood, take Route 20 approximately one mile west to the facility.		
Portable Source? ☐ Yes ☒ No		
Is facility located within a nonattainment area? ☐ Yes ☒ No		If yes, for what air pollutants? N/A
Is facility located within 50 miles of another state? ☒ Yes ☐ No		If yes, name the affected state(s). Pennsylvania
Is facility located within 100 km of a Class I Area ¹ ? ☒ Yes ☐ No		If yes, name the area(s). Dolly Sods Wilderness Area - 91km Otter Creek Wilderness Area- 69km
If no, do emissions impact a Class I Area ¹ ? ☐ Yes ☐ No		
¹ Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.		

13. Contact Information		
Responsible Official: Gary J. Dinzeo		Title: Director, Harrison Plant
Street or P.O. Box: P.O. Box 600		
City: Haywood	State: West Virginia	Zip: 26366-0600
Telephone Number: (304) 584-2233	Cell Number: (724) 787-6977	
E-mail address: gdinzeo@firstenergycorp.com		
Environmental Contact: James A. Lefik		Title: Engineer V
Street or P.O. Box: 800 Cabin Hill Drive		
City: Greensburg	State: Pennsylvania	Zip: 15601-1650
Telephone Number: (724) 838-6136	Cell Number: (724) 672-2621	
E-mail address: jlefik@firstenergycorp.com		
Application Preparer: James A. Lefik		Title: Engineer V
Company: FirstEnergy Corp.		
Street or P.O. Box: 800 Cabin Hill Drive		
City: Greensburg	State: Pennsylvania	Zip: 15601-1650
Telephone Number: (724) 838-6136	Cell Number: (724) 672-2621	
E-mail address: jlefik@firstenergycorp.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Electric Generation Service	Electric power generation and transmission	221112	4911

Provide a general description of operations.

The Harrison Power Station is a fossil fuel-fired electric generation facility with three (3) 6,325 MMBtu/hr (nominal) coal-fired boilers, identified as Units B1, B2, and B3, with nominal gross MW ratings of 713 MW, 710 MW, and 711 MW, respectively. The facility operates under the Standard Industrial Code (SIC) 4911, and North American Industry Classification System (NAICS) Code 221112. The facility also consists of two (2) 202.2 MMBtu/hr auxiliary boilers, two (2) 800-kW diesel-fired emergency generators, a 350-kW diesel-fired emergency generator, a 100-kW propane-fired emergency generator, a 605-bhp propane-fired emergency generator, and two (2) diesel-fired emergency fire pump engines. Supporting operations include lime handling, coal handling, ash handling, sludge system and various storage tanks with insignificant air emissions. The facility has the potential to operate twenty-four hours a day, seven days a week, and fifty-two weeks per year.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☒ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☒ PSD (45CSR14)
☒ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☒ Section 111 NSPS	☒ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☒ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☒ 45CSR4 State enforceable only rule	☒ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☒ Compliance Assurance Monitoring (40CFR64)
☒ Cross-State Air Pollution Rule (45CSR43)	

19. Non Applicability Determinations
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies. 45CSR27: To prevent and control the emissions of Toxic Air Pollutants. Although this facility has emissions of Toxic Air Pollutants in excess of the thresholds listed in 45CSR27 Table A, it does not meet the definition of a Chemical Processing Unit. There is not an assembly of reactors, tanks, distillation columns, heat exchangers, vaporizers, compressors, dryers, decanters, and/or other equipment used to treat, store, manufacture, or use toxic air pollutants. 40 C.F.R. 60, Subpart K & Ka: All tanks are below 40,000 gallons in capacity. 40 C.F.R. 60, Subpart D: Harrison Power Station boilers (B1, B2, & B3) were constructed prior to August 17, 1971. 40 C.F.R. 60, Subpart Da: Harrison Power Station boilers (B1, B2, & B3) were constructed before September 18, 1978. 40 C.F.R. 60, Subpart Db: Harrison Power Station Auxiliary boilers (A, B) were constructed prior to June 19, 1984.
☒ Permit Shield

19. Non Applicability Determinations (Continued) - Attach additional pages as necessary.

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

40 C.F.R. 60, Subpart OOO: The definition of limestone states that it is a sedimentary rock consisting of at least 80% calcium or magnesium carbonates. Lime is defined as calcium oxide, which can be produced by subjecting calcium carbonate to high temperature baking in kilns to drive off carbon dioxide. Therefore, lime is not equivalent to limestone and the Harrison lime handling operation is not subject to Subpart OOO.

40 C.F.R. 63, Subpart Q: The existing Cooling Towers do not use any chromium-based water treatment chemicals and therefore, are exempt from the referenced regulation.

45CSR5: The Rule to Prevent and Control Air Pollution from the Operation of Coal Preparation Plants, Coal Handling Operations, and Coal Disposal Areas is not applicable to the facility since 45CSR2 applies.

45CSR17: The Rule to Prevent and Control Particulate Matter Air Pollution from Material Handling Preparation, Storage, and Other Sources of Fugitive Particulate Matter is not applicable to the facility because 45CSR2 is applicable.

☒ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements).

45CSR2: Control of Particulate matter emissions from indirect heat exchangers
45CSR6: Open burning prohibited
45CSR7: Control of Particulate from Manufacturing Source Operations
45CSR10: Control of sulfur dioxide emissions from in direct heat exchangers
45CSR11: Standby plans for emergency episodes.
45CSR13: Permit for construction, modification
45CSR16: Standard of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
WVCode§22-5-4 (a)(14): Secretary can request any pertinent information.
45CSR30: Operating permit requirement
45CSR33: Acid Rain Provisions and Permits
45CSR34: Emission Standards for Hazardous Air Pollutants
40 C.F.R. Part 61: Asbestos inspection and removal
40 C.F.R. Part 64: Compliance Assurance Monitoring
40 C.F.R Part 63 Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45CSR2: monitoring/testing/recordkeeping/reporting
45CSR6: recordkeeping
45CSR7: recordkeeping
45CSR10: monitoring/recordkeeping
45CSR11: recordkeeping
45CSR13: recordkeeping/reporting
45CSR16: recordkeeping
WVCode§22-5-4 (a)(14): recordkeeping/reporting
45CSR30: monitoring/testing/recordkeeping/reporting
45CSR33: monitoring/testing/recordkeeping/reporting
45CSR34: monitoring/testing/recordkeeping/reporting
40 C.F.R. Part 61: recordkeeping
40 C.F.R. Part 64: monitoring/recordkeeping/reporting
40 C.F.R Part 63 Subpart DDDDD: monitoring/testing/recordkeeping/reporting

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the Schedule of Compliance Form as ATTACHMENT F.

20. Facility-Wide Applicable Requirements (Continued) - Attach additional pages as necessary.

List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.

40 C.F.R Part 63 Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units
40 C.F.R. Part 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
40 C.F.R. Part 60, Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
40 C.F.R Part 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 C.F.R. Part 72: Permits Regulation
40 C.F.R. Part 74: Sulfur dioxide Opt-ins
40 C.F.R. Part 75: Continuous Emissions Monitoring
40 C.F.R. Part 76: Nitrogen Oxides Reduction Program
40 C.F.R. Part 77: Excess Emissions
40 C.F.R. Part 60, Subpart Y: Coal Preparation Plants
40 C.F.R. Part 82, Subpart F: Ozone depleting substances
State Only: 45CSR4: No objectionable odors
45CSR39: NOx Annual Trading Program
45CSR40: NOx Ozone Season Trading Program
45CSR41: SO2 Trading Program

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R Part 63 Subpart UUUUU: monitoring/testing/recordkeeping/reporting
40 C.F.R. Part 60, Subpart IIII: monitoring/recordkeeping
40 C.F.R. Part 60, Subpart JJJJ: monitoring/recordkeeping
40 C.F.R. Part 63, Subpart ZZZZ: monitoring/recordkeeping
40 C.F.R. Part 72: recordkeeping/reporting
40 C.F.R. Part 74: recordkeeping/reporting
40 C.F.R. Part 75: monitoring/testing/recordkeeping/reporting
40 C.F.R. Part 76: monitoring/recordkeeping
40 C.F.R. Part 77: monitoring/recordkeeping/reporting
40 C.F.R. Part 60, Subpart Y: monitoring/testing/recordkeeping/reporting
40 C.F.R. Part 82, Subpart F: testing/recordkeeping
State Only: 45CSR4: monitoring/recordkeeping
45CSR39: monitoring/recordkeeping/reporting
45CSR40: monitoring/recordkeeping/reporting
45CSR41: monitoring/recordkeeping/reporting

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the Schedule of Compliance Form as ATTACHMENT F.

21. Active Permits/Consent Orders

[illegible]

22. Inactive Permits/Obsolete Permit Conditions

[illegible]

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	1,888
Nitrogen Oxides (NO _x)	42,072
Lead (Pb)	0.54
Particulate Matter (PM _{2.5}) ¹	2,769
Particulate Matter (PM ₁₀) ¹	4,135
Total Particulate Matter (TSP)	7,420
Sulfur Dioxide (SO ₂)	425,533
Volatile Organic Compounds (VOC)	219
Hazardous Air Pollutants ²	Potential Emissions
Hydrochloric Acid (HCl)	88.3
Hydrofluoric Acid (HF)	30.3
Mercury (Hg)	0.23
*See Appendix A for additional HAPs	
Regulated Pollutants other than Criteria and HAP	Potential Emissions
None	N/A

¹PM_{2.5} and PM₁₀ are components of TSP.
²For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)	
☒	1. Air compressors and pneumatically operated equipment, including hand tools.
☒	2. Air contaminant detectors or recorders, combustion controllers or shutoffs.
☒	3. Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☒	4. Bathroom/toilet vent emissions.
☒	5. Batteries and battery charging stations, except at battery manufacturing plants.
☒	6. Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7. Blacksmith forges.
☒	8. Boiler water treatment operations, not including cooling towers.
☒	9. Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10. CO ₂ lasers, used only on metals and other materials which do not emit HAP in the process.
☒	11. Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☒	12. Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☒	13. Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☒	14. Demineralized water tanks and demineralizer vents.
☐	15. Drop hammers or hydraulic presses for forging or metalworking.
☒	16. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17. Emergency (backup) electrical generators at residential locations.
☐	18. Emergency road flares.
☒	19. Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO₂, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: Various insignificant storage tanks with negligible VOC emissions

24. Insignificant Activities (Check all that apply)	
☐	20. Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:
☐	21. Environmental chambers not using hazardous air pollutant (HAP) gases.
☒	22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☒	24. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☐	25. Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☒	26. Fire suppression systems.
☒	27. Firefighting equipment and the equipment used to train firefighters.
☐	28. Flares used solely to indicate danger to the public.
☒	29. Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☒	31. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32. Humidity chambers.
☒	33. Hydraulic and hydrostatic testing equipment.
☒	34. Indoor or outdoor kerosene heaters.
☒	35. Internal combustion engines used for landscaping purposes.
☐	36. Laser trimmers using dust collection to prevent fugitive emissions.
☒	37. Laundry activities, except for dry-cleaning and steam boilers.
☒	38. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☒	39. Oxygen scavenging (de-aeration) of water.
☐	40. Ozone generators.

24. Insignificant Activities (Check all that apply)	
☒	41. Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☒	42. Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☒	43. Process water filtration systems and demineralizers.
☒	44. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☒	45. Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☒	46. Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48. Shock chambers.
☐	49. Solar simulators.
☒	50. Space heaters operating by direct heat transfer.
☒	51. Steam cleaning operations.
☒	52. Steam leaks.
☐	53. Steam sterilizers.
☒	54. Steam vents and safety relief valves.
☒	55. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☒	56. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57. Such other sources or activities as the Director may determine.
☒	58. Tobacco smoking rooms and areas.
☒	59. Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the Title V Equipment Table and provide it as ATTACHMENT D .
26. Emission Units
For each emission unit listed in the Title V Equipment Table , fill out and provide an Emission Unit Form as ATTACHMENT E .
For each emission unit not in compliance with an applicable requirement, fill out a Schedule of Compliance Form as ATTACHMENT F .
27. Control Devices
For each control device listed in the Title V Equipment Table , fill out and provide an Air Pollution Control Device Form as ATTACHMENT G .
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the Compliance Assurance Monitoring (CAM) Form(s) for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as ATTACHMENT H .

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

Note: This Certification must be signed by a responsible official as defined in 45CSR§30-2.38.

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. 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.

Responsible official (type or print)

Name:

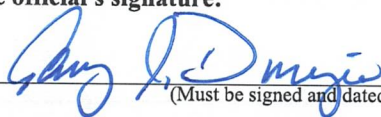
Gary J. Dinzeo

Title:

Director, Harrison Plant

Responsible official's signature:

Signature:



Signature Date:

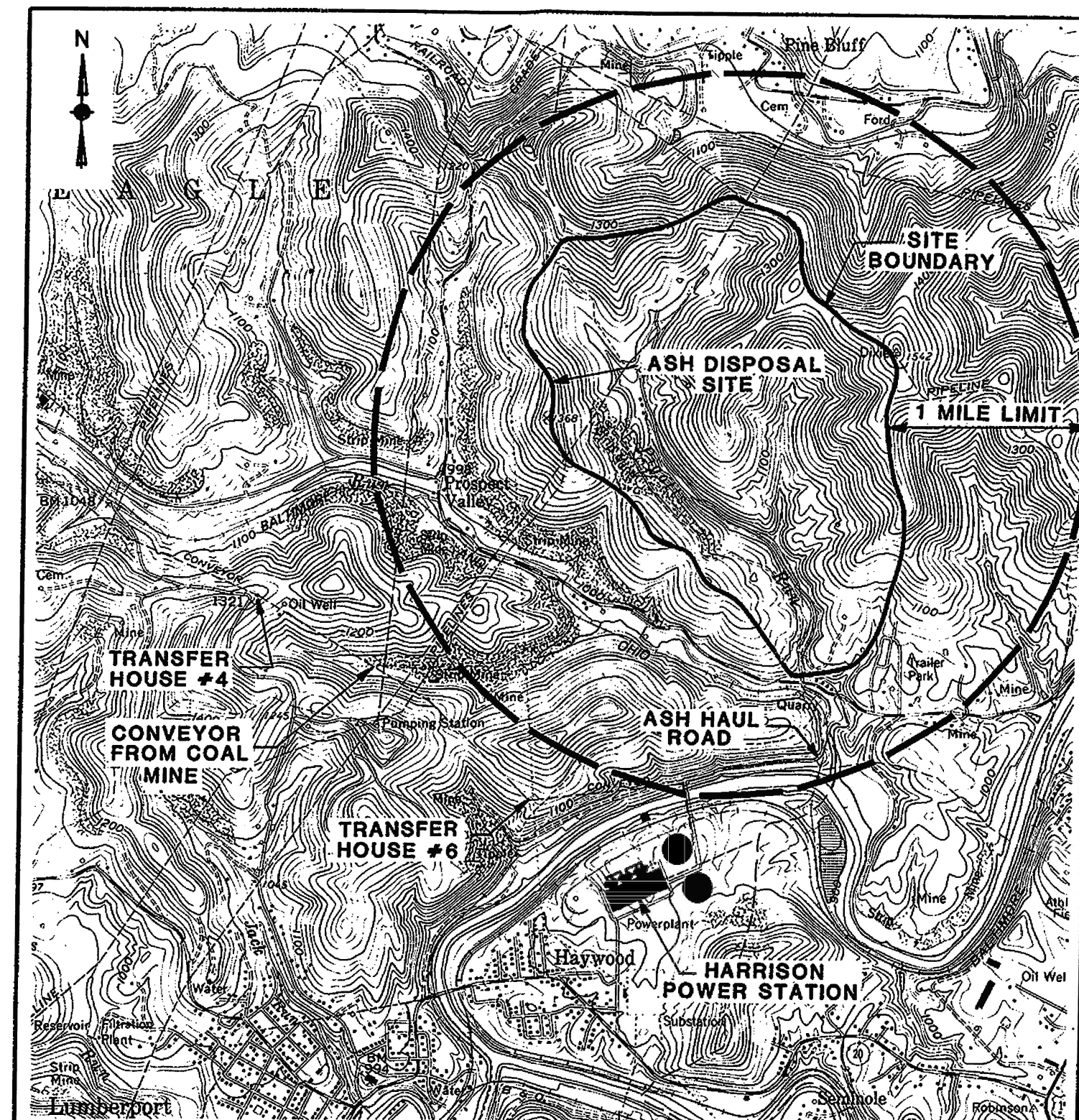
4/30/2025

(Must be signed and dated in blue ink or have a valid electronic signature)

Note: Please check all applicable attachments included with this permit application:

☒	ATTACHMENT A: Area Map
☒	ATTACHMENT B: Plot Plan(s)
☒	ATTACHMENT C: Process Flow Diagram(s)
☒	ATTACHMENT D: Equipment Table
☒	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☒	ATTACHMENT G: Air Pollution Control Device Form(s)
☐	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

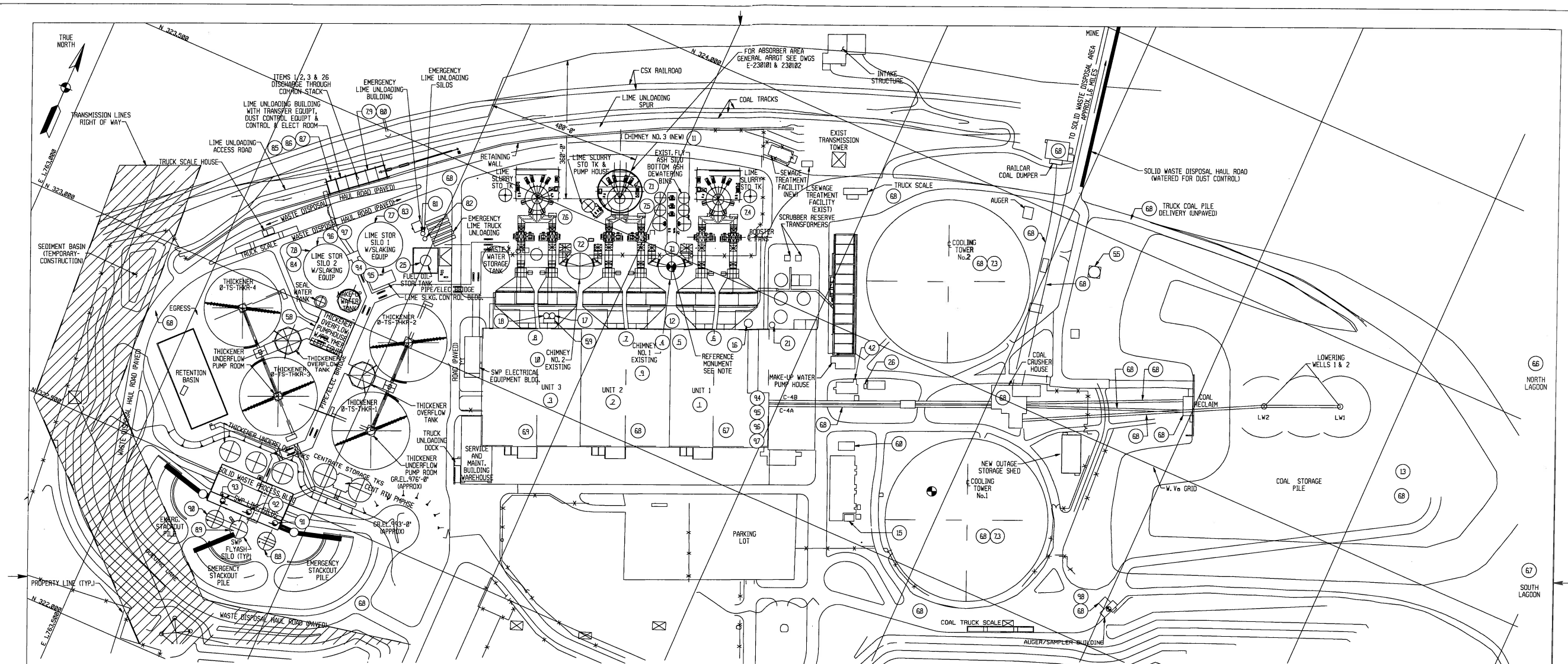
All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.



REFERENCE:

U.S.G.S. 7.5' Topographic Map; Shinnston, W.V. Quadrangle; Dated 1960, Photorevised 1977.

PERMIT DRAWING - NOT TO BE CHANGED UNLESS AUTHORIZED BY PERMITTING AND LICENSING, ENVIRONMENTAL SERVICES GROUP		ALLEGHENY POWER SYSTEM HARRISON POWER STATION TITLE V PERMIT DRAWINGS SITE LOCATION PLAN			
SE TECHNOLOGIES		98 VANADIUM ROAD BRIDGEVILLE, PA 15017 (412) 221-1100 • (800) 685-0354			
DWN. BY: <i>HAH</i>	CAD FILE:	SCALE: 1"=2000'	DATE: 5/22/96	DRAWING No. L8910001	REV. A
CHKD. BY: <i>LMZ</i>					



EMISSION POINT/ITEM No. IDENTIFICATION LIST				
ITEM No.	LOCAL I.D.	DESCRIPTION	SUBSTANCE STORED OR EMITTED	COMMENTS
1	BOILER 1	FOSTER WHEELER BOILER No. 1	FLUE GAS	SEE NOTE 1
2	BOILER 2	FOSTER WHEELER BOILER No. 2	FLUE GAS	SEE NOTE 1
3	BOILER 3	FOSTER WHEELER BOILER No. 3	FLUE GAS	SEE NOTE 1
4	BOILER 4A	BARCKOCK & WILCOX AUX. BOILER 4A	FLUE GAS	SEE NOTE 1
5	BOILER 4B	BARCKOCK & WILCOX AUX. BOILER 4B	FLUE GAS	SEE NOTE 1
6	ESP-1	AMERICAN STANDARD PRECIP. No. 1	FLUE GAS	SEE NOTE 1
7	ESP-2	AMERICAN STANDARD PRECIP. No. 2	FLUE GAS	SEE NOTE 1
8	ESP-3	AMERICAN STANDARD PRECIP. No. 3	FLUE GAS	SEE NOTE 1
9	STACK 1	BOILER No. 1 STACK	FLUE GAS	SEE NOTE 1
10	STACK 2	BOILER No. 2 STACK	FLUE GAS	SEE NOTE 1
11	STACK 3	BOILER No. 3 STACK	FLUE GAS	SEE NOTE 1
12	AUX. STK.	AUX. BOILER STACK	FLUE GAS	SEE NOTE 1
13	STACK 4	COAL STOCKPILE	FUGITIVE COAL DUST	SEE NOTE 1
14	A49N	SULFURIC ACID TANK 2	H2SO4	SEE NOTE 1
15	A49N	SULFURIC ACID TANK 1	H2SO4	SEE NOTE 1
16	A49N	COAL FLOW ADJUSTIVE TANK No. 1	ADJUSTED JTS	WET COAL FLOW PROMOTER
17	A49N	COAL FLOW ADJUSTIVE TANK No. 2	ADJUSTED JTS	WET COAL FLOW PROMOTER
18	A49N	COAL FLOW ADJUSTIVE TANK No. 3	ADJUSTED JTS	WET COAL FLOW PROMOTER
19	A49N	OLYOIL STORAGE TANK	ETHYLENE GLYCOL	TRANSFER HOUSE No. 4
20	A49N	OLYOIL STORAGE TANK	ETHYLENE GLYCOL	TRANSFER HOUSE No. 5
21	A49N	PHOSPHORIC TANK	COLORED PHOS	COOLING WATER TREATMENT
22	A49N	EMERG. DIESEL GEN. No. 1 FUEL TANK	No. 2 FUEL OIL	SEE NOTE 1
23	A49N	EMERG. DIESEL GEN. No. 2 FUEL TANK	No. 2 FUEL OIL	SEE NOTE 1
24	A49N	EMERG. DIESEL GEN. No. 3 FUEL TANK	No. 2 FUEL OIL	SEE NOTE 1
25	A49N	EMERG. DIESEL GEN. FUEL TANK COMMON	No. 2 FUEL OIL	SEE NOTE 1
26	A49N	SPACE HEATER FUEL TANK	KEROSENE	SEE NOTE 1
27	A49N	B/L FEED PUMP 18 TURB. OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
28	A49N	B/L FEED PUMP 19 TURB. OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
29	A49N	B/L FEED PUMP 20 TURB. OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
30	A49N	B/L FEED PUMP 21 TURB. OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
31	A49N	B/L FEED PUMP 22 TURB. OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
32	A49N	B/L FEED PUMP 23 TURB. OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
33	A49N	S/OIL BLOWER COMPRESS. 1 OIL RESERVOIR	COMPRESSOR OIL	SEE NOTE 1
34	A49N	S/OIL BLOWER COMPRESS. 2 OIL RESERVOIR	COMPRESSOR OIL	SEE NOTE 1
35	A49N	S/OIL BLOWER COMPRESS. 3 OIL RESERVOIR	COMPRESSOR OIL	SEE NOTE 1
36	A49N	UNIT 1 TURBINE OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
37	A49N	UNIT 2 TURBINE OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
38	A49N	UNIT 3 TURBINE OIL RESERVOIR	TURBINE OIL	SEE NOTE 1
39	A49N	UNIT 1 TURBINE OIL FILTER	TURBINE OIL	SEE NOTE 1
40	A49N	UNIT 2 TURBINE OIL FILTER	TURBINE OIL	SEE NOTE 1
41	A49N	UNIT 3 TURBINE OIL FILTER	TURBINE OIL	SEE NOTE 1
42	A49N	WASTE OIL TANK	OIL/ASH SEPARATOR, DEGREASER	SEE NOTE 1
43	A49N	WASTE OIL TANK	WASTE OIL TANK	SEE NOTE 1
44	A49N	BIOCHINE BIODIESEL STORAGE TANK	CALCULATED	SEE NOTE 1
45	A49N	BIOCHINE BIODIESEL STORAGE TANK	CALCULATED	SEE NOTE 1
46	A49N	DIESEL FINE FUEL PUMP STORAGE TANK	No. 2 FUEL OIL	SEE NOTE 1
47	A49N	UNIT 1 GEN. LOOP SEAL OIL TANK	TURBINE OIL	SEE NOTE 1
48	A49N	UNIT 2 GEN. LOOP SEAL OIL TANK	TURBINE OIL	SEE NOTE 1
49	A49N	UNIT 3 GEN. LOOP SEAL OIL TANK	TURBINE OIL	SEE NOTE 1

• DISCREPANT ACTIVITY

EMISSION POINT/ITEM No. IDENTIFICATION LIST				
ITEM No.	LOCAL I.D.	DESCRIPTION	SUBSTANCE STORED OR EMITTED	COMMENTS
50	A49N	PART CLEANER TANK (ELEC.)	SOLVENT	SEE NOTE 1
51	A49N	PART CLEANER TANK (ELEC.)	SOLVENT	SEE NOTE 1
52	A49N	PART CLEANER TANK (ELEC.)	SOLVENT	SEE NOTE 1
53	A49N	WASTE OIL STORAGE TANK	WASTE OIL	SEE NOTE 1
54	A49N	WASTE OIL STORAGE TANK	WASTE OIL	SEE NOTE 1
55	A49N	DOZER FUEL OIL STORAGE TANK	No. 2 FUEL OIL	SEE NOTE 1
56	A49N	PARTS CLEANER TANK No. 2 MILL	SOLVENT	SEE NOTE 1
57	A49N	PARTS CLEANER TANK No. 3 MILL	SOLVENT	SEE NOTE 1
58	A49N	POLYMER STORAGE TANK	CALCULATED	SEE NOTE 1
59	U49N	GLYCOL HOLDING TANK	ETHYLENE GLYCOL	SEE NOTE 1
60	U49N	GLYCOL TANK	ETHYLENE GLYCOL	SEE NOTE 1
61	U49N	CLEAN TURBINE OIL STORAGE TANK	TURBINE OIL	SEE NOTE 1
62	U49N	NEW TURBINE OIL TANK	TURBINE OIL	SEE NOTE 1
63	GEN. No. 1	EMERG. DIESEL GENERATOR No. 1	EXHAUST FUMES	SEE NOTE 1
64	GEN. No. 2	EMERG. DIESEL GENERATOR No. 2	EXHAUST FUMES	SEE NOTE 1
65	GEN. No. 3	EMERG. DIESEL GENERATOR No. 3	EXHAUST FUMES	SEE NOTE 1
66	W49N	WASTEWATER	WASTEWATER	SEE NOTE 1
67	W49N	WASTEWATER	WASTEWATER	SEE NOTE 1
68	W49N	WASTEWATER	WASTEWATER	SEE NOTE 1
69	W49N	WASTEWATER	WASTEWATER	SEE NOTE 1
70	W49N	WASTEWATER	WASTEWATER	SEE NOTE 1
71	BPS-1	BYPASS STACK No. 1	FLUE GAS	SEE NOTE 1
72	BPS-2	BYPASS STACK No. 2	FLUE GAS	SEE NOTE 1
73	COOL. TWR.	COOLING TOWER	FUGITIVE EMISSIONS	SEE NOTE 1
74	FSD-1	SCRUBBER No. 1	SO2	SEE NOTE 1
75	FSD-2	SCRUBBER No. 2	SO2	SEE NOTE 1
76	FSD-3	SCRUBBER No. 3	SO2	SEE NOTE 1
77	6C	LIME SILLO DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
78	6C	LIME UNLOADING DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
79	6C	LIME UNLOADING DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
80	6C	LIME UNLOADING DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
81	6C	EMERGENCY LIME UNLOADING DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
82	6C	LIME CRUSHER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
83	6C	LIME CRUSHER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
84	6C	LIME CRUSHER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
85	6C	LIME CRUSHER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
86	6C	LIME CRUSHER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
87	6C	LIME CRUSHER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
88	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
89	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
90	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
91	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
92	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
93	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
94	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
95	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
96	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
97	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
98	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
99	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1
100	6C	FLY ASH TRANSFER DUST COLLECTOR	FUGITIVE DUST	SEE NOTE 1

• DISCREPANT ACTIVITY

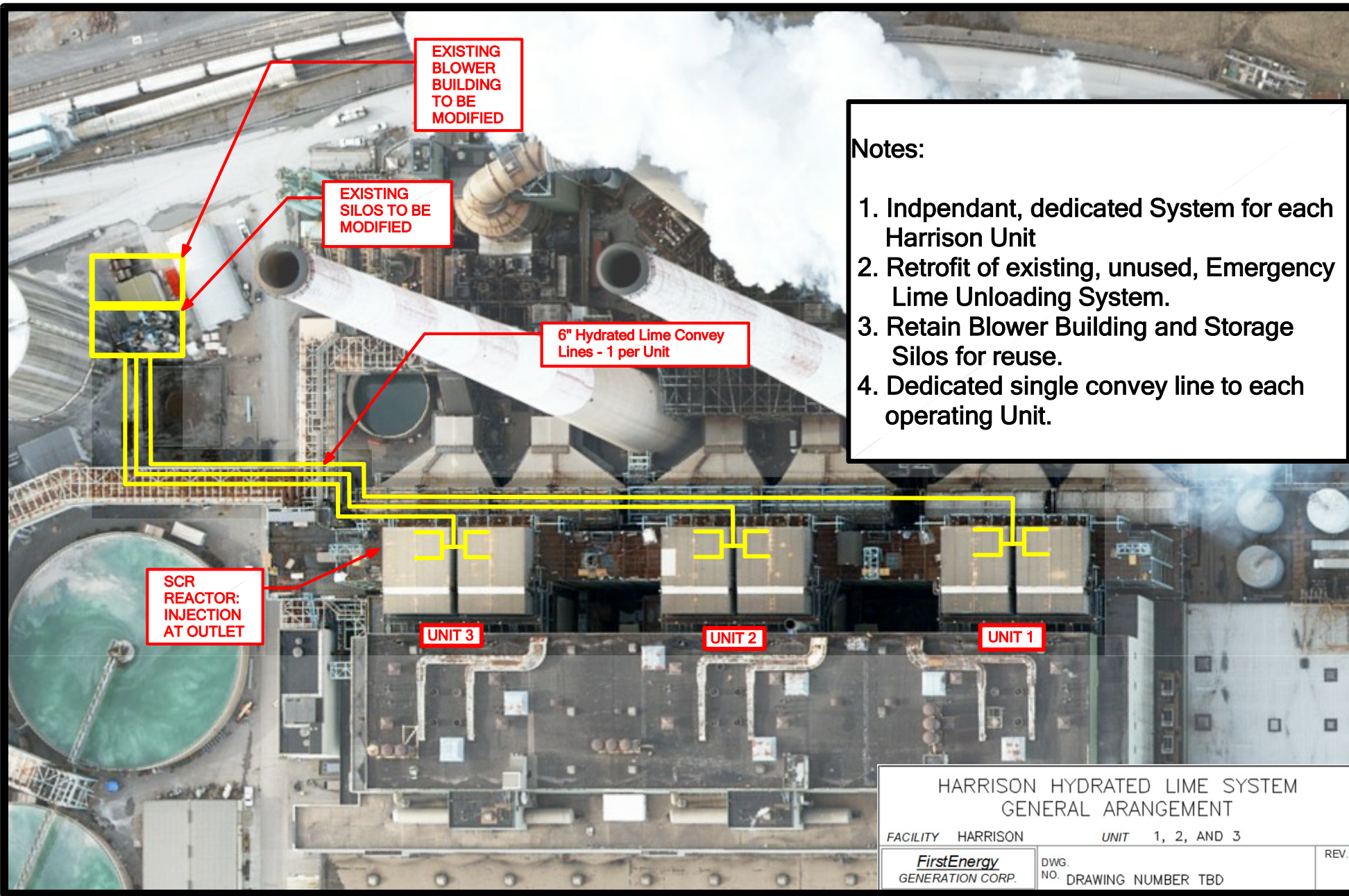
REV.	DESCRIPTION	BY	DATE
1	960244		
2			
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4			
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6			

NOTICE	REV	DATE	DRAWN BY
INFORMATION/REFERENCE			CH
APPROVAL			
PROCUREMENT			
BID			
CONSTRUCTION/FABRICATION			



- NOTES:
- EQUIPMENT LOCATED INSIDE PLANT, NOT SHOWN FOR CLARITY.
 - TANK VENTS AT LOCATIONS INDICATED FOR TANKS.
 - FUGITIVE EMISSIONS INCLUDE ROADS, STOCKPILE, MATERIAL HANDLING AND COOLING TOWER. THESE EMISSIONS POINTS ARE NOTED WITH NUMBER (68).
 - DIESEL GENERATOR VENT AT LOCATION INDICATED FOR GENERATOR.
 - SEE DRAWING No. L8950002 FOR ASH DISPOSAL SITE (INCLUDES ROAD AND STOCKPILE, EMISSIONS NOTED AS FUGITIVE DUST EMISSION POINT No. 68).

ALLEGHENY POWER SYSTEM		
HARRISON POWER STATION		
MIDCONGHELA POWER COMPANY	WEST PENN. POWER COMPANY	THE POTOMAC EDISON COMPANY
TITLE: V. PERMIT DRAWINGS		
SITE: PLANT		
CONSTRUCTION SPEC. No.	DRAWING No.	REV.
	L8950001	A



EXISTING
BLOWER
BUILDING
TO BE
MODIFIED

EXISTING
SILOS TO BE
MODIFIED

6" Hydrated Lime Convey
Lines - 1 per Unit

SCR
REACTOR:
INJECTION
AT OUTLET

UNIT 3

UNIT 2

UNIT 1

Notes:

1. Independent, dedicated System for each Harrison Unit
2. Retrofit of existing, unused, Emergency Lime Unloading System.
3. Retain Blower Building and Storage Silos for reuse.
4. Dedicated single convey line to each operating Unit.

HARRISON HYDRATED LIME SYSTEM
GENERAL ARRANGEMENT

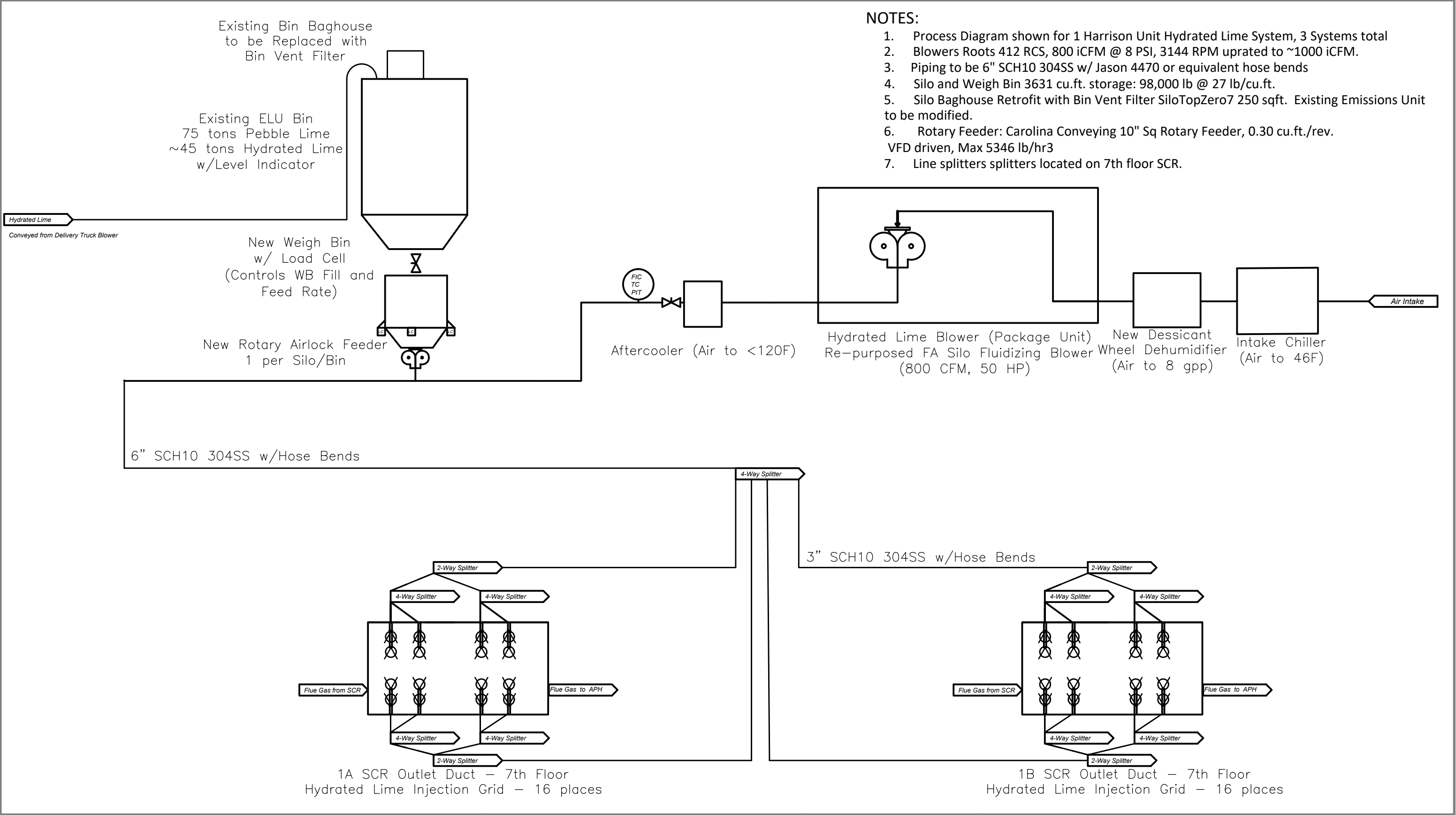
FACILITY HARRISON

UNIT 1, 2, AND 3

FirstEnergy
GENERATION CORP.

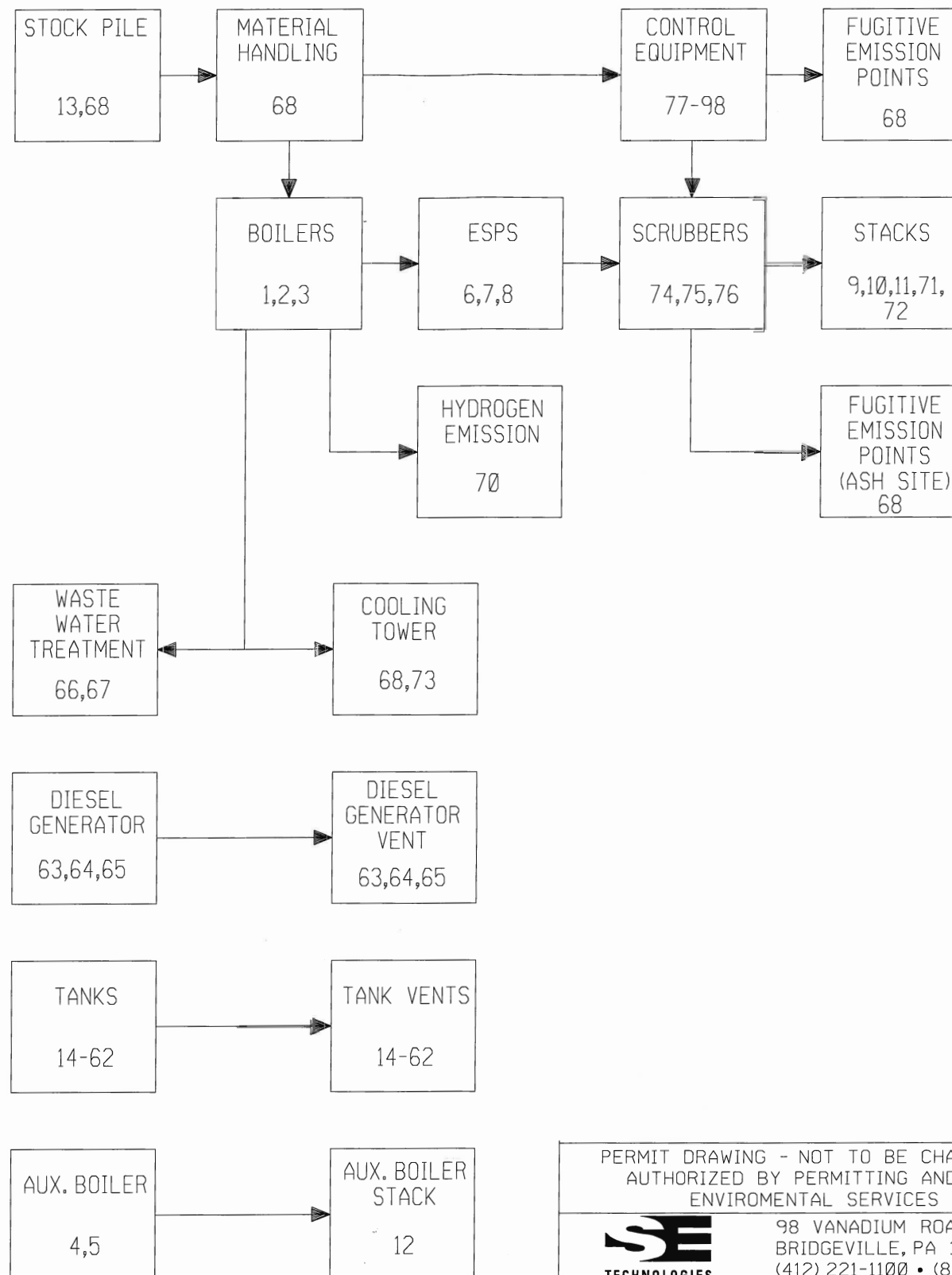
DWG.
NO. DRAWING NUMBER TBD

REV.



- NOTES:
- 1. Process Diagram shown for 1 Harrison Unit Hydrated Lime System, 3 Systems total
 - 2. Blowers Roots 412 RCS, 800 iCFM @ 8 PSI, 3144 RPM uprated to ~1000 iCFM.
 - 3. Piping to be 6" SCH10 304SS w/ Jason 4470 or equivalent hose bends
 - 4. Silo and Weigh Bin 3631 cu.ft. storage: 98,000 lb @ 27 lb/cu.ft.
 - 5. Silo Baghouse Retrofit with Bin Vent Filter SiloTopZero7 250 sqft. Existing Emissions Unit to be modified.
 - 6. Rotary Feeder: Carolina Conveying 10" Sq Rotary Feeder, 0.30 cu.ft./rev. VFD driven, Max 5346 lb/hr3
 - 7. Line splitters located on 7th floor SCR.

REVISION	DR	CHKD	APPD.	DATE	REFERENCE DRAWINGS		ENGINEERING	DATE	HARRISON HYDRATED LIME SYSTEM Single Unit (Proposed)		
					DWG. NO. 4656-1.tif	TITLE ELU Silo	DR HOALCRAFT	8/2/2021			
					16515C-1.tif	FA Fluidizing Blower	CHKD		FACILITY HARRISON UNIT COMMON		
							APPD		FirstEnergy GENERATION CORP.		
PROJECT NUMBER - GF-0015191-1-1 HARRISON HYDRATED LIME INJECTION							SCALE	N/A			
					DWG. NO. DRAWING NUMBER TBD					REV.	



NOTES:

1. SEE SITE PLOT PLAN FOR EQUIPMENT LOCATIONS, DESCRIPTIONS, TANK VENTS, FUGITIVE EMISSION POINTS AND DIESEL GENERATOR VENT.

PERMIT DRAWING - NOT TO BE CHANGED UNLESS AUTHORIZED BY PERMITTING AND LICENSING, ENVIROMENTAL SERVICES GROUP			-----ALLEGHENY_POWER_SYSTEM-----		
 SE TECHNOLOGIES			-----HARRISON_POWER_STATION-----		
			-----TITLE_V_PERMIT_DRAWINGS-----		
98 VANADIUM ROAD BRIDGEVILLE, PA 15017 (412) 221-1100 • (800) 685-0354			-----MATERIAL_FLOW_DIAGRAM-----		
DWN. BY: RCH	CAD FILE:	SCALE:	DATE:	DRAWING No.	REV.
CHKD. BY: ---	L8920001.DGN	N.T.S.---	5-21-96	L8920001 SHT. 1 OF 2	A

*****DGN*SPEC*****

STANDARD TEXT SIZE
STANDARD TEXT SIZE

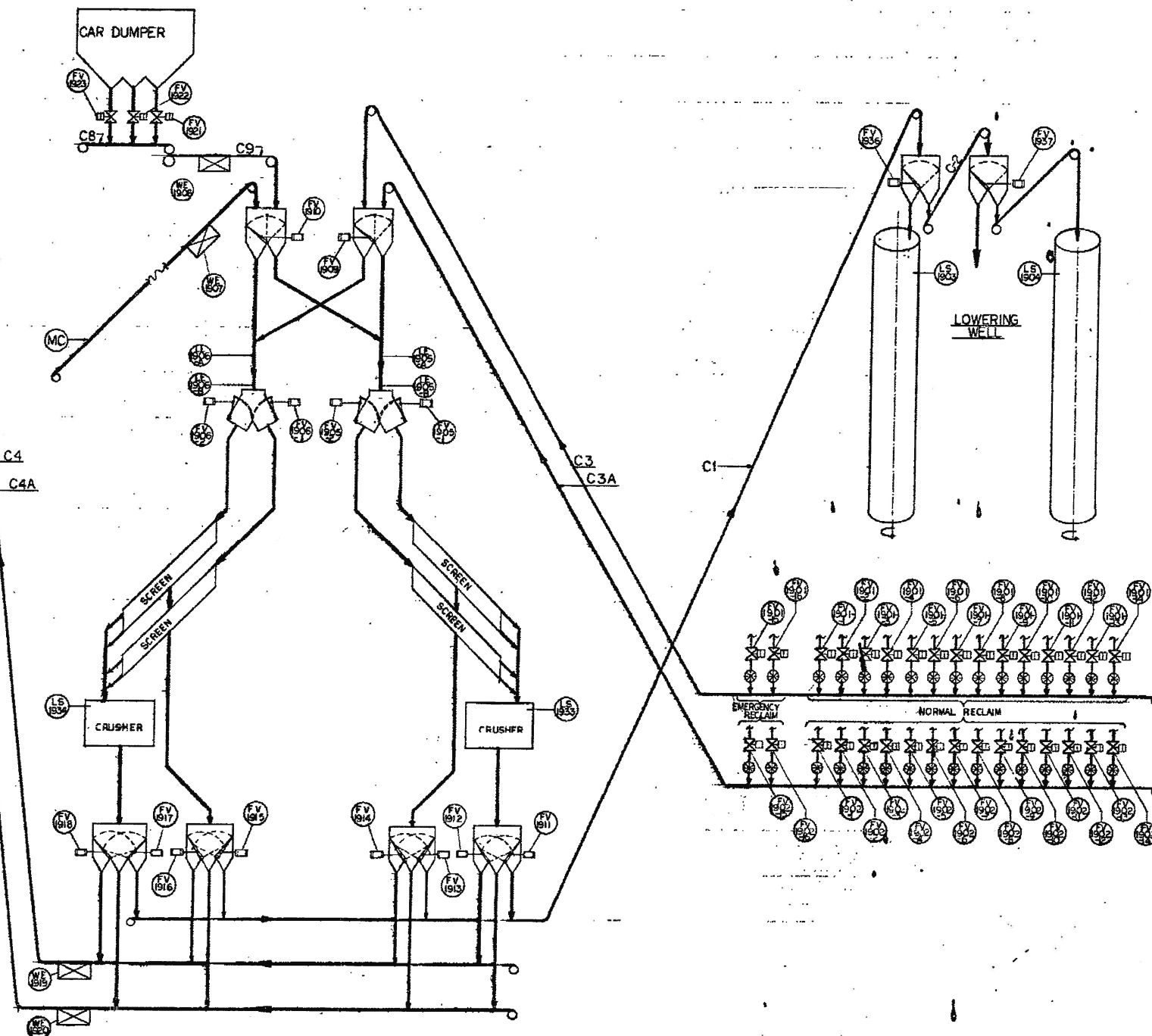
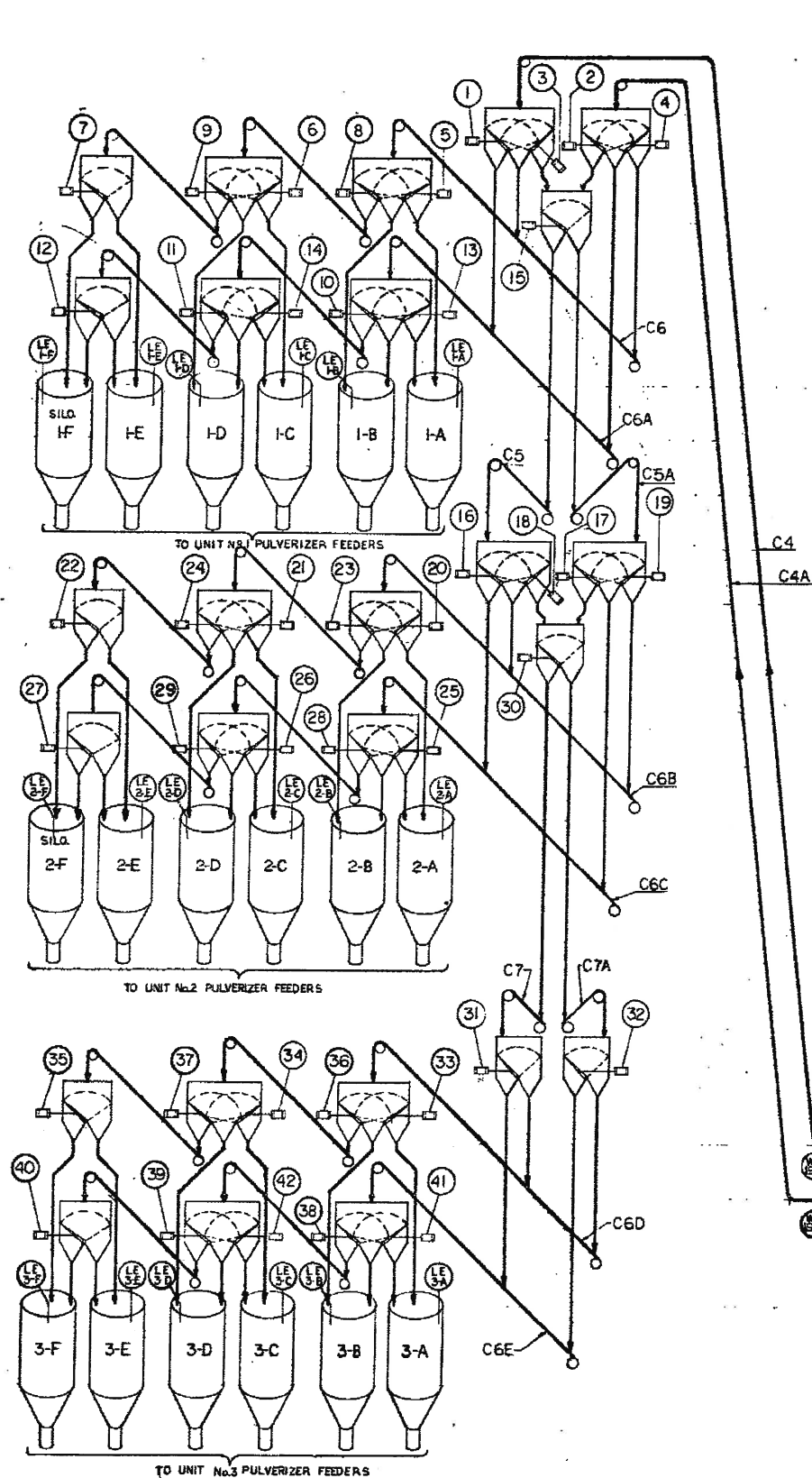
EMISSION POINT/ITEM No. IDENTIFICATION LIST		
ITEM No.	LOCAL I.D.	DESCRIPTION
1	BOILER 1	FOSTER WHEELER BOILER No. 1
2	BOILER 2	FOSTER WHEELER BOILER No. 2
3	BOILER 3	FOSTER WHEELER BOILER No. 3
4	BOILER 1A	BABCOCK & WILCOX AUX. BOILER 1A
5	BOILER 2A	BABCOCK & WILCOX AUX. BOILER 1B
6	ESP-1	AMERICAN STANDARD PRECIP. No. 1
7	ESP-2	AMERICAN STANDARD PRECIP. No. 2
8	ESP-3	AMERICAN STANDARD PRECIP. No. 3
9	STACK 1	BOILER No. 1 STACK
10	STACK 2	BOILER No. 2 STACK
11	STACK 3	BOILER No. 3 STACK
12	AUX. STK.	AUX. BOILER STACK
13	STKPILE	COAL STOCKPILE
14*	A3HN	SULFURIC ACID TANK 2
15*	A4HN	SULFURIC ACID TANK 1
16*	A6HN	COAL FLOW ADDITIVE TANK No. 1
17*	A7HN	COAL FLOW ADDITIVE TANK No. 2
18*	A8HN	COAL FLOW ADDITIVE TANK No. 3
19*	A12HN	GLYCOL STORAGE TANK
20*	A13HN	GLYCOL STORAGE TANK
21*	A14HN	PHOSPHONATE TANK
22*	A16HN	EMERG. DIESEL GEN. No. 1 FUEL TANK
23*	A17HN	EMERG. DIESEL GEN. No. 2 FUEL TANK
24*	A18HN	EMERG. DIESEL GEN. No. 3 FUEL TANK
25*	A19HN	EMERG. DIESEL GEN. FUEL TANK-COMMON
26*	A20HN	SPACE HEATER FUEL TANK
27*	A21HN	BLR. FEED PUMP 1A TURB. OIL RESERVOIR
28*	A22HN	BLR. FEED PUMP 1B TURB. OIL RESERVOIR
29*	A23HN	BLR. FEED PUMP 2A TURB. OIL RESERVOIR
30*	A24HN	BLR. FEED PUMP 2B TURB. OIL RESERVOIR
31*	A25HN	BLR. FEED PUMP 3A TURB. OIL RESERVOIR
32*	A26HN	BLR. FEED PUMP 3B TURB. OIL RESERVOIR
33*	A27HN	SOOT BLOWER COMPRESS. 1 OIL RESERVOIR

EMISSION POINT/ITEM No. IDENTIFICATION LIST		
ITEM No.	LOCAL I.D.	DESCRIPTION
34*	A28HN	SOOT BLOWER COMPRESS. 2 OIL RESERVOIR
35*	A29HN	SOOT BLOWER COMPRESS. 3 OIL RESERVOIR
36*	A30HN	UNIT 1 TURBINE OIL RESERVOIR
37*	A31HN	UNIT 2 TURBINE OIL RESERVOIR
38*	A32HN	UNIT 3 TURBINE OIL RESERVOIR
39*	A33HN	UNIT 1 TURBINE OIL FILTER
40*	A34HN	UNIT 2 TURBINE OIL FILTER
41*	A35HN	UNIT 3 TURBINE OIL FILTER
42*	A39HN	WASTE OIL TANK
43*	A40HN	GLYCOL RECOVERY TANK
44*	A41HN	BIOCIDE (DGH) STORAGE TANK
45*	A42HN	BIOCIDE (QUAT) STORAGE TANK
46*	A44HN	DIESEL FIRE PUMP FUEL STORAGE TANK
47*	A45HN	UNIT 1 GEN. LOOP SEAL OIL TANK
48*	A46HN	UNIT 2 GEN. LOOP SEAL OIL TANK
49*	A47HN	UNIT 3 GEN. LOOP SEAL OIL TANK
50*	A48HN	PART CLEANER TANK (ELEC.)
51*	A49HN	PART CLEANER TANK (SHOP)
52*	A50HN	PART CLEANER TANK (SWP)
53*	A51HN	WASTE OIL STORAGE TANK
54*	A52HN	HAZARDOUS WASTE OIL STORAGE TANK
55*	A53HN	DOZER FUEL OIL STORAGE TANK
56*	A54HN	PARTS CLEANER TANK (No. 2 MILL)
57*	A55HN	PARTS CLEANER TANK (No. 3 MILL)
58*	A56HN	POLYMER STORAGE TANK
59*	U1HN	GLYCOL HOLDING TANK
60	U2HN	GASOLINE TANK
61*	U3HN	CLEAN TURBINE OIL STORAGE TANK
62*	U4HN	NEW TURBINE OIL TANK
63	GEN. No. 1	EMERG. DIESEL GENERATOR No. 1
64	GEN. No. 2	EMERG. DIESEL GENERATOR No. 2
65	GEN. No. 3	EMERG. DIESEL GENERATOR No. 3
66	WASTEWATER	NORTH LAGOON

EMISSION POINT/ITEM No. IDENTIFICATION LIST		
ITEM No.	LOCAL I.D.	DESCRIPTION
67	WASTEWATER	SOUTH LAGOON
68	MAT. HAND, ROADS, STOCKPILE, COOLING TR.	FUGITIVE DUST EMISSION POINTS
69*	SPACE HEATERS	SPACE HEATERS (KEROSENE)
70*	HYDROGEN EMISSION POINTS	HYDROGEN EXHAUST POINTS
71	BPS-1	BYPASS STACK No. 1
72	BPS-2	BYPASS STACK No. 2
73	COOL. TWR.	COOLING TOWER
74	FGD-1	SCRUBBER No. 1
75	FGD-2	SCRUBBER No. 2
76	FGD-3	SCRUBBER No. 3
77	6C	LIME SILO DUST COLLECTOR
78	8C	LIME SILO DUST COLLECTOR
79	9C	LIME UNLOADING DUST COLLECTOR
80	10C	LIME UNLOADING DUST COLLECTOR
81	11C	EMERGENCY LIME UNLOADING DUST COLLECTOR
82	12C	EMERGENCY LIME UNLOADING DUST COLLECTOR
83	13C	LIME CRUSHER DUST COLLECTOR
84	14C	LIME CRUSHER DUST COLLECTOR
85	15C	LIME CONVEYING DUST COLLECTOR
86	16C	LIME CONVEYING DUST COLLECTOR
87	17C	LIME CONVEYING DUST COLLECTOR
88	18C	FLY ASH TRANSFER DUST COLLECTOR
89	19C	FLY ASH TRANSFER DUST COLLECTOR
90	20C	FLY ASH TRANSFER DUST COLLECTOR
91	21C	SWP DUST COLLECTOR
92	22C	SWP DUST COLLECTOR
93	23C	SWP DUST COLLECTOR
94	24C	BALL MILL SLAKER DUST COLLECTOR
95	25C	BALL MILL SLAKER DUST COLLECTOR
96	26C	BALL MILL SLAKER DUST COLLECTOR
97	27C	BALL MILL SLAKER DUST COLLECTOR
98	28C	COAL AUGER HOUSE DUST COLLECTOR

* - INSIGNIFICANT ACTIVITY

PERMIT DRAWING - NOT TO BE CHANGED UNLESS AUTHORIZED BY PERMITTING AND LICENSING, ENVIRONMENTAL SERVICES GROUP			ALLEGHENY POWER SYSTEM HARRISON POWER STATION TITLE V PERMIT DRAWINGS MATERIAL FLOW DIAGRAM			
 98 VANADIUM ROAD BRIDGEVILLE, PA 15017 (412) 221-1100 • (800) 685-0354						
DWN. BY:	RCH	CAD FILE:	SCALE:	DATE:	DRAWING No.	REV.
CHKD. BY:		L8920002.DGN	N.T.S.	5-21-96	L8920001 SHT. 2 OF 2	A

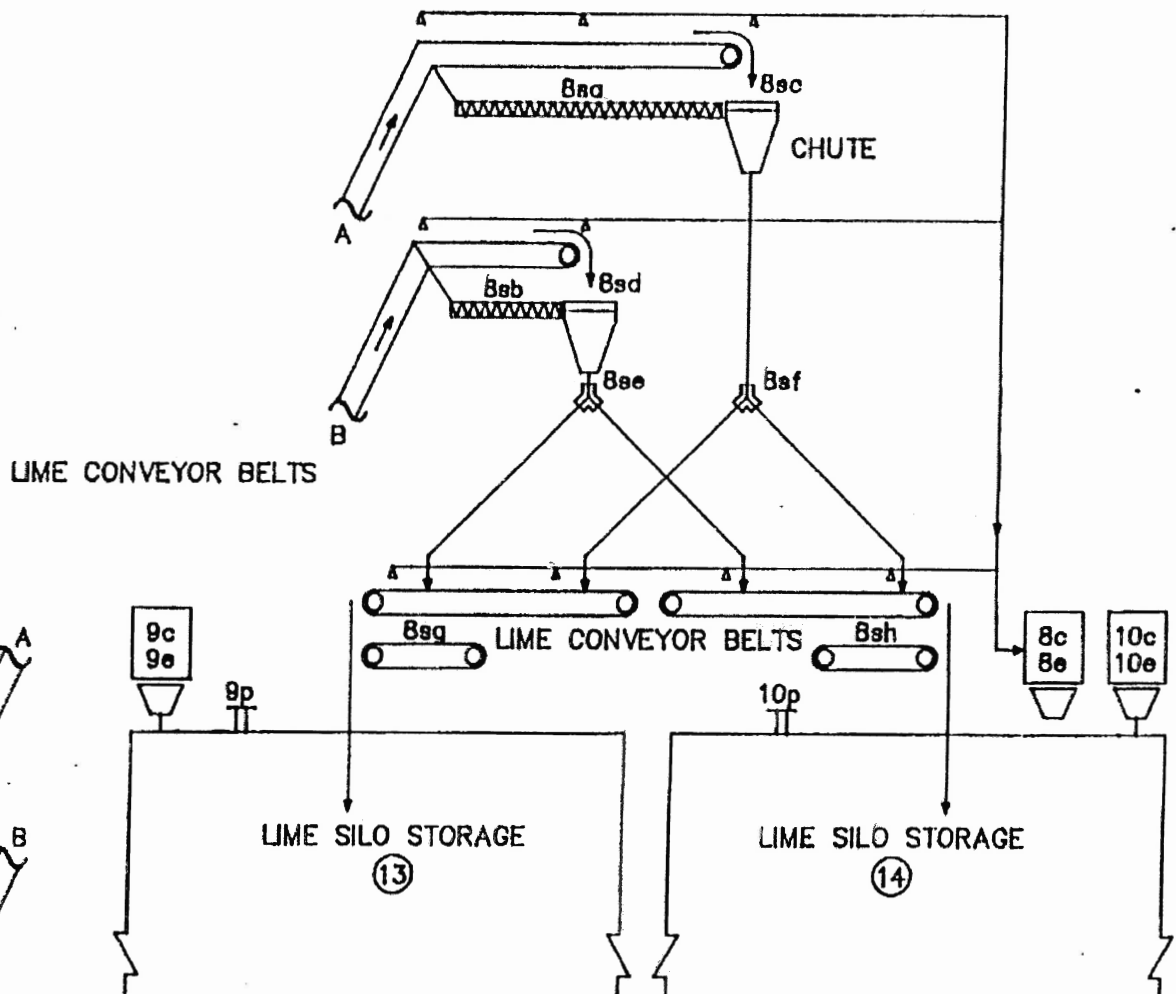
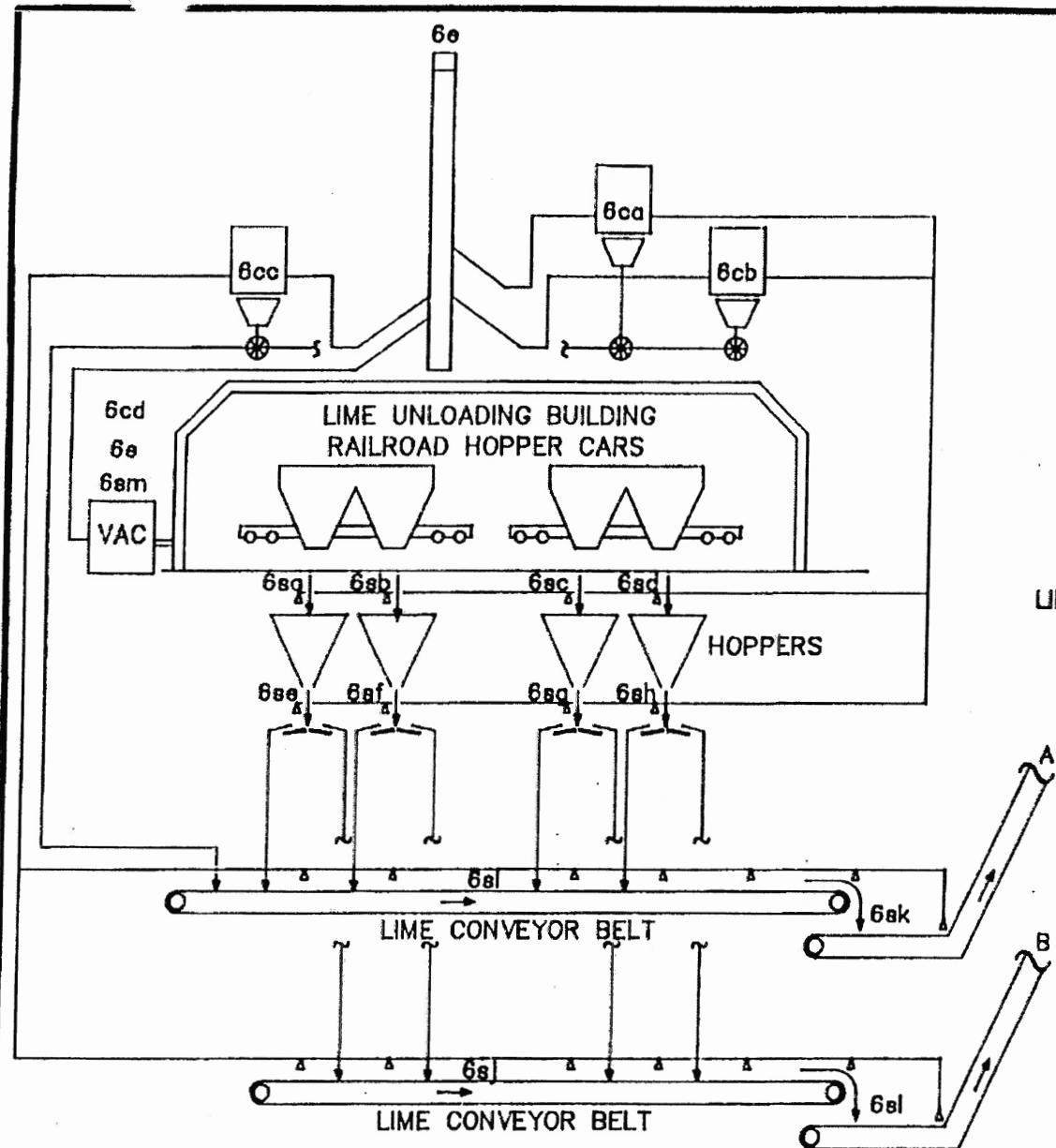


VALVE NO.	COAL LEVEL DETECTOR
FV-1905-1	LE-1905-A
FV-1905-2	LE-1905-B
FV-1905-3	LE-1905-C
FV-1905-4	LE-1905-D
FV-1905-5	LE-1905-E
FV-1905-6	LE-1905-F

SILLO No.	SONIC LEVEL DETECTOR
1-A	LE-1-1932-A
1-B	LE-1-1932-B
1-C	LE-1-1932-C
1-D	LE-1-1932-D
1-E	LE-1-1932-E
1-F	LE-1-1932-F
2-A	LE-2-1932-A
2-B	LE-2-1932-B
2-C	LE-2-1932-C
2-D	LE-2-1932-D
2-E	LE-2-1932-E
2-F	LE-2-1932-F
3-A	LE-3-1932-A
3-B	LE-3-1932-B
3-C	LE-3-1932-C
3-D	LE-3-1932-D
3-E	LE-3-1932-E
3-F	LE-3-1932-F

SILLO VALVE No.	VALVE DESIGNATION
1	FV-1924-A
2	FV-1924-B
3	FV-1924-C
4	FV-1924-D
5	FV-1924-E
6	FV-1924-F
7	FV-1924-G
8	FV-1924-H
9	FV-1924-I
10	FV-1924-J
11	FV-1924-K
12	FV-1924-L
13	FV-1924-M
14	FV-1924-N
15	FV-1924-O
16	FV-1924-P
17	FV-1924-Q
18	FV-1924-R
19	FV-1924-S
20	FV-1924-T
21	FV-1924-U
22	FV-1924-V
23	FV-1924-W
24	FV-1924-X
25	FV-1924-Y
26	FV-1924-Z
27	FV-1924-AA
28	FV-1924-AB
29	FV-1924-AC
30	FV-1924-AD
31	FV-1924-AE
32	FV-1924-AF
33	FV-1924-AG
34	FV-1924-AH
35	FV-1924-AI
36	FV-1924-AJ
37	FV-1924-AK
38	FV-1924-AL
39	FV-1924-AM
40	FV-1924-AN
41	FV-1924-AO
42	FV-1924-AP

HONOLULU THE POTOMAC WEST PENN POWER COMPANY EMSON COMPANY POWER COMPANY HARRISON POWER STATION UNITS 1 & 2	
FLOW CONTROL DIAGRAM COAL HANDLING SYSTEM	
Gibbs & Hill, Inc. ENGINEERING AND CONSTRUCTION	
DATE: 1968-04-01	SCALE: NONE
JOHN NO. 1968	1968-M-57



LEGEND

DRY DUST COLLECTOR

Xcx CONTROL DEVICE

Xsx EMISSION SOURCE

Xe EMISSION POINT

Xp RELIEF VENT

Δ PICKUP POINT

→ LIME FLOW

SCREW CONVEYOR

FOOTNOTE:
 (XX) - ITEM No. ON DWG 9899-E-23002

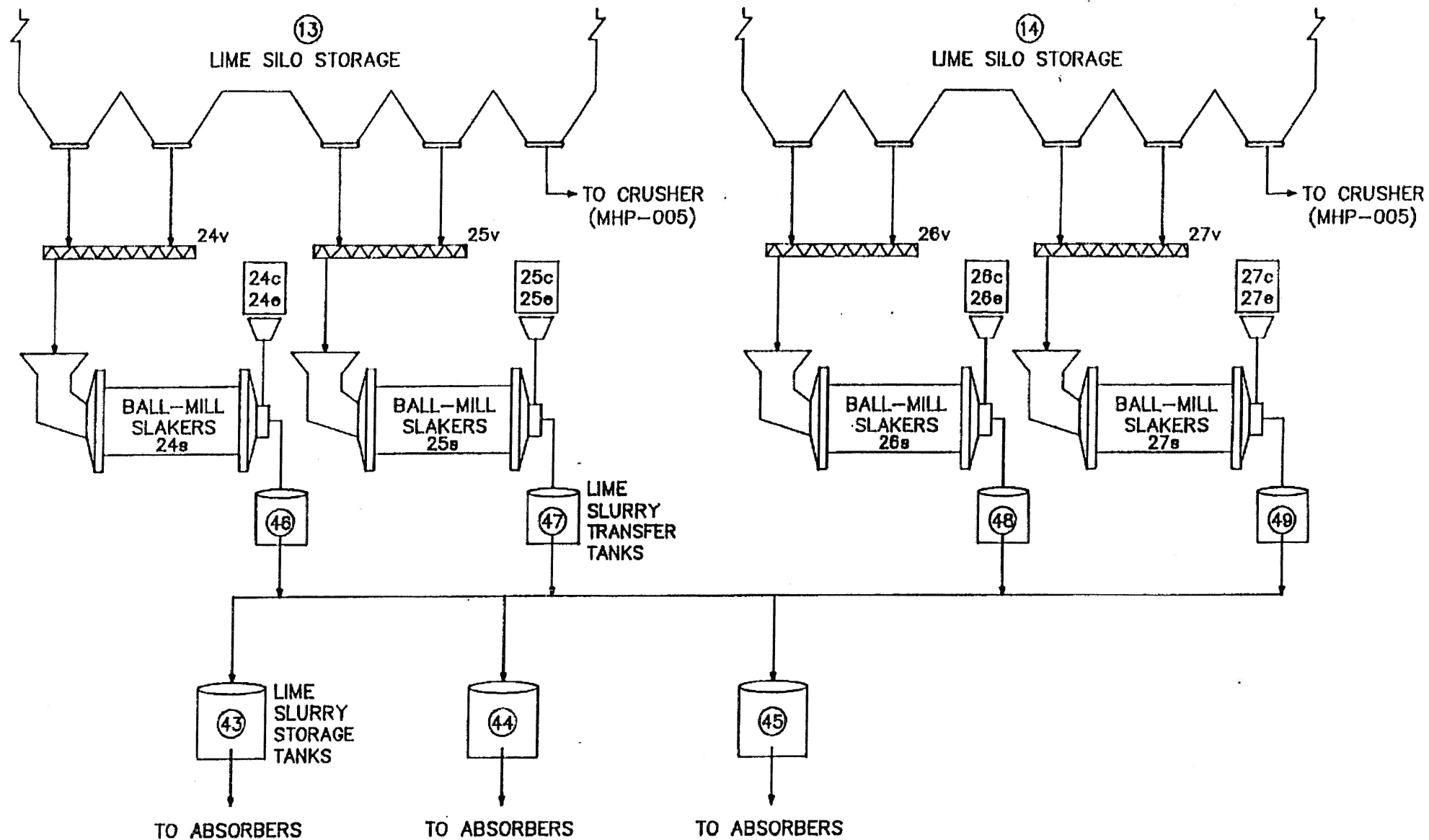
United Engineers & Constructors
 A Day/Johnson Company

HARRISON POWER STATION UNITS 1, 2 & 3
 SO₂ REMOVAL PROJECT

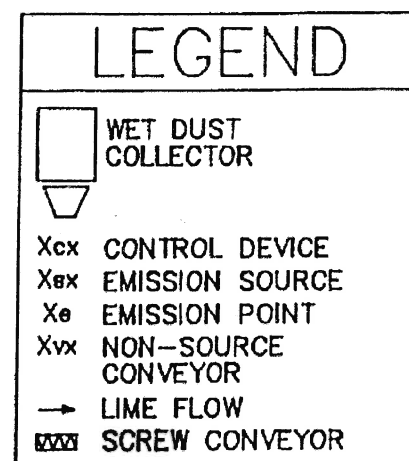
MONONGAHELA POWER COMPANY THE POTOMAC EDISON COMPANY WEST PENN POWER COMPANY

SYSTEM FLOW DIAGRAM
LIME HANDLING

SKETCH MHP-001 3/3/92



CONTINUED ON SKETCH MHP-004



FOOTNOTE:

⊗ - ITEM No. ON DWG 9899-E-230002

United Engineers & Constructors
A Day & Zimmermann Company

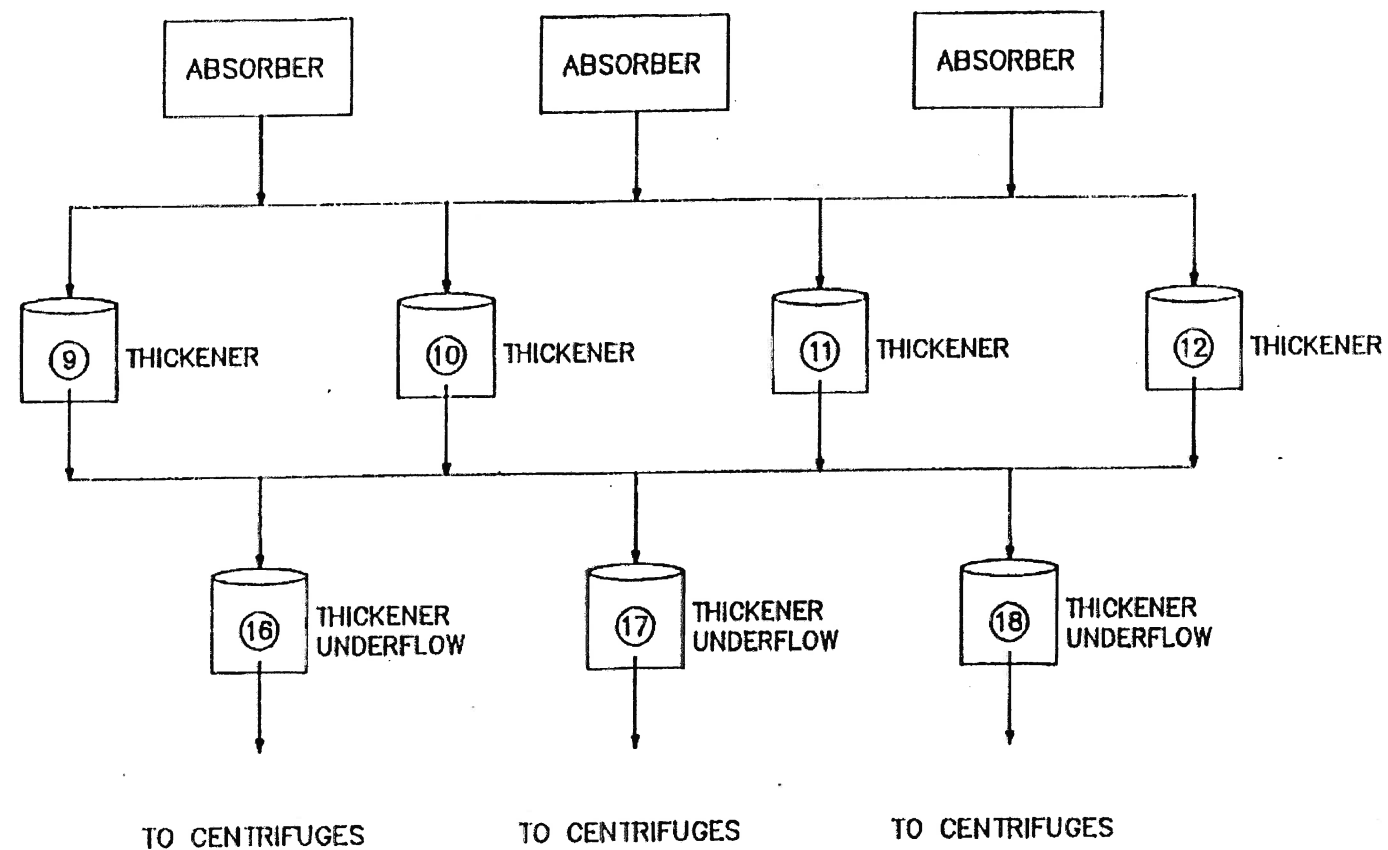
HARRISON POWER STATION UNITS 1, 2 & 3
SO₂ REMOVAL PROJECT

MONONGAHELA POWER COMPANY THE POTOMAC EDISON COMPANY WEST PENN POWER COMPANY

SYSTEM FLOW DIAGRAM
LIME SLURRY HANDLING

SKETCH MHP-003

3/3/92



CONTINUED ON SKETCH MHP-007

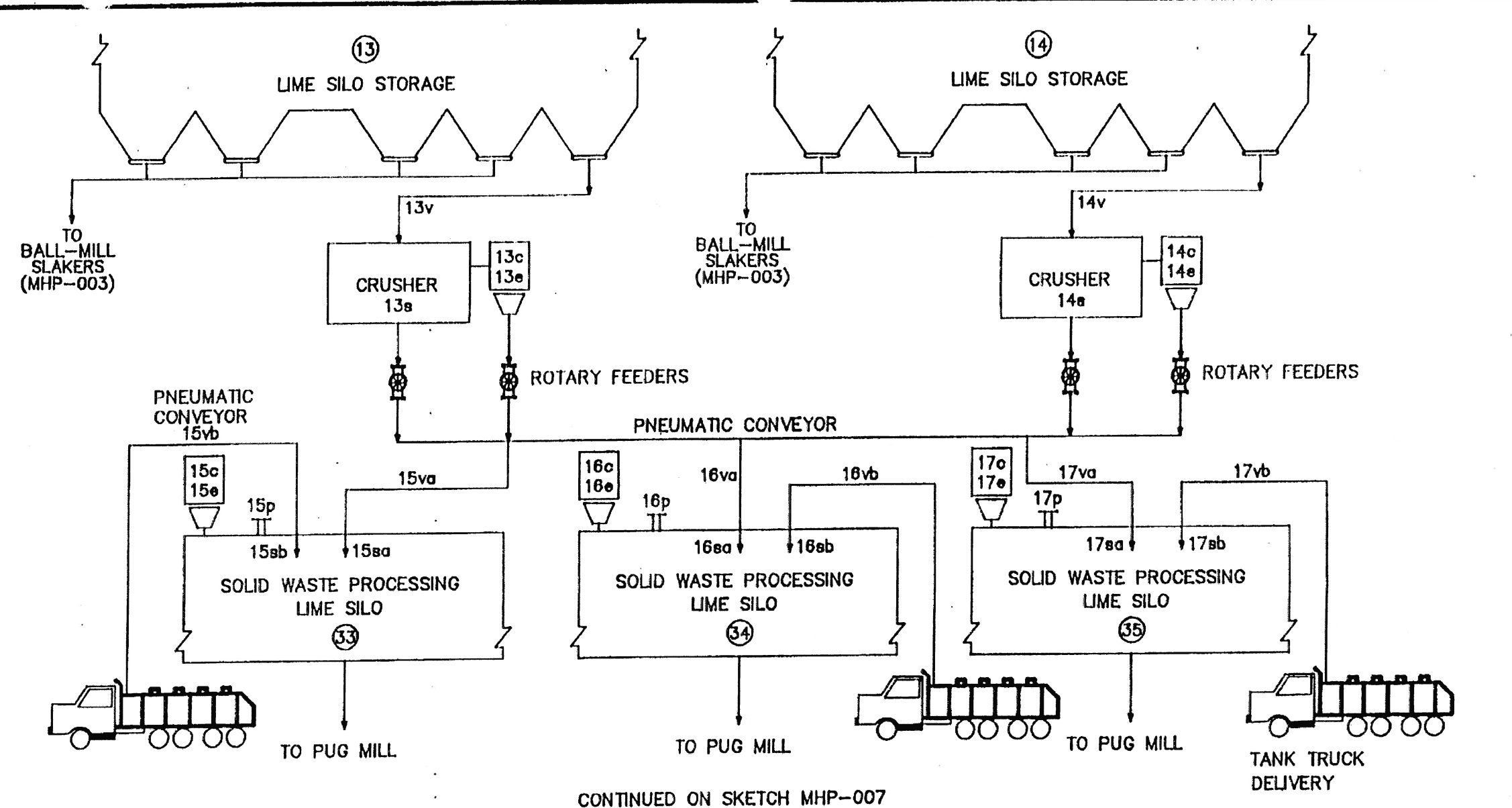
LEGEND	
	WET DUST COLLECTOR
Xcx	CONTROL DEVICE
Xsx	EMISSION SOURCE
Xe	EMISSION POINT
Xvx	NON-SOURCE CONVEYOR
→	LIME FLOW
	SCREW CONVEYOR

FOOTNOTE:

⊗ - ITEM No. ON DWG 9899-E-230002

**United Engineers
& Constructors**
A Day & Zimmermann Company

HARRISON POWER STATION UNITS 1, 2 & 3 SO ₂ REMOVAL PROJECT	
MONONGAHELA POWER COMPANY	THE POTOMAC EDISON COMPANY
WEST PENN POWER COMPANY	
SYSTEM FLOW DIAGRAM ABSORBER SLUDGE HANDLING	
SKETCH MHP-004	3/3/92



LEGEND

 DRY DUST COLLECTOR
 Xcx CONTROL DEVICE
 Xsx EMISSION SOURCE
 Xe EMISSION POINT
 Xp RELIEF VENT
 Xvx NON-SOURCE CONVEYOR
 → LIME FLOW

FOOTNOTE:
 (XX) - ITEM No. ON DWG 9899-E-230002

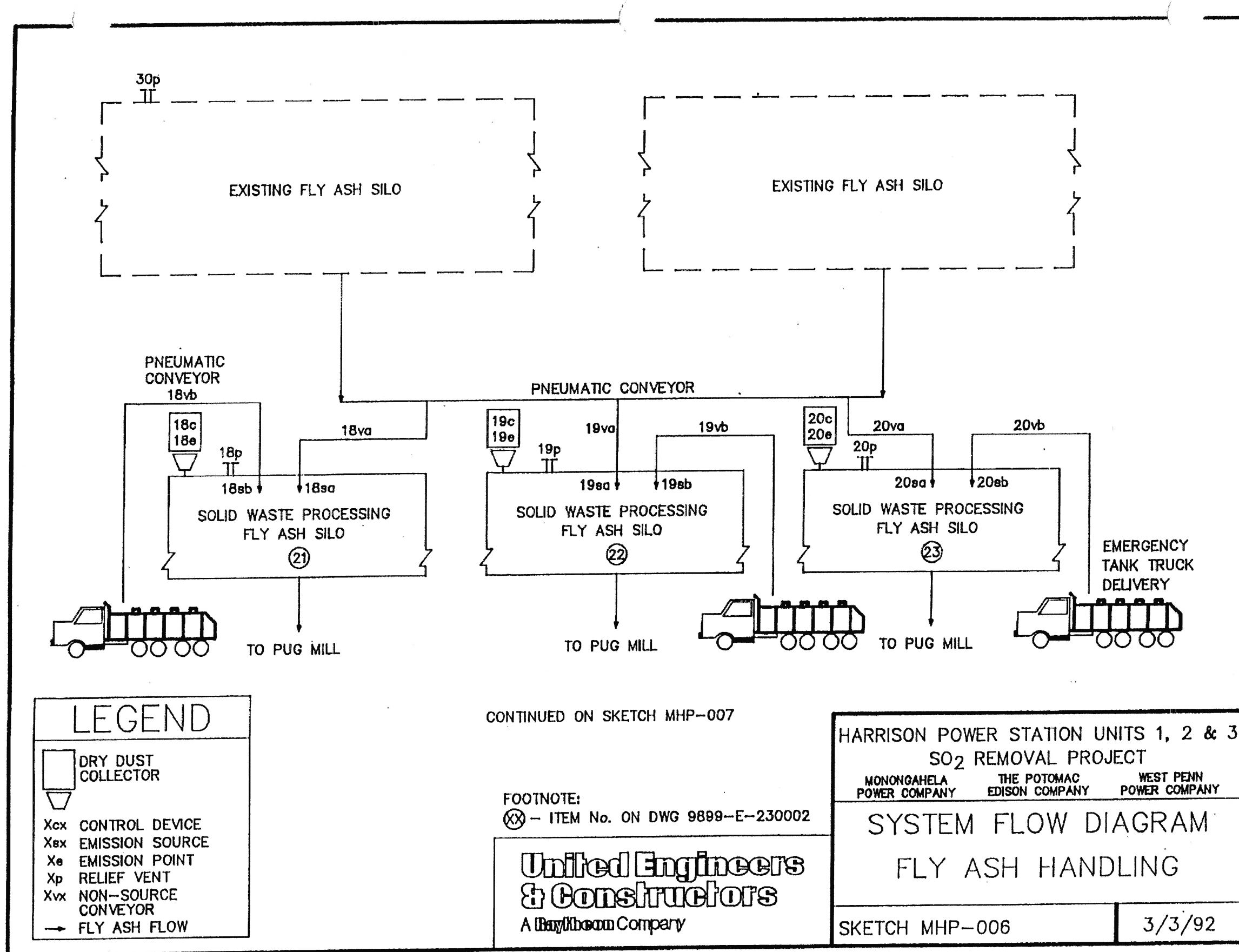
United Engineers & Constructors
 A Raytheon Company

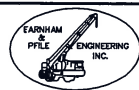
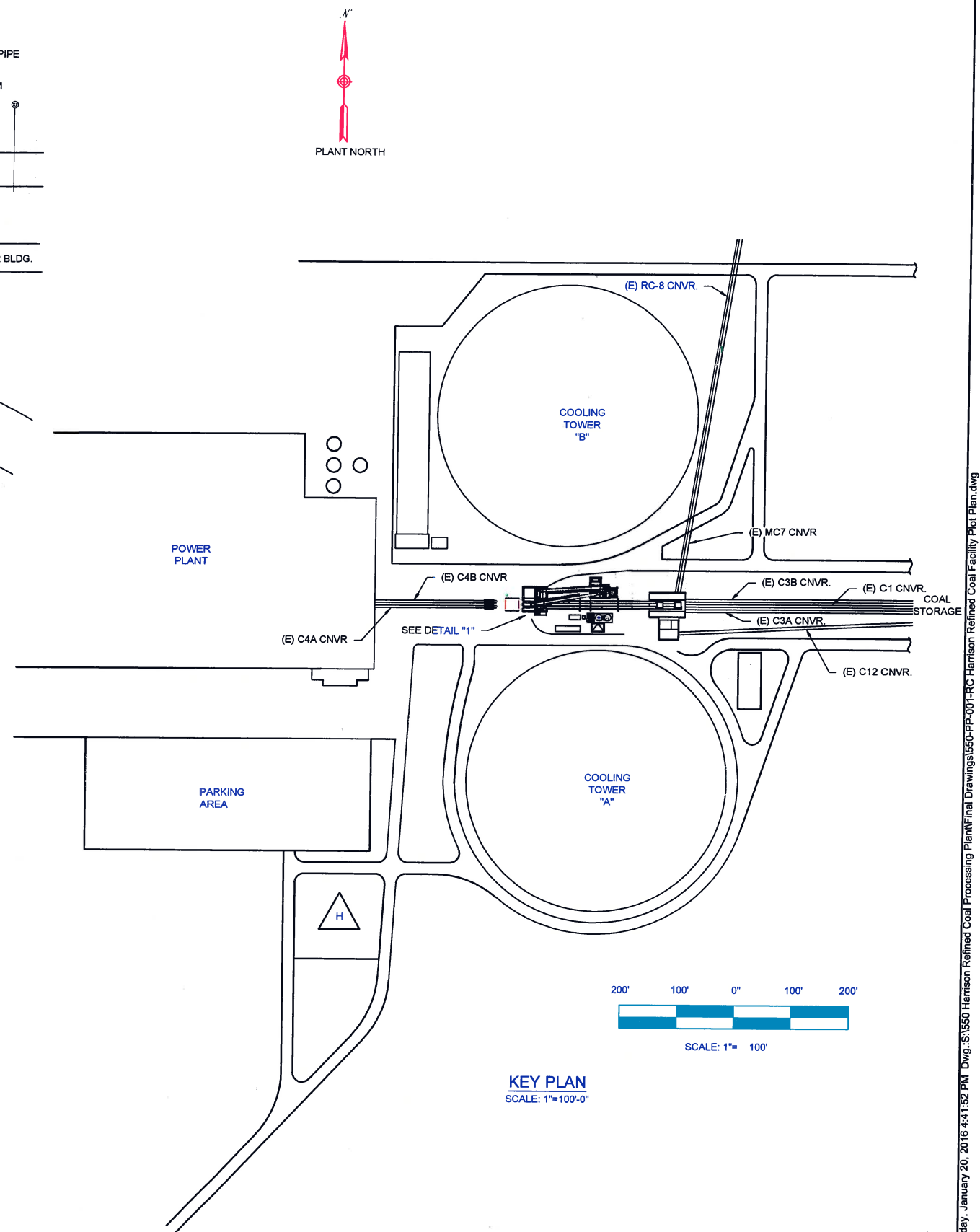
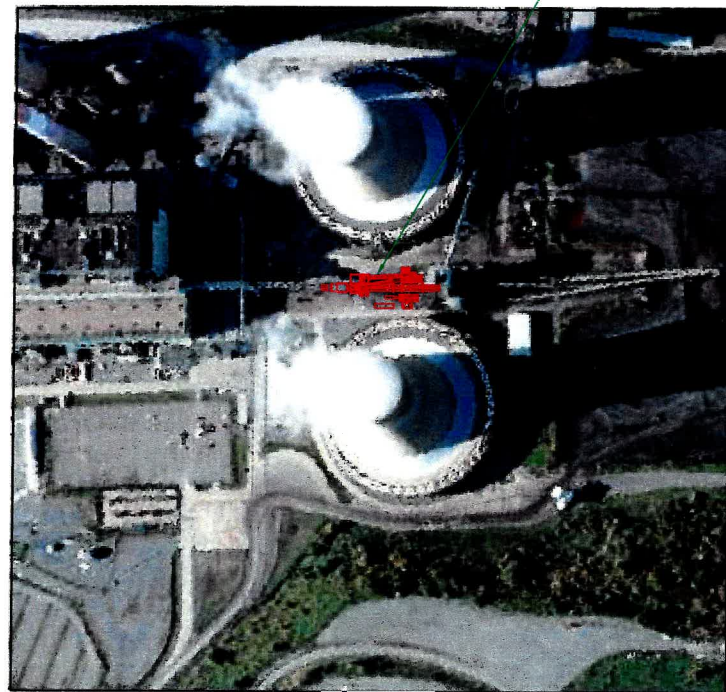
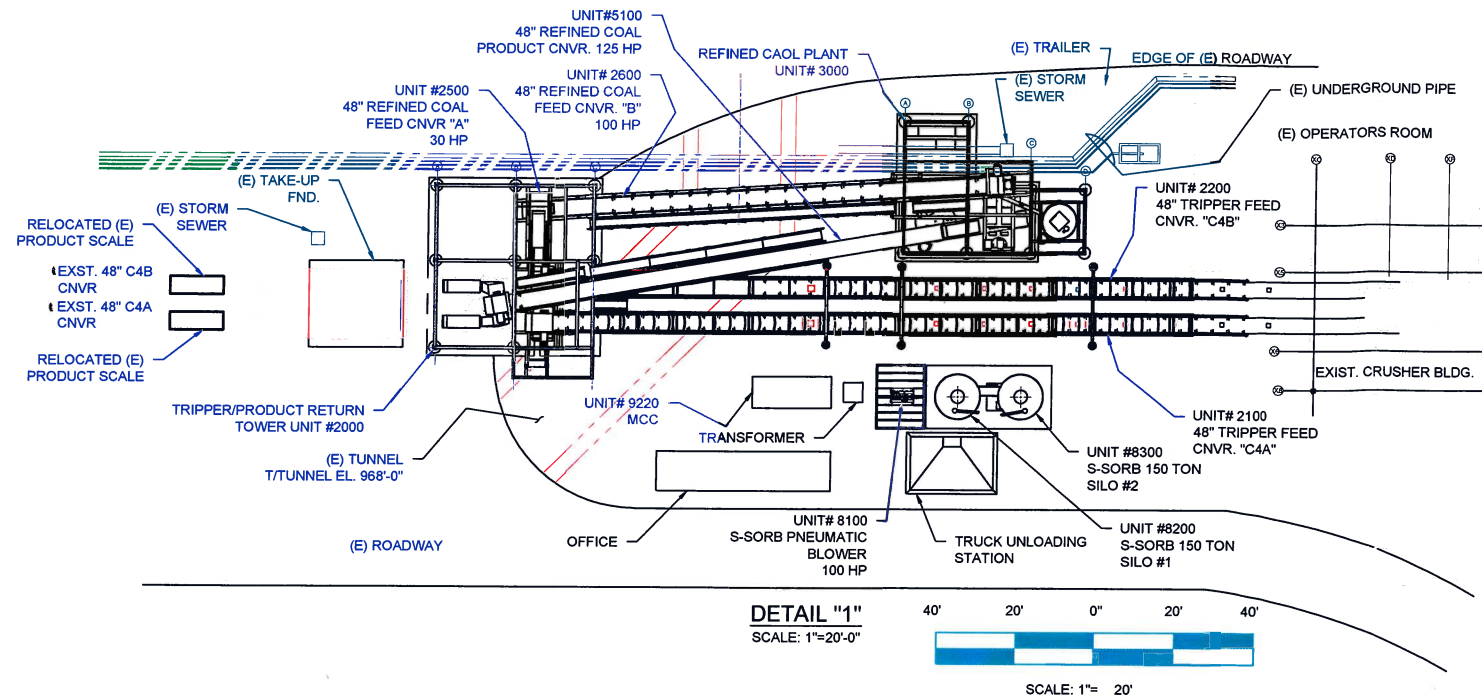
HARRISON POWER STATION UNITS 1, 2 & 3
 SO₂ REMOVAL PROJECT

MONONGAHELA POWER COMPANY THE POTOMAC EDISON COMPANY WEST PENN POWER COMPANY

SYSTEM FLOW DIAGRAM
 LIME HANDLING

SKETCH MHP-005 3/3/92





Q	UPDATED LOCATION OF REFINED COAL FACILITY	01/20/15	RJF	4
B	RVSD PRODUCT SCALES LOCATION	11/03/15	MDM	2
A	PERMIT	10/30/15	MDM	1
REV				

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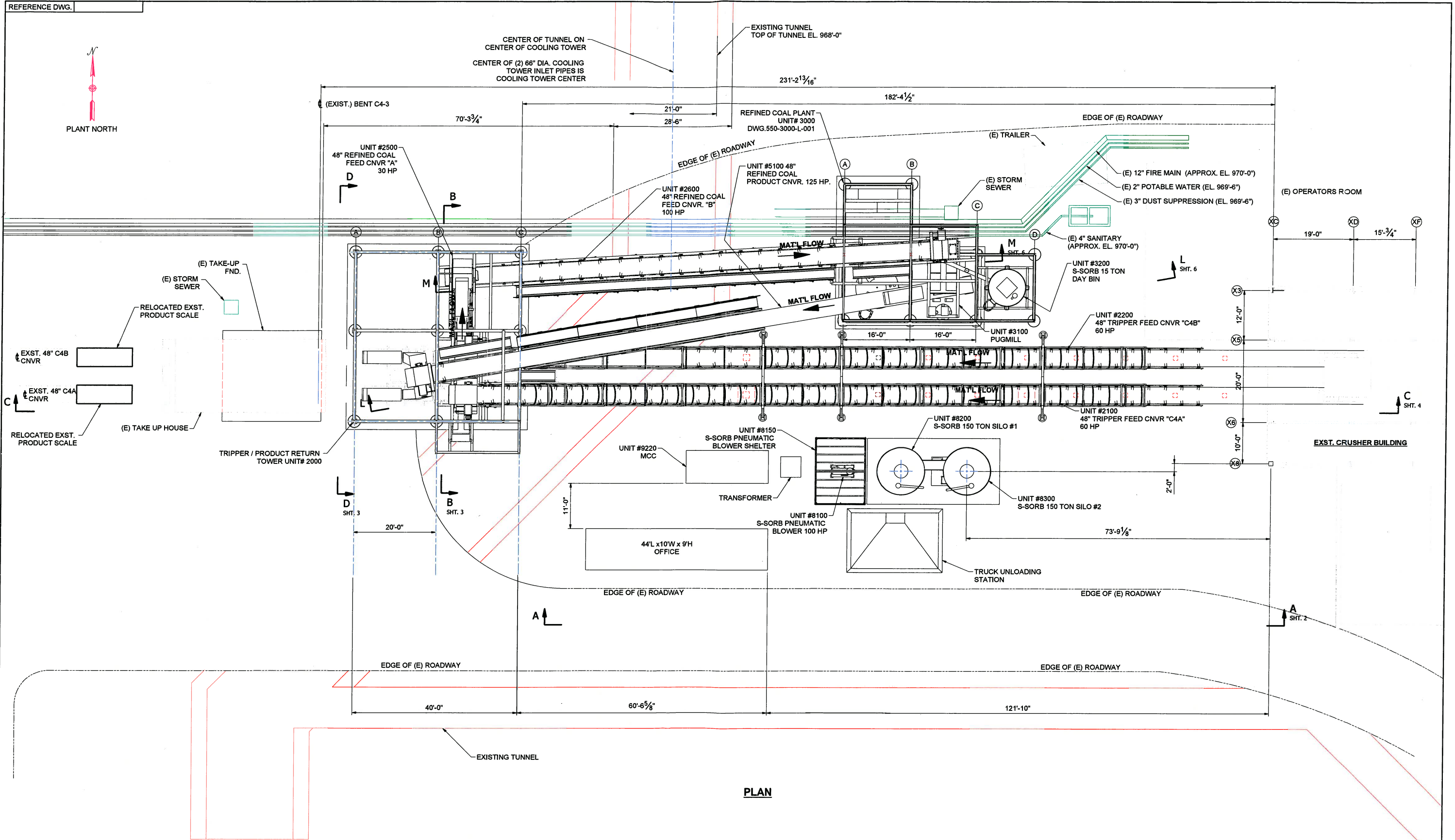
DESIGN	MDM	DATE	10/30/15
DESIGN	MDM	DATE	10/30/15
DESIGN	TJP	DATE	10/30/15
APPROVED		DATE	

AJG COAL INC.
REFINED COAL FACILITY
HARRISON POWER STATION
PLOT PLAN

1"=100'
550
PP-001
1 OF 1

Plot Date: Wednesday, January 20, 2016 4:41:52 PM Dwg.: S:\550 Harrison Refined Coal Processing Plant\Final Drawings\550-PP-001-RC Harrison Refined Coal Facility Plot Plan.dwg

REFERENCE DWG.

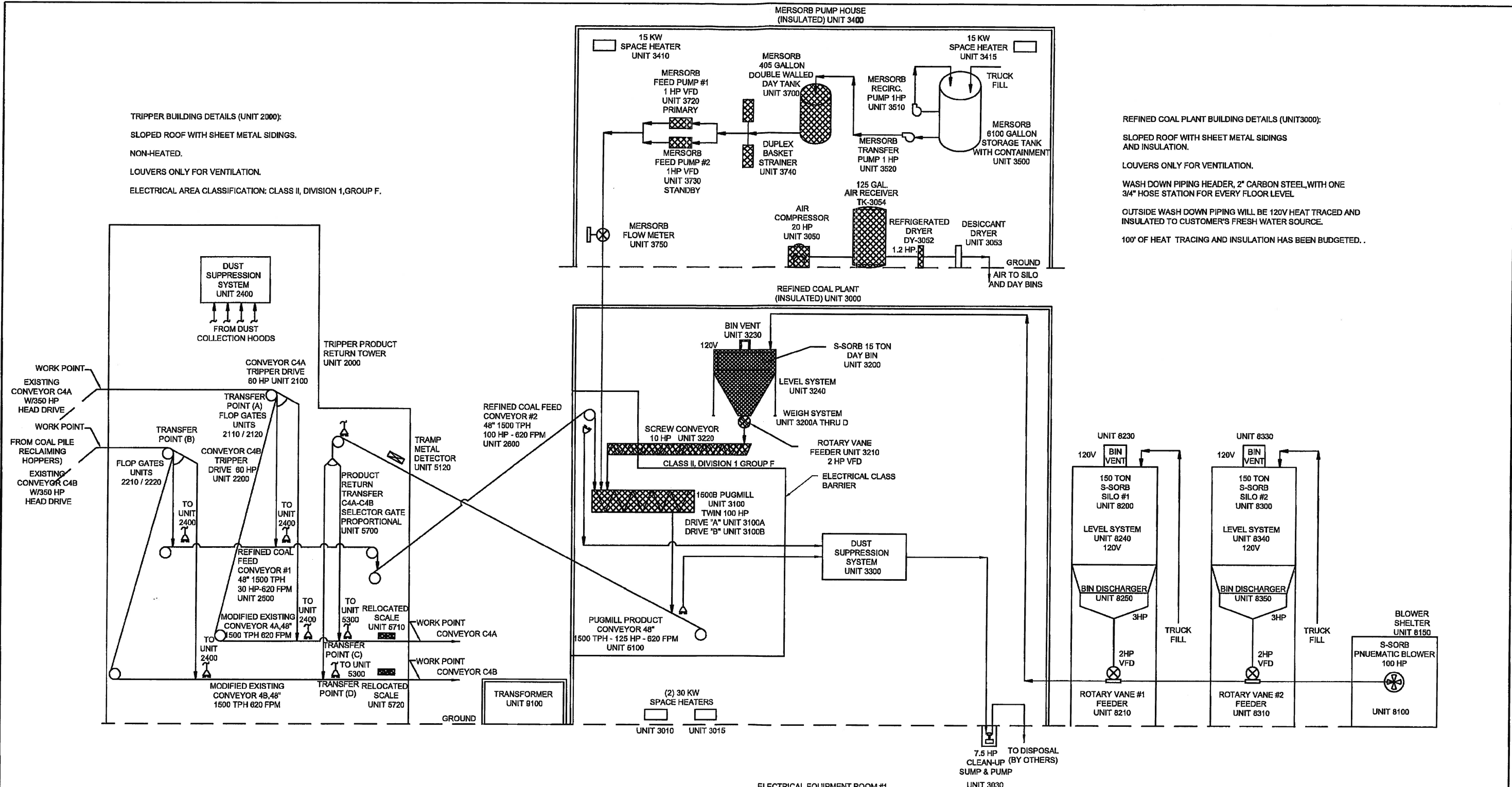


PLAN

	D				4	THIS DRAWING IS THE PROPERTY OF FARNHAM & PILE ENGINEERING, INC. AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK ALL RIGHTS OF DESIGN OR INVENTION RESERVED		DRAWN BY: MDM DATE: 11/03/15	AJG COAL INC.	SCALE: 1"=10'	PROJECT NO. 550
	C	REWORKED REF. COAL BLDG.	12/11/15	RJF	3						
	B	REVISED TO CLEAR EXIST. TUNNEL	11/17/15	RJF	2						
	A	FOR APPROVAL	11/03/15	MDM	1						
	REV.	ISSUED FOR	DATE	MADE BY	REV.						
								APPROVED BY:			SHEET 1 OF 6

TRIPPER BUILDING DETAILS (UNIT 2000):
SLOPED ROOF WITH SHEET METAL SIDINGS.
NON-HEATED.
LOUVERS ONLY FOR VENTILATION.
ELECTRICAL AREA CLASSIFICATION: CLASS II, DIVISION 1, GROUP F.

REFINED COAL PLANT BUILDING DETAILS (UNIT 3000):
SLOPED ROOF WITH SHEET METAL SIDINGS AND INSULATION.
LOUVERS ONLY FOR VENTILATION.
WASH DOWN PIPING HEADER, 2" CARBON STEEL, WITH ONE 3/4" HOSE STATION FOR EVERY FLOOR LEVEL.
OUTSIDE WASH DOWN PIPING WILL BE 120V HEAT TRACED AND INSULATED TO CUSTOMER'S FRESH WATER SOURCE.
100' OF HEAT TRACING AND INSULATION HAS BEEN BUDGETED.



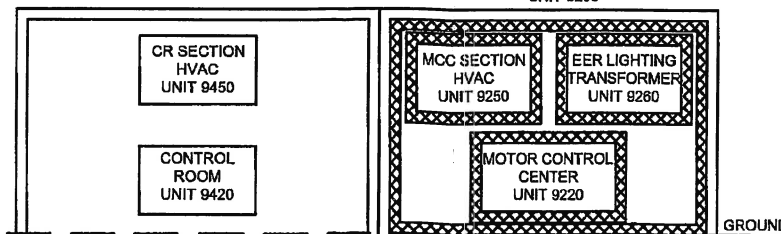
PLANT FEED RATES (TPH)		ANNUAL MAX BURN (TONS)	TONS/WEEK	HOURS/WEEK BASED ON MAX RECLAIM RATE
1500	CONVEYORS 4A & 4B COMBINED MAX RECLAIM	5,000,000	96,000	64

STORAGE CAPACITY - 5 DAYS						
MAX BURN RATE TONS PER DAY	CKD - S- SORB			MERSORB		
	TPD	STORAGE (TONS)	SILLO (TONS)	GPD	STORAGE (GAL)	TANKS (GAL)
16,500	65	324	(2) - 150	313	1,583	(1) - 6,150

	PERCENT BY WEIGHT			CHEMICAL FLOW (TPH)			CHEMICAL FLOW (GPH)		
	LOW	DESIGN	HIGH	LOW	DESIGN	HIGH	LOW	DESIGN	HIGH
MERSORB	0.01%	0.012%	0.03%	0.15	0.18	0.45	21.13	25.38	63.38
S-SORB	0.20%	0.35%	0.50%	3.0	5.25	7.5			

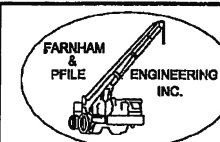
ELECTRICAL EQUIPMENT TRAILER #2
9400

ELECTRICAL EQUIPMENT ROOM #1
(20' L x 8' W x 8.75' H)
UNIT 9200



= RELOCATED EQUIPMENT

REV	DATE	BY	DESCRIPTION
L	01/15/16	MIL	REVISED MERSORB STORAGE TANK DESCRIPTION (UNIT 3500)
K	11/16/15	MIL	ADD REFINED FEED CONV.#2 & REMOVED PUGMILL PRODUCT CONV.#2
J	11/09/15	MIL	REMOVED TRUCK FILL FROM PNEUMATIC BLOWER
H	11/08/15	MIL	ADDED TRAMP METAL DETECTOR & BUILDING UNIT NUMBER
G	11/03/15	MIL	RELOCATED BELT SCALE & IDENTIFIED SELECTOR GATE
F	10/27/15	MIL	REVISED CONVEYOR NAME'S



AJG COAL INC. REFINED COAL FACILITY
HARRISON POWER STATION
FLOW SHEET

DRAWN BY: MIL	DATE: 10/08/15	DWG No: 550-FS-001	REV. L
CHECKED BY: TJP	SCALE: N.T.S.		

Attachment D
Emission Units Table

ATTACHMENT D - Emission Units Table
(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID ¹	Emission Point ID ¹	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device ¹
Combustion Sources					
Unit B1	Stack1	Harrison Unit 1	1972	6325 MMBtu/hr	ESP-1, FGD-1, SCR-1
Unit B2	Stack2	Harrison Unit 2	1973	6325 MMBtu/hr	ESP-2, FGD-2, SCR-2
Unit B3	Stack3	Harrison Unit 3	1974	6325 MMBtu/hr	ESP-3, FGD-3, SCR-3
Boiler 1A	Aux Boiler Stack	Auxiliary Boiler A	1972	202.2 MMBtu/hr	N/A
Aux Blr PB	Aux Boiler Stack	Auxiliary Boiler B	1972	202.2 MMBtu/hr	N/A
EDG1	EDG1	Emergency Generator No. 1	1971	800 kW	N/A
EDG2	EDG2	Emergency Generator No. 2	1971	800 kW	N/A
EDG3	EDG3	Emergency Generator No. 3	1994	350 kW	N/A
FP-01	FP-01	Emergency Diesel Fire Pump	2019	510 bhp	N/A
FP-02	FP-02	Emergency Diesel Fire Pump	1971	335 bhp	N/A
EG-1	EG-1	Wetlands Pump House Emergency Generator	2012	145 HP/108.2 kW	N/A
EG-2	EG-2	Leachate Collection/Conveyance System Emergency Generator	2019	605 bhp	N/A
Material Handling Sources					
LRCH	LRCH	Lime Rail Car Unloading Hoppers	1994	380 TPH	6ca, 6cb, 6cc, 6cd
6si, 6sj	6si, 6sj	Lime Unloading Conveyor and Transfer Points	1994	450 TPH	6ca, 6cb, 6cc
8sa, 8sb, 8sg, 8sh	8sa, 8sb, 8sg, 8sh	Lime Transfer and Storage Conveyors with Associated Dribble Conveyors	1994	450 TPH (Trans.) 900 TPH (Stor.)	8c
13	13	Lime Storage Silo	1994	101,788 Tons	9c
14	14	Lime Storage Silo	1994	101,788 Tons	10c
37u, 37Au, 38u	37u, 37Au, 38u	Hydrated Lime Pneumatic Delivery Conveyors (from trucks)	2022	70,250 TPY	Full Enclosure
37	37	DSI Lime Storage Silo 1	1994	150 Tons	37c
37A	37A	DSI Lime Storage Silo 2	1994	150 tons	37Ac
38	38	DSI Lime Storage Silo 3	1994	150 Tons	38c

ATTACHMENT D - Emission Units Table
(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID ¹	Emission Point ID ¹	Emission Unit Description	Year Installed/Modified	Design Capacity	Control Device ¹
37pc, 37Apc, 38pc	37pc, 37Apc, 38pc	DSI Pneumatic Delivery Conveyors	2022	2.67 TPH	Full Enclosure
24v, 25v, 26v, 27v	24v, 25v, 26v, 27v	Ball-Mill Delivery Screw Conveyors	1994	30 TPH	Full Enclosure
24s, 25s, 26s, 27s	24s, 25s, 26s, 27s	Ball-Mill Slakers	1994	30 TPH	24c, 25c, 26c, 27c
15va, 16va, 17va	15va, 16va, 17va	Solid Waste Processing Lime Silo (SWPLS) Loading Pneumatic Conveyors from Lime Crushers	1994	25 TPH	Full Enclosure
15vb, 16vb, 17vb	15vb, 16vb, 17vb	Solid Waste Processing Lime Silo (SWPLS) Loading Pneumatic Conveyors from trucks	1994	25 TPH	Full Enclosure
33	33	Solid Waste Processing Lime Silo	1994	388 Tons	15c
34	34	Solid Waste Processing Lime Silo	1994	388 Tons	16c
35	35	Solid Waste Processing Lime Silo	1994	388 Tons	17c
18va, 19va, 20va	18va, 19va, 20va	Solid Waste Processing Fly Ash Silo (SWPFAS) Loading Pneumatic Conveyors from Fly Ash Silos	1994	120 TPH	Full Enclosure
18vb, 19vb, 20vb	18vb, 19vb, 20vb	Solid Waste Processing Fly Ash Silo (SWPFAS) Loading Pneumatic Conveyors from trucks	1994	120 TPH	Full Enclosure
21	21	Solid Waste Processing Fly Ash Silo	1994	10,479 Tons	18c
22	22	Solid Waste Processing Fly Ash Silo	1994	10,479 Tons	19c
23	23	Solid Waste Processing Fly Ash Silo	1994	10,479 Tons	20c
21va, 22va, 23va	21va, 22va, 23va	Solid Waste Processing Fly Ash Screw Conveyors	1994	70 TPH	Full Enclosure
21vb, 22vb, 23vb	21vb, 22vb, 23vb	Solid Waste Processing Lime Screw Conveyors	1994	10 TPH	Full Enclosure
21vc, 22vc, 23vc	21vc, 22vc, 23vc	Solid Waste Processing Lime/Fly Ash Screw Conveyors	1994	80 TPH	Full Enclosure
21vd, 22vd, 23vd	21vd, 22vd, 23vd	Solid Waste Processing Lime/Fly Ash Screw Conveyors	1994	80 TPH	Full Enclosure
37v, 38v	37v, 38v	Centrifuge Cake Screw Conveyors	1994	150 TPH	Full Enclosure
21s	21s	Solid Waste Processing Pug Mill	1994	600 TPH	21c
22s	22s	Solid Waste Processing Pug Mill	1994	600 TPH	22c
23s	23s	Solid Waste Processing Pug Mill	1994	600 TPH	23c
RCCD	RCCD	Rail Car Coal Dumpers	1971	1500 TPH	Water Spray

ATTACHMENT D - Emission Units Table
(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID ¹	Emission Point ID ¹	Emission Unit Description	Year Installed/Modified	Design Capacity	Control Device ¹
ST-1	ST-1	Coal Stockpile	1971	1,000,000 Tons	Water Spray
ST-2	ST-2	Ash Disposal Areas	1971	64,320,000 Tons	Water Spray
BH Conv	BH Conv	Boiler House Conveyors (S-1a/b, S-2a/b, S-3a/b, C-5a/b, C-6a/b)	1971	1500 TPH	Partial Enclosure
C-12	C-12	Conveyor from Surge Bin to Lowering Well #2	1971	1500 TPH	Partial Enclosure
C-1	C-1	Conveyor from Crusher House to Lowering Well #2	1971	1500 TPH	Partial Enclosure
C-3a/b	C-3a/b	Conveyor From Coal Reclaim to Crusher House Transfer Bin	1971	1500 TPH	Partial Enclosure
C-4a/b	C-4a/b	Conveyor From Crusher House to Boiler House Conveyors	1971	1500 TPH	Partial Enclosure
RC-7	RC-7	Conveyor From Rail Dumper to RC-8	1971	1500 TPH	Partial Enclosure
RC-8	RC-8	Conveyor From RC-7 to Crusher House	1971	1500 TPH	Partial Enclosure
MC-7	MC-7	Conveyor From Mine to Crusher House	1971	1500 TPH	Partial Enclosure
C-2b	C-2b	Conveyor From Chute to Lowering Well #1	1971	800 TPH	Partial Enclosure
C-10	C-10	Internal Crusher House Conveyor to Surge Bin	1971	1500 TPH	Partial Enclosure
C-11	C-11	Internal Crusher House Conveyor from Surge Bin	1979	1500 TPH	Partial Enclosure
CRU-01	CRU-01	Coal Crusher	1971	1500 TPH	Full Enclosure, Water Spray
CRU-02	CRU-02	Coal Crusher	1972	1500 TPH	Full Enclosure, Water Spray
CRU-03	CRU-03	Coal Crusher	1977	1500 TPH	Full Enclosure, Water Spray
UR-1	UR-1	Urea Storage Silos (4)	1994	25 TPH (each)	28c, 29c, 30c, 31c
UR-2	UR-2	Urea Feed Hoppers (2)	1994	16 TPH (each)	32c, 33c
Miscellaneous Sources					
COOL-01	Cooling Towers (2)	Natural Draft Cooling Towers (2)	1971	585,000 gpm	N/A
PVR	Paved Roads	Plant Paved Roads	N/A	N/A	N/A

ATTACHMENT D - Emission Units Table
(includes all emission units at the facility except those designated as
insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID¹	Emission Point ID¹	Emission Unit Description	Year Installed/Modified	Design Capacity	Control Device¹
UPVR	Unpaved Roads	Plant Unpaved Roads	N/A	N/A	N/A
U2HN	U2HN	Underground Gasoline Storage Tank	1990	2000 gallons	N/A
A53HN	A53HN	Dozer Fuel Oil Storage Tank	1990	12000 gallons	N/A
WASTE-WATER	Harrison Wastewater Operations	Harrison Wastewater Treatment Operations (Insignificant Activity)	N/A	6,084.55 MMgal/year	N/A
Insig Tanks	N/A	Insignificant Storage Tanks (Insignificant Activity)	N/A	N/A	N/A
T01	T01	Propane Storage/Feed Tank	2012	1000 gallons	N/A
T02	T02	Propane Storage/Feed Tank	2012	1000 gallons	N/A

Miscellaneous Sources (Rapid Discharge Rail Unloading) *					
Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
RDRU	EP-1	Rapid Discharge Rail Unloader to Belt Feeder	TBD	3,000 TPH	Chemical Fogging System
BF-01	EP-2	Unloading Belt Feeder	TBD	3,000 TPH	Enclosure/CFS
CV-01	EP-3	Load-out Conveyor	TBD	3,000 TPH	Enclosure/CFS
CV-02	EP-4	Conveyor	TBD	3,000 TPH	Enclosure/CFS
CV-03	EP-5	Conveyor to Transfer Tower	TBD	3,000 TPH	Enclosure/CFS
CV-04	EP-6	Conveyor to Stacking Tubes	TBD	3,000 TPH	Enclosure/CFS
ST-003	EP-7	Stacking Tube/Coal Pile	TBD	3,000 TPH	None

**These sources were included in Permit R13-2988 but have not yet been installed as of the date of this application*

Attachment E

Emission Unit Forms

Combustion Sources

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: Unit B1	Emission unit name: Harrison Unit 1	List any control devices associated with this emission unit. ESP-1, FGD-1, SCR-1, DSI	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 6,325 MMBtu/hr Foster Wheeler opposed wall fired boiler. The primary fuel is coal with natural used for start-up and stabilization. The flue gas emissions are controlled with an ESP for particulate control, a wet scrubber for SO ₂ control and low-NOx burners and an SCR for NOx control.			
Manufacturer: Foster and Wheeler	Model number:	Serial number:	
Construction date:	Installation date: 1972	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 6,325 MMBtu/hr			
Maximum Hourly Throughput: 263.54 tons/hour coal	Maximum Annual Throughput: 2,308,625 tons/year coal	Maximum Operating Schedule: 8,760 hours per year	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☒ Indirect Fired ☐ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 6,325 MMBtu/hr		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Bituminous coal – 263.54 tons/hr; 2,308,625 tons/yr			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Coal (Primary)	4.0%	N/A	~12,500 Btu/lb
Natural Gas (Start-Up/Stabilization)	N/A	N/A	~1,020 Btu/scf
#2 Fuel Oil (Start-Up/Stabilization)	N/A	N/A	140,000 Btu/gal

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	131.8	577.2
Nitrogen Oxides (NO _x) ^b	3,162.5	13,851.8
Lead (Pb) ^c	0.0408	0.179
Particulate Matter (PM _{2.5}) ^a	161.3	706.4
Particulate Matter (PM ₁₀) ^a	224.5	983.5
Total Particulate Matter (TSP) ^d	316.3	1,385.2
Condensable PM ^g	126.5	554.1
Sulfur Dioxide (SO ₂) ^c	32,384.0	141,841.9
Volatile Organic Compounds (VOC) ^a	15.8	69.3
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Antimony ^c	0.00253	0.011
Arsenic ^c	0.0417	0.183
Beryllium ^c	0.00221	0.0097
Cadmium ^c	0.00506	0.0222
Chromium ^c	0.0534	0.234
Cobalt ^c	0.0158	0.0693
Manganese ^c	0.0679	0.297
Mercury ^c	0.0173	0.0759
Nickel ^c	0.0512	0.224
Selenium ^c	0.18	0.79
Hydrochloric Acid (HCl) ^c	6.72	29.45
Hydrogen Flourine (HF) ^c	2.31	10.11
Sulfuric Acid (H ₂ SO ₄) ^c	249.99	1094.95
Dioxin Compounds ^c	0.000000464	0.00000203
Polycyclic Organics ^c	0.0132	0.0576
Acetaldehyde ^a	0.15	0.658
Acrolein ^a	0.076	0.335
Benzene ^a	0.343	1.501
Benzyl chloride ^a	0.184	0.808
Cyanide Compounds ^a	0.659	2.886
Formaldehyde ^a	0.063	0.277
Isophorone ^a	0.153	0.670
Methyl Bromide ^a	0.042	0.185
Methyl Chloride ^a	0.140	0.612
Methyl Ethyl Ketone ^a	0.103	0.450
Methyl Hydrazine ^a	0.045	0.196
Methylene chloride ^a	0.076	0.335
Propionaldehyde ^a	0.100	0.439
Toluene ^a	0.063	0.277

Emissions Data (Continued)		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	1,591,791.7	6,972,047.5
Methane ^f	14.0	61.2
N ₂ O ^f	22.3	97.8

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

^a Emissions based on AP-42, Section 1.1 (Revised 9/98).
^b Emissions based on 0.50 lbs/MMBtu NO_x limit from current Phase II Acid Rain Permit.
^c Emissions based on Electric Power Research Institute (EPRI) LARK-TRIPP RY2006 software.
^d Emissions based on 45 CSR 2-4.1a TSP limit of 0.05 lbs/MMBtu.
^e Emissions based on 5.12 lbs/MMBtu SO₂ limit per 45 CSR 10.
^f Emissions based on 40 CFR Part 98, Subpart C, Tables C-1 and C-2.
^g Emissions based on AP-42, Table 1.1-5, "All PM controls combined with an FGD control"
Supporting emission calculation information is provided in Appendix A.

Applicable Requirements																		
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included. Combustion Emissions Unit ("C") applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. "C-1") to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting ("CTRR") requirements in Table C-TRR. Applicable requirement codes below are listed in Table C-AR. Requirementd are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units <table> <tbody> <tr> <td>C-1</td> <td>C-11</td> <td></td> </tr> <tr> <td>C-2</td> <td>C-12</td> <td></td> </tr> <tr> <td>C-4</td> <td>C-13</td> <td>C-20</td> </tr> <tr> <td>C-6</td> <td>C-14</td> <td>C-21</td> </tr> <tr> <td>C-8</td> <td>C-16</td> <td>C-22</td> </tr> <tr> <td>C-9</td> <td>C-17</td> <td></td> </tr> </tbody> </table>	C-1	C-11		C-2	C-12		C-4	C-13	C-20	C-6	C-14	C-21	C-8	C-16	C-22	C-9	C-17	
C-1	C-11																	
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C-6	C-14	C-21																
C-8	C-16	C-22																
C-9	C-17																	
☒ Permit Shield																		
For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.) Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.																		
Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No If no, complete the Schedule of Compliance Form as ATTACHMENT F.																		

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: Unit B2	Emission unit name: Harrison Unit 2	List any control devices associated with this emission unit. ESP-2, FGD-2, SCR-2, DSI
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

6,325 MMBtu/hr Foster Wheeler opposed wall fired boiler. The primary fuel is coal with natural used for start-up and stabilization. The flue gas emissions are controlled with an ESP for particulate control, a wet scrubber for SO₂ control and low-NOx burners and an SCR for NOx control.

Manufacturer: Foster and Wheeler	Model number:	Serial number:
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Construction date:	Installation date: 1973	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 6,325 MMBtu/hr

Maximum Hourly Throughput: 263.54 tons/hour coal	Maximum Annual Throughput: 2,308,625 tons/year coal	Maximum Operating Schedule: 8760 hours per year
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☒ Yes ☐ No	If yes, is it? ☒ Indirect Fired ☐ Direct Fired
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Maximum design heat input and/or maximum horsepower rating: 6,325 MMBtu/hr	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Bituminous coal – 263.54 tons/hr; 2,308,625 tons/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Coal (Primary)	4.0%	N/A	~12,500 Btu/lb
Natural Gas (Start-Up/Stabilization)	N/A	N/A	1,020 Btu/scf
#2 Fuel Oil (Start-Up/Stabilization)	N/A	N/A	140,000 Btu/gal

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	131.8	577.2
Nitrogen Oxides (NO _x) ^b	3162.5	13,851.8
Lead (Pb) ^c	0.0408	0.179
Particulate Matter (PM _{2.5}) ^a	161.3	706.4
Particulate Matter (PM ₁₀) ^a	224.5	983.5
Total Particulate Matter (TSP) ^d	316.3	1385.2
Condensable PM ^g	126.5	554.1
Sulfur Dioxide (SO ₂) ^c	32,384.0	141,841.9
Volatile Organic Compounds (VOC) ^a	15.8	69.3
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Antimony ^c	0.00253	0.011
Arsenic ^c	0.0417	0.183
Beryllium ^c	0.00221	0.0097
Cadmium ^c	0.00506	0.0222
Chromium ^c	0.0534	0.234
Cobalt ^c	0.0158	0.0693
Manganese ^c	0.0679	0.297
Mercury ^c	0.0173	0.0759
Nickel ^c	0.0512	0.224
Selenium ^c	0.18	0.79
Hydrochloric Acid (HCl) ^c	6.72	29.45
Hydrogen Flourine (HF) ^c	2.31	10.11
Sulfuric Acid (H ₂ SO ₄) ^c	249.99	1094.95
Dioxin Compounds ^c	.000000464	.00000203
Polycyclic Organics ^c	.0132	.0576
Acetaldehyde ^a	0.15	0.658
Acrolein ^a	0.076	0.335
Benzene ^a	0.343	1.501
Benzyl chloride ^a	0.184	0.808
Cyanide Compounds ^a	0.659	2.886
Formaldehyde ^a	0.063	0.277
Isophorone ^a	0.153	0.670
Methyl Bromide ^a	0.042	0.185
Methyl Chloride ^a	0.140	0.612
Methyl Ethyl Ketone ^a	0.103	0.450
Methyl Hydrazine ^a	0.045	0.196
Methylene chloride ^a	0.076	0.335
Propionaldehyde ^a	0.100	0.439
Toluene ^a	0.063	0.277

<i>Emissions Data (Continued)</i>		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	1,591,791.7	6,972,047.5
Methane ^a	14.0	61.2
N ₂ O ^a	22.3	97.8

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

^a Emissions based on AP-42, Section 1.1 (Revised 9/98).
^b Emissions based on 0.50 lbs/MMBtu NO_x limit from current Phase II Acid Rain Permit.
^c Emissions based on Electric Power Research Institute (EPRI) LARK-TRIPP RY2006 software.
^d Emissions based on 45 CSR 2-4.1a TSP limit of 0.05 lbs/MMBtu.
^e Emissions based on 5.12 lbs/MMBtu SO₂ limit per 45 CSR 10.
^f Emissions based on 40 CFR Part 98, Subpart C, Tables C-1 and C-2.
^g Emissions based on AP-42, Table 1.1-5, "All PM controls combined with an FGD control"
Supporting emission calculation information is provided in Appendix A.

<i>Applicable Requirements</i>																				
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (<i>Note: Title V permit condition numbers alone are not the underlying applicable requirements</i>). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included. Combustion Emissions Unit ("C") applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. "C-1") to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting ("CTRR") requirements in Table C-TRR. Applicable requirement codes below are listed in Table C-AR. Requirements are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units <table> <tbody> <tr> <td>C-1</td> <td>C-11</td> <td></td> </tr> <tr> <td>C-2</td> <td>C-12</td> <td></td> </tr> <tr> <td>C-4</td> <td>C-13</td> <td>C-20</td> </tr> <tr> <td>C-6</td> <td>C-14</td> <td>C-21</td> </tr> <tr> <td>C-8</td> <td>C-16</td> <td>C-22</td> </tr> <tr> <td>C-9</td> <td>C-17</td> <td></td> </tr> </tbody> </table>			C-1	C-11		C-2	C-12		C-4	C-13	C-20	C-6	C-14	C-21	C-8	C-16	C-22	C-9	C-17	
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<u> X </u> Permit Shield																				
For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (<i>Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.</i>) Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.																				
Are you in compliance with all applicable requirements for this emission unit? <u> X </u> Yes <u> </u> No If no, complete the Schedule of Compliance Form as ATTACHMENT F.																				

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: Unit B3	Emission unit name: Harrison Unit 3	List any control devices associated with this emission unit. ESP-3, FGD-3, SCR-3, DSI	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 6,325 MMBtu/hr Foster Wheeler opposed wall fired boiler. The primary fuel is coal with natural gas used for start-up and stabilization. The flue gas emissions are controlled with an ESP for particulate control, a wet scrubber for SO ₂ control and low-NOx burners and an SCR for NOx control.			
Manufacturer: Foster and Wheeler	Model number:	Serial number:	
Construction date:	Installation date: 1974	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 6,325 MMBtu/hr			
Maximum Hourly Throughput: 263.54 tons/hour coal	Maximum Annual Throughput: 2,308,625 tons/year coal	Maximum Operating Schedule: 8760 hours per year	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☒ Indirect Fired ☐ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 6,325 MMBtu/hr		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Bituminous coal – 263.54 tons/hr; 2,308,625 tons/yr			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Coal (Primary)	4.0%	N/A	~12,500 Btu/lb
Natural Gas (Start-Up/Stabilization)	N/A	N/A	1,020 Btu/scf
#2 Fuel Oil (Start-Up/Stabilization)	N/A	N/A	140,000 Btu/gal

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	131.8	577.2
Nitrogen Oxides (NO _x) ^b	3162.5	13,851.8
Lead (Pb) ^c	0.0408	0.179
Particulate Matter (PM _{2.5}) ^a	161.3	706.4
Particulate Matter (PM ₁₀) ^a	224.5	983.5
Total Particulate Matter (TSP) ^d	316.3	1385.2
Condensable PM ^g	126.5	554.1
Sulfur Dioxide (SO ₂) ^c	32,384.0	141,841.9
Volatile Organic Compounds (VOC) ^a	15.8	69.3
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Antimony ^c	0.00253	0.011
Arsenic ^c	0.0417	0.183
Beryllium ^c	0.00221	0.0097
Cadmium ^c	0.00506	0.0222
Chromium ^c	0.0534	0.234
Cobalt ^c	0.0158	0.0693
Manganese ^c	0.0679	0.297
Mercury ^c	0.0173	0.0759
Nickel ^c	0.0512	0.224
Selenium ^c	0.18	0.79
Hydrochloric Acid (HCl) ^c	6.72	29.45
Hydrogen Flourine (HF) ^c	2.31	10.11
Sulfuric Acid (H ₂ SO ₄) ^c	249.99	1094.95
Dioxin Compounds ^c	.000000464	.00000203
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Methyl Chloride ^a	0.140	0.612
Methyl Ethyl Ketone ^a	0.103	0.450
Methyl Hydrazine ^a	0.045	0.196
Methylene chloride ^a	0.076	0.335
Propionaldehyde ^a	0.100	0.439
Toluene ^a	0.063	0.277

Emissions Data (Continued)		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	1,591,791.7	6,972,047.5
Methane ^a	14.0	61.2
N ₂ O ^a	22.3	97.8

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

^a Emissions based on AP-42, Section 1.1 (Revised 9/98).
^b Emissions based on 0.50 lbs/MMBtu NO_x limit from current Phase II Acid Rain Permit.
^c Emissions based on Electric Power Research Institute (EPRI) LARK-TRIPP RY2006 software.
^d Emissions based on 45 CSR 2-4.1a TSP limit of 0.05 lbs/MMBtu.
^e Emissions based on 5.12 lbs/MMBtu SO₂ limit per 45 CSR 10.
^f Emissions based on 40 CFR Part 98, Subpart C, Tables C-1 and C-2.
^g Emissions based on AP-42, Table 1.1-5, "All PM controls combined with an FGD control"
Supporting emission calculation information is provided in Appendix A.

Applicable Requirements																		
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included. Combustion Emissions Unit ("C") applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. "C-1") to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting ("CTRR") requirements in Table C-TRR. Applicable requirement codes below are listed in Table C-AR. References are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units <table> <tbody> <tr> <td>C-1</td> <td>C-11</td> <td></td> </tr> <tr> <td>C-2</td> <td>C-12</td> <td></td> </tr> <tr> <td>C-4</td> <td>C-13</td> <td>C-20</td> </tr> <tr> <td>C-6</td> <td>C-14</td> <td>C-21</td> </tr> <tr> <td>C-8</td> <td>C-16</td> <td>C-22</td> </tr> <tr> <td>C-9</td> <td>C-17</td> <td></td> </tr> </tbody> </table>	C-1	C-11		C-2	C-12		C-4	C-13	C-20	C-6	C-14	C-21	C-8	C-16	C-22	C-9	C-17	
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☒ Permit Shield																		
For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.) Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.																		
Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No If no, complete the Schedule of Compliance Form as ATTACHMENT F.																		

ATTACHMENT E - Emission Unit Form**Emission Unit Description****Emission unit ID number:**

Boiler 1A

Emission unit name:

Aux Boiler A

List any control devices associated with this emission unit.**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**

The auxiliary boiler is rated at 202.2 MMBtu/hr and is natural gas and No. 2 fuel oil fired.

Manufacturer:

Babcock and Wilcox

Model number:

FM-11797A

Serial number:**Construction date:****Installation date:**

1972

Modification date(s):**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):** 202.2MMBtu/hr**Maximum Hourly Throughput:**

202,200 scf/hour Natural Gas

1,455 gal/hour No. 2 Oil

Maximum Annual Throughput:

1,771 MMscf Natural Gas

12,742,964 gal/yr No. 2 Oil

Maximum Operating Schedule:

8,760 hours per year

Fuel Usage Data (fill out all applicable fields)**Does this emission unit combust fuel?** ☒ Yes ☐ No**If yes, is it?**☒ Indirect Fired ☐ Direct Fired**Maximum design heat input and/or maximum horsepower rating:**

202.2 MMBtu/hr

Type and Btu/hr rating of burners:**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**

Natural Gas – 202,200 scf/hr, 1,771 MMscf/yr

No. 2 Fuel Oil - 1,455 gal/hr; 12,742,964 gal/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	N/A		1,020 btu/scf
No. 2 Fuel Oil	1.0%		139,000 btu/gal

Emissions Data		
Criteria Pollutants^a	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	16.98	74.39
Nitrogen Oxides (NO _x)	56.62	247.98
Lead (Pb)	1.80E-03	7.88E-03
Particulate Matter (PM _{2.5})	2.25	9.88
Particulate Matter (PM ₁₀)	3.35	14.65
Total Particulate Matter (TSP)	4.80	21.03
Sulfur Dioxide (SO ₂)	205.11	539.03
Volatile Organic Compounds (VOC)	1.11	4.87
Hazardous Air Pollutants^a	Potential Emissions	
	PPH	TPY
Arsenic	8.49E-04	3.72E-03
Beryllium	5.06E-04	2.21E-03
Cadmium	2.22E-03	9.74E-03
Chromium	1.35E-02	5.93E-02
Manganese	2.83E-03	1.24E-02
Mercury	6.07E-04	2.66E-03
Nickel	3.44E-02	1.51E-01
Polycyclic Organic Compounds	4.85E-03	2.13E-02
Formaldehyde	1.52	6.64
Regulated Pollutants other than Criteria and HAP^a	Potential Emissions	
	PPH	TPY
CO ₂	32,439	142,084
Methane	0.47	2.04
N ₂ O	0.44	1.95
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). ^a Potential emissions for each pollutant based on worst case fuel (natural gas or No. 2 oil). Natural gas emissions based on AP-42, Section 1.4 (rev 7/98) and No. 2 oil emissions based on AP-42, Section 1.3 (rev 9/98). Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Combustion Emissions Unit (“C”) applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. “C-1”) to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting (“CTRR”) requirements in Table C-TRR.

Applicable requirement codes below are listed in Table C-AR. Requirements are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

C-1 C-11
C-3 C-15
C-5 C-16
C-7
C-10

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form**Emission Unit Description**

Emission unit ID number: Boiler 1B	Emission unit name: Aux Boiler B	List any control devices associated with this emission unit.
--	--	---

Provide a description of the emission unit (type, method of operation, design parameters, etc.):
The auxiliary boiler is rated at 202.2 MMBtu/hr and is natural gas and No. 2 fuel oil fired.

Manufacturer:
Babcock and Wilcox

Model number:
FM-11797A

Serial number:

Construction date:

Installation date:
1972

Modification date(s):

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 202.2MMBtu/hr

Maximum Hourly Throughput:
202,200 scf/hour Natural Gas
1,455 gal/hour No. 2 Oil

Maximum Annual Throughput:
1,771 MMscf Natural Gas
12,742,964 gal/yr No. 2 Oil

Maximum Operating Schedule:
8760 hours per year

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☒ Yes ☐ No

If yes, is it?

☒ Indirect Fired ☐ Direct Fired

Maximum design heat input and/or maximum horsepower rating:
202.2 MMBtu/hr

Type and Btu/hr rating of burners:

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas – 202,200 scf/hr, 1,771 MMscf/yr
No. 2 Fuel Oil - 1,455 gal/hr; 12,742,964 gal/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	N/A		1,020 btu/scf
No. 2 Fuel Oil	1.0%		139,000 btu/gal

Emissions Data		
Criteria Pollutants^a	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	16.98	74.39
Nitrogen Oxides (NO _x)	56.62	247.98
Lead (Pb)	1.80E-03	7.88E-03
Particulate Matter (PM _{2.5})	2.25	9.88
Particulate Matter (PM ₁₀)	3.35	14.65
Total Particulate Matter (TSP)	4.80	21.03
Sulfur Dioxide (SO ₂)	205.11	539.03
Volatile Organic Compounds (VOC)	1.11	4.87
Hazardous Air Pollutants^a	Potential Emissions	
	PPH	TPY
Arsenic	8.49E-04	3.72E-03
Beryllium	5.06E-04	2.21E-03
Cadmium	2.22E-03	9.74E-03
Chromium	1.35E-02	5.93E-02
Manganese	2.83E-03	1.24E-02
Mercury	6.07E-04	2.66E-03
Nickel	3.44E-02	1.51E-01
Polycyclic Organic Compounds	4.85E-03	2.13E-02
Formaldehyde	1.52	6.64
Regulated Pollutants other than Criteria and HAP^a	Potential Emissions	
	PPH	TPY
CO ₂	32,439	142,084
Methane	0.47	2.04
N ₂ O	0.44	1.95
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). ^a Potential emissions for each pollutant based on worst case fuel (natural gas or No. 2 oil). Natural gas emissions based on AP-42, Section 1.4 (rev 7/98) and No. 2 oil emissions based on AP-42, Section 1.3 (rev 9/98). Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Combustion Emissions Unit ("C") applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. "C-1") to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting ("CTRR") requirements in Table C-TRR.

Applicable requirement codes below are listed in Table C-AR. Requirements are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

C-1 C-11
C-3 C-15
C-5 C-16
C-7
C-10

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description			
Emission unit ID number: EDG1	Emission unit name: Emergency Generator No. 1	List any control devices associated with this emission unit. None	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 1000 kW, 1341 HP No. 2 fuel oil-fired emergency generator			
Manufacturer: Caterpillar	Model number: D399TA	Serial number:	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 800 kW			
Maximum Hourly Throughput: 61.8 gal/hour	Maximum Annual Throughput: 30,900 gal/year	Maximum Operating Schedule: 500 hours per year	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☐ Indirect Fired ☒ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 8.59 MMBtu/hr		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. No. 2 Fuel Oil - 61.8 gal/hr; 30,900 gal/yr			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
No. 2 Fuel Oil	1.0%	N/A	139,000 btu/gal

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	7.30	1.83
Nitrogen Oxides (NO _x) ^a	27.49	6.87
Lead (Pb) ^c	7.73E-05	1.93E-05
Particulate Matter (PM _{2.5}) ^a	0.48	0.12
Particulate Matter (PM ₁₀) ^a	0.49	0.12
Total Particulate Matter (TSP) ^a	0.60	0.15
Sulfur Dioxide (SO ₂)	8.71	2.18
Volatile Organic Compounds (VOC) ^a	0.77	0.19
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic ^c	3.44E-05	8.59E-06
Beryllium ^c	2.58E-05	6.44E-06
Cadmium ^c	2.58E-05	6.44E-06
Chromium ^c	2.58E-05	6.44E-06
Manganese ^c	5.15E-05	1.29E-05
Mercury ^c	2.58E-05	6.44E-06
Nickel ^c	2.58E-05	6.44E-06
Polycyclic Organic Compounds ^d	1.12E-03	2.79E-04
Benzene ^d	6.67E-03	1.67E-03
Toluene ^d	2.41E-03	6.03E-04
Xylenes ^d	1.66E-03	4.14E-04
Acetaldehyde ^d	2.16E-04	5.41E-05
Acrolein ^d	6.77E-05	1.69E-05
Formaldehyde ^d	6.78E-04	1.69E-04
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	1417.4	354.4
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). ^a EPA AP-42, Tables 3.4-1 and 3.4-2 (10/96) for large stationary diesel engines. ^b SO₂ emission based on 1.0% oil sulfur content. ^c EPA AP-42, Table 1.3-10(9/98), Assumed oil-fired boiler emission factors. ^d EPA AP-42, Table 3.4-3 and 3.4-4 (10/96). Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Combustion Emissions Unit (“C”) applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. “C-1”) to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting (“CTRR”) requirements in Table C-TRR.

Applicable requirement codes below are listed in Table C-AR. Requirements are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

C-18

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: EDG2	Emission unit name: Emergency Generator No. 2	List any control devices associated with this emission unit. None	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 1000 kW, 1341 HP No. 2 fuel oil-fired emergency generator			
Manufacturer: Caterpillar	Model number: D399TA	Serial number:	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 800 kW			
Maximum Hourly Throughput: 61.8 gal/hour	Maximum Annual Throughput: 30,900 gal/year	Maximum Operating Schedule: 500 hours per year	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☐ Indirect Fired ☒ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 8.59 MMBtu/hr		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. No. 2 Fuel Oil - 61.8 gal/hr; 30,900 gal/yr			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
No. 2 Fuel Oil	1.0%	N/A	139,000 btu/gal

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	7.30	1.83
Nitrogen Oxides (NO _x) ^a	27.49	6.87
Lead (Pb) ^c	7.73E-05	1.93E-05
Particulate Matter (PM _{2.5}) ^a	0.48	0.12
Particulate Matter (PM ₁₀) ^a	0.49	0.12
Total Particulate Matter (TSP) ^a	0.60	0.15
Sulfur Dioxide (SO ₂)	8.71	2.18
Volatile Organic Compounds (VOC) ^a	0.77	0.19
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic ^c	3.44E-05	8.59E-06
Beryllium ^c	2.58E-05	6.44E-06
Cadmium ^c	2.58E-05	6.44E-06
Chromium ^c	2.58E-05	6.44E-06
Manganese ^c	5.15E-05	1.29E-05
Mercury ^c	2.58E-05	6.44E-06
Nickel ^c	2.58E-05	6.44E-06
Polycyclic Organic Compounds ^d	1.12E-03	2.79E-04
Benzene ^d	6.67E-03	1.67E-03
Toluene ^d	2.41E-03	6.03E-04
Xylenes ^d	1.66E-03	4.14E-04
Acetaldehyde ^d	2.16E-04	5.41E-05
Acrolein ^d	6.77E-05	1.69E-05
Formaldehyde ^d	6.78E-04	1.69E-04
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	1417.4	354.4
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). ^a EPA AP-42, Tables 3.4-1 and 3.4-2 (10/96) for large stationary diesel engines. ^b SO₂ emission based on 1.0% oil sulfur content. ^c EPA AP-42, Table 1.3-10(9/98), Assumed oil-fired boiler emission factors. ^d EPA AP-42, Table 3.4-3 and 3.4-4 (10/96). Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Combustion Emissions Unit (“C”) applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. “C-1”) to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate Combustion Testing/Recordkeeping/Reporting (“CTRR”) requirements in Table C-TRR.

Applicable requirement codes below are listed in Table C-AR. Requirements are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

C-18

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: EDG3	Emission unit name: Emergency Generator No. 3	List any control devices associated with this emission unit. None	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 350 kW, 470 HP No. 2 fuel oil-fired emergency generator			
Manufacturer: Caterpillar	Model number: 3406	Serial number:	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 350 kW			
Maximum Hourly Throughput: 27.0 gal/hour	Maximum Annual Throughput: 13,500 gal/year	Maximum Operating Schedule: 500 hours per year	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☐ Indirect Fired ☒ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 3.75 MMBtu/hr		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. No. 2 Fuel Oil - 27.0 gal/hr; 13,500 gal/yr			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
No. 2 Fuel Oil	1.0%	N/A	139,000 btu/gal

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	3.19	0.80
Nitrogen Oxides (NO _x) ^a	12.01	3.00
Lead (Pb) ^c	3.38E-05	8.44E-06
Particulate Matter (PM _{2.5}) ^a	0.21	0.05
Particulate Matter (PM ₁₀) ^a	0.22	0.05
Total Particulate Matter (TSP) ^a	0.26	0.07
Sulfur Dioxide (SO ₂)	3.81	0.95
Volatile Organic Compounds (VOC) ^a	0.34	0.08
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic ^c	1.50E-05	3.75E-06
Beryllium ^c	1.13E-05	2.81E-06
Cadmium ^c	1.13E-05	2.81E-06
Chromium ^c	1.13E-05	2.81E-06
Manganese ^c	2.25E-05	5.63E-06
Mercury ^c	1.13E-05	2.81E-06
Nickel ^c	1.13E-05	2.81E-06
Polycyclic Organic Compounds ^d	4.88E-04	1.22E-04
Benzene ^d	2.91E-03	7.28E-04
Toluene ^d	1.05E-03	2.64E-04
Xylenes ^d	7.24E-04	1.81E-04
Acetaldehyde ^d	9.46E-05	2.36E-05
Acrolein ^d	2.96E-05	7.39E-06
Formaldehyde ^d	2.96E-04	7.40E-05
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	619.25	154.81
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). ^a EPA AP-42, Tables 3.4-1 and 3.4-2 (10/96) for large stationary diesel engines. ^b SO₂ emission based on 1.0% oil sulfur content. ^c EPA AP-42, Table 1.3-10(9/98), Assumed oil-fired boiler emission factors. ^d EPA AP-42, Table 3.4-3 and 3.4-4 (10/96). Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Combustion Emissions Unit ("C") applicable requirements are listed below as references to an Appendix containing the actual requirements. Each applicable requirement code below is linked by a reference number (e.g. "C-1") to detailed information for that requirement contained in Table C-AR. Each requirement in Table C-AR then references appropriate **Combustion Testing/Recordkeeping/Reporting ("CTRR")** requirements in Table C-TRR.

Applicable requirement codes below are listed in Table C-AR. Requirements are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

C-18

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table C-TRR and are associated with the Applicable Requirements for this emissions unit within Table C-TRR.

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: EG-1	Emission unit name: Wetlands Pump House Emergency Generator	List any control devices associated with this emission unit. None	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 108.2 kW, 145-HP LPG-fired emergency generator			
Manufacturer: Kohler	Model number: 100REZGD	Serial number:	
Construction date:	Installation date: 2012	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 108.2 kW			
Maximum Hourly Throughput: N/A	Maximum Annual Throughput: N/A	Maximum Operating Schedule: 500 hours per year	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☐ Indirect Fired ☒ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 145 BHP		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Liquid Propane Gas @ 12.81 gal/hr; 6,403 gal/yr			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Liquid Propane Gas	N/A	N/A	92,500 btu/gal

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO) ^a	1.41	0.4
Nitrogen Oxides (NO _x) ^a	0.32	0.1
Lead (Pb) ^c	Negligible = "Neg."	Neg.
Particulate Matter (PM _{2.5}) ^a	Neg.	Neg.
Particulate Matter (PM ₁₀) ^a	Neg.	Neg.
Total Particulate Matter (TSP) ^a	Neg.	Neg.
Sulfur Dioxide (SO ₂)	Neg.	Neg.
Volatile Organic Compounds (VOC) ^a	0.23	0.1
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic ^c	Neg.	Neg.
Beryllium ^c	Neg.	Neg.
Cadmium ^c	Neg.	Neg.
Chromium ^c	Neg.	Neg.
Manganese ^c	Neg.	Neg.
Mercury ^c	Neg.	Neg.
Nickel ^c	Neg.	Neg.
Polycyclic Organic Compounds ^d	Neg.	Neg.
Benzene ^d	Neg.	Neg.
Toluene ^d	Neg.	Neg.
Xylenes ^d	Neg.	Neg.
Acetaldehyde ^d	Neg.	Neg.
Acrolein ^d	Neg.	Neg.
Formaldehyde ^d	Neg.	Neg.
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ ^a	No factor available	No factor available
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). ^a Emission factors from the engine's "Equipment Exhaust Emission Data Sheet" Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Class II General Permit G60-C049, issued 11/28/2012

Sections 1 through 4

Section 5: Source-Specific Requirements (Reciprocating Internal Combustion Engines)

Section 8: Source Specific Requirements (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines); 40 CFR Part 60, Subpart JJJJ

Operating hours are limited to 500 hours/year (100 hours per year for readiness and maintenance testing, included in this total is 50 hours/year for non-emergency use)

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Class II General Permit G60-C049, Condition 5.4.1. Record amount and type of fuel combusted in the emergency engine; record hours of operation and reason for operation (emergency, readiness testing, etc.) to demonstrate compliance with Condition 8.4.4.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Table C-AR

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station

(Compilation of Applicable Requirements)

TABLE C-AR

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.					
Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Stack 1, Stack 2, Stack 3, Aux Blr Stk	C-1	45CSR§2-10.1. State- Enforceable only	4.0.1	Emergency Operating Scenarios In the event of an unavoidable shortage of fuel having characteristics or specifications necessary to comply with the visible emission standard set forth in permit condition 4.1.1. of this permit, or any emergency situation or condition creating a threat to public safety or welfare, the Secretary may grant an exemption to the otherwise applicable visible emission standards for a period not to exceed fifteen (15) days, provided that visible emissions during that period do not exceed a maximum six (6) minute average of thirty (30) percent and that a reasonable demonstration is made by the owner or operator that the weight emission standards under permit conditions 4.1.3. and/or 4.1.4. of this permit, will not be exceeded during the exemption period.	None Required
Stack 1, Stack 2, Stack 3	C-2	45CSR§2-3.1.	4.1.1	Visible Emissions: Visible Emissions from each stack shall not exceed ten (10) percent opacity based on a six-minute block average.	CTRR-1 CTRR-6 CTRR-7 CTRR-8 CTRR-9 CTRR-10 CTRR-11

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station					
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.					
Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Aux Blr Stk	C-3	45CSR§2-3.1.	4.1.1	Visible Emissions: Visible Emissions from this stack shall not exceed ten (10) percent opacity based on a six-minute block average.	CTRR-2 CTRR-6 CTRR-7 CTRR-8 CTRR-9 CTRR-10 CTRR-11
Stack 1, Stack 2, Stack 3	C-4	45CSR§2-3.2., 45CSR§2A-6]	4.1.2	Visible Emissions Compliance: Compliance with the visible emission requirements of 45CSR2 section 3.1 shall be determined in accordance with the approved monitoring plan.	CTRR-1
Aux Boiler Stk	C-5	45CSR§2-3.2., 45CSR§2A-6]	4.1.2	Visible Emissions Compliance: Compliance with the visible emission requirements of 45CSR2 section 3.1 shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 and as described in the approved monitoring plan.	CTRR-2
Stack 1, Stack 2, Stack 3	C-6	45CSR§2-4.1.a.	4.1.3	Particulate Matter: Particulate matter emissions from each stack shall not exceed 316.25 lb/hr.	CTRR-3 CTRR-6 CTRR-7 CTRR-8 CTRR-11
Aux Boiler Stk	C-7	45CSR§2-4.1.b.	4.1.4	Particulate Matter: Particulate matter emissions from this stack shall not exceed 36.40 lb/hr.	CTRR-6 CTRR-7 CTRR-8 CTRR-11
Stack 1, Stack 2, Stack 3	C-8	45CSR§2-4.4.	4.1.5	Addition of Sulfur Oxides for Particulate Control: The addition of sulfur oxides to a combustion unit exit gas stream for the purpose of improving emissions control equipment is prohibited unless written approval for such addition is provided by the Secretary.	None Required

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station					
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.					
Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Stack 1, Stack 2, Stack 3	C-9	45CSR§2-9.1.	4.1.11	Visible Emissions Applicability: The visible emission standards of permit condition 4.1.1., shall apply at all times except in periods of start-ups, shutdowns and malfunctions.	CTRR-1
Aux Boiler Stk	C-10	45CSR§2-9.1.	4.1.11	Visible Emissions Applicability: The visible emission standards of permit condition 4.1.1., shall apply at all times except in periods of start-ups, shutdowns and malfunctions.	CTRR-2
Stack 1, Stack 2, Stack 3, Aux Boiler Stk	C-11	45CSR§2-9.2., 45CSR16	4.1.12	Good Pollution Control Practice: Any fuel burning unit(s) including associated air pollution control equipment, shall at all times, including periods of start-up, shutdowns, and malfunctions, to the extent practicable, be maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions.	None Required
Stack 1, Stack 2, Stack 3	C-12	45CSR30-12.7.	4.1.13	Unit B1, B2, and B3 shall not be operated without a flue gas desulfurization system (scrubber).	
Stack 1, Stack 2, Stack 3	C-14	45CSR10-3.3.a.	4.1.14	Sulfur Dioxide: Sulfur dioxide emissions from each stack (<i>Stack 1, Stack 2, and Stack 3</i>) shall not exceed 32,384 lb/hr.	CTRR-5 CTRR-18
Aux Boiler Stack	C-15	45CSR§10-3.1.e.	4.1.15	Sulfur Dioxide: Sulfur dioxide emissions from the auxiliary boiler stack (<i>Aux Boiler Stk</i>) shall not exceed 1,294.08 lb/hr.	CTRR-4 CTRR-10

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Stack 1, Stack 2, Stack 3, Aux Boiler Stack	C-16	45CSR§10-3.8.	4.1.16	Sulfur Dioxide Compliance: Compliance with the allowable sulfur dioxide emission limitations from fuel burning units shall be based on a continuous twenty-four (24) hour averaging time. Emissions shall not be allowed to exceed the weight emissions standards for sulfur dioxide as set forth in 45CSR10, except during one (1) continuous twenty-four (24) hour period in each calendar month. During this one (1) continuous twenty-four-hour period, emissions shall not be allowed to exceed such weight emission standards by more than ten percent (10%) without causing a violation of 45CSR10. A continuous twenty-four (24) hour period is defined as one (1) calendar day.	CTRR-4 CTRR-10

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station					
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.					
Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Stack 1, Stack 2, Stack 3	C-17	45CSR33, 40 C.F.R. Parts 72, 73, 74, 75, 76, 77, 78.	4.1.17	Phase II Acid Rain Requirements: Unit No 1, Unit No. 2, and Unit No. 3 are Phase II Acid Rain affected units under 45CSR33, as defined by 40 C.F.R § 72.6, and as such are required to meet the requirements of 40 C.F.R. Parts 72, 73, 74, 75, 76, 77 and 78. These requirements include, but are not limited to: a. Hold an Acid Rain permit; b. Hold allowances, as of the allowance transfer deadline, in the unit’s compliance sub-account of not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; c. Comply with the applicable Acid Rain emissions for sulfur dioxide; d. Comply with the applicable Acid Rain emissions for nitrogen oxides; e. Comply with the monitoring requirements of 40 CFR. Part 75 and section 407 of the Clean Air Act of 1990 and regulations implementing section 407 of the Act; f. Submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR Part 72, Subpart I and 40 CFR Part 75.	CTRR-5 CTRR-18
Stack 1, Stack 2, Stack 3	C-18 – C-35	40 CFR 63, Subpart UUUUU (MATS)	4.1.18 through 4.1.35	Units B1, B2, and B3 shall comply with all applicable provisions of the Mercury and Air Toxics Standards (MATS).	

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station					
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.					
Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Aux Boiler Stack 1A, Aux Boiler Stack PB	C-36	40 CFR 63, Subpart DDDDD, Industrial Boilers MACT	4.1.36	Aux Boilers shall comply with all provisions of the Industrial, Commercial, and Institutional Boilers and Process Heaters MACT including annual tune-ups, inspections and maintenance.	
EDG1, EDG2, EDG3, EG-1; EG-2 FP-01; FP-02	C-18	40 CFR 60, Subpart JJJJ (EG-1 only); Subpart IIII (FP-01 only); 40 CFR 63.6640(f) Subpart ZZZZ (RICE)	7.1.1 – 7.1.21	Operate each emergency generator in accordance with applicable 40 CFR 60, Subpart IIII, 40 CFR 60, Subpart JJJJ, and 40 CFR 63, Subpart ZZZZ requirements pertaining to emergency-use only.	N/A

Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
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Source-Specific Applicable Requirements for Combustion Sources – Harrison Power Station					
List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.					
Emission Point ID (Reference Attachment D “Emissions Units Table” For Key)	Reference From Attachment E Form	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emissions Unit-Specific Applicable Requirement Summary	Link to Monitoring / Testing / Recordkeeping / Reporting Requirements
Stack 1, Stack 2, Stack 3		40CFR§97.406; 45CSR§43	3.1.10	CSAPR NOx Annual Trading Program: The permittee shall comply with the standard requirements set forth in the Cross-State Air Pollution Rule Trading Program	CTRR-5
Stack 1, Stack 2, Stack 3		40CFR§97.806; 45CSR§43	3.1.11	CSAPR NOx Ozone Season Group 2 Trading Program: The permittee shall comply with the standard requirements set forth in the Cross-State Air Pollution Rule Trading Program	CTRR-5
Stack 1, Stack 2, Stack 3		40CFR§97.606; 45CSR§43	3.1.12	CSAPR SO2 Group 1 Trading Program: The permittee shall comply with the standard requirements set forth in the Cross-State Air Pollution Rule Trading Program	

Table C-TRR

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station

(Compilation of Monitoring, Testing, Reporting and
Recordkeeping Requirements)

TABLE C-TRR

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station				
Link Referenced from Applicable Requirements	Emission Point ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emission Unit-Specific Applicable Requirement Summary
CTRR-1	Stack 1, Stack 2, Stack 3	45CSR§§2-3.2. & 8.2.	4.2.1	Compliance with the visible emission requirements for <i>Stack 1, Stack 2 and Stack 3</i> shall be determined as outlined in Section I.A. of Revision 3 of the “45CSR2 Monitoring Plan”
CTRR-2	Aux Boiler Stk	45CSR§§2-3.2. & 8.2.	4.2.1	Compliance with the visible emission requirements for <i>Aux Boiler Stk</i> shall be determined as outlined in Section I.B. of Revision 3 of the “45CSR2 Monitoring Plan”
	Stack 1, Stack 2, Stack 3	45CSR§30-5.1.c.; 40 CFR §64.3(b)(1) and (b)(4)(ii)	4.2.2	ESP secondary voltage and secondary current shall be measured continuously in order to calculate the total power input to each ESP. Total power is the sum of the products of secondary voltage and secondary current in each field, in accordance with Condition 4.4.3
	Stack 1, Stack 2, Stack 3	45CSR§30-5.1.c.; 40 CFR §64.3(b)(3)	4.2.3	Calibrate, maintain, and operate the instrumentation used to measure the secondary voltages and currents in Condition 4.2.2 in accordance with manufacturers’ specifications.
	Stack 1, Stack 2, Stack 3	45CSR16, 45CSR45, 40CFR§75.10, 40CFR§60.45	4.2.4	Install, calibrate, certify, operate, and maintain continuous monitoring systems that measure all SO ₂ , NO _x , and CO ₂ emissions from each stack as specified in 40CFR60, Subpart D and 40CFR75.
	Stack 1, Stack 2, Stack 3	45CSR§10-3.8	4.2.5	Maintain compliance with the allowable sulfur dioxide emissions limitations in Conditions 4.1.15 and 4.1.16 of the TVOP, based on a continuous 24-hour averaging time, except for one continuous 24-hour period each calendar month. In this case, emissions shall not exceed the limitation by more than 10%.
	Stack 1, Stack 2, Stack 3	45CSR§30-5.1.c., 40CFR§64.4(e)	4.2.6	Maintain compliance with established monitoring parameters in accordance with approved site-specific Compliance Assurance Monitoring Plan (CAM) and testing protocol – implementation began 2Q2010.

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station																																											
Link Referenced from Applicable Requirements	Emission Point ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emission Unit-Specific Applicable Requirement Summary																																							
CTRR-3	Stack 1, Stack 2, Stack 3	45CSR§2-8.1., 45CSR§2A-5.2.	4.3.1	The owner or operator shall conduct, or have conducted, tests to determine the compliance of <i>Unit B1, Unit B2, and Unit B3</i> with the particulate matter mass emission limitations. Such tests shall be conducted in accordance with the appropriate method set forth in 45CSR2 Appendix - Compliance Test Procedures for 45CSR2 or other equivalent EPA approved method approved by the Secretary. Such tests shall be conducted in accordance with the schedule set forth in the following table.																																							
				<table><tr><th>Test Frequency</th><th>Test Results</th><th>Retesting</th></tr><tr><td>Initial Baseline</td><td>≤50% of weight emission standard</td><td>Once/3 years</td></tr><tr><td>Initial Baseline</td><td>between 50% and 80 % of weight emission standard</td><td>Once/2 years</td></tr><tr><td>Initial Baseline</td><td>≥80% of weight emission standard</td><td>Annual</td></tr><tr><td>Annual</td><td>after three successive tests indicate mass emission rates ≤50% of weight emission standard</td><td>Once/3 years</td></tr><tr><td>Annual</td><td>after two successive tests indicate mass emission rates <80 % of weight emission standard</td><td>Once/2 years</td></tr><tr><td>Annual</td><td>any test indicates a mass emission rate ≥80% of weight emission standard</td><td>Annual</td></tr><tr><td>Once/2 years</td><td>after two successive tests indicate mass emission rates ≤50% of weight emission standard</td><td>Once/3 years</td></tr><tr><td>Once/2 years</td><td>any test indicates a mass emission rate <80 % of weight emission standard</td><td>Once/2 years</td></tr><tr><td>Once/2 years</td><td>any test indicates a mass emission rate >80% of weight emission standard</td><td>Annual</td></tr><tr><td>Once/3 years</td><td>any test indicates a mass emission rate ≤50% of weight emission standard</td><td>Once/3 years</td></tr><tr><td>Once/3 years</td><td>any test indicates mass emission rates between 50% and 80 % of weight emission standard</td><td>Once/2 years</td></tr><tr><td>Once/3 years</td><td>any test indicates a mass emission rate ≥80% of weight emission standard</td><td>Annual</td></tr></table>	Test Frequency	Test Results	Retesting	Initial Baseline	≤50% of weight emission standard	Once/3 years	Initial Baseline	between 50% and 80 % of weight emission standard	Once/2 years	Initial Baseline	≥80% of weight emission standard	Annual	Annual	after three successive tests indicate mass emission rates ≤50% of weight emission standard	Once/3 years	Annual	after two successive tests indicate mass emission rates <80 % of weight emission standard	Once/2 years	Annual	any test indicates a mass emission rate ≥80% of weight emission standard	Annual	Once/2 years	after two successive tests indicate mass emission rates ≤50% of weight emission standard	Once/3 years	Once/2 years	any test indicates a mass emission rate <80 % of weight emission standard	Once/2 years	Once/2 years	any test indicates a mass emission rate >80% of weight emission standard	Annual	Once/3 years	any test indicates a mass emission rate ≤50% of weight emission standard	Once/3 years	Once/3 years	any test indicates mass emission rates between 50% and 80 % of weight emission standard	Once/2 years	Once/3 years	any test indicates a mass emission rate ≥80% of weight emission standard	Annual
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Monongahela Power Company

Emission Unit Form

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station				
Link Referenced from Applicable Requirements	Emission Point ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emission Unit-Specific Applicable Requirement Summary
CTRR-4	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§§2-8.3.c	4.4.1 4.4.2	Maintain records of the operating schedule and the quantity and quality of fuel consumed in each fuel burning unit as outlined in Revision 3 of the “45CSR2 Monitoring Plan.” Such records are to be maintained on-site and made available to the Director or his duly authorized representative upon request.
	Stack 1, Stack 2, Stack 3	45CSR§30-5.1.c.; 40 CFR §64.9(b)	4.4.3	Total secondary ESP power input (in kW) shall be calculated and recorded no less than four times per hour, equally spaced over each hour, in an electronic data acquisition system, and averaged on a 3-hour basis.
CTRR-5	Stack 1, Stack 2, Stack 3	45CSR33, 40 C.F.R. § 75.64	4.5.1	The designated representative shall electronically report SO ₂ , NO _x , and CO ₂ emissions data and information as specified in 40 C.F.R. § 75.64 to the Administrator of USEPA, quarterly. Each electronic report must be submitted within thirty (30) days following the end of each calendar quarter.
CTRR-6	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-9.3.a. State-Enforceable only	4.5.3.a	Excess opacity periods, resulting from any malfunction, meeting the following conditions may be reported on a quarterly basis unless otherwise required by the Director: a. The excess opacity period does not exceed thirty (30) minutes within any twenty-four (24) hour period; and b. Excess opacity does not exceed forty percent (40%).

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station				
Link Referenced from Applicable Requirements	Emission Point ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emission Unit-Specific Applicable Requirement Summary
CTRR-7	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-9.3.b. State-Enforceable only	4.5.3.b	The owner or operator shall report to the Director by telephone, telefax, or e-mail any malfunction which results in excess particulate matter or excess opacity by the end of the next business day after becoming aware of such condition. The owner or operator shall file a certified written report concerning the malfunction with the Secretary within thirty (30) days providing the following information: a. A detailed explanation of the factors involved or causes of the malfunction; b. The date, and time of duration (with starting and ending times) of the period of excess emissions; c. An estimate of the mass of excess emissions discharged during the malfunction period; d. The maximum opacity measured or observed during the malfunction; e. Immediate remedial actions taken at the time of the malfunction to correct or mitigate the effects of the malfunction; and f. A detailed explanation of the corrective measures or program that will be implemented to prevent a recurrence of the malfunction and a schedule for such implementation.
CTRR-8	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-8.1.a.	4.1.6	Compliance with the visible emission limit shall be demonstrated by periodic testing in accordance with 40 CFR Part 60, Appendix A, Method 9, a certified continuous opacity monitoring system, or through use of the alternative monitoring method outlined in the “45CSR2 Monitoring Plan”) as approved by the Secretary. Compliance with the weight emission limit shall be demonstrated by periodic particulate matter stack testing, conducted in accordance with the appropriate test method set forth in the Appendix to 45CSR2 or other equivalent EPA approved method or as outlined in the “45CSR2 Monitoring Plan” as approved by the Secretary. Such testing shall be conducted at a frequency to be established by the Secretary.
CTRR-9	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-8.2.a.	4.1.7	Compliance with the visible emissions limit shall be monitored as set forth in of the “45CSR2 Monitoring Plan”

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station				
Link Referenced from Applicable Requirements	Emission Point ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emission Unit-Specific Applicable Requirement Summary
CTRR-10	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-8.3.a.	4.1.8	Records of monitored data established in the monitoring plan shall be maintained on site and shall be made available to the Secretary or his duly authorized representative upon request.
CTRR-11	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-8.3.b., 45CSR2A	4.1.9 4.5.2	A periodic exception report shall be submitted to the Secretary, in a manner and at a frequency to be established by the Secretary. Such exception report shall provide details of all excursions outside the range of measured emissions or monitored parameters established in an approved monitoring plan, and shall include, but not be limited to, the time of the excursion, the magnitude of the excursion, the duration of the excursion, the cause of the excursion and the corrective action taken.
CTRR-12	Stack 1, Stack 2, Stack 3, Aux Boiler Stk	45CSR§2-8.3.c.	4.1.10	Records of the operating schedule and the quantity and quality of fuel consumed in each fuel burning unit, shall be maintained on-site in a manner to be established by the Secretary and made available to the Secretary or his duly authorized representative upon request.
CTRR-18	Stack 1, Stack 2, Stack 3	40CFR Part 75	No Explicit Condition in 2020 Permit	Continuous Emission Monitoring (CEM): Pollutant emissions monitoring for pollutants listed below is through installation, calibration, certification, operation, and maintenance of continuous monitoring systems. Continuous emissions monitoring is required as the primary method for the following pollutants and parameters: • SO₂ (CEM is Primary Method) • SO₂ (Alternate Method -- ASTM compliant fuel sampling and analysis or other appropriate method in the absence of CEMS data per section II.A.3. of the “45CSR10 Monitoring Plan”) • NO_x • CO₂ (By CEM or by alternative calculation) • Flue gas flow
	Lime Handling Facilities	45CSR13; R13-1477, Cond. A.1.	5.1.1	In accordance with the information filed in Permit Application R13-1477A, R13-1477B and any amendments thereto, the maximum throughputs in Section 1.0 shall not be exceeded and, at a minimum, the control equipment specified in Section 1.0 shall be installed, maintained, and operated to minimize particulate matter emissions.

C-TRR. Combustion Sources – Emissions Unit Testing, Recordkeeping and Reporting Requirements – Harrison Power Station				
Link Referenced from Applicable Requirements	Emission Point ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2020	Emission Unit-Specific Applicable Requirement Summary
	Lime Handling Facilities	45CSR13; R13-1477, Cond. A.2.	5.1.2	In accordance with the information filed in Permit Application R13-1477A, R13-1477B and any amendments thereto, particulate matter emissions from the emission points shall not exceed the limitations and maximum exit flows from the associated control devices as specified in the table listed in Condition 5.1.2 of TVOP R30-03300015-2020.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:

Insig Tanks

Emission unit name:

Insignificant Storage Tanks

List any control devices associated with this emission unit.

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Storage tanks that store volatile organic (or non-volatile/ non-organic) liquids that are not subject to any applicable state or federal requirements. Emissions from these tanks are negligible based on the products stored, tank capacity and annual throughputs.

Manufacturer:

Model number:

Serial number:

Construction date:

Installation date:

Modification date(s):

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): See attached table for list of tank capacities and product stored.

Maximum Hourly Throughput:

Maximum Annual Throughput:

Maximum Operating Schedule:
8760 hours per year

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes X No

If yes, is it?

___ Indirect Fired ___ Direct Fired

Maximum design heat input and/or maximum horsepower rating:

Type and Btu/hr rating of burners:

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)	Negligible	
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Negligible	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Harrison Power Station
Storage Tank Inventory for Emission Unit: “Insig Tanks”

Tank ID#	Year Installed	Tank Capacity (gal)	Stored Substance
A3HN	1991	10,000	Sulfuric Acid Tank 2
A4HN	1978	10,000	Sulfuric Acid Tank 1
A6HN	1980	12,000	Coal Flow Additive
A7HN	1980	12,000	Coal Flow Additive
A8HN	1980	12,000	Coal Flow Additive
A9HN	1971	1200	Propylene glycol
A10HN	1971	1200	Propylene glycol
A11HN	1971	1200	Propylene glycol
A12HN	2002	500	(propylene glycol)
A14HN	2000	4,000	Phosphonate
A15HN	1971	750,000	Chemical Cleaning Waste
A16HN	1971	300	No. 2 Fuel Oil
A17HN	1971	300	No. 2 Fuel Oil
A18HN	1971	200	No. 2 Fuel Oil
A19HN	1978	125,000	Diesel Fuel
A21HN	1974	800	Turbine Oil Reservoir
A22HN	1974	800	Turbine Oil Reservoir
A23HN	1974	800	Turbine Oil Reservoir
A24HN	1974	800	Turbine Oil Reservoir
A25HN	1974	800	Turbine Oil Reservoir
A26HN	1974	800	Turbine Oil Reservoir
A27HN	1971	800	Oil Reservoir
A28HN	1971	800	Oil Reservoir
A29HN	1971	800	Oil Reservoir
A30HN	1971	12,200	Turbine Oil Reservoir
A31HN	1971	12,200	Turbine Oil Reservoir
A32HN	1971	12,200	Turbine Oil Reservoir
A33HN	1971	932	Turbine Oil Filter
A34HN	1971	932	Turbine Oil Filter
A35HN	1971	932	Turbine Oil Filter
A36HN	1971	300	Hydraulic Oil
A37HN	1971	300	Hydraulic Oil
A38HN	1971	300	Hydraulic Oil
A39HN	1971	1,000	Waste Oil
A51HN	1989	1200	Waste Oil
A52HN	1984	100	Hazardous Waste Oil
A53HN	1990	12,000	Dozer Fuel Oil
A80HN	1995	2000	Polymer
A95HN	1995	275	No. 2 Fuel Oil
A97HN	1971	1500	Biocide DGH
A98HN	1971	1500	Biocide QUAT
A301HN	1971	250	Loop Seal Oil
A302HN	1971	250	Loop Seal Oil
A303HN	1971	250	Loop Seal Oil
A163HN	App 1980	10	Part Cleaner
A164HN	App 1980	50	Part Cleaner
A173HN	App 1980	50	Part Cleaner
A166HN	App 1980	50	Parts Cleaner
A167HN	App 1980	50	Parts Cleaner
A299HN	1990	2,000	Turbine Oil
A300HN	1972	15,000	Waste Turbine Oil
A96HN	1972	15,000	Ammonium Hydroxide

Harrison Power Station
Storage Tank Inventory for Emission Unit: “Insig Tanks” (continued)

Tank ID#	Year Installed	Tank Capacity (gal)	Stored Substance
A101HN	1985	600	Polymer (Nalco 2706)
A102HN	1985	100	Coagulant (Nalco7735)
A103HN	1995	50	Sodium Sulfite
A104HN	1968	600	(Nalco LCS 3800)
A107HN	1995	340	Biocide (Nalco H-135)
A109HN	1995	340	Biocide (Nalco H-135)
A110HN	1995	300	Sodium Hypochlorite (15%)
A116HN	1968	75	Ammonium Hydroxide
A117HN	1968	75	Ammonium Hydroxide
A118HN	1968	75	Ammonium Hydroxide
A120HN	1968	50	Trisodium Phosphate
A121HN	1968	50	Ammonium Hydroxide-
A122HN	1968	75	Calgon C-5
A123HN	1968	100	Sodium Hypochlorite (15%) (Potable Water)
A125 HN	2000	3135	Polypropylene Glycol
A126HN	2000	3135	Polypropylene Glycol
A164HN	2001	13450	Urea Solution (40%)
A165HN	2001	13450	Urea Solution (40%)
A166HN	2001	40000	Urea Solution (40%)
A167HN	2002	2000	Biocide (Nalco 7320)
A175HN	2001	200	Hydraulic Oil
A176HN	2001	200	Hydraulic Oil
A177HN	2001	200	Hydraulic Oil
A178HN	1991	65	Lube Oil
A179HN	1991	65	Lube Oil
A180HN	1991	65	Lube Oil
A181HN	1991	65	Lube Oil
A182HN	2001	65	Hydraulic Oil
A183HN	2001	65	Hydraulic Oil
A184HN	2001	65	Hydraulic Oil
A281HN	2001	110	Lube Oil
A282HN	2001	110	Lube Oil
A283HN	2001	110	Lube Oil
A284HN	2001	110	Lube Oil
A285HN	2001	110	Lube Oil
A286HN	2001	110	Lube Oil
A287HN	1991	110	Lube Oil
A288HN	1991	110	Lube Oil
A289HN	1991	110	Lube Oil
A290HN	1991	110	Lube Oil
A291HN	1991	110	Lube Oil
A292HN	1991	110	Lube Oil
A294HN	2002	500	Propylene Glycol
A295HN	2002	500	Propylene Glycol
A296HN	2002	100	Propylene Glycol
A297HN	2002	2500	Biocide (Nalco 7320)

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: FP-01	Emission unit name: Emergency Diesel Fire Pump 1	List any control devices associated with this emission unit: None
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Fire pump engine used to provide emergency back-up water supply if main facility power supply is disrupted

Manufacturer: Clarke (John Deere)	Model number: JX6H-UFAD60	Serial number: N/A
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Construction date: April 2019	Installation date: November 2019	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
510 bhp

Maximum Hourly Throughput: 22 gal/hr ULSD	Maximum Annual Throughput: 11,000 gal/year	Maximum Operating Schedule: 500 hours/year
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☒ Yes ☐ No	If yes, is it? ☐ Indirect Fired ☒ Direct Fired
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Maximum design heat input and/or maximum horsepower rating: 3.0 MMBtu/hr; 510 bhp	Type and Btu/hr rating of burners: N/A - Internal Combustion
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Ultra-Low Sulfur Diesel fuel

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
ULSD	15 ppm	N/A	137,000 btu/gal

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	2.86	0.72
Nitrogen Oxides (NO _x)	3.37	0.84
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})	0.17	0.04
Particulate Matter (PM ₁₀)	0.17	0.04
Total Particulate Matter (TSP)	0.17	0.04
Sulfur Dioxide (SO ₂)	0.87	0.22
Volatile Organic Compounds (VOC)	1.05	0.26
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAPs	0.0090	0.0022
Formaldehyde	0.0036	0.0009
Benzene	0.0028	0.0007
Toluene	0.0012	0.0003
Xylenes	0.0009	0.0002
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ e	494	124
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). For NO_x and PM, used limits set forth in Table 4 to 40 CFR Part 60, Subpart IIII, for Emergency Fire Pump Engines, Model Year 2009+ For all other pollutants, calculated using engine specs and AP-42 factors from Tables 3.3-1 and 3.3-2 for diesel fuel. Excel calculations spreadsheet enclosed as part of this Title V renewal submittal.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45CSR§30, Title V Operating Permit Condition 3.4 – Recordkeeping Requirements, Retention of Records

Operating hours are limited to 500 hours/year (100 hours per year for readiness and maintenance testing, included in this total is 50 hours/year for non-emergency use)

40 CFR Part 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR Part 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Record amount and type of fuel combusted in the emergency fire pump engine; record hours of operation and reason for operation (emergency, readiness testing, etc.).

Perform and record annual maintenance activities as per 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ.

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: FP-02	Emission unit name: Emergency Diesel Fire Pump 2	List any control devices associated with this emission unit: None	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Fire pump engine used to provide emergency back-up water supply if main facility power supply is disrupted			
Manufacturer: Cummins	Model number: NTC335	Serial number: 27175340	
Construction date: 1971	Installation date: August 1971	Modification date(s): N/A	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 335 bhp			
Maximum Hourly Throughput: 18 gal/hr ULSD	Maximum Annual Throughput: 9,000 gal/year	Maximum Operating Schedule: 500 hours/year	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☒ Yes ☐ No		If yes, is it? ☐ Indirect Fired ☒ Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 335 bhp		Type and Btu/hr rating of burners: N/A - Internal Combustion	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Ultra-Low Sulfur Diesel fuel			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
ULSD	15 ppm	n/a	137,000 btu/gal

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	2.3	0.59
Nitrogen Oxides (NO _x)	10.9	2.72
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})	0.76	0.19
Particulate Matter (PM ₁₀)	0.76	0.19
Total Particulate Matter (TSP)	0.76	0.19
Sulfur Dioxide (SO ₂)	0.72	0.18
Volatile Organic Compounds (VOC)	0.86	0.22
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAPs	0.0073	0.0018
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ e	404	101
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). Calculated using engine specs and AP-42 factors from Tables 3.3-1 and 3.3-2 for diesel fuel. Excel calculations spreadsheet enclosed as part of this Title V renewal submittal.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45CSR§30, Title V Operating Permit Condition 3.4 – Recordkeeping Requirements, Retention of Records

Operating hours are limited to 500 hours/year (100 hours per year for readiness and maintenance testing, included in this total is 50 hours/year for non-emergency use)

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

Record amount and type of fuel combusted in the emergency fire pump engine; record hours of operation and reason for operation (emergency, readiness testing, etc.).

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: EG-2	Emission unit name: Leachate Collection System Emergency Generator	List any control devices associated with this emission unit: None
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

This generator is for emergency back-up power supply purposes and is located near the Leachate Collection and Conveyance System in the Harrison CCB Landfill.

Manufacturer: Kohler Power systems	Model number: 400REZXB	Serial number: N/A
Construction date: 2019	Installation date: November 2019	Modification date(s): N/A

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

605 bhp, three (3) 1,000-gallon LPG tanks

Maximum Hourly Throughput: 39 gal/hr LPG	Maximum Annual Throughput: 19,360 gal/year LPG	Maximum Operating Schedule: 500 hours/year
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☒ Yes ☐ No	If yes, is it? ☐ Indirect Fired ☒ Direct Fired
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Maximum design heat input and/or maximum horsepower rating: 3.54 MMBtu/hr; 605 bhp (full standby load)	Type and Btu/hr rating of burners: N/A - Internal Combustion
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Propane gas @ 39 gal/hr and 19,360 gal/year

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
LPG	-	-	91,502 btu/gal

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	5.33	1.33
Nitrogen Oxides (NO _x)	2.67	0.67
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})	0.034	0.008
Particulate Matter (PM ₁₀)	0.034	0.008
Total Particulate Matter (TSP)	0.034	0.008
Sulfur Dioxide (SO ₂)	0.002	0.0005
Volatile Organic Compounds (VOC)	1.33	0.33
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAPs	0.081	0.0202
Formaldehyde	0.073	0.018
Benzene	0.006	0.0014
Toluene	0.002	0.0005
Xylenes	0.001	0.0002
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂ e	390	97
CH ₄	0.08	0.02
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). For NO_x, CO and VOCs, used limits set forth in Table 1 to 40 CFR Part 60, Subpart JJJJ, for SI Emergency Engines For all other pollutants, calculated using engine specs and AP-42 factors from Table 3.2-3, "Rich-Burn Engines;" however, since no factors exist for LPG, natural gas combustion factors were used. Excel calculations spreadsheet enclosed as part of this Title V renewal submittal		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45CSR§30, Title V Operating Permit Condition 3.4 – Recordkeeping Requirements, Retention of Records

Operating hours are limited to 500 hours/year (100 hours per year for readiness and maintenance testing, included in this total is 50 hours/year for non-emergency use)

40 CFR Part 60, Subpart JJJJ: Standards of Performance for Stationary Spark-Ignition Internal Combustion Engines

40 CFR Part 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Record amount and type of fuel combusted in the emergency engine; record hours of operation and reason for operation (emergency, readiness testing, etc.).

Perform and record annual maintenance activities as per 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ.

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E

Materials Handling Emissions Units Part I: Coal, Lime and Ash Handling

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: RCCD	Emission unit name: RCCD	List any control devices associated with this emission unit: Partial Enclosure, Water Spray	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Railcar Coal Unloading, indoor process partially enclosed with a water spray dust prevention system.			
Manufacturer:	Model number:	Serial number:	
Construction date: 1971	Installation date: 1971	Modification date(s): n/a	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour, 6,925,875 tons/year coal.			
Maximum Hourly Throughput: 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes <u>x</u> No		If yes, is it? ___ Indirect Fired ___Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.01	0.01
Particulate Matter (PM ₁₀)	0.04	0.09
Total Particulate Matter (TSP)	0.09	0.20
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Section 13.2.4 (Materials Handling) for AP-42 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific applicable requirements for RCCD

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific monitoring / testing / recordkeeping / reporting requirements for RCCD

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: ST-1	Emission unit name: Coal Stockpile	List any control devices associated with this emission unit: Water Spray
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 A 1,000,000-ton coal pile controlled by water spray. This unit consists of wind erosion from the coal pile, all bulldozing and grading operations on the pile (8760 hours/year), and fugitive emissions from the truck unloading of coal. This source also includes fugitive emissions from all materials transfers related to stock-out operations.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1971	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 N/A

Maximum Hourly Throughput N/A	Maximum Annual Throughput: N/A	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☐ Yes ☒ No	If yes, is it? ☐ Indirect Fired ☐ Direct Fired
--	--

Maximum design heat input and/or maximum horsepower rating: N/A	Type and Btu/hr rating of burners:
---	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	531.26	6.63
Particulate Matter (PM ₁₀)	1,364.55	172.86
Total Particulate Matter (TSP)	2,797.12	632.85
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Bulldozing activity – AP-42 Section 11.9.2 (Revised 10/1998), Materials Transfer Section – AP-42 Section 13.2.4 (Revised 11/2006) and Industrial Wind Erosion – AP-42 Section 13.2.5 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific applicable requirements for ST-1

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific monitoring / testing / recordkeeping / reporting requirements for ST-1

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: ST-2	Emission unit name: Ash Disposal Areas	List any control devices associated with this emission unit: Water Spray	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): An approximately 64,320,000-ton ash disposal area controlled by water spray. This unit consists of wind erosion from the ash disposal pile, all bulldozing and grading operations on the pile (160 hours/year), and fugitive emissions from the loading/unloading of trucks hauling ash for sale, re-use or disposal.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 64,320,000 tons			
Maximum Hourly Throughput N/A	Maximum Annual Throughput: N/A	Maximum Operating Schedule: 8,760 hours for all except 160 hours/year fly ash surface bulldozing	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	287.07	0.58
Particulate Matter (PM ₁₀)	858.63	6.98
Total Particulate Matter (TSP)	1,888.81	20.79
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Bulldozing activity – AP-42 Section 11.9.2 (Revised 10/1998), Materials Transfer Section – AP-42 Section 13.2.4 (Revised 11/2006) and Industrial Wind Erosion – AP-42 Section 13.2.5 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

MH-1 Limit on amount of bottom ash transported
MH-2 Limit on amount of fly ash transported
MH-3 Limit on amount of fly ash disposed in landfill
MH-4 Limit on amount of FGD sludge disposed of
MH-5 Limit on fly ash surface bulldozing operations
MH-6 Minimum stabilized sludge moisture content

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1 Method of calculation
MHTRR-7 Throughput and Bulldozing Recordkeeping Requirements

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: BH Conv	Emission unit name: Boiler house Conveyors	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): All boiler-house conveyors (and associated transfer points) for Conveyors S-1a/b, S-2a/b, S-3a/b, C-5a/b, C-6a/b.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes ☒ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.07	0.16
Particulate Matter (PM ₁₀)	0.62	1.42
Total Particulate Matter (TSP)	1.61	3.71
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for BH Conv

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for BH Conv

Are you in compliance with all applicable requirements for this emission unit? X Yes ___ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: C-12	Emission unit name: Conveyor -12	List any control devices associated with this emission unit: Partial Enclosure
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Conveyor from Surge Bin to Lowering Well #2 (and all associated transfers).

Manufacturer: N/A	Model number: N/A	Serial number: N/A
-----------------------------	-----------------------------	------------------------------

Construction date:	Installation date: 1971	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 1,500 tons/hour

Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <u>X</u> ___ No	If yes, is it? ___ Indirect Fired ___Direct Fired
---	--

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.06	0.14
Particulate Matter (PM ₁₀)	0.58	1.33
Total Particulate Matter (TSP)	1.52	3.51
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).		
1. Applicable Requirements		
2. List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.		

3. 4. 5. 6. There are no emissions unit-specific requirements for C-12 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19.
20. <u> X </u> Permit Shield
21. For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.) 22. 23. 24. 25. There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-12 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40.
41. Are you in compliance with all applicable requirements for this emission unit? <u> X </u> Yes <u> </u> No
42. If no, complete the Schedule of Compliance Form as ATTACHMENT F .

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: C-1	Emission unit name: Conveyor -1	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from Crusher House to Lowering Well #2 (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes <u>X</u> ___ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.06	0.14
Particulate Matter (PM ₁₀)	0.58	1.33
Total Particulate Matter (TSP)	1.52	3.51
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for C-1

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-1

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: C-3a/b	Emission unit name: Conveyor -3a/b	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from Coal Reclaim to Crusher House Transfer Bin (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.07	0.16
Particulate Matter (PM ₁₀)	0.62	1.42
Total Particulate Matter (TSP)	1.61	3.71
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for C-3a/b

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-3a/b

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: C-4a/b	Emission unit name: Conveyor-4a/b	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from Crusher House to Boiler House Conveyors (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes <u>X</u> ___ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.06	0.14
Particulate Matter (PM ₁₀)	0.58	1.33
Total Particulate Matter (TSP)	1.52	3.51
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for C-4a/b

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-4a/b

Are you in compliance with all applicable requirements for this emission unit? X Yes ___ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: RC-7	Emission unit name: Conveyor RC-7	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from Rail Dumper to RC-8 (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes ☒ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.06	0.13
Particulate Matter (PM ₁₀)	0.54	1.24
Total Particulate Matter (TSP)	1.44	3.31
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for RC-7

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for RC-7

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: RC-8	Emission unit name: Conveyor RC-8	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from RC-7 to Crusher House (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes ☒ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.03	0.07
Particulate Matter (PM ₁₀)	0.30	0.66
Total Particulate Matter (TSP)	0.81	1.76
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for RC-8

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for RC-8

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: MC-7	Emission unit name: Conveyor –MC-7	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from Mine to Crusher House (and all associated fugitive emissions from 4 associated transfer houses).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes <u>X</u> ___ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.07	0.17
Particulate Matter (PM ₁₀)	0.66	1.52
Total Particulate Matter (TSP)	1.69	3.91
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for RC-8

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for MC-7

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: C-2b	Emission unit name: Conveyor -2b	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Conveyor from Chute to Lowering Well #1 (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 800 tons/hour			
Maximum Hourly Throughput 800 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes <u>X</u> ___ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.03	0.07
Particulate Matter (PM ₁₀)	0.30	0.67
Total Particulate Matter (TSP)	0.81	1.76
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for C-2b

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-2b

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: C-10	Emission unit name: Conveyor -10	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Internal Crusher House Conveyor to Surge Bin (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes ☒ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.05	0.11
Particulate Matter (PM ₁₀)	0.50	1.14
Total Particulate Matter (TSP)	1.35	3.12
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for C-10

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-10

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: C-11	Emission unit name: Conveyor 11	List any control devices associated with this emission unit: Partial Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Internal Crusher House Conveyor from Surge Bin (and all associated transfers).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1979	Modification date(s): n/a	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes ☒ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.05	0.06
Particulate Matter (PM ₁₀)	0.50	0.57
Total Particulate Matter (TSP)	1.35	1.56
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Conveyor activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for C-11

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for C-11

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: CRU-01	Emission unit name: Coal Crusher 01	List any control devices associated with this emission unit: Full Enclosure, Water Spray	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): This emission unit is 1 of 3 1500 TPH Coal Crushers at Harrison Station.			
Manufacturer: Pennsylvania Crusher Corp.	Model number: TK8 – 72CD	Serial number: N/A	
Construction date:	Installation date: 1971	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.08	0.17
Particulate Matter (PM ₁₀)	1.80	4.16
Total Particulate Matter (TSP)	4.05	9.35
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Crusher activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for CRU-01

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for CRU-01

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: CRU-02	Emission unit name: Coal Crusher 02	List any control devices associated with this emission unit: Full Enclosure, Water Spray	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): This emission unit is 1 of 3 1500 TPH Coal Crushers at Harrison Station.			
Manufacturer: Pennsylvania Crusher Corp.	Model number: TK8 – 72CD	Serial number: N/A	
Construction date:	Installation date: 1972	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ☐ Yes ☒ No		If yes, is it? ☐ Indirect Fired ☐ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.08	0.17
Particulate Matter (PM ₁₀)	1.80	4.16
Total Particulate Matter (TSP)	4.05	9.35
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Crusher activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for CRU-02

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for CRU-02

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: CRU-03	Emission unit name: Coal Crusher 03	List any control devices associated with this emission unit: Full Enclosure, Water Spray	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): This emission unit is 1 of 3 1500 TPH Coal Crushers at Harrison Station.			
Manufacturer: Pennsylvania Crusher Corp.	Model number: TK8 – 72CD	Serial number: N/A	
Construction date:	Installation date: 1977	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1,500 tons/hour			
Maximum Hourly Throughput 1,500 tons	Maximum Annual Throughput: 6,925,875 tons	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes ☒ No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.08	0.17
Particulate Matter (PM ₁₀)	1.80	4.16
Total Particulate Matter (TSP)	4.05	9.35
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Crusher activity – AP-42 Section 11.19.2 (Revised 8/2004) and Material Transfers – AP-42 Section 13.2.4 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement code below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

MH-7 Opacity Limit

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-4 Monitoring and Testing Requirements
MHTRR-5 Performance Test Methods
MHTRR-6 Records Retention

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Materials Handling Emissions Units Completed “Attachment E” Forms

Part II - Lime Unloading Circuit

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: LRCH	Emission unit name: LRCH	List any control devices associated with this emission unit: Baghouse dust collectors 6ca, 6cb, 6cc, Vacuum system 6cd	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Railcar Lime Unloading Transfer Hoppers (4) and transfers to Lime Unloading Conveyors, venting to dust collectors, and supplemented with a vacuum system.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 380 tons/hour, 627,546 tons/year Lime.			
Maximum Hourly Throughput: 380 tons	Maximum Annual Throughput: 627,546 tons	Maximum Operating Schedule: 2,920 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	14.96	21.84
Particulate Matter (PM ₁₀)	14.96	21.84
Total Particulate Matter (TSP)	14.96	21.84
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon outlet grain loading of 0.009 gr/cf, for collectors 6ca, 6cb, and 6cc (combining for 175,000 cfm), and collector 6cd with grain loading of 0.18 gr/cf and 947 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units

MH-8 Throughput Limits and Control Equipment Requirements
MH-9 Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-10 Limit on Annual Input to Lime Handling System
MH-11 Hours Limit on Lime Unloading Operations:
MH-12 Opacity Limit – Process Sources
MH-14 Particulate Weight Emission Limits – Process Sources
MH-15 Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1 Method of Calculation
MHTRR-3 Test Methods for PM Emissions
MHTRR-7 Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8 Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: 6si, 6sj	Emission unit name: 6si, 6sj	List any control devices associated with this emission unit: Baghouse dust collectors 6ca, 6cb, 6cc	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Lime Unloading Conveyor Belts (2) from the Railcar Unloading Transfer Hoppers to the Lime Transfer/Storage conveyors. These conveyors are vented to common dust collectors (6ca, 6cb, and 6cc).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 450 tons/hour, 627,546 tons/year Lime (each).			
Maximum Hourly Throughput: 450 tons (each)	Maximum Annual Throughput: 627,546 tons (each)	Maximum Operating Schedule: 2,920 hours (each)	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

These emissions are contained within the Railcar Unloading Process, controlled by building baghouse dust collectors 6ca, 6cb, and 6cc.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 8sa, 8sb, 8sg, 8sh	Emission unit name: 8sa, 8sb, 8sg, 8sh	List any control devices associated with this emission unit: Baghouse Dust Collector 8c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Two (2) Lime Transfer Conveyor Belts, each rated at 450 TPH, and two (2) Lime Storage Conveyor Belts each rated at 900 TPH, as well as associated Dribble conveyors, all enclosed and venting to a common dust collector (8c).

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 450 tons/hour, 627,546 tons/year Lime (each transfer conveyor)
 900 tons/hour, 627,546 tons/year Lime (each storage conveyor)

Maximum Hourly Throughput: 450 TPH (each transfer conv.) 900 TPH (each storage conv.)	Maximum Annual Throughput: 627,546 tons (each)	Maximum Operating Schedule: 2,920 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.72	1.05
Particulate Matter (PM ₁₀)	0.72	1.05
Total Particulate Matter (TSP)	0.72	1.05
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon outlet grain loading of 0.003 gr/cf, and 28,000 cfm collector for collector 8c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 13	Emission unit name: 13	List any control devices associated with this emission unit: Dust Collector 9c	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Lime Storage Silo with a 101,788-ton capacity, fed by enclosed conveyor (9va) and vented to Dust Collector 9c.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 313,773 tons/year Lime			
Maximum Hourly Throughput	Maximum Annual Throughput: 313,773 tons	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.26	0.38
Particulate Matter (PM ₁₀)	0.26	0.38
Total Particulate Matter (TSP)	0.26	0.38
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon dust collector 9c, outlet grain loading of 0.003 gr/cf, and 10,000 cfm collector.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 14	Emission unit name: 14	List any control devices associated with this emission unit: Dust Collector 10c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Lime Storage Silo with a 101,788-ton capacity, fed by enclosed conveyor (10va) and vented to Dust Collector 10c.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
313,773 tons/year Lime

Maximum Hourly Throughput	Maximum Annual Throughput: 313,773 tons	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.26	0.38
Particulate Matter (PM ₁₀)	0.26	0.38
Total Particulate Matter (TSP)	0.26	0.38
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon dust collector 10c, outlet grain loading of 0.003 gr/cf, and 10,000 cfm collector.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Materials Handling Emissions Units Completed “Attachment E” Forms

Part III – DSI Pneumatic Lime Delivery & Storage Circuit

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 37u, 37Au, 38u	Emission unit name: 37u, 37Au, 38u	List any control devices associated with this emission unit: Full Enclosure to Fabric Filter	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Hydrated Lime Pneumatic Delivery Conveyors from trucks, with a 70,250 ton/yr throughput, fully enclosed to 150-ton capacity DSI Lime Storage Silos 1, 2 and 3.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s): 2022	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 70,250 tons/yr			
Maximum Hourly Throughput	Maximum Annual Throughput: n/a	Maximum Operating Schedule: n/a	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these sources are contained within the dust collector 9c

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 37	Emission unit name: 37 – DSI Lime Storage Silo 1	List any control devices associated with this emission unit: Bin Vent
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
A 150-ton capacity DSI Lime Storage Silo, with pneumatic conveyor fill from trucks.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
150 tons

Maximum Hourly Throughput	Maximum Annual Throughput:	Maximum Operating Schedule:
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.05	0.08
Particulate Matter (PM ₁₀)	0.05	0.08
Total Particulate Matter (TSP)	0.05	0.08
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon dust collector 9c, with grain loading of 0.003 gr/cf, and rated at 2,100 cfm.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 37A, 38	Emission unit name: 37A, 38 - DSI Lime Storage Silo 2 and Silo 3	List any control devices associated with this emission unit: Bin Vents
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Two (2) 150-ton capacity DSI Lime Storage Silos, with pneumatic conveyor fill from trucks.

Manufacturer:	Model number:	Serial number:
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Construction date: 01/01/1994	Installation date: 12/31/1994	Modification date(s): n/a
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 150 tons (each silo)

Maximum Hourly Throughput n/a	Maximum Annual Throughput: n/a	Maximum Operating Schedule: n/a
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data			
Criteria Pollutants	Potential Emissions		
	PPH	TPY	
Carbon Monoxide (CO)			
Nitrogen Oxides (NO _x)			
Lead (Pb)			
Particulate Matter (PM _{2.5})	0.05	0.08	
Particulate Matter (PM ₁₀)	0.05	0.08	
Total Particulate Matter (TSP)	0.05	0.08	
Sulfur Dioxide (SO ₂)			
Volatile Organic Compounds (VOC)			
Hazardous Air Pollutants	Potential Emissions		
	PPH	TPY	
Regulated Pollutants other than Criteria and HAP	Potential Emissions		
	PPH	TPY	
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). Emissions based upon dust collector 9c, with grain loading of 0.003 gr/cf, and rated at 2,100 cfm.			

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 37pc, 37Apc, 38pc	Emission unit name: 37pc, 37Apc, 38pc Pneumatic Conveyors	List any control devices associated with this emission unit: Full Enclosure	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Fully enclosed Pneumatic Conveyors (3) between hydrated Lime Storage Silos and Units B1, B2 and B3.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 2022	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons):			
Maximum Hourly Throughput 2.67 TPH (each)	Maximum Annual Throughput: 23,416 TPY (each)	Maximum Operating Schedule:	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these sources are included with the dust collectors on the Lime Storage Silos being filled by these pneumatic conveyors.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Materials Handling Emissions Units Completed “Attachment E” Forms

Part IV - Lime Slurry Handling Circuit

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 24v, 25v, 26v, 27v	Emission unit name: 24v, 25v, 26v, 27v	List any control devices associated with this emission unit: Full Enclosure to Wet Scrubber	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Four (4) Identical 30 TPH Slaker Delivery Screw Conveyors, each fully enclosed, venting into a Ball-Mill slaker (24s, 25s, 26s, and 27s) equipped with a wet scrubber dust collector (collectors 24-27c).			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): N/A			
Maximum Hourly Throughput 30 TPH (each)	Maximum Annual Throughput: 262,800 tons (each)	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed conveyors are contained within the Ball-Mill slaker wet scrubber collectors (24-27c).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 24s, 25s, 26s, 27s	Emission unit name: 24s, 25s, 26s, 27s	List any control devices associated with this emission unit: Wet Scrubbers 24c, 25c, 26c, 27c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Four (4) Identical Ball-Mill slakers, each with a 30 TPH, and 262,800 TPY capacity, equipped with a wet scrubber dust collector (collectors 24-27c).

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 N/A

Maximum Hourly Throughput 30 TPH (each)	Maximum Annual Throughput: 262,800 tons (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.31	1.35
Particulate Matter (PM ₁₀)	0.31	1.35
Total Particulate Matter (TSP)	0.31	1.35
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon the combined outlet grain loading of shared dust collectors 24-27c, each rated at 0.009 gr/cf, and 1,000 cfm.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Materials Handling Emissions Units Completed “Attachment E” Forms

Part V - Lime Handling Circuit

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 15va, 16va, 17va	Emission unit name: 15va, 16va, 17va	List any control devices associated with this emission unit: Full Enclosure to Fabric Filter
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Lime Silo Loading Pneumatic Conveyors (3), each fully enclosed with a 25 ton/hour capacity, from the Lime Crushers to the SW Lime silos, with each SW Lime silo dust collector controlling these emissions.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 25 tons/hour (each)

Maximum Hourly Throughput 25 tons/hour (each)	Maximum Annual Throughput: 115,623 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are contained within the SWP Lime Silos dust collectors 15c-17c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 15vb, 16vb, 17vb	Emission unit name: 15vb, 16vb, 17vb	List any control devices associated with this emission unit: Full Enclosure to Fabric Filter	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Solid Waste Processing Lime Silo Loading Pneumatic Conveyors (3), each fully enclosed and with a 25 ton/hour capacity, from lime hauling trucks to the SW Lime silos, with each SW Lime silo dust collector controlling these emissions.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 25 tons/hour (each)			
Maximum Hourly Throughput 25 tons/hour (each)	Maximum Annual Throughput: 115,623 tons/year	Maximum Operating Schedule: 2,920 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are contained within the SWP Lime Silos dust collectors 15c-17c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-10	Limit on Annual Input to Lime Handling System
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 33	Emission unit name: 33	List any control devices associated with this emission unit: Dust Collector 15c	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Solid Waste Processing Lime Silo (1 of 3), with a 388-ton capacity, for storage of lime as it moves through the solid waste processing cycle.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 388 tons			
Maximum Hourly Throughput n/a	Maximum Annual Throughput: 38,541 tons/year	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.07	0.30
Particulate Matter (PM ₁₀)	0.07	0.30
Total Particulate Matter (TSP)	0.07	0.30
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon emissions from dust collector 15c with outlet grain loading of 0.003 gr/cf, and 2,700 cfm.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: 34	Emission unit name: 34	List any control devices associated with this emission unit: Dust Collector 16c	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Solid Waste Processing Lime Silo (1 of 3), with a 388-ton capacity, for storage of lime as it moves through the solid waste processing cycle.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 388 tons			
Maximum Hourly Throughput N/A	Maximum Annual Throughput: 38,541 tons/year	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.07	0.30
Particulate Matter (PM ₁₀)	0.07	0.30
Total Particulate Matter (TSP)	0.07	0.30
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon emissions from dust collector 16c with outlet grain loading of 0.003 gr/cf, and 2,700 cfm.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 35	Emission unit name: 35	List any control devices associated with this emission unit: Dust Collector 17c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Solid Waste Processing Lime Silo (1 of 3), with a 388-ton capacity, for storage of lime as it moves through the solid waste processing cycle.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
388 tons

Maximum Hourly Throughput N/A	Maximum Annual Throughput: 38,541 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.07	0.30
Particulate Matter (PM ₁₀)	0.07	0.30
Total Particulate Matter (TSP)	0.07	0.30
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon emissions from dust collector 17c with outlet grain loading of 0.003 gr/cf, and 2,700 cfm.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-11	Operating Hours Limit on Lime Unloading Operations
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Materials Handling Emissions Units Completed “Attachment E” Forms

Part VI - Fly Ash Handling Circuit

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 18va, 19va, 20va	Emission unit name: 18va, 19va, 20va	List any control devices associated with this emission unit: Full Enclosure to Fabric Filter
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Lime Silo Loading Pneumatic Conveyors (3), each fully enclosed and with a 120 ton/hour capacity, from the Fly Ash Storage Silos to the SW Fly Ash silos, with each SW Fly Ash silo dust collector controlling these emissions.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 120 tons/hour (each)

Maximum Hourly Throughput 120 tons/hour (each)	Maximum Annual Throughput: 818,739 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources contained within the dust collector emissions of collectors 18c-20c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 18vb, 19vb, 20vb	Emission unit name: 18vb, 19vb, 20vb	List any control devices associated with this emission unit: Dust Collector 18c, 19c, 20c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Lime Silo Loading Pneumatic Conveyors (3), each fully enclosed and with a 120 ton/hour capacity, from the Fly Ash Hauling trucks to the SW Fly Ash silos, with each SW Fly Ash silo dust collector controlling these emissions.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 120 tons/hour (each)

Maximum Hourly Throughput 120 tons/hour (each)	Maximum Annual Throughput: 818,739 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources contained within the dust collector emissions of collectors 18c-20c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 21	Emission unit name: 21	List any control devices associated with this emission unit: Dust Collector 18c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Fly Ash Silo (1 of 3), with a 10,479-ton capacity, for storage of fly ash as it moves through the solid waste processing cycle.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 10,479 tons

Maximum Hourly Throughput N/A	Maximum Annual Throughput: 272,913 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.16	0.70
Particulate Matter (PM ₁₀)	0.16	0.70
Total Particulate Matter (TSP)	0.16	0.70
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon dust collectors 18c with outlet grain loading of 0.003 gr/cf, and 6,400 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 22	Emission unit name: 22	List any control devices associated with this emission unit: Dust Collector 19c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Fly Ash Silo (1 of 3), with a 10,479-ton capacity, for storage of fly ash as it moves through the solid waste processing cycle.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 10,479 tons

Maximum Hourly Throughput N/A	Maximum Annual Throughput: 272,913 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.16	0.70
Particulate Matter (PM ₁₀)	0.16	0.70
Total Particulate Matter (TSP)	0.16	0.70
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon dust collectors 19c with outlet grain loading of 0.003 gr/cf, and 6,400 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 23	Emission unit name: 23	List any control devices associated with this emission unit: Dust Collector 20c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Fly Ash Silo (1 of 3), with a 10,479-ton capacity, for storage of fly ash as it moves through the solid waste processing cycle.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 10,479 tons

Maximum Hourly Throughput N/A	Maximum Annual Throughput: 272,913 tons/year	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.16	0.70
Particulate Matter (PM ₁₀)	0.16	0.70
Total Particulate Matter (TSP)	0.16	0.70
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon dust collectors 20c with outlet grain loading of 0.003 gr/cf, and 6,400 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-13	Visible Emissions Limit – Storage Structures
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Materials Handling Emissions Units Completed “Attachment E” Forms

Part VII - Solid Waste Handling Circuit

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 21va, 22va, 23va	Emission unit name: 21va, 22va, 23va	List any control devices associated with this emission unit: Full Enclosure to Scrubber
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Fly Ash Screw Conveyors (3), each with a 70 ton/hour capacity, from the SW Fly Ash Storage Silos to the Lime/Fly Ash Screw Conveyors. Each conveyor is fully enclosed, with the process venting through pug mill wet scrubbers 21-23c.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 70 tons/hour (each)

Maximum Hourly Throughput 70 tons/hour (each)	Maximum Annual Throughput: 613,200 tons/year (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are included in the Pug Mills, controlled by scrubbers 21-23c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 21vb, 22vb, 23vb	Emission unit name: 21vb, 22vb, 23vb	List any control devices associated with this emission unit: Full Enclosure to Scrubber
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Solid Waste Processing Lime Screw Conveyors (3), each with a 10 ton/hour capacity, from the SW Lime Storage Silos to the Lime/Fly Ash Screw Conveyors. Each conveyor is fully enclosed, with the process venting through pug mill wet scrubbers 21-23c.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
10 tons/hour (each)

Maximum Hourly Throughput 10 tons/hour (each)	Maximum Annual Throughput: 87,600 tons/year (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are included in the Pug Mills, controlled by scrubbers 21-23c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 21vc, 22vc, 23vc	Emission unit name: 21vc, 22vc, 23vc	List any control devices associated with this emission unit: Full Enclosure to Scrubber
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Lime/Fly Ash Screw Conveyors (3), each with a 80 ton/hour capacity, from the Lime (21-23va) and Fly Ash (21-23vb) Screw Conveyors to the Lime/Fly Ash Screw Conveyors (21-23vd). Each conveyor is fully enclosed, with the process venting through pug mill wet scrubbers 21-23c.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 80 tons/hour (each)

Maximum Hourly Throughput 80 tons/hour (each)	Maximum Annual Throughput: 700,800 tons/year (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are included in the Pug Mills, controlled by scrubbers 21-23c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 21vd, 22vd, 23vd	Emission unit name: 21vd, 22vd, 23vd	List any control devices associated with this emission unit: Full Enclosure to Scrubber
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Solid Waste Processing Lime/Fly Ash Screw Conveyors (3), each with a 80 ton/hour capacity, from the Lime/Fly Ash Screw Conveyors (21-23vc) to the SW processing Pug Mills (21-23s). Each conveyor is fully enclosed, with the process venting through pug mill wet scrubbers 21-23c.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 80 tons/hour (each)

Maximum Hourly Throughput 80 tons/hour (each)	Maximum Annual Throughput: 700,800 tons/year (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u> X </u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are included in the Pug Mills, controlled by scrubbers 21-23c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 37v, 38v	Emission unit name: 37v, 38v	List any control devices associated with this emission unit: Full Enclosure to Scrubbers
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Centrifuge Cake Screw Conveyors (2), each with a 150 ton/hour capacity, from the Centrifuges to the SW processing Pug Mills (21-23s). Each conveyor is fully enclosed, with the process venting through pug mill wet scrubbers 21-23c.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 150 tons/hour (each)

Maximum Hourly Throughput 150 tons/hour (each)	Maximum Annual Throughput: 1,314,000 tons/year (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.00	0.00
Particulate Matter (PM ₁₀)	0.00	0.00
Total Particulate Matter (TSP)	0.00	0.00
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions for these fully enclosed sources are included in the Pug Mills, controlled by scrubbers 21-23c.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
<i>Emission Unit Description</i>			
Emission unit ID number: 21s	Emission unit name: 21s	List any control devices associated with this emission unit: Wet Scrubbers 21c	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Solid Waste Processing Pug Mill (1 of 3), with a 600 ton/hour capacity, with a wet scrubber used as emissions control.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 600 tons/hour (each)			
Maximum Hourly Throughput 600 tons/hour (each)	Maximum Annual Throughput: 3,303,474 tons/year (each)	Maximum Operating Schedule: 8,760 hours	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. 			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.51	2.25
Particulate Matter (PM ₁₀)	0.51	2.25
Total Particulate Matter (TSP)	0.51	2.25
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon wet scrubber 21c with outlet grain loading of 0.03 gr/cf, and 2,000 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 22s	Emission unit name: 22s	List any control devices associated with this emission unit: Wet Scrubbers 22c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Solid Waste Processing Pug Mill (1 of 3), with a 600 ton/hour capacity, with a wet scrubber used as emissions control.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 1994	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
600 tons/hour (each)

Maximum Hourly Throughput 600 tons/hour (each)	Maximum Annual Throughput: 3,303,474 tons/year (each)	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.51	2.25
Particulate Matter (PM ₁₀)	0.51	2.25
Total Particulate Matter (TSP)	0.51	2.25
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon wet scrubber 22c with outlet grain loading of 0.03 gr/cf, and 2,000 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: 23s	Emission unit name: 23s	List any control devices associated with this emission unit: Wet Scrubbers 23c	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Solid Waste Processing Pug Mill (1 of 3), with a 600 ton/hour capacity, with a wet scrubber used as emissions control.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1994	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 600 tons/hour (each)			
Maximum Hourly Throughput 600 tons/hour (each)	Maximum Annual Throughput: 3,303,474 tons/year (each)	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes <u>X</u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.51	2.25
Particulate Matter (PM ₁₀)	0.51	2.25
Total Particulate Matter (TSP)	0.51	2.25
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon wet scrubber 23c with outlet grain loading of 0.03 gr/cf, and 2,000 cfm rating.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Materials Handling ("MH") emissions unit-specific applicable requirements are listed below as references to an Appendix containing the actual requirements text. Each applicable requirement below is linked by a reference number (e.g. "MH-1") to detailed information for that requirement contained in Table MH-AR. Each requirement in Table MH-AR then references appropriate Materials Handling Testing/Recordkeeping/Reporting ("MHTRR") requirements in Table MH-TRR.

Applicable requirement codes below are actively hyperlinked to Table MH-AR. The actual requirement text may be seen by ctrl-clicking on the links below. Links are numbered sequentially per the following conventions: C=combustion emissions units, MH = materials handling emissions units, MI = miscellaneous emissions units.

MH-8	Throughput Limits and Control Equipment Requirements
MH-9	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits
MH-12	Opacity Limit – Process Sources
MH-14	Particulate Weight Emission Limits – Process Sources
MH-15	Process Fugitive Particulate Control Requirement

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Monitoring / Testing / Recordkeeping / Reporting requirements are provided for this emissions unit in Table MH-TRR and are associated with the Applicable Requirements for this emissions unit within Table MH-AR.

MHTRR-1	Method of Calculation
MHTRR-3	Test Methods for PM Emissions
MHTRR-7	Throughput and Bulldozing Recordkeeping Requirements
MHTRR-8	Emission Inspection

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: UR-1	Emission unit name: UR-1	List any control devices associated with this emission unit: Dust Collectors 28c, 29c, 30c, 31c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Four (4) Urea Storage Silos (each with 9,000-cubic foot capacity), each venting to a dust collector.

Manufacturer:	Model number:	Serial number:
Construction date: 1994	Installation date: 1994	Modification date(s): n/a

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
9,000 cubic feet.

Maximum Hourly Throughput: 25 tons urea	Maximum Annual Throughput: 219,000 tons urea	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.22	0.98
Particulate Matter (PM ₁₀)	0.22	0.98
Total Particulate Matter (TSP)	0.22	0.98
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon (4) separate collectors, each with outlet grain loading of 0.01 gr/cf, flow rate of 655 cfm, and 8760 hours of operation.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for UR-1

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for UR-1

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description			
Emission unit ID number: UR-2	Emission unit name: UR-2	List any control devices associated with this emission unit: Dust Collectors 32c, 33c	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Two (2) Urea Hoppers (handling 16 TPH each of dry pelletized urea), each venting to a dust collector.			
Manufacturer:	Model number:	Serial number:	
Construction date: 1994	Installation date: 1994	Modification date(s): n/a	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 9,000 cubic feet.			
Maximum Hourly Throughput: 16 tons urea (each)	Maximum Annual Throughput: 140,160 tons urea (each)	Maximum Operating Schedule: 8,760 hours	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___ Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.11	0.49
Particulate Matter (PM ₁₀)	0.11	0.49
Total Particulate Matter (TSP)	0.11	0.49
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon (2) separate collectors, each with outlet grain loading of 0.01 gr/cf, flow rate of 655 cfm, and 8760 hours of operation.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for UR-2

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for UR-2

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

Materials Handling Emissions Units Completed “Attachment E” Forms

REFERENCED TABLES

Table MH-8A:

Maximum Capacities and Required Control Devices for Lime Handling Equipment

Table MH-9A:

Outlet Grain Loading and Maximum Air Flow Requirements for Control Devices

Table MH-AR:

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

Table MH-TRR

MHTRR. Materials Handling Sources – Harrison Power Station – Emissions Unit Testing, Recordkeeping and Reporting Requirements

Table MH-8A
Maximum Capacities and Required Control Devices for SO₂ Absorber-Related Process Equipment

Equipment ID	Description	Maximum Capacity (tons/hour)	Maximum Capacity (tons/year)	Control Device¹
Lime Unloading Circuit				
LRCH	Railcar Unloading Transfer Hoppers	380	627,546	BH
6si	Lime Unloading Conveyor Belt	450	627,546	BH
6sj	Lime Unloading Conveyor Belt	450	627,546	BH
8sa	Lime Transfer Conveyor and Associated Dribble Conveyor	450	627,546	BH
8sb	Lime Transfer Conveyor and Associated Dribble Conveyor	450	627,546	BH
8sg	Lime Storage Conveyor and Associated Dribble Conveyor	900	627,546	BH
8sh	Lime Storage Conveyor and Associated Dribble Conveyor	900	627,546	BH
13	Lime Storage Silo (101,788 ton)	n/a	313,773	BH
14	Lime Storage Silo (101,788 ton)	n/a	313,773	BH
Dry Sorbent Injection Circuit				
37u	Pneumatic Unloading to DSI Storage Silo 1	70,250 tpy	n/a	FE
37Au	Pneumatic Unloading to DSI Storage Silo 2		n/a	FE
38	Pneumatic Unloading to DSI Silo 3		n/a	FE
37	DSI Storage Silo 1	150 tons	n/a	BV
37A	DSI Storage Silo 2	150 tons	n/a	BV
38	DSI Storage Silo 3	150 tons	n/a	BV
37pc	Pneumatic Conveyor to Unit B1	2.67 tph	23,416 tpy	FE
37Apc	Pneumatic Conveyor to Unit B2	2.67 tph	23,416 tpy	FE
38pc	Pneumatic Conveyor to Unit B3	2.67 tph	23,416 tpy	FE
Lime Slurry Handling Circuit				
24v,25v 26v,27v	Ball-Mill Slaker Delivery Screw Conveyers	30 (each)	262,800 (each)	FE, SCR
24s,25s 26s,27s	Ball-Mill Slakers	30 (each)	262,800 (each)	SCR
46,47, 48,49	Lime Slurry Transfer Tanks (108,600 gal each)	n/a	712,970 (gl each)	N/R
43,44,45	Lime Slurry Storage Tanks (380,000 gal each)	n/a	950,627 (gl each)	N/R
Absorber Sludge Handling Circuit				
16,17, 18,19	Thickener Underflow Tanks (7,253 tons each)	n/a	1,428,305 (each)	N/R
Lime Handling Circuit				
13v	Lime Conveyor to Crusher	25	115,623	BH

¹ Codes: BH=Baghouse; BV=Bin Vent; FE=Full Enclosure; SCR=Wet Scrubber, N/R=None Required

Equipment ID	Description	Maximum Capacity (tons/hour)	Maximum Capacity (tons/year)	Control Device ¹
14v	Lime Conveyor to Crusher	25	115,623	BH
13s	Lime Crusher	25	115,623	BH
14s	Lime Crusher	25	115,623	BH
15va	Solid Waste Processing Lime Silos (SWPLS) Loading Pneumatic Conveyor	25	115,623	FE,BH
16va	(SWPLS) Loading Pneumatic Conveyor	25	115,623	FE,BH
17va	(SWPLS) Loading Pneumatic Conveyor	25	115,623	FE,BH
15vb	(SWPLS) Loading Pneumatic Conveyor from Truck	25	115,623	FE,BH
16vb	(SWPLS) Loading Pneumatic Conveyor from Truck	25	115,623	FE,BH
17vb	(SWPLS) Loading Pneumatic Conveyor from Truck	25	115,623	FE,BH
33	Solid Waste Processing Lime Silos (388 tons each)	n/a	38,541 (each)	BH
34	Solid Waste Processing Lime Silos (388 tons each)	n/a	38,541 (each)	BH
35	Solid Waste Processing Lime Silos (388 tons each)	n/a	38,541 (each)	BH
Fly Ash Handling Circuit				
18va	Solid Waste Processing Fly Ash Silos (SWPFAS) Loading Pneumatic Conveyor	120	818,739	FE,BH
19va	(SWPFAS) Loading Pneumatic Conveyor	120	818,739	FE,BH
20va	(SWPFAS) Loading Pneumatic Conveyor	120	818,739	FE,BH
18vb	(SWPFAS) Loading Pneumatic Conveyor from Truck	120	818,739	FE,BH
19vb	(SWPFAS) Loading Pneumatic Conveyor from Truck	120	818,739	FE,BH
20vb	(SWPFAS) Loading Pneumatic Conveyor from Truck	120	818,739	FE,BH
21	Solid Waste Processing Fly Ash Silos (10,479 tons each)	n/a	272,913 (each)	BH
22	Solid Waste Processing Fly Ash Silos (10,479 tons each)	n/a	272,913 (each)	BH
23	Solid Waste Processing Fly Ash Silos (10,479 tons each)	n/a	272,913 (each)	BH

Equipment ID	Description	Maximum Capacity (tons/hour)	Maximum Capacity (tons/year)	Control Device ¹
Solid Waste Handling Circuit				
21va, 22va, 23va	Fly Ash Screw Conveyers	70 (each)	613,200 (each)	FE,SCR
21vb, 22vb, 23vb	Lime Screw Conveyers	10 (each)	87,600 (each)	FE,SCR
21vc, 22vc, 23vc	Lime/Fly Ash Screw Conveyers	80 (each)	700,800 (each)	FE,SCR
21vd, 22vd, 23vd	Lime/Fly Ash Screw Conveyers	80 (each)	700,800 (each)	FE,SCR
37v,38v	Centrifuge Cake Screw Conveyers	150 (each)	1,314,000 (each)	FE,SCR
21s,22s, 23s	Solid Waste Processing (SWP) Pug Mills	600 (each)	3,303,474 (each)	SCR
31v,32v, 33v	Stabilized Sludge Screw Conveyers	600 (each)	3,303,474 (each)	FE,SCR
34v,35v, 36v	Emergency Radial Stacking Conveyers	265	n/a	N/R

Table MH-9A
Outlet Grain Loading and Maximum Air Flow Requirements for Control Devices

Control Device Identification Number	Control Device Type	Emission Point Identification Number	gr/acf ⁽¹⁾	Maximum Air Flow (acfm) ⁽²⁾
6ca,6cb,6cc	Baghouses	6e	0.009	175,000
6cd	Baghouse	6e	0.180	950
8c	Baghouse	8e	0.003	28,000
9c	Baghouse	9e	0.003	10,000
10c	Baghouse	10e	0.003	10,000
11c	Baghouse	11e	0.003	2,100
12c	Baghouse	12e	0.003	2,100
13c	Baghouse	13e	0.003	600
14c	Baghouse	14e	0.003	600
15c	Baghouse	15e	0.003	2,700
16c	Baghouse	16e	0.003	2,700
17c	Baghouse	17e	0.003	2,700
18c	Baghouse	18e	0.003	6,400
19c	Baghouse	19e	0.003	6,400
20c	Baghouse	20e	0.003	6,400
21c	Wet Collector	21e	0.030	2,000
22c	Wet Collector	22e	0.030	2,000
23c	Wet Collector	23e	0.030	2,000
24c	Wet Collector	24e	0.009	1,000
25c	Wet Collector	25e	0.009	1,000
26c	Wet Collector	26e	0.009	1,000
27c	Wet Collector	27e	0.009	1,000
28c	Baghouse	28e	0.01	655
29c	Baghouse	29e	0.01	655
30c	Baghouse	30e	0.01	655
31c	Baghouse	31e	0.01	655
32c	Baghouse	32e	0.01	655
33c	Baghouse	33e	0.01	655

(1) gr/acf = grains per actual cubic foot of exit gas. These limits are considered instantaneous limits.

(2) Compliance with the maximum air flow is based on the maximum rated capacity of all blowers feeding the emission point.

Table MH-AR

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

(Compilation of Applicable Requirements)

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
ST-2	MH-1	45CSR§13 R13-1477B, A.3	5.1.3.b	Limit on Amount of Bottom Ash Transported: The combined amount of bottom ash transported to the landfill area (and then possibly sized and sent offsite) and the bottom ash transported directly offsite shall not exceed 192,000 TPY.	MHTRR-1 MHTRR-6
ST-2	MH-2	45CSR§13 R13-1477B, A.3	5.1.3.c	Limit on Amount of Fly Ash Transported: The amount of fly ash, as generated by the Harrison Power Station, to be transported to the landfill (FA_{LF}) shall not exceed the amount as calculated in the following equation: $FA_{LF} \text{ (TPY)} = 256,000 + ((250,000 - FA_{OS}) * 0.48)$ Where, FA_{OS} = Amount of Fly-Ash disposed of from off-site sources.	MHTRR-1 MHTRR-6
ST-2	MH-3	45CSR§13 R13-1477B, A.3	5.1.3.c	Limit on Amount of Fly Ash Disposed in Landfill: The maximum amount of fly ash to be disposed of in the landfill shall not exceed 376,000 TPY from the Harrison Power Station and 506,000 TPY total from both Harrison Power Station and offsite sources	MHTRR-1 MHTRR-6
ST-2	MH-4	45CSR§13 R13-1477B, A.3	5.1.3.d	Limit on Amount of FGD Sludge Disposed: The amount of flue gas desulfurization (FGD) sludge to be disposed of either in the landfill or offsite shall not exceed 3,000,000 TPY.	MHTRR-1 MHTRR-6
ST-2	MH-5	45CSR§13 R13-1477B, A.3	5.1.3.e	Limit on Fly Ash Surface Bulldozing Operations: Landfill fly ash surface bulldozing shall be limited to 160 hours per year.	MHTRR-1 MHTRR-6
ST-2	MH-6	45CSR§13 R13-1477B, A.5	5.1.5	Minimum Stabilized Sludge Moisture Content: Stabilized sludge shall be maintained at a minimum of 30% moisture, by weight, prior to final deposition at any landfill.	MHTRR-6

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
CRU-03 C-11	MH-7	40CFR 60.252(c)	6.1.1	Opacity Limit: Opacity of any discharge gases to the atmosphere shall be less than 20%.	MHTRR-4 MHTRR-5 MHTRR-6
All Lime Handling, Lime Storage, Lime Slurry Handling, Absorber Sludge Handling, Solid Waste Handling, and Fly Ash Handling Equipment Listed In Table MH-8A	MH-8	45CSR13 R13-1477A & B	5.1.1	Throughput Limits and Control Equipment Requirements: In accordance with the information filed in Permit Application R13-1477A, R13-1477B and any amendments thereto, the maximum throughputs in Table MH-8A (attached) shall not be exceeded, and, at a minimum, the control equipment specified in Table MH-8A shall be installed, maintained, and operated so as to minimize particulate matter emissions.	MHTRR-1 MHTRR-3 MHTRR-7
All Control Devices Listed in Table MH-9A	MH-9	45CSR13 R13-1477 A & B	5.1.2	Particulate Control Equipment Capacity Limits and Outlet Grain Loading Limits: In accordance with the information filed in Permit Application R13-1477A, R13-1477B, and any amendments thereto, particulate matter (PM) emissions from the emission points listed in Table MH-9A shall not exceed the limitations given in Table MH-9A and the maximum exit gas flows from the control devices as listed in Table MH-9A shall not be exceeded.	MHTRR-3

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
LRCH, 6si, 6sj, 8sa, 8sb, 8sg, 8sh, 13, 14, 11va, 12va, 37, 38, 9va, 10va, 24s, 25s, 26s, 27s, 24v, 25v, 26v, 27v 15va, 16va, 17va, 15vb, 16vb, 17vb, 33, 34, 35, 18va, 19va, 20va, 18vb, 19vb, 20vb, 21va, 22va, 23va, 21vb, 22vb, 23vb, 21vc, 22vc, 23vc, 21vd, 22vd, 23vd, 21s, 22s, 23s, 21. 22. 23, 37v, 38v, 37, 38	MH-10	45CSR13 R13-1477, Cond. A.3	5.1.3.a	Limit on Annual Input to Lime Handling System: The input of lime into the lime handling system shall not exceed 627,546 tons per year	MHTRR-1 MHTRR-7
13, 14, 21, 22, 23, 33, 34, 35, 37, 38	MH-12	45CSR13 R13-1477B, B.2 45CSR§7-3.1 45CSR§7-3.2	5.1.6	Opacity Limit – Process Sources: The emission of smoke and/or particulate matter into the open air having greater than twenty (20) percent opacity from any process source operation is prohibited, except as noted in Subsections 3.2, 3.3, 3.4, 3.5, 3.6, and 3.7 of 45CSR §7-3. This requirement does not apply to smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.	

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
LRCH, 6si, 6sj, 8sa, 8sb, 8sg, 8sh, 13, 14, 11va, 12va, 37, 38, 9va, 10va, 24s, 25s, 26s, 27s, 24v, 25v, 26v, 27v 15va, 16va, 17va, 15vb, 16vb, 17vb, 33, 34, 35, 18va, 19va, 20va, 18vb, 19vb, 20vb, 21va, 22va, 23va, 21vb, 22vb, 23vb, 21vc, 22vc, 23vc, 21vd, 22vd, 23vd, 21s, 22s, 23s, 21. 22. 23, 37v, 38v, 37, 38	MH-13	45CSR13 R13-1477B, B.2 45CSR§7-3.7	5.1.6	Visible Emissions Limit – Storage Structures: No visible emissions are permitted from any storage structures associated with any manufacturing processes that are required to have a full enclosure and be equipped with a particulate matter control device.	MHTRR-8

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
LRCH, 6si, 6sj, 8sa, 8sb, 8sg, 8sh, 13, 14, 11va, 12va, 37, 38, 9va, 10va, 24s, 25s, 26s, 27s, 24v, 25v, 26v, 27v 15va, 16va, 17va, 15vb, 16vb, 17vb, 33, 34, 35, 18va, 19va, 20va, 18vb, 19vb, 20vb, 21va, 22va, 23va, 21vb, 22vb, 23vb, 21vc, 22vc, 23vc, 21vd, 22vd, 23vd, 21s, 22s, 23s, 21. 22. 23, 37v, 38v, 37, 38	MH-14	45CSR13 R13-1477B, B.2 45CSR§7-4.1	5.1.6	Particulate Weight Emission Limits – Process Sources: Particulate matter may not be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity specified under the appropriate source operation type in Table 45-7A of 45CSR§7.	MHTRR-8
N/A	MH-15	45CSR13 R13-1477B, B.2 45CSR§7-5.1	5.1.6	Process Fugitive Particulate Control Requirement: Process or storage structures generating fugitive particulate matter may not operate unless equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.	MHTRR-3

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
N/A	N/A	R13-2988; Condition 4.1.1, 4.1.2, and 4.1.3; Condition 4.1.8.	New	Emissions from activities shall not exceed any of the short-term or long-term emissions limitations specified in the tables under 4.1.1, 4.1.2, and 4.1.3.	MHTRR-8
N/A	N/A	R13-2988; Condition 4.1.4	New	The facility’s annual throughput of total coal shall not exceed 500,000 tons per year, based on a 12-month rolling total.	N/A
N/A	N/A	R13-2988; Condition 4.1.5; 45CSR§2-5.1.	New	Permittee shall no operate any source of fugitive particulate matter unless it is equipped with a fugitive dust control system, which is operated and maintained in such a manner as to minimize the emissions of fugitive particulate matter.	N/A
N/A	N/A	R13-2988; Condition 4.1.6; 40 CFR §60.254(b)	New	(1) Owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater; (2) Owner or operator must not cause to be discharged into the atmosphere from any mechanical vent on an affected facility gases which contain particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf); (3) equipment used in the loading, unloading and conveying operation of open storage piles are not subject to the 10% opacity limitations from Item 1 above.	N/A
N/A	N/A	R13-2988; Condition 4.1.7; 40 CFR §60.254(c)	New	Fugitive Coal Dust Emissions Control Plan for Subpart Y; owner or operator of an open storage pile, including the loading, unloading, and conveying operations of the affected facility, must prepare and operate the facility in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions as specified in R13-2988 Conditions 4.1.7(c)(1) through (6).	N/A

Source-Specific Applicable Requirements for Material Handling Sources – Harrison Power Station

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Emission Unit ID (Reference Attachment D “Emissions Units Table” For Key)	Link From Form E	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015- 2009	Requirement Summary	Monitoring / Testing / Recordkeeping / Reporting Requirement Links
	N/A	R13-2988; Condition 4.1.9; 40 CFR§13-5.11.	New	Operation and maintenance of air pollution control equipment. Install, maintain, and operate all pollution control equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth by any State rule, federal regulation, or alternative control plan approved by the Secretary.	N/A
					N/A

**Note: Conditions highlighted in blue font pertain to the Rapid Discharge Rail Unloader (RDRU) system that was approved under Permit R13-2988. At the date of this application, the system has not yet been operated or installed at the Harrison facility.*

Table MH-TRR

**MHTRR. Materials Handling Sources – Harrison Power Station –
Emissions Unit Testing, Recordkeeping and Reporting Requirements**

(Compilation of Monitoring, Testing, Reporting and
Recordkeeping Requirements)

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
MHTRR-1	ST-2, All Lime Handling, Lime Storage, Lime Slurry Handling, Absorber Sludge Handling, Solid Waste Handling, and Fly Ash Handling Equipment Listed In Table MH-8A	45CSR13 R13-1477B, A3	5.1.3	Record material throughput and hours of operation. All annual limits are calculated using a rolling yearly total. A rolling yearly total shall mean the sum of the material throughput at any given time for the previous twelve (12) months.
	All facility emission units	45CSR§30-5.1.c	5.4.1	Maintain a record of each visible emission observation, including any data required by 40 CFR Part 60, Appendix A, Method 9, on site for at least five (5) years after the date of the observation. Each record shall include the date, time, name of observer, name of emission unit, applicable visible emission requirement, and the results of each observation. The records shall also include any maintenance or corrective actions taken as a result of the weekly inspections, and the times the fugitive dust control systems are inoperable.

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
MHTRR-3	All Control Devices Listed In Table MH-9A servicing the following Emissions Units: LRCH, 6si, 6sj, 8sa, 8sb, 8sg, 8sh, 13, 14, 37, 38, 9va, 10va, 24s, 25s, 26s, 27s, 24v, 25v, 26v, 27v 15va, 16va, 17va, 15vb, 16vb, 17vb, 33, 34, 35, 18va, 19va, 20va, 18vb, 19vb, 20vb, 21va, 22va, 23va, 21vb, 22vb, 23vb, 21vc, 22vc, 23vc, 21vd, 22vd, 23vd, 21s, 22s, 23s, 21. 22. 23, 37v, 38v, 37, 38	45CSR13 R13-1477B, A.6 R13-1477B, B.5 R13-1477B, B.6	5.2.1 5.2.2	Test Methods for PM Emissions: Tests that are required by the Director to determine compliance with the emission limitations for this emissions unit shall be conducted in accordance with the methods as set forth in a.) and b.) below. The Director may require a different test method or approve an alternative method in light of any new technology advancements that may occur. Compliance testing shall be conducted at the maximum permitted operating conditions unless otherwise specified by the Director. a.) Tests to determine compliance with PM emission limits shall be conducted in accordance with 45CSR7A. b.) Submit to the Director of Air Quality a test protocol detailing the proposed test methods, the date, and the time the proposed testing is to take place, as well as identifying the sampling locations and other relevant information. The test protocol must be received by the Director no less than thirty (30) days prior to the date the testing is to take place. Test results shall be submitted to the Director no more than sixty (60) days after the date the testing takes place.

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
MHTRR-4	CRU-03	45CSR §30-5.1c 40 CFR 60.254	6.2.1	Monitoring and Testing Requirements: Emission unit CRU-03 shall be observed visually at least each calendar month during periods of normal facility operation for a sufficient time interval to determine if the unit has any visible emissions using 40 C.F.R. 60 Appendix A, Method 22. If visible emissions are observed during these monthly observations, or at any other time, that appear to exceed the allowable visible emission requirement in Section 8.1.1, visible emissions evaluations in accordance with 40 C.F.R. 60 Appendix A, Method 9 shall be conducted as soon as practicable, but no later than one month from the time of the observation. A visible emissions evaluation in accordance with 40 C.F.R. 60 Appendix A, Method 9 shall not be required under condition Section 8.2.1 if the visible emissions condition is corrected in a timely manner; the emission unit CRU-03 is operating at normal operating conditions; and, the cause and corrective measures taken are recorded.
MHTRR-5	CRU-03	40 CFR 60.254	6.3.1	Performance Test Methods: In conducting the performance tests which may be required by 40 CFR §60.8, reference methods and procedures shall be based on the test methods in appendix A of 40 CFR 60, or other methods and procedures as specified in 40 CFR §60.8, except as provided in 40 CFR §60.8(b).
MHTRR-6	CRU-03	45CSR §30-5.1c	6.4.1	Records Retention: Retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date.

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
MHTRR-7	All Lime Handling, Lime Storage, Lime Slurry Handling, Absorber Sludge Handling, Solid Waste Handling, and Fly Ash Handling Equipment Listed In Table MH-8A plus ST-2	45CSR13 R13-1477B, B.7	5.4.2	Throughput and Bulldozing Recordkeeping Requirements: For the purposes of determining compliance with maximum throughput limits set forth in Section 5.1.3, the applicant shall maintain monthly records of the throughputs of the specified materials and the hours of operation of the bulldozing operations.

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
MHTRR-8	LRCH, 6si, 6sj, 8sa, 8sb, 8sg, 8sh, 13, 14, 11va, 12va, 37, 38, 9va, 10va, 24s, 25s, 26s, 27s, 24v, 25v, 26v, 27v 15va, 16va, 17va, 15vb, 16vb, 17vb, 33, 34, 35, 18va, 19va, 20va, 18vb, 19vb, 20vb, 21va, 22va, 23va, 21vb, 22vb, 23vb, 21vc, 22vc, 23vc, 21vd, 22vd, 23vd, 21s, 22s, 23s, 21. 22. 23, 37v, 38v, 37, 38.	45CSR§30-5.1.c.	3.4.4	Fugitive Dust Control: Maintain records indicating the use of dust suppressants or any other suitable dust control measures applied at the facility. Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs. Maintain records of all scheduled and unscheduled maintenance and state any maintenance or corrective actions taken as a result of the weekly and/or monthly inspections, the times the fugitive dust control systems were inoperable, and any corrective actions taken.
N/A		R13-2988, Condition 4.3.1	New	Records of Monitoring - permittee shall keep records of the following: (a) date, place and time of sampling; (b) date of analyses; (c) company performing analyses; (d) analytical method; (e) results of analyses; and (f) operating conditions at time of measurement/sampling.

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
N/A		R13-2988, Condition 4.3.2	New	Permittee shall maintain accurate records of all required pollution control equipment inspections and/or preventative maintenance procedures.
N/A		R13-2988, Condition 4.3.3	New	Permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of air pollution control equipment during which excess emissions occur. Records shall include the equipment involved, steps taken to minimize emissions, duration, and estimated increase of emissions resulting from incident.
N/A		R13-2988, Condition 4.3.4	New	Monitor and record the amount of coal processed through the facility on a monthly basis.
N/A		R13-2988, Condition 4.3.5	New	Records of any Method 22 or Method 9 testing in order to determine compliance with Conditions 4.2.1 and 4.2.2 of Permit R13-2988 shall be maintained on site for at least five (5) years; records shall be certified and made available to the WVDEP Director upon request.
N/A		R13-2988, Condition 4.4.1	New	Any violation of the allowable visible emission requirement for any emission source discovered during observation using 40 CFR 60, Appendix A, Method 9 must be reported in writing to the Director of DAQ as soon as practicable, but within ten (10) calendar days of the occurrence, and shall include, at a minimum, the following information: results of testing, cause or suspected cause, and corrective measures taken.

MHTRR. Materials Handling Sources – Harrison Power Station - Emissions Unit Testing, Recordkeeping and Reporting Requirements				
Link from Applicable Requirement	Emission Unit ID (See Attachment D “Equipment Table” For Key)	Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Requirement Summary
N/A		R13-2988, Condition 4.2.1; 40CFR§60.255(b), (b)(2), (b)(2)(i) and (b)(2)(ii)	New	Compliance with 40 CFR 60, Subpart Y: conduct performance testing in accordance with §60.8 and methods identified in §60.257; conduct initial performance testing and subsequent testing when any 6-minute average opacity in most recent performance test exceeds half the applicable opacity limit within 90 days of that test; if all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test must be completed within 12 calendar months of that previous test.
N/A		R13-2988, Condition 4.2.2; 40CFR§60.255(f) and (f)(1)	New	Alternative monitoring method for compliance with 40 CFR 60, Subpart Y: In accordance with §2.3 of Method 22 of Appendix A-7, conduct one daily 15-second observation each operating day for each affected process (during normal operation) when the coal preparation and processing plant is in operation. Each observation must be recorded as either visible emissions observed or no visible emissions observed. If visible emissions are observed, adjust operations and demonstrated within 24 hours that no visible emissions are observed; if visible emissions are still observed, conduct Method 9 observation within 45 operating days. Conduct monthly visual observations of all processes and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible. Conduct Method 9 visible emissions testing once every five (5) calendar years for each affected facility.
N/A		R13-2988, Condition 4.2.2(2); 40CFR§60.255(f)(2)	New	Alternative monitoring method for compliance with 40 CFR 60, Subpart Y: prepare site-specific monitoring plan for a digital opacity compliance system for approval by the Administration or delegated authority as detailed in R13-2988, Condition 4.2.2(2).

**Note: Conditions highlighted in blue font pertain to the Rapid Discharge Rail Unloader (RDRU) system that was approved under Permit R13-2988. At the date of this application, the system has not yet been operated or installed at the Harrison facility.*

ATTACHMENT E

Miscellaneous Emissions Units

Cooling Towers
Paved Roads
Unpaved Roads
Gasoline UST
Wastewater Treatment
Insignificant Tanks

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: Cool-01	Emission unit name: Cooling Towers (2)	List any control devices associated with this emission unit: N/A
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Natural Draft Cooling Towers (2), each rated at 585,000 gpm.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date: 1971	Installation date:	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
585,000 gpm circulating water rate (each)

Maximum Hourly Throughput 585,000 gpm (each)	Maximum Annual Throughput: N/A	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <u>X</u> ___ No	If yes, is it? ___ Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	121.75	533.26
Particulate Matter (PM ₁₀)	121.75	533.26
Total Particulate Matter (TSP)	121.75	533.26
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon design drift rate of 0.03%, and a TDS+TSS value of 1,639 ppm.
Assumed that TSP = PM₁₀ = PM_{2.5}

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for Cool-01

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for Cool-01

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: PVR	Emission unit name: Paved Roads	List any control devices associated with this emission unit: Water Truck
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 This unit consists of all paved roads at the facility including those serving deliveries and haulage to landfills. Approximately 12.52 miles of paved roads exist on-site.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date: N/A	Installation date: N/A	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 N/A

Maximum Hourly Throughput N/A	Maximum Annual Throughput: N/A	Maximum Operating Schedule: 8,760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <u>X</u> ___ No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	23.70	56.82
Particulate Matter (PM ₁₀)	156.18	378.98
Total Particulate Matter (TSP)	813.39	1,961.63
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). Emissions based upon Paved Road activity – AP-42 Section 13.2.1 (Revised 11/2006).		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Emissions Unit-Specific Requirement Summary
45CSR13 R13-1477B, Condition A.4	5.1.4	Fugitive Dust Control – Haul Roads: Fugitive dust control measures for haul roads shall be utilized and maintained in such a manner as to minimize dust generation and atmospheric entrainment. Those measures shall include a continuous program of watering haul road(s) and by wet-vacuum sweeping of paved haul roads at all times haulage trucks are in operation unless such haul roads are adequately wetted by natural rainfall. a. Water truck to be utilized shall be equipped with manufactured-type spray nozzles which are pressurized per manufacturer's recommended guidelines for controlling fugitive dust emissions. b Vacuum sweeper shall be of the type that utilizes wet vacuuming and filtration prior to exhausting air. c. A maximum speed limit of 15 miles per hour shall be maintained on all unpaved roads. A clear and visible sign shall be posted at the beginning of all unpaved roads clearly displaying this speed limit.
45CSR13 R13-1477B, Condition B.2 45CSR§7-5.2	5.1.6	Particulate Matter Control of Roads: Maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Emissions Unit-Specific Requirement Summary
45CSR13 R13-1477B, Condition B.7	5.4.2	Water Truck Recordkeeping Requirement: For the purposes of determining compliance with the water truck requirement in Condition 5.1.4, maintain a certified daily and monthly record of water truck usage. Such records shall be retained by the permittee for at least five (5) years. Certified records shall be made available to the Director or his/her duly authorized representative upon request.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: UPVR	Emission unit name: Unpaved Roads	List any control devices associated with this emission unit: Water Truck
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 This unit consists of emissions from all unpaved roads at the facility (limited to coal pile and disposal area vicinity). Approximately 0.2 miles of unpaved roads exist on-site.

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date: N/A	Installation date: N/A	Modification date(s):
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 N/A

Maximum Hourly Throughput N/A	Maximum Annual Throughput: N/A	Maximum Operating Schedule: 8760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☐ Yes ☒ No	If yes, is it? ☐ Indirect Fired ☐ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	2.53	3.37
Particulate Matter (PM ₁₀)	25.33	33.69
Total Particulate Matter (TSP)	86.36	114.86
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon Unpaved Road activity – AP-42 Section 13.2.2 (Revised 11/2006).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Emissions Unit-Specific Requirement
45CSR13 R13-1477B, Condition A.4	5.1.4	Fugitive Dust Control – Haul Roads: Fugitive dust control measures for haul roads shall be utilized and maintained in such a manner as to minimize dust generation and atmospheric entrainment. Those measures shall include a continuous program of watering haul road(s) and by wet-vacuum sweeping of paved haul roads at all times haulage trucks are in operation unless such haul roads are adequately wetted by natural rainfall. a. Water truck to be utilized shall be equipped with manufactured-type spray nozzles which are pressurized per manufacturer's recommended guidelines for controlling fugitive dust emissions. b Vacuum sweeper shall be of the type that utilizes wet vacuuming and filtration prior to exhausting air. c. A maximum speed limit of 15 miles per hour shall be maintained on all unpaved roads. A clear and visible sign shall be posted at the beginning of all unpaved roads clearly displaying this speed limit.
45CSR13 R13-1477B, Condition B.2 45CSR§7-5.2	5.1.6	Particulate Matter Control of Roads: Maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Applicable Requirement Citation	Permit Condition Number from Permit R30-03300015-2009	Emissions Unit-Specific Requirement Summary
45CSR13 R13-1477B, Condition B.7	5.4.2	Water Truck Recordkeeping Requirement: For the purposes of determining compliance with the water truck requirement in Condition 5.1.4, maintain a certified daily and monthly record of water truck usage. Such records shall be retained by the permittee for at least five (5) years. Certified records shall be made available to the Director or his/her duly authorized representative upon request.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: U2HN	Emission unit name: Harrison Gasoline UST	List any control devices associated with this emission unit.	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): 2,000-gallon underground storage tank used to store gasoline for site vehicles.			
Manufacturer: N/A	Model number: N/A	Serial number: N/A	
Construction date:	Installation date: 1990	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 2,000 gallons			
Maximum Hourly Throughput:	Maximum Annual Throughput: 15,080 gallons	Maximum Operating Schedule: 8,760 hours per year	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)	0.014	0.064
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). EPA Tanks software (Version 4.0.9b)		

<i>Applicable Requirements</i> List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included. Gasoline storage tank shall be loaded by submerged fill – 45CSR21-23.2.a.1
<u> X </u> Permit Shield
For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.) Reports of excess emissions. -- Except as provided in section 9.3 (“variance”) of 45CSR21, for each occurrence of excess emissions expected to last more than 7 days, within 1 business day of becoming aware of such occurrence, supply the Director by letter with the following information: a. The name and location of the facility; b. The subject sources that caused the excess emissions; c. The time and date of first observation of the excess emissions; and d. The cause and expected duration of the excess emissions. f. The proposed corrective actions and schedule to correct the conditions causing the excess emissions. 45CSR21-5.2 (Not in current Title V operating permit)
Are you in compliance with all applicable requirements for this emission unit? <u> X </u> Yes <u> </u> No If no, complete the Schedule of Compliance Form as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: WASTEWATER	Emission unit name: Harrison Wastewater Operations	List any control devices associated with this emission unit. None
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Wastewater operations for Harrison station include two ≈ 19 MMgal capacity lagoons.

Manufacturer:	Model number:	Serial number:
Construction date:	Installation date:	Modification date(s):

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):

Lagoon 1 - 18.9 MM gallons;
Lagoon 2 – 19.4 MM gallons

Maximum Hourly Throughput:	Maximum Annual Throughput: 6,084.55 MMgal/yr	Maximum Operating Schedule: 8,760 hours per year
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ☐ Yes ☒ No	If yes, is it? ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)	7.04	30.84
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). EPA WATER9 software. Supporting emission calculation information is provided in Appendix A.		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific applicable requirements for WASTEWATER

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific applicable requirements for WASTEWATER

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form			
Emission Unit Description			
Emission unit ID number: Insig Tanks	Emission unit name: Insignificant Storage Tanks	List any control devices associated with this emission unit.	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Storage tanks that store volatile organic (or non-volatile/ non-organic) liquids that are not subject to any applicable state or federal requirements. Emissions from these tanks are negligible based on the products stored, tank capacity and annual throughputs.			
Manufacturer:	Model number:	Serial number:	
Construction date:	Installation date:	Modification date(s):	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): See attached table for list of tank capacities and product stored.			
Maximum Hourly Throughput:	Maximum Annual Throughput:	Maximum Operating Schedule: 8760 hours per year	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes <u> X </u> No		If yes, is it? ___ Indirect Fired ___ Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no applicable requirements for the tanks grouped in this emissions unit

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no monitoring, testing, recordkeeping or reporting requirements for the tanks grouped in this emissions unit.

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Harrison Power Station
Storage Tank Inventory for Emission Unit: Insig Tanks

Tank ID#	Year Installed	Tank Capacity (gal)	Stored Substance
A3HN	1991	10,000	Sulfuric Acid Tank 2
A4HN	1978	10,000	Sulfuric Acid Tank 1
A6HN	1980	12,000	Coal Flow Additive
A7HN	1980	12,000	Coal Flow Additive
A8HN	1980	12,000	Coal Flow Additive
A9HN	1971	1200	Propylene glycol
A10HN	1971	1200	Propylene glycol
A11HN	1971	1200	Propylene glycol
A12HN	2002	500	Propylene glycol
A14HN	2000	4,000	Phosphonate
A15HN	1971	750,000	Chemical Cleaning Waste
A16HN	1971	300	No. 2 Fuel Oil
A17HN	1971	300	No. 2 Fuel Oil
A18HN	1971	200	No. 2 Fuel Oil
A19HN	1978	125,000	Diesel Fuel
A20HN	1990	4000	Kerosene
A21HN	1974	800	Turb. Oil Reservoir
A22HN	1974	800	Turb. Oil Reservoir
A23HN	1974	800	Turb. Oil Reservoir
A24HN	1974	800	Turb. Oil Reservoir
A25HN	1974	800	Turb. Oil Reservoir
A26HN	1974	800	Turb. Oil Reservoir
A27HN	1971	800	Oil Reservoir
A28HN	1971	800	Oil Reservoir
A29HN	1971	800	Oil Reservoir
A30HN	1971	12,200	Turbine Oil Reservoir
A31HN	1971	12,200	Turbine Oil Reservoir
A32HN	1971	12,200	Turbine Oil Reservoir
A33HN	1971	932	Turbine Oil Filter
A34HN	1971	932	Turbine Oil Filter
A35HN	1971	932	Turbine Oil Filter
A36HN	1971	300	Hydraulic Oil
A37HN	1971	300	Hydraulic Oil
A38HN	1971	300	Hydraulic Oil
A39HN	1971	1,000	Waste Oil
A51HN	1989	1,200	Waste Oil
A52HN	1984	100	Hazardous Waste Oil
A53HN	1990	12,000	Dozer Fuel Oil
A80HN	1995	2000	Polymer
A95HN	1995	275	No. 2 Fuel Oil
A97HN	1971	1500	Biocide DGH
A98HN	1971	1500	Biocide QUAT
A301HN	1971	250	Loop Seal Oil
A302HN	1971	250	Loop Seal Oil
A303HN	1971	250	Loop Seal Oil
A163HN	App 1980	10	Part Cleaner Tank
A164HN	App 1980	50	Part Cleaner Tank
A173HN	App 1980	50	Part Cleaner Tank
A166HN	App 1980	50	Parts Cleaner Tank
A167HN	App 1980	50	Parts Cleaner Tank
A299HN	1972	15,000	Clean Turbine Oil

Tank ID#	Year Installed	Tank Capacity (gal)	Stored Substance
A300HN	1972	15,000	Waste Turbine Oil
A96HN	1985	330	Ammonium Hydroxide
A101HN	1985	600	Polymer (Nalco 2706)
A102HN	1985	100	Coagulant (Nalco7735)
A103HN	1995	50	Sodium Sulfite
A104HN	1968	600	(Nalco LCS 3800)
A107HN	1995	340	Biocide (Nalco H-135)
A109HN	1995	340	Biocide (Nalco H-135)
A110HN	1995	300	Sodium Hypochlorite (15%)
A116HN	1968	75	Ammonium Hydroxide
A117HN	1968	75	Ammonium Hydroxide
A118HN	1968	75	Ammonium Hydroxide
A120HN	1968	50	Trisodium Phosphate
A121HN	1968	50	Ammonium Hydroxide-
A122HN	1968	75	Calgon C-5
A123HN	1968	100	Sodium Hypochlorite (15%) (Potable Water)
A125 HN	2000	3135	Polypropylene Glycol
A126HN	2000	3135	Polypropylene Glycol
A164HN	2001	13450	Urea Solution (40%)
A165HN	2001	13450	Urea Solution (40%)
A166HN	2001	40000	Urea Solution (40%)
A167HN	2002	2000	Biocide (Nalco 7320)
A175HN	2001	200	Hydraulic Oil
A176HN	2001	200	Hydraulic Oil
A177HN	2001	200	Hydraulic Oil
A178HN	1991	65	Lube Oil
A179HN	1991	65	Lube Oil
A180HN	1991	65	Lube Oil
A181HN	1991	65	Lube Oil
A182HN	2001	65	Hydraulic Oil
A183HN	2001	65	Hydraulic Oil
A184HN	2001	65	Hydraulic Oil
A281HN	2001	110	Lube Oil
A282HN	2001	110	Lube Oil
A283HN	2001	110	Lube Oil
A284HN	2001	110	Lube Oil
A285HN	2001	110	Lube Oil
A286HN	2001	110	Lube Oil
A287HN	1991	110	Lube Oil
A288HN	1991	110	Lube Oil
A289HN	1991	110	Lube Oil
A290HN	1991	110	Lube Oil
A291HN	1991	110	Lube Oil
A292HN	1991	110	Lube Oil
A294HN	2002	500	Propylene Glycol
A295HN	2002	500	Propylene Glycol
A296HN	2002	100	Propylene Glycol
A297HN	2002	2500	Biocide (Nalco 7320)

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: UR-1	Emission unit name: UR-1	List any control devices associated with this emission unit: Dust Collectors 28c, 29c, 30c, 31c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Four (4) Urea Storage Silos (each with 9,000-cubic foot capacity), each venting to a dust collector.

Manufacturer:	Model number:	Serial number:
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Construction date: 1994	Installation date: 1994	Modification date(s): n/a
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 9,000 cubic feet.

Maximum Hourly Throughput: 25 tons urea	Maximum Annual Throughput: 219,000 tons urea	Maximum Operating Schedule: 8760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.22	0.98
Particulate Matter (PM ₁₀)	0.22	0.98
Total Particulate Matter (TSP)	0.22	0.98
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emissions based upon (4) separate collectors, each with outlet grain loading of 0.01 gr/cf, flow rate of 655 cfm, and 8760 hours of operation.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for UR-1

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for UR-1

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: UR-2	Emission unit name: UR-2	List any control devices associated with this emission unit: Dust Collectors 32c, 33c
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Two (2) Urea Hoppers (handling 16 TPH each of dry pelletized urea), each venting to a dust collector.

Manufacturer:	Model number:	Serial number:
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Construction date: 1994	Installation date: 1994	Modification date(s): n/a
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 9,000 cubic feet.

Maximum Hourly Throughput: 16 tons urea (each)	Maximum Annual Throughput: 140,160 tons urea (each)	Maximum Operating Schedule: 8760 hours
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <u>X</u> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data			
Criteria Pollutants	Potential Emissions		
	PPH	TPY	
Carbon Monoxide (CO)			
Nitrogen Oxides (NO _x)			
Lead (Pb)			
Particulate Matter (PM _{2.5})	0.11	0.49	
Particulate Matter (PM ₁₀)	0.11	0.49	
Total Particulate Matter (TSP)	0.11	0.49	
Sulfur Dioxide (SO ₂)			
Volatile Organic Compounds (VOC)			
Hazardous Air Pollutants	Potential Emissions		
	PPH	TPY	
Regulated Pollutants other than Criteria and HAP	Potential Emissions		
	PPH	TPY	
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). Emissions based upon (2) separate collectors, each with outlet grain loading of 0.01 gr/cf, flow rate of 655 cfm, and 8760 hours of operation.			

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no emissions unit-specific requirements for UR-2

 X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no emissions unit-specific testing, recordkeeping, reporting requirements for UR-2

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Attachment G

Air Pollution Control Device Forms

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID numbers: 6ca, 6cb, 6cc	List all emission units associated with this control device. LRCH, 6si, 6sj	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
This baghouse is a 175,000 CFM fabric filter baghouse designed with a grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: 6cd	List all emission units associated with this control device. LRCH	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	85%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
This dust collector is a 947 CFM vacuum system designed with a grain loading of 0.18 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: 8c	List all emission units associated with this control device. 8sa, 8sb, 8sg, 8sh	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
This baghouse is a 28,000 CFM fabric filter baghouse designed with a grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID numbers: 9c, 10c	List all emission units associated with this control device. 13, 14, 9va, 10va	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These are 10,000 CFM fabric filters designed as part of a pneumatic conveyor system with an outlet grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. The fabric filter is an inherent part of the pneumatic conveying process equipment.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID numbers: 11c, 12c	List all emission units associated with this control device. 37, 38, 11va, 12va	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These are 2,100 CFM fabric filters designed as part of a pneumatic conveyor system with an outlet grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. The fabric filter is an inherent part of the pneumatic conveying process equipment.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID numbers: 13c, 14c	List all emission units associated with this control device. 13s, 14s, 13v, 14v	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These control devices are 600 CFM fabric filters designed with an outlet grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID numbers: 15c, 16c, 17c	List all emission units associated with this control device. 15va, 16va, 17va, 15vb, 16vb, 17vb, 33, 34, 35	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). These are 2,700 CFM fabric filters designed as part of a pneumatic conveyor system with an outlet grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No If Yes, Complete ATTACHMENT H If No, Provide justification. The fabric filter is an inherent part of the pneumatic conveying process equipment.		
Describe the parameters monitored and/or methods used to indicate performance of this control device. Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID numbers: 18c, 19c, 20c	List all emission units associated with this control device. 18va, 19va, 20va, 18vb, 19vb, 20vb, 21, 22, 23	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99+%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These are 6,400 CFM fabric filters designed as part of a pneumatic conveyor system with an outlet grain loading of 0.003 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. The fabric filter is an inherent part of the pneumatic conveying process equipment.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		
ATTACHMENT G - Air Pollution Control Device Form		

Control device ID numbers: 21c, 22c, 23c	List all emission units associated with this control device. 21va, 22va, 23va, 21vb, 22vb, 23vb, 21vc, 22vc, 23vc, 21vd, 22vd, 23vd, 21s, 22s, 23s	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device: ___ Baghouse/Fabric Filter ___ Venturi Scrubber ___ Multiclone ___ Carbon Bed Adsorber ___ Packed Tower Scrubber ___ Single Cyclone ___ Carbon Drum(s) _X_ Other Wet Scrubber ___ Cyclone Bank ___ Catalytic Incinerator ___ Condenser ___ Settling Chamber ___ Thermal Incinerator ___ Flare ___ Other (describe) _____ ___ Wet Plate Electrostatic Precipitator ___ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	90%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). These wet scrubbers are designed with a 2,000 CFM outlet with a grain loading of 0.03 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ___ Yes <u>X</u> No If Yes, Complete ATTACHMENT H If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device. Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		
ATTACHMENT G - Air Pollution Control Device Form		

Control device ID numbers: 24c, 25c, 26c, 27c	List all emission units associated with this control device. 24v, 25v, 26v, 27v, 24s, 25s, 26s, 27s	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device: ☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☒ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	90%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). These wet scrubbers are designed with a 1,000 CFM outlet with a grain loading of 0.009 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No If Yes, Complete ATTACHMENT H If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device. Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		
ATTACHMENT G - Air Pollution Control Device Form		

Control device ID number: FGD-1	List all emission units associated with this control device. STACK1	
Manufacturer:	Model number:	Installation date: 1994

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	<u> X </u> Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator	___ Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
SO ₂	100%	95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

The FGD Wet Scrubbing System has a scrubbing agent flow rate of 105,000 gpm at 2.26x10⁶ ACFM.

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___ Yes X No
 If Yes, **Complete ATTACHMENT H**
 If No, **Provide justification.** Device is exempt from 40 CFR 64 CAM requirements because it is utilized to comply with the Acid Rain Program Requirements. In addition, a certified CEM is used to measure SO₂ emissions in the exhaust flow and demonstrate continuous compliance.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The monitoring of SO₂ emission in the exhaust stream with the certified CEM is the primary method used to indicate the control device is operating properly.

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: FGD-2	List all emission units associated with this control device. STACK2	
Manufacturer:	Model number:	Installation date: 1995
Type of Air Pollution Control Device:		
☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☒ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
SO ₂	100%	95%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
The FGD Wet Scrubbing System has a scrubbing agent flow rate of 105,000 gpm at 2.26x10 ⁶ ACFM.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Device is exempt from 40 CFR 64 CAM requirements because it is utilized to comply with the Acid Rain Program Requirements. In addition, a certified CEM is used to measure SO ₂ emissions in the exhaust flow and demonstrate continuous compliance.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
The monitoring of SO ₂ emission in the exhaust stream with the certified CEM is the primary method used to indicate the control device is operating properly.		

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:
FGD-3

List all emission units associated with this control device.
STACK3

Manufacturer:

Model number:

Installation date:

1995

Type of Air Pollution Control Device:

☐ Baghouse/Fabric Filter	☐ Venturi Scrubber	☐ Multiclone
☐ Carbon Bed Adsorber	☐ Packed Tower Scrubber	☐ Single Cyclone
☐ Carbon Drum(s)	☒ Other Wet Scrubber	☐ Cyclone Bank
☐ Catalytic Incinerator	☐ Condenser	☐ Settling Chamber
☐ Thermal Incinerator	☐ Flare	☐ Other (describe) _____
☐ Wet Plate Electrostatic Precipitator	☐ Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
SO ₂	100%	95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

The FGD Wet Scrubbing System has a scrubbing agent flow rate of 105,000 gpm at 2.26x10⁶ ACFM.

Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.** Device is exempt from 40 CFR 64 CAM requirements because it is utilized to comply with the Acid Rain Program Requirements. In addition, a certified CEM is used to measure SO₂ emissions in the exhaust flow and demonstrate continuous compliance.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The monitoring of SO₂ emission in the exhaust stream with the certified CEM is the primary method used to indicate the control device is operating properly.

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: ESP-1	List all emission units associated with this control device. STACK1	
Manufacturer: American Standard	Model number: S.O.7-61475	Installation date: 1972
Type of Air Pollution Control Device:		
☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☒ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	93%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
This Electrostatic Precipitator has a collection plate area of 374,400 square feet, designed for flow capacity of 2.079x10 ⁶ ACFM.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☒ Yes ☐ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Primary and secondary voltage and current, secondary power and spark rate for each of the fields is monitored and logged in an electronic data acquisition system. In addition, total secondary power level for the entire ESP is also calculated and logged.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: ESP-2	List all emission units associated with this control device. STACK2	
Manufacturer: American Standard	Model number: S.O.7-61475	Installation date: 1973
Type of Air Pollution Control Device:		
☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☒ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	93%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
This Electrostatic Precipitator has a collection plate area of 374,400 square feet, designed for flow capacity of 2.079x10 ⁶ ACFM.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☒ Yes ☐ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Primary and secondary voltage and current, secondary power and spark rate for each of the fields is monitored and logged in an electronic data acquisition system. In addition, total secondary power level for the entire ESP is also calculated and logged.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: ESP-3	List all emission units associated with this control device. STACK3	
Manufacturer: American Standard	Model number: S.O.7-61475	Installation date: 1974
Type of Air Pollution Control Device:		
☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☒ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	93%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
This Electrostatic Precipitator has a collection plate area of 374,400 square feet, designed for flow capacity of 2.079x10 ⁶ ACFM.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☒ Yes ☐ No If Yes, Complete ATTACHMENT H If No, Provide justification.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Primary and secondary voltage and current, secondary power and spark rate for each of the fields is monitored and logged in an electronic data acquisition system. In addition, total secondary power level for the entire ESP is also calculated and logged.		

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:
SCR-1

List all emission units associated with this control device.
STACK1

Manufacturer:
Haldor Topsoe

Model number:

Installation date:
2003

Type of Air Pollution Control Device:

☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone
☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone
☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank
☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber
☐ Thermal Incinerator ☐ Flare ☒ Other (describe) Selective Catalytic Reduction (SCR)
☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
NOx	100%	82%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.** Device is exempt from 40 CFR 64 CAM requirements because it is utilized to comply with the Acid Rain Program Requirements. In addition, a certified CEM is used to measure SO₂ emissions in the exhaust flow and demonstrate continuous compliance.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The monitoring of NOx emissions in the exhaust stream with the certified CEM is the primary method used to indicate the control device is operating properly.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:
SCR-2

List all emission units associated with this control device.
STACK2

Manufacturer:
Haldor Topsoe

Model number:

Installation date:
2003

Type of Air Pollution Control Device:

☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone
☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone
☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank
☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber
☐ Thermal Incinerator ☐ Flare ☒ Other (describe) Selective Catalytic Reduction (SCR)
☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
NOx	100%	82%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Is this device subject to the CAM requirements of 40 C.F.R. 64? ☒ Yes ☒ No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.** Device is exempt from 40 CFR 64 CAM requirements because it is utilized to comply with the Acid Rain Program Requirements. In addition, a certified CEM is used to measure SO₂ emissions in the exhaust flow and demonstrate continuous compliance.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The monitoring of NO_x emissions in the exhaust stream with the certified CEM is the primary method used to indicate the control device is operating properly.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:
SCR-3

List all emission units associated with this control device.
STACK3

Manufacturer:
Haldor Topsoe

Model number:

Installation date:
2003

Type of Air Pollution Control Device:

☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone
☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone
☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank
☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber
☐ Thermal Incinerator ☐ Flare ☒ Other (describe) Selective Catalytic Reduction (SCR)
☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
NOx	100%	82%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.** Device is exempt from 40 CFR 64 CAM requirements because it is utilized to comply with the Acid Rain Program Requirements. In addition, a certified CEM is used to measure NOx emissions in the exhaust flow and demonstrate continuous compliance.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The monitoring of NOx emissions in the exhaust stream with the certified CEM is the primary method used to indicate the control device is operating properly.

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: 28c, 29c, 30c, 31c	List all emission units associated with this control device. UR-1	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These dusts collector are 655 CFM bin vents designed with a grain loading of 0.01 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: 32c, 33c	List all emission units associated with this control device. UR-2	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These dusts collector are 655 CFM bin vents designed with a grain loading of 0.01 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: 28c, 29c, 30c, 31c	List all emission units associated with this control device. UR-1	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other: Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These dust collectors are 655 CFM bin vents designed with a grain loading of 0.01 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

ATTACHMENT G - Air Pollution Control Device Form		
Control device ID number: 32c, 33c	List all emission units associated with this control device. UR-2	
Manufacturer:	Model number:	Installation date: 1994
Type of Air Pollution Control Device:		
☒ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone ☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone ☐ Carbon Drum(s) ☐ Other: Wet Scrubber ☐ Cyclone Bank ☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber ☐ Thermal Incinerator ☐ Flare ☐ Other (describe) _____ ☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator		
List the pollutants for which this device is intended to control and the capture and control efficiencies.		
Pollutant	Capture Efficiency	Control Efficiency
Particulate	100%	99%
Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).		
These dust collectors are 655 CFM bin vents designed with a grain loading of 0.01 gr/scf.		
Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No		
If Yes, Complete ATTACHMENT H		
If No, Provide justification. Pre-control emissions do not exceed Title V major source threshold.		
Describe the parameters monitored and/or methods used to indicate performance of this control device.		
Emission Inspection: Inspect all fugitive dust control systems weekly from May 1 through September 30 and monthly from October 1 through April 30 to ensure that they are operated and maintained in conformance with their designs.		

**MONONGAHELA POWER COMPANY
HARRISON POWER STATION**

**Units 1, 2 and 3, Materials Handling, Aux Boilers, Emergency Generators and Heaters
MAXIMUM TOTAL POTENTIAL EMISSIONS (Tons/Year)**

Compound	Coal Fired Boilers			Auxiliary Boilers A and B	Emergency Generators and Fire Pumps	ANNUAL TOTAL FACILITY-WIDE ALL SOURCES
	Unit 1	Unit 2	Unit 3			
Criteria Pollutants						Criteria Pollutants
SO ₂	141,841.9	141,841.9	141,841.9	1.1	5.71	425,533
NO _x	13,851.8	13,851.8	13,851.8	496.0	21.06	42,072
PM	1,385.2	1,385.2	1,385.2	13.5	0.60	7,420
PM ₁₀	983.5	983.5	983.5	13.5	0.54	4,135
PM _{2.5}	706.4	706.4	706.4	13.5	0.53	2,769
Condensable PM	554.1	554.1	554.1			1,662
CO	577.2	577.2	577.2	148.8	7.44	1,888
VOCs	69.3	69.3	69.3	9.7	1.34	219
Trace HAP Metals						Trace HAP Metals
Antimony	0.0111	0.0111	0.0111	-	-	0.03
Arsenic	0.1828	0.1828	0.1828	0.0004	0.0000	0.55
Beryllium	0.0097	0.0097	0.0097	-	0.0000	0.03
Cadmium	0.0222	0.0222	0.0222	0.0019	0.0000	0.07
Chromium	0.2341	0.2341	0.2341	0.0025	0.0000	0.70
Cobalt	0.0693	0.0693	0.0693	-	-	0.21
Lead	0.1787	0.1787	0.1787	-	0.0000	0.54
Manganese	0.2973	0.2973	0.2973	0.0007	0.0000	0.89
Mercury	0.0759	0.0759	0.0759	0.0005	0.0000	0.23
Nickel	0.2244	0.2244	0.2244	0.0037	0.0000	0.68
Selenium	0.7895	0.7895	0.7895	-	-	2.37
Trace HAP Compounds						Trace HAP Compounds
Chlorine (as HCl)	29.4	29.4	29.4	-	-	88.3
Fluorine (as HF)	10.1	10.1	10.1	-	-	30.3
Sulfuric Acid (H ₂ SO ₄)	1,095.0	1,095.0	1,095.0	-	-	3,285
Dioxins	0.0000	0.0000	0.0000	-	-	0.0000
Polycyclic Aromatics	0.0576	0.0576	0.0576	0.0001	0.0007	0.174
HAP VOCs						HAP VOCs
Acetaldehyde	0.6580	0.6580	0.6580	-	0.0001	1.97
Acrolein	0.3348	0.3348	0.3348	-	0.0000	1.00
Benzene	1.5006	1.5006	1.5006	-	0.0068	4.51
Benzyl chloride	0.8080	0.8080	0.8080	-	-	2.42
Cyandide compounds	2.8858	2.8858	2.8858	-	-	8.66
Formaldehyde	0.2770	0.2770	0.2770	13.2845	0.0201	14.14
Isophorone	0.6695	0.6695	0.6695	-	-	2.01
Methyl Bromide	0.1847	0.1847	0.1847			0.55
Methyl chloride	0.6118	0.6118	0.6118	-	-	1.84
Methyl Ethyl Ketone	0.4502	0.4502	0.4502			1.35
Methyl Hydrazine	0.1962	0.1962	0.1962			0.59
Methylene chloride	0.3348	0.3348	0.3348	-	-	1.00
Propionaldehyde	0.4386	0.4386	0.4386	-	-	1.32
Toluene	0.2770	0.2770	0.2770	-	0.0026	0.83
Greenhouse Gases						Greenhouse Gases
CO ₂	6,972,048	6,972,048	6,972,048	212,553	708.7	21,129,404
Methane (CH ₄)	61.2	61.2	61.2	4.07	-	187.7
N ₂ O	97.8	97.8	97.8	3.90	-	297.3
Other Compounds						Other Compounds
Ammonia	0.00008	0.00008	0.00008			0.00023

Materials Handling	RDRU
Fugitive Emissions	Emissions
3,240.4	10.4
1,166.7	3.4
635.5	0.4

MONONGAHELA POWER COMPANY HARRISON STATION

UNITS 1,2 AND 3: POTENTIAL EMISSIONS OF CRITERIA POLLUTANTS

Boiler Performance and Operating Parameters

Parameter	Unit No. 1	Unit No. 2	Unit No. 3
Maximum Net Generating Capacity	670 MW	670 MW	670 MW
Maximum Heat Input Rate	6,325 MMBtu/hr	6,325 MMBtu/hr	6,325 MMBtu/hr
Fuel Type	Coal	Coal	Coal
Fuel Heating Value	12,000 Btu/lb	12,000 Btu/lb	12,000 Btu/lb
Potential Operating Hours/Year	8760 hours/yr	8760 hours/yr	8760 hours/yr
Maximum Coal Use/Hr	263.5 tons/hr	263.5 tons/hr	263.5 tons/hr
Maximum Coal Use/Year	2,308,625 ton/yr	2,308,625 ton/yr	2,308,625 ton/yr
Maximum Heat Input/Year	55.4 10 ¹² Btu/yr	55.4 10 ¹² Btu/yr	55.4 10 ¹² Btu/yr

Pollutant Emission Factors

Criteria Air Pollutant	Unit No. 1	Unit No. 2	Unit No. 3
SO ₂	5.12 lbs/MMBtu (a)	5.12 lbs/MMBtu (a)	5.12 lbs/MMBtu (a)
NO _x	0.50 lbs/MMBtu (b)	0.50 lbs/MMBtu (b)	0.50 lbs/MMBtu (b)
PM	0.05 lbs/MMBtu (c)	0.05 lbs/MMBtu (c)	0.05 lbs/MMBtu (c)
PM-10	0.0355 lbs/MMBtu (d)	0.0355 lbs/MMBtu (d)	0.0355 lbs/MMBtu (d)
PM-2.5	0.0255 lbs/MMBtu (e)	0.0255 lbs/MMBtu (e)	0.0255 lbs/MMBtu (e)
Condensable PM	0.02 lbs/MMBtu (h)	0.02 lbs/MMBtu (h)	0.02 lbs/MMBtu (h)
CO	0.50 lbs/ton coal (f)	0.50 lbs/ton coal (f)	0.50 lbs/ton coal (f)
VOCs	0.06 lbs/ton coal (g)	0.06 lbs/ton coal (g)	0.06 lbs/ton coal (g)

Maximum Hourly Potential Emissions (lb/hr)

Criteria Air Pollutant	Unit No. 1	Unit No. 2	Unit No. 3
SO ₂	32384.0	32384.0	32384.0
NO _x	3162.5	3162.5	3162.5
PM	316.3	316.3	316.3
PM-10	224.5	224.5	224.5
PM-2.5	161.3	161.3	161.3
Condensable PM	126.5	126.5	126.5
CO	131.8	131.8	131.8
VOCs	15.8	15.8	15.8

Maximum Annual Potential Emissions (tons/yr)

Criteria Air Pollutant	Unit No. 1	Unit No. 2	Unit No. 3
SO ₂	141,841.9	141,841.9	141,841.9
NO _x	13,851.8	13,851.8	13,851.8
PM	1,385.2	1,385.2	1,385.2
PM-10	983.5	983.5	983.5
PM-2.5	706.4	706.4	706.4
Condensable PM	554.1	554.1	554.1
CO	577.2	577.2	577.2
VOCs	69.3	69.3	69.3

Footnotes:

- (a) SO₂ emission factor limit per 45 CFR 10.
- (b) NO_x emission factor based on Phase II Acid Rain Permit #R33-3944-2017-4 for Harrison Station.
- (c) PM emission factor based on 45 CSR 2-4.1a limit.
- (d) PM-10 factor derived from AP-42 Table 1.1-6; mass percent 10μ or less with FGD scrubber control ; 71% of PM (dry-bottom boiler).
- (e) PM-2.5 coal factor from AP-42 Table 1.1-6 (9/98); mass percent 2.5μ or less for FGD control; 51% of PM (dry bottom boiler).
- (f) CO emission factor based on AP-42, Table 1.1-3 (9/98).
- (g) VOC emission factor based on AP-42, Table 1.1-19 (9/98).
- (h) Condensable PM factor from AP-42, Table 1.1-5, "All PM controls combined with an FGD control"

**MONONGAHELA POWER COMPANY
HARRISON STATION**

UNITS 1,2 AND 3: POTENTIAL EMISSIONS OF CRITERIA POLLUTANTS

Boiler Performance and Operating Parameters

Parameter	Unit No. 1	Unit No. 2	Unit No. 3
Maximum Net Generating Capacity	670 MW	670 MW	670 MW
Maximum Heat Input Rate	6,325 MMBtu/hr	6,325 MMBtu/hr	6,325 MMBtu/hr
Fuel Type	Coal	Coal	Coal
Fuel Heating Value	12,000 Btu/lb	12,000 Btu/lb	12,000 Btu/lb
Potential Operating Hours/Year	8760 hours/yr	8760 hours/yr	8760 hours/yr
Maximum Coal Use/Hr	263.5 tons/hr	263.5 tons/hr	263.5 tons/hr
Maximum Coal Use/Year	2,308,625 ton/yr	2,308,625 ton/yr	2,308,625 ton/yr
Maximum Heat Input/Year	55.4 10 ¹² Btu/yr	55.4 10 ¹² Btu/yr	55.4 10 ¹² Btu/yr

Pollutant Emission Factors

Regulated Air Pollutant	Unit No. 1	Unit No. 2	Unit No. 3
CO2	6040.00 lbs/ton coal (a)	6040.00 lbs/ton coal (a)	6040.00 lbs/ton coal (a)
Methane (CH4)	0.00221 lbs/MMBtu (b,c)	0.00221 lbs/MMBtu (b,c)	0.00221 lbs/MMBtu (b,c)
N2O	0.00353 lbs/MMBtu (b)	0.00353 lbs/MMBtu (b)	0.00353 lbs/MMBtu (b)

Maximum Hourly Potential Emissions (lb/hr)

Criteria Air Pollutant	Unit No. 1	Unit No. 2	Unit No. 3
CO2	1,591,791.7	1,591,791.7	1,591,791.7
Methane (CH4)	14.0	14.0	14.0
N2O	22.3	22.3	22.3

Maximum Annual Potential Emissions (tons/yr)

Criteria Air Pollutant	Unit No. 1	Unit No. 2	Unit No. 3
CO2	6,972,047.5	6,972,047.5	6,972,047.5
Methane (CH4)	61.2	61.2	61.2
N2O	97.8	97.8	97.8

Footnotes:

- (a) CO2 emission factor based on AP-42, Table 1.1-20 (9/98) for medium-volatile bituminous coal.
(b) Emission factors taken from 40 CFR Part 98, Subpart C, Tables C-1 and C-2, converted to lbs/MMBtu
(c) Emission factor for methane used utility industry standard for coal of 0.001 Kg/MMBTU, converted to lbs/MMBtu

**MONONGAHEA POWER COMPANY
HARRISON STATION**

UNIT 1: POTENTIAL HAP EMISSIONS

UNIT 1 Firing Coal

HAP Compound	Emission Factor		Harrison Unit 1	
	lb/ton	(lb/10 ¹² Btu)	(lbs/hr)	(tons/yr)
Trace Metals (a)				
Antimony		0.40	2.53E-03	1.11E-02
Arsenic		6.60	4.17E-02	1.83E-01
Beryllium		0.35	2.21E-03	9.70E-03
Cadmium		0.80	5.06E-03	2.22E-02
Chromium		8.45	5.34E-02	2.34E-01
Cobalt		2.50	1.58E-02	6.93E-02
Lead		6.45	4.08E-02	1.79E-01
Manganese		10.73	6.79E-02	2.97E-01
Mercury		2.74	1.73E-02	7.59E-02
Nickel		8.10	5.12E-02	2.24E-01
Selenium		28.50	1.80E-01	7.90E-01
Trace Compounds (a)				
Hydrochloric Acid (HCl)		1,063	6.72E+00	2.94E+01
Hydrogen Fluoride (HF)		365.0	2.31E+00	1.01E+01
Sulfuric Acid (H ₂ SO ₄)		39,524	2.50E+02	1.09E+03
Dioxin Compounds		7.33E-05	4.64E-07	2.03E-06
Polycyclic Organics		2.080	1.32E-02	5.76E-02
VOCs (b)				
Acetaldehyde	5.70E-04	23.75	0.150	0.658
Acrolein	2.90E-04	12.08	0.076	0.335
Benzene	1.30E-03	54.17	0.343	1.501
Benzyl chloride	7.00E-04	29.17	0.184	0.808
Cyanide Compounds	2.50E-03	104.17	0.659	2.886
Formaldehyde	2.40E-04	10.00	0.063	0.277
Isophorone	5.80E-04	24.17	0.153	0.670
Methyl Bromide	1.60E-04	6.67	0.042	0.185
Methyl Chloride	5.30E-04	22.08	0.140	0.612
Methyl Ethyl Ketone	3.90E-04	16.25	0.103	0.450
Methyl Hydrazine	1.70E-04	7.08	0.045	0.196
Methylene chloride	2.90E-04	12.08	0.076	0.335
Propionaldehyde	3.80E-04	15.83	0.100	0.439
Toluene	2.40E-04	10.00	0.063	0.277

Footnotes:

- (a) Emission factors obtained from EPRI LARK-TRIPP RY2006 software.
- (b) Emission factors obtained from AP-42, Table 1.1-14 (9/98).

**MONONGAHEA POWER COMPANY
HARRISON STATION**

UNIT 2: POTENTIAL HAP EMISSIONS

UNIT 2 Firing Coal

HAP Compound	Emission Factor		Harrison Unit 2	
	lb/ton	(lb/10 ¹² Btu)	(lbs/hr)	(tons/yr)
Trace Metals (a)				
Antimony		0.40	2.53E-03	1.11E-02
Arsenic		6.60	4.17E-02	1.83E-01
Beryllium		0.35	2.21E-03	9.70E-03
Cadmium		0.80	5.06E-03	2.22E-02
Chromium		8.45	5.34E-02	2.34E-01
Cobalt		2.50	1.58E-02	6.93E-02
Lead		6.45	4.08E-02	1.79E-01
Manganese		10.73	6.79E-02	2.97E-01
Mercury		2.74	1.73E-02	7.59E-02
Nickel		8.10	5.12E-02	2.24E-01
Selenium		28.50	1.80E-01	7.90E-01
Trace Compounds (a)				
Hydrochloric Acid (HCl)		1,063	6.72E+00	2.94E+01
Hydrogen Fluorine (HF)		365.0	2.31E+00	1.01E+01
Sulfuric Acid (H ₂ SO ₄)		39,524	2.50E+02	1.09E+03
Dioxin Compounds		7.33E-05	4.64E-07	2.03E-06
Polycyclic Aromatic Compounds		2.080	1.32E-02	5.76E-02
VOCs (b)				
Acetaldehyde	5.70E-04	23.75	0.150	0.658
Acrolein	2.90E-04	12.08	0.076	0.335
Benzene	1.30E-03	54.17	0.343	1.501
Benzyl chloride	7.00E-04	29.17	0.184	0.808
Cyanide Compounds	2.50E-03	104.17	0.659	2.886
Formaldehyde	2.40E-04	10.00	0.063	0.277
Isophorone	5.80E-04	24.17	0.153	0.670
Methyl Bromide	1.60E-04	6.67	0.042	0.185
Methyl Chloride	5.30E-04	22.08	0.140	0.612
Methyl Ethyl Ketone	3.90E-04	16.25	0.103	0.450
Methyl Hydrazine	1.70E-04	7.08	0.045	0.196
Methylene chloride	2.90E-04	12.08	0.076	0.335
Propionaldehyde	3.80E-04	15.83	0.100	0.439
Toluene	2.40E-04	10.00	0.063	0.277

Footnotes:

- (a) Emission factors obtained from EPRI LARK-TRIPP RY2006 software.
- (b) Emission factors obtained from AP-42, Table 1.1-14 (9/98).

**MONONGAHEA POWER COMPANY
HARRISON STATION**

UNIT 3: POTENTIAL HAP EMISSIONS

UNIT 3 Firing Coal

HAP Compound	Emission Factor		Harrison Unit 3	
	lb/ton	(lb/10 ¹² Btu)	(lbs/hr)	(tons/yr)
Trace Metals (a)				
Antimony		0.40	2.53E-03	1.11E-02
Arsenic		6.60	4.17E-02	1.83E-01
Beryllium		0.35	2.21E-03	9.70E-03
Cadmium		0.80	5.06E-03	2.22E-02
Chromium		8.45	5.34E-02	2.34E-01
Cobalt		2.50	1.58E-02	6.93E-02
Lead		6.45	4.08E-02	1.79E-01
Manganese		10.73	6.79E-02	2.97E-01
Mercury		2.74	1.73E-02	7.59E-02
Nickel		8.10	5.12E-02	2.24E-01
Selenium		28.50	1.80E-01	7.90E-01
Trace Compounds (a)				
Hydrochloric Acid (HCl)		1,063	6.72E+00	2.94E+01
Hydrogen Flourine (HF)		365.0	2.31E+00	1.01E+01
Sulfuric Acid (H2SO4)		39,524	2.50E+02	1.09E+03
Dioxin Compounds		7.33E-05	4.64E-07	2.03E-06
Polycyclic Aromatic Compounds		2.080	1.32E-02	5.76E-02
VOCs (b)				
Acetaldehyde	5.70E-04	23.75	0.150	0.658
Acrolein	2.90E-04	12.08	0.076	0.335
Benzene	1.30E-03	54.17	0.343	1.501
Benzyl chloride	7.00E-04	29.17	0.184	0.808
Cyanide Compounds	2.50E-03	104.17	0.659	2.886
Formaldehyde	2.40E-04	10.00	0.063	0.277
Isophorone	5.80E-04	24.17	0.153	0.670
Methyl Bromide	1.60E-04	6.67	0.042	0.185
Methyl Chloride	5.30E-04	22.08	0.140	0.612
Methyl Ethyl Ketone	3.90E-04	16.25	0.103	0.450
Methyl Hydrazine	1.70E-04	7.08	0.045	0.196
Methylene chloride	2.90E-04	12.08	0.076	0.335
Propionaldehyde	3.80E-04	15.83	0.100	0.439
Toluene	2.40E-04	10.00	0.063	0.277

Footnotes:

- (a) Emission factors obtained from EPRI LARK-TRIPP RY2006 software.
- (b) Emission factors obtained from AP-42, Table 1.1-14 (9/98).

**MONONGAHELA POWER COMPANY
HARRISON STATION**

AUXILIARY BOILERS 1A & 1B: POTENTIAL EMISSIONS

PARAMETER	Auxiliary Boilers 1A & 1B	
Description	Babcock and Wilcox FM-120-97	
Heat Input, (MMBtu/hr) (a)	202.2	
Fuel	No. 2 Oil	Nat. Gas
Fuel Heat Content, (Btu/gal- Oil), (Btu/ft**3 - Nat. Gas) (b)		1,000
Fuel Firing Rate, (gal/hr - Oil), (ft**3/hr - Nat. Gas)		202,200
Potential Hours of Operation	8,760	
Fuel Use, (gal/year - Oil), (MMscf/yr - Nat. Gas) (c)	0	1,771
Heat Rate, (MMBtu/yr)	0	1,771,272

POLLUTANT	EMISSION FACTORS (d) (lb/MMBtu)		EMISSIONS SUMMARY					
			AUXILIARY BOILERS A/B Hourly PTE (lb/hr) per Boiler			AUXILIARY BOILERS A/B Annual PTE (tpy) per Boiler		
			No. 2 Oil	Nat. Gas	Maximum	No. 2 Oil	Nat. Gas	Maximum
SO2 (e)	0.00	0.00060	0.00	0.12	0.12	0.00	0.53	0.53
NOx	0.00	0.28000	0.00	56.62	56.62	0.00	247.98	247.98
PM	0.00	0.00760	0.00	1.54	1.54	0.00	6.73	6.73
PM-10	0.00	0.00760	0.00	1.54	1.54	0.00	6.73	6.73
PM2.5	0.00	0.00760	0.00	1.54	1.54	0.00	6.73	6.73
CO	0.00	0.08400	0.00	16.98	16.98	0.00	74.39	74.39
VOC	0.00	0.00550	0.00	1.11	1.11	0.00	4.87	4.87
CO2	0.00	120.00000	0.00	24,264	24,264	0	106,276	106,276
Methane	0.00	0.00230	0.00	0.47	0.47	0.00	2.04	2.04
N2O	0.00	0.00220	0.00	0.44	0.44	0.00	1.95	1.95
Arsenic	0.00	0.00000	0.00	0.0000	0.0000	0.0000	0.0002	0.0002
Beryllium	0.00	-	0.00	-	0.0000	0.0000	-	0.0000
Cadmium	0.00	0.00000	0.00	0.0002	0.0002	0.0000	0.0010	0.0010
Chromium	0.00	0.00000	0.00	0.0003	0.0003	0.0000	0.0012	0.0012
Lead	0.00	-	0.00	-	0.0000	0.0000	-	0.0000
Manganese	0.00	0.00000	0.00	0.0001	0.0001	0.0000	0.0003	0.0003
Mercury	0.00	0.00000	0.00	0.0001	0.0001	0.0000	0.0002	0.0002
Nickel	0.00	0.00000	0.00	0.0004	0.0004	0.0000	0.0019	0.0019
Formaldehyde	0.00	0.00750	0.00	1.5165	1.5165	0.0000	6.6423	6.6423
Polycyclic Organics	0.00	0.00000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000

FOOTNOTES:

- (a) Heat input provided by TV #R-30-03300015-2003
- (b) Heat content of fuel oil is user input; for natural gas, 1000 BTU/ft**3 assumed.
- (c) Natural Gas and fuel oil usage are based on 8760 hours of operation.
- (d) Natural gas fired emission factor takens from EPA AP-42 Section 1.4 (7/98).
Oil fired emission factor takens from EPA AP-42 Section 1.3 (9/98).
- (e) Oil-fired SO2 emissions based on 1.0% oil sulfur content, as this is the limit for the diesel gens, and same fuel is assumed.

MONONGAHELA POWER COMPANY
HARRISON STATION

EMERGENCY GENERATOR RICE UNITS: POTENTIAL EMISSIONS

PARAMETER	DIESEL GENERATOR 1 & 2 (each)	DIESEL GENERATOR 3	EMERGENCY GENERATOR EG-1 (Wetland Pumphouse)	EMERGENCY GENERATOR EG-2 (Leachate System)	EMERGENCY FIRE PUMP FP-01	EMERGENCY FIRE PUMP FP-02
Description (a)	Caterpillar	Caterpillar	Kohler	Kohler	Clarke (John Deere)	855 Cummins
	Model No. D399 TA	Model No. 3406	Model No. 100REZGD	Model No. 100REZGD	Model No. JX6H-UFAD60	Model NTC335
Full Standby Load	800 kW, 1120 HP	350 kW, 519 HP	108.2 kW, 145 HP	605 HP	510 HP	335 HP
Fuel (a)	No. 2 Fuel Oil	No. 2 Fuel Oil	Liquid Propane Gas	Liquid Propane Gas	ULSD	ULSD
Fuel Firing Rate, (gal/hr) (a)	61.80	27.00	12.81	38.72	22.0	18.0
Max. Operating Time, (hr/yr)	500	500	500	500	500	500
Fuel Use, (gal/yr)	30,900	13,500	6,403	19,360	11,000	9,000
Fuel Heating Value, (Btu/gal)	139,000	139,000	92,500	91,502	137,000	137,000
Heat Input, (MMBtu/hr)	8.59	3.75	1.18	3.54	3.01	2.47
Heat Rate, (MMBtu/yr)	4,295	1,877	592	1,771	1,507	1,233

Emergency Generators 1 and 2				Emergency Generator 3		REFERENCES
POLLUTANT	Emission Factor (lb/MMBtu)	POTENTIAL EMISSIONS (per generator)		POTENTIAL EMISSIONS (per generator)		
		Max Hourly (lb/hr)	Max Annual (tpy)	Max Hourly (lb/hr)	Max Annual (tpy)	
SO2	1.01	8.71	2.18	3.81	0.95	(b)
NOx	3.20	27.49	6.87	12.01	3.00	EPA AP-42, Tables 3.4-1 and 3.4-2 (10/96) for large stationary diesel engines.
PM	0.07	0.60	0.15	0.26	0.07	
PM-10	0.06	0.49	0.12	0.22	0.05	
PM2.5	0.06	0.48	0.12	0.21	0.05	
CO	0.85	7.30	1.83	3.19	0.80	
VOC's	0.09	0.77	0.19	0.34	0.08	
CO2	165.0	1417.4	354.3	619.2	154.8	
Lead	0.0000	0.0001	0.0000	0.0000	0.0000	EPA AP-42, Table 1.3-10(9/98), Assumed oil-fired boiler emission factors.
Arsenic	0.0000	0.0000	0.0000	0.0000	0.0000	
Beryllium	0.0000	0.0000	0.0000	0.0000	0.0000	
Cadmium	0.0000	0.0000	0.0000	0.0000	0.0000	
Chromium	0.0000	0.0000	0.0000	0.0000	0.0000	
Manganese	0.0000	0.0001	0.0000	0.0000	0.0000	
Mercury	0.0000	0.0000	0.0000	0.0000	0.0000	
Nickel	0.0000	0.0000	0.0000	0.0000	0.0000	EPA AP-42, Table 3.4-3 (10/96)
Formaldehyde	0.0001	0.0007	0.0002	0.0003	0.0001	
Benzene	0.0008	0.0067	0.0017	0.0029	0.0007	
Toluene	0.0003	0.0024	0.0006	0.0011	0.0003	
Xylenes	0.0002	0.0017	0.0004	0.0007	0.0002	
Acetaldehyde	0.0000	0.0002	0.0001	0.0001	0.0000	
Acrolein	0.0000	0.0001	0.0000	0.0000	0.0000	
Polycyclic Organics	0.0001	0.0011	0.0003	0.0005	0.0001	(10/96)

FOOTNOTES:

- (a) Data From 2012 Combustion Calculations
(b) SO2 emission based on 1% oil sulfur content.

Maximum Potential Emissions (tpy) - Additional Units

POLLUTANT	EMERGENCY GENERATOR EG-1** (Wetland Pumphouse)	EMERGENCY GENERATOR EG-2 (Leachate System)	EMERGENCY FIRE PUMP FP-01	EMERGENCY FIRE PUMP FP-02
NOx	0.08	0.67	0.84	2.72
PM	0.0001	0.0084	0.04	0.19
PM10	0.0001	0.0084	0.04	0.19
PM2.5	0.0001	0.0084	0.04	0.19
SO2	0.0001	0.0005	0.22	0.18
CO	0.35	1.33	0.72	0.59
VOC	0.06	0.33	0.26	0.22
Formaldehyde	0	0.018	0.001	0.0007
Benzene	0	0.0014	0.0007	0.0006
Toluene	0	0.0005	0.0003	0.0003
Xylene	0	0.0002	0.0002	0.0002
Total HAPs	0	0.0202	0.0022	0.0018

**MONONGAHELA POWER COMPANY
HARRISON STATION**

SPACE HEATERS: POTENTIAL EMISSIONS

PARAMETER	PORTABLE KEROSENE-FIRED SPACE HEATERS				
Heater Quantity, size (a)	2 (100 kBtu/hr)	5 (150 kBtu/hr)	11 (320 kBtu/hr)	11 (350 kBtu/hr)	All Kerosene
Fuel Heat Content, (Btu/gal) (b)	135,000	135,000	135,000	135,000	135,000
Fuel Firing Rate, each,(gal/hr) (a)	0.74	1.11	2.37	2.59	61.63
Operating Time, each size category, (hr/yr/heater) (c)	5,088	5,088	5,088	5,088	5,088
Total Fuel Use, (gal/yr) (c)	7,538	28,267	132,665	145,102	-
Total Heat Input, (10 ⁶ Btu/yr)	1,018	3,816	17,910	19,589	42,332

POLLUTANT	Kerosene Emission Factor (d)	Hourly Emissions (lb/hr)	Annual Emissions (tons/year)
	(lb/10 ⁶ Btu)	Kerosene Heaters	Kerosene Heaters
SO ₂	0.05	0.43	1.11
NO _x	0.15	1.23	3.14
PM	0.02	0.20	0.52
PM-10	0.02	0.14	0.36
PM2.5	0.01	0.10	0.24
CO	0.04	0.31	0.78
VOC	0.00	0.02	0.05
CO ₂	159.3	1325.0	3370.9
Methane	0.00	0.01	0.03
N ₂ O	0.00	0.01	0.02
Arsenic	0.00	0.00	0.00
Beryllium	0.00	0.00	0.00
Cadmium	0.00	0.00	0.00
Chromium	0.00	0.00	0.00
Lead	0.00	0.00	0.00
Manganese	0.00	0.00	0.00
Mercury	0.00	0.00	0.00
Nickel	0.00	0.00	0.00
Formaldehyde	0.00	0.00	0.01
Polycyclic Organics	0.00	0.00	0.00

FOOTNOTES:

- (a) Heater data provided by TV #R-30-03300015-2003.
- (b) Assumes EPA AP-42, Appendix A heating value for kerosene, and AP-42, Section 1.5-1 (10/96) heat value for liquid propane.
- (c) Average heater operating time (by size category), or alternatively total fuel use by all heaters is user input.
- (d) Emission factors for distillate oil-fired, industrial boilers given in AP-42 Tables 1.3-1, -2, -7, and -9 in EPA AP-42 (9/99) are conservatively assumed for kerosene-firing, except for SO₂. For SO₂, the emissions for kerosene-firing are calculated assuming 0.05% sulfur. A density of 7.05 lb/gal is assumed for kerosene. Liquid propane-fired units emissions were calculated from EPA AP-42 Table 1.5-1 (10/96) for LPG combustion. AP-42, Appendix A gives 4.24 lb/gal density and indicates sulfur content of LPG is negligible. Therefore, the sulfur content equivalent to that used for kerosene was conservatively used for LPG.

MONONGAHELA POWER COMPANY
HARRISON STATION

UNITS 1 THROUGH 3: POTENTIAL VOC/HAP EMISSIONS

ALL UNITS with WV Bituminous Coal

Volatile Organic Compounds (VOC)	AP-42, Table 1.1-14 (9/98) Emission Factor		Harrison Unit 1		Harrison Unit 2		Harrison Unit 3	
	lb/ton	lb/mmBtu	(lbs/hr)	(tons/yr)	(lbs/hr)	(tons/yr)	(lbs/hr)	(tons/yr)
Acetaldehyde	0.0006	0.0000	0.150	0.658	0.150	0.658	0.150	0.658
Acetophenone	0.0000	0.0000	0.004	0.017	0.004	0.017	0.004	0.017
Acrolein	0.0003	0.0000	0.076	0.335	0.076	0.335	0.076	0.335
Benzene	0.0013	0.0001	0.343	1.501	0.343	1.501	0.343	1.501
Benzyl chloride	0.0007	0.0000	0.184	0.808	0.184	0.808	0.184	0.808
Bis(2-ethylhexl) phthalate (DEHP)	0.0001	0.0000	0.019	0.084	0.019	0.084	0.019	0.084
Bormoform	0.0000	0.0000	0.010	0.045	0.010	0.045	0.010	0.045
Carbon disulfide	0.0001	0.0000	0.034	0.150	0.034	0.150	0.034	0.150
2-Cloroacetophenone	0.0000	0.0000	0.002	0.008	0.002	0.008	0.002	0.008
Chlorobenzene	0.0000	0.0000	0.006	0.025	0.006	0.025	0.006	0.025
Chloroform	0.0001	0.0000	0.016	0.068	0.016	0.068	0.016	0.068
Cumene	0.0000	0.0000	0.001	0.006	0.001	0.006	0.001	0.006
Cyanide Compounds	0.0025	0.0001	0.659	2.886	0.659	2.886	0.659	2.886
2,4-Dinitrotoluene	0.0000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000
Dimethyl sulfate	0.0000	0.0000	0.013	0.055	0.013	0.055	0.013	0.055
Ethyl Benzene	0.0001	0.0000	0.025	0.109	0.025	0.109	0.025	0.109
Ethyl Chloride	0.0000	0.0000	0.011	0.048	0.011	0.048	0.011	0.048
Ethylene dichloride	0.0000	0.0000	0.011	0.046	0.011	0.046	0.011	0.046
Ethylene dibromide	0.0000	0.0000	0.000	0.001	0.000	0.001	0.000	0.001
Formaldehyde	0.0002	0.0000	0.063	0.277	0.063	0.277	0.063	0.277
Hexane	0.0001	0.0000	0.018	0.077	0.018	0.077	0.018	0.077
Isophorone	0.0006	0.0000	0.153	0.670	0.153	0.670	0.153	0.670
Methyl Bromide	0.0002	0.0000	0.042	0.185	0.042	0.185	0.042	0.185
Methyl Chloride	0.0005	0.0000	0.140	0.612	0.140	0.612	0.140	0.612
Methyl Ethyl Ketone	0.0004	0.0000	0.103	0.450	0.103	0.450	0.103	0.450
Methyl Hydrazine	0.0002	0.0000	0.045	0.196	0.045	0.196	0.045	0.196
Methyl methacrylate	0.0000	0.0000	0.005	0.023	0.005	0.023	0.005	0.023
Methyl Tert butyl ether	0.0000	0.0000	0.009	0.040	0.009	0.040	0.009	0.040
Methylene chloride	0.0003	0.0000	0.076	0.335	0.076	0.335	0.076	0.335
Napthalene	0.0000	0.0000	0.003	0.015	0.003	0.015	0.003	0.015
Phenol	0.0000	0.0000	0.004	0.018	0.004	0.018	0.004	0.018
Propionaldehyde	0.0004	0.0000	0.100	0.439	0.100	0.439	0.100	0.439
Tetrachloroethylene	0.0000	0.0000	0.011	0.050	0.011	0.050	0.011	0.050
Toluene	0.0002	0.0000	0.063	0.277	0.063	0.277	0.063	0.277

1.974 Yes
0.052 -
1.004 Yes
4.502 Yes
2.424 Yes
0.253 -
0.135 -
0.450 -
0.024 -
0.076 -
0.204 -
0.018 -
8.657 Yes
0.001 -
0.166 -
0.326 -
0.145 -
0.139 -
0.004 -
0.831 Yes
0.232 -
2.009 Yes
0.554 Yes
1.835 Yes
1.351 Yes
0.589 Yes
0.069 -
0.121 -
1.004 Yes
0.045
0.055 -
1.316 Yes
0.149 -
0.831 Yes

MONONGAHELA POWER COMPANY HARRISON STATION MAX PTE EMISSIONS CALCULATIONS

FUGITIVE DUST SOURCES

<u>Category</u>	<u>Description</u>	<u>Parameter</u>	<u>Value</u>	<u>Comments</u>
Bulldozer/ Equipment:	Coal Pile-Bulldozer 1 (speading & filling)	Hours of Operation	8,760 hrs/yr	No Limit in Title V
	Coal Pile-Bulldozer 2 (speading & filling)	Hours of Operation	8,760 hrs/yr	No Limit in Title V
	Coal Pile-Bulldozer 3 (clearing & grading)	Hours of Operation	8,760 hrs/yr	No Limit in Title V
	Ash Disposal-Bulldozer 1	Hours of Operation	160 hrs/yr	TV Permit Limit
	Ash Disposal-Bulldozer 2	Hours of Operation	160 hrs/yr	TV Permit Limit
Coal:	Total Delivered by Truck	Amount	6,925,875 tpy	Consumption Limit
	Deliveries by Truck - Back Entrance	Amount	6,925,875 tpy	Max PTE is this route
	Deliveries by Truck - Front Entrance	Amount	0 tpy	Not Max PTE route
	Deliveries by mine conveyor	Amount	0 tpy	Not Max PTE route
	Deliveries by rail car	Amount	0 tpy	Not Max PTE route
	Characteristics of Delivered Coal	Min Moisture Content	5.23 %	Harrison Data - minimum from pa
	Characteristics of Delivered Coal	Max Ash Content	12.74 %	Harrison Data - maximum from pa
Ash Disposal:	Fly Ash Sold	Amount	0 tpy	Max PTE is Landfill
	Fly Ash to Landfill	Amount	376,000 tpy	TV Permit Limit
	Fly Ash to Solid Waste Processing	Amount	818,739 tpy	SWP Limit
	Bottom Ash Trucked to Landfill	Amount	192,000 tpy	TV Permit Limit
	Bottom Ash Trucked to Be Sold	Amount	0 tpy	station data
Oil:	Delivery	Amount	0 gal/yr	Max PTE is coal firing
Lime :	Rail Delivery for Scrubber Lime	Amount	627,546 tpy	TV Permit Limit
	Truck Delivery for SWP (Fixation) Lime	Amount	0 tpy	station data
	Truck Delivery for Emergency Lime	Amount	0 tpy	station data
	Lime to Solid Waste Processing (pneumatic)	Amount	115,623 tpy	TV Permit Limit

Overall Fugitive Emissions Summary - TSP
Harrison Station Fugitive Emission Calculations - Annual Emissions

Source category		Source I.d.	Source Description	TSP Emissions (Tons/Yr)		
				Station	Landfill	TOTAL
Haul Roads	Paved	pav01	Fly Ash To Disposal Area (Loaded)	0.00		
		pav02	Fly Ash To Disposal Area (Unloaded)	0.00		
		pav03	Fly Ash Sold, On-Site Travel (Loaded)	22.28		
		pav04	Fly Ash Sold, On-Site Travel (Unloaded)	5.58		
		pav05	Bottom Ash To Disposal Area (Loaded)	26.34		
		pav06	Bottom Ash To Disposal Area (Unloaded)	6.60		
		pav07	Bottom Ash Sold, On-Site Travel (Loaded)	0.00		
		pav08	Bottom Ash Sold, On-Site Travel (Unloaded)	0.00		
		pav09	Coal Delivery - Front Entrance (Loaded)	0.00		
		pav10	Coal Delivery - Front Entrance (Unloaded)	0.00		
		pav11	Coal Delivery - Back Entrance (Loaded)	412.81		
		pav12	Coal Delivery - Back Entrance (Unloaded)	94.78		
		pav13	Oil delivery tankers (loaded)	0.00		
		pav14	Oil delivery tankers (unloaded)	0.00		
		pav15	Misc. delivery trucks (loaded)	0.38		
		pav16	Misc. delivery trucks (unloaded)	0.08		
		pav17	Station Pickups (loaded)	1.29		
		pav18	Station Pickups (unloaded)	0.98		
		pav19	Station F-800 trucks (loaded)	8.31		
		pav20	Station F-800 trucks (unloaded)	2.94		
		pav21	Employee vehicles and station cars (round trip)	0.00		
		pav22	Lime Delivery to SWP Silos (Loaded)	0.00		
		pav23	Lime Delivery to SWP Silos (Unloaded)	0.00		
		pav24	Emergency Lime Delivery (Loaded)	0.00		
		pav25	Emergency Lime Delivery (Unloaded)	0.00		
		pav26	Stabilized Sludge to Landfill (Loaded)	1024.80		
		pav27	Stabilized Sludge to Landfill (Unloaded)	311.02		
				1918.20		1918.20
	Unpaved	unp01	Coal Delivery - Travel on Pile	84.20		
		unp02	Fly Ash To Landfill	4.21		
		unp03	Bottom Ash to/from Landfill Stockpile	8.25		
		unp04	Solid Waste To Landfill	18.20		
				114.86	0.00	114.86
Materials Handling	Material transfers	xfr01	Fly Ash Transfer To Trucks - Landfill	0.05		
		xfr02	Fly Ash Transfer To Trucks - Sold	0.00		
		xfr03	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer hou:	0.00		
		xfr04	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled	1.34		
		xfr05	Coal Railcar Unloading (indoor, assume partial control)	0.00		
		xfr06	Crusher house internal transfers (through surge bin)	0.00		
		xfr07	Crusher house internal transfers (through transfer bin)	0.61		
		xfr08	Coal Stock Out To Pile, Outdoor - Uncontrolled	4.01		
		xfr09	Boiler House transfers (assume 3 xfer, partial control)	0.26		
		xfr10	Fly Ash Unloading At Disposal Site		0.11	
				6.27	0.11	6.38
	Conveyors	cnv01	From Surge Bin To Lowering Well #2 (C-12)	0.00		
		cnv02	From Crusher House To Lowering Well #2 (C-1)	3.12		
		cnv03	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)	3.12		
		cnv04	From Crusher House To Boiler House Conveyors (C-4a/b)	3.12		
		cnv05	From Rail Dumper To Crusher House (RC-8)	0.00		
		cnv06	From Mine To Crusher House (MC-7)	0.00		
		cnv07	From Lowering Well #2 To Chute (C-2a)	1.56		
		cnv08	From Chute To Lowering Well #1 (C-2b)	1.56		
		cnv09	Internal Crusher House Conveyor To Surge Bin (C-10)	0.00		
		cnv10	Internal Crusher House Conveyor From Surge Bin (C-11)	0.00		
		cnv11	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)	3.12		
				15.58		15.58
	Coal Crushing	cru01	Transfer Bin Crushers 1 & 2	9.35		
		cru02	Surge Bin Crusher	0.00		
				9.35		9.35
	Dust Collectors	6ca, 6cb, 6cc	Railcar transfer hoppers	19.71		
		6cd	Lime unloading building vacuum system	2.13		
		8c	Lime and dribble conveyor	1.05		
		9c	Lime storage conveyor to silo transfer	0.38		
		10c	Lime conveyor to silo transfer	0.38		
		11c	Lime unloading transfer	0.08		
		12c	Lime unloading transfer	0.08		
		13c	Lime crusher operation	0.07		
		14c	Lime crusher operation	0.07		
		15c	SWP Lime silo- transfer from silo	0.30		
		16c	SWP Lime silo- transfer from silo	0.30		
		17c	SWP Lime silo- transfer from silo	0.30		
		18c	SWP Fly Ash Silo- transfer	0.70		
		19c	SWP Fly Ash Silo- transfer	0.70		
		20c	SWP Fly Ash Silo- transfer	0.70		
		21c	SWP pug mill operation	2.25		
		22c	SWP pug mill operation	2.25		
		23c	SWP pug mill operation	2.25		
		24c	Ball Mill slaker operation	0.34		
		25c	Ball Mill slaker operation	0.34		
		26c	Ball Mill slaker operation	0.34		
		27c	Ball Mill slaker operation	0.34		
		28c	Coal Auger house vacuum	0.19		
				35.25		35.25
Stockpiles	Bulldozing	bull1	Dozer #1 - Stock Out / Reclamation	267.73		
		bull2	Dozer #2 - Stock Out / Reclamation	267.73		
		grad1	Dozer #3 - Coal Pile Sides	48.97		
		bull3	Ash Dozer #1 - Spreading		9.49	
		bull4	Ash Dozer #2 - Spreading		9.49	
				584.42	18.99	603.41
	Wind erosion	wbf01	Coal Pile - active/inactive	2.66		
		wbf02	Ash Disposal Pile - active/inactive		1.47	
				2.66	1.47	4.13
Miscellaneous	CoolingTowers	Cool01	Two cooling towers			533.26
			Annual Plant total for Harrison (TSP, tons/year)			3,240.42

Overall Fugitive Emissions Summary - PM10
Harrison Station Fugitive Emission Calculations - Annual Emissions

Source category		Source i.d.	Source Description	PM10 Emissions (Tons/Yr)		
				Station	Landfill	TOTAL
Haul Roads	Paved		0 On plant site	0.00		
		pav01	Fly Ash To Disposal Area (Loaded)	0.00		
		pav02	Fly Ash To Disposal Area (Unloaded)	0.00		
		pav03	Fly Ash Sold, On-Site Travel (Loaded)	4.35		
		pav04	Fly Ash Sold, On-Site Travel (Unloaded)	1.09		
		pav05	Bottom Ash To Disposal Area (Loaded)	5.14		
		pav06	Bottom Ash To Disposal Area (Unloaded)	1.29		
		pav07	Bottom Ash Sold, On-Site Travel (Loaded)	0.00		
		pav08	Bottom Ash Sold, On-Site Travel (Unloaded)	0.00		
		pav09	Coal Delivery - Front Entrance (Loaded)	0.00		
		pav10	Coal Delivery - Front Entrance (Unloaded)	0.00		
		pav11	Coal Delivery - Back Entrance (Loaded)	80.53		
		pav12	Coal Delivery - Back Entrance (Unloaded)	18.48		
		pav13	Oil delivery tankers (loaded)	0.00		
		pav14	Oil delivery tankers (unloaded)	0.00		
		pav15	Misc. delivery trucks (loaded)	0.00		
		pav16	Misc. delivery trucks (unloaded)	0.00		
		pav17	Station Pickups (loaded)	0.00		
		pav18	Station Pickups (unloaded)	0.00		
		pav19	Station F-800 trucks (loaded)	0.00		
		pav20	Station F-800 trucks (unloaded)	0.00		
		pav21	Employee vehicles and station cars (round trip)	0.00		
		pav22	Lime Delivery to SWP Silos (Loaded)	0.00		
		pav23	Lime Delivery to SWP Silos (Unloaded)	0.00		
		pav24	Emergency Lime Delivery (Loaded)	0.00		
		pav25	Emergency Lime Delivery (Unloaded)	0.00		
		pav26	Stabilized Sludge to Landfill (Loaded)	199.96		
		pav27	Stabilized Sludge to Landfill (Unloaded)	60.68		
				371.51		371.51
	Unpaved	unp01	Coal Delivery - Travel on Pile	24.70		
		unp02	Fly Ash To Landfill	1.24		
		unp03	Bottom Ash to/from Landfill Stockpile	2.42		
		unp04	Solid Waste To Landfill	5.34		
				33.69		33.69
Materials Handling	Material transfers	xfr01	Fly Ash Transfer To Trucks - Landfill	0.11		
		xfr02	Fly Ash Transfer To Trucks - Sold	0.00		
		xfr03	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer hou	0.00		
		xfr04	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled	2.82		
		xfr05	Coal Railcar Unloading (indoor, assume partial control)	0.00		
		xfr06	Crusher house internal transfers (max transfers for mine coal)	0.00		
		xfr07	Crusher house internal transfers (max transfers for rail coal)	1.30		
		xfr08	Coal Stock Out To Pile, Outdoor - Uncontrolled	8.47		
		xfr09	Boiler House transfers (assume 3 xfer, partial control)	0.56		
		xfr10	Fly Ash Unloading At Disposal Site		0.22	
				13.26	0.22	13.48
	Conveyors	cnv01	From Surge Bin To Lowering Well #2 (C-12)	0.00		
		cnv02	From Crusher House To Lowering Well #2 (C-1)	1.14		
		cnv03	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)	1.14		
		cnv04	From Crusher House To Boiler House Conveyors (C-4a/b)	1.14		
		cnv05	From Rail Dumper To Crusher House (RC-8)	0.00		
		cnv06	From Mine To Crusher House (MC-7)	0.00		
		cnv07	From Lowering Well #2 To Chute (C-2a)	0.57		
		cnv08	From Chute To Lowering Well #1 (C-2b)	0.57		
		cnv09	Internal Crusher House Conveyor To Surge Bin (C-10)	0.00		
		cnv10	Internal Crusher House Conveyor From Surge Bin (C-11)	0.00		
		cnv11	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)	1.14		
				5.71		5.71
	Coal Crushing	cru01	Transfer Bin Crushers 1 & 2	9.35		
		cru02	Surge Bin Crusher	0.00		
				9.35		9.35
	Dust Collectors	6ca, 6cb, 6cc	Railcar transfer hoppers	19.71		
		6cd	Lime unloading building vacuum system	2.13		
		8c	Lime and dribble conveyor	1.05		
		9c	Lime storage conveyor to silo transfer	0.38		
		10c	Lime conveyor to silo transfer	0.38		
		11c	Lime unloading transfer	0.08		
		12c	Lime unloading transfer	0.08		
		13c	Lime crusher operation	0.07		
		14c	Lime crusher operation	0.07		
		15c	SWP Lime silo- transfer from silo	0.30		
		16c	SWP Lime silo- transfer from silo	0.30		
		17c	SWP Lime silo- transfer from silo	0.30		
		18c	SWP Fly Ash Silo- transfer	0.70		
		19c	SWP Fly Ash Silo- transfer	0.70		
		20c	SWP Fly Ash Silo- transfer	0.70		
		21c	SWP pug mill operation	2.25		
		22c	SWP pug mill operation	2.25		
		23c	SWP pug mill operation	2.25		
		24c	Ball Mill slaker operation	0.34		
		25c	Ball Mill slaker operation	0.34		
		26c	Ball Mill slaker operation	0.34		
		27c	Ball Mill slaker operation	0.34		
		28c	Coal Auger house vacuum	0.19		
				35.25		35.25
Stockpiles	Bulldozing	bull1	Coal Dozer #1 - Stock Out / Reclamation	69.79		
		bull2	Coal Dozer #2 - Stock Out / Reclamation	69.79		
		grad1	Dozer #3 - Coal Pile Sides	16.75		
		bull3	Ash Dozer #1 - Spreading		3.04	
		bull4	Ash Dozer #2 - Spreading		3.04	
				156.33	6.09	162.42
	Wind erosion	wbf01	Coal Pile - active/inactive	1.33		
		wbf02	Ash Disposal Pile - active/inactive		0.73	
				1.33	0.73	2.06
Miscellaneous	CoolingTowers	Cool01	Two cooling towers			533.26
			Annual Plant total for Harrison (PM10, tons/year)			1166.7

Overall Fugitive Emissions Summary - PM2.5
Harrison Station Fugitive Emission Calculations - Annual Emissions

Source category		Source i.d.	Source Description	PM2.5 Emissions (Tons/Yr)		
				Station	Landfill	TOTAL
Haul Roads	Paved		0 On plant site	0.00		
		pav01	Fly Ash To Disposal Area (Loaded)	0.00		
		pav02	Fly Ash To Disposal Area (Unloaded)	0.00		
		pav03	Fly Ash Sold, On-Site Travel (Loaded)	0.65		
		pav04	Fly Ash Sold, On-Site Travel (Unloaded)	0.16		
		pav05	Bottom Ash To Disposal Area (Loaded)	0.77		
		pav06	Bottom Ash To Disposal Area (Unloaded)	0.19		
		pav07	Bottom Ash Sold, On-Site Travel (Loaded)	0.00		
		pav08	Bottom Ash Sold, On-Site Travel (Unloaded)	0.00		
		pav09	Coal Delivery - Front Entrance (Loaded)	0.00		
		pav10	Coal Delivery - Front Entrance (Unloaded)	0.00		
		pav11	Coal Delivery - Back Entrance (Loaded)	12.07		
		pav12	Coal Delivery - Back Entrance (Unloaded)	2.76		
		pav13	Oil delivery tankers (loaded)	0.00		
		pav14	Oil delivery tankers (unloaded)	0.00		
		pav15	Misc. delivery trucks (loaded)	0.00		
		pav16	Misc. delivery trucks (unloaded)	0.00		
		pav17	Station Pickups (loaded)	0.00		
		pav18	Station Pickups (unloaded)	0.00		
		pav19	Station F-800 trucks (loaded)	0.00		
		pav20	Station F-800 trucks (unloaded)	0.00		
		pav21	Employee vehicles and station cars (round trip)	0.00		
		pav22	Lime Delivery to SWP Silos (Loaded)	0.00		
		pav23	Lime Delivery to SWP Silos (Unloaded)	0.00		
		pav24	Emergency Lime Delivery (Loaded)	0.00		
		pav25	Emergency Lime Delivery (Unloaded)	0.00		
		pav26	Stabilized Sludge to Landfill (Loaded)	29.99		
		pav27	Stabilized Sludge to Landfill (Unloaded)	9.10		
				55.70		55.70
	Unpaved	unp01	Coal Delivery - Travel on Pile	2.47		
		unp02	Fly Ash To Landfill	0.12		
		unp03	Bottom Ash to/from Landfill Stockpile	0.24		
		unp04	Solid Waste To Landfill	0.53		
				3.37		3.37
Materials Handling	Material transfers	xfr01	Fly Ash Transfer To Trucks - Landfill	0.01		
		xfr02	Fly Ash Transfer To Trucks - Sold	0.00		
		xfr03	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer ho	0.00		
		xfr04	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled	0.20		
		xfr05	Coal Railcar Unloading (indoor, assume partial control)	0.00		
		xfr06	Crusher house internal transfers (max transfers for mine coal)	0.00		
		xfr07	Crusher house internal transfers (max transfers for rail coal)	0.09		
		xfr08	Coal Stock Out To Pile, Outdoor - Uncontrolled	0.61		
		xfr09	Boiler House transfers (assume 3 xfer, partial control)	0.04		
		xfr10	Fly Ash Unloading At Disposal Site		0.22	
				0.95	0.22	1.17
	Conveyors	cnv01	From Surge Bin To Lowering Well #2 (C-12)	0.00		
		cnv02	From Crusher House To Lowering Well #2 (C-1)	0.11		
		cnv03	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)	0.11		
		cnv04	From Crusher House To Boiler House Conveyors (C-4a/b)	0.11		
		cnv05	From Rail Dumper To Crusher House (RC-8)	0.00		
		cnv06	From Mine To Crusher House (MC-7)	0.00		
		cnv07	From Lowering Well #2 To Chute (C-2a)	0.06		
		cnv08	From Chute To Lowering Well #1 (C-2b)	0.06		
		cnv09	Internal Crusher House Conveyor To Surge Bin (C-10)	0.00		
		cnv10	Internal Crusher House Conveyor From Surge Bin (C-11)	0.00		
		cnv11	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)	0.11		
				0.57		0.57
	Coal Crushing	cru01	Transfer Bin Crushers 1 & 2	0.17		
		cru02	Surge Bin Crusher	0.00		
				0.17		0.17
	Dust Collectors	6ca, 6cb, 6cc	Railcar transfer hoppers	19.71		
		6cd	Lime unloading building vacuum system	2.13		
		8c	Lime and dribble conveyor	1.05		
		9c	Lime storage conveyor to silo transfer	0.38		
		10c	Lime conveyor to silo transfer	0.38		
		11c	Lime unloading transfer	0.08		
		12c	Lime unloading transfer	0.08		
		13c	Lime crusher operation	0.07		
		14c	Lime crusher operation	0.07		
		15c	SWP Lime silo- transfer from silo	0.30		
		16c	SWP Lime silo- transfer from silo	0.30		
		17c	SWP Lime silo- transfer from silo	0.30		
		18c	SWP Fly Ash Silo- transfer	0.70		
		19c	SWP Fly Ash Silo- transfer	0.70		
		20c	SWP Fly Ash Silo- transfer	0.70		
		21c	SWP pug mill operation	2.25		
		22c	SWP pug mill operation	2.25		
		23c	SWP pug mill operation	2.25		
		24c	Ball Mill slaker operation	0.34		
		25c	Ball Mill slaker operation	0.34		
		26c	Ball Mill slaker operation	0.34		
		27c	Ball Mill slaker operation	0.34		
		28c	Coal Auger house vacuum	0.19		
				35.25		35.25
Stockpiles	Bulldozing	bull1	Coal Dozer #1 - Stock Out / Reclamation	2.05		
		bull2	Coal Dozer #2 - Stock Out / Reclamation	2.05		
		grad1	Dozer #3 - Coal Pile Sides	0.87		
		bull3	Ash Dozer #1 - Spreading		0.09	
		bull4	Ash Dozer #2 - Spreading		0.09	
				4.96	0.18	5.14
	Wind erosion	wbf01	Coal Pile - active/inactive	0.53		
		wbf02	Ash Disposal Pile - active/inactive		0.29	
				0.53	0.29	0.83
Miscellaneous	CoolingTowers	Cool01	Two cooling towers			533.26
Annual Plant total for Harrison (PM2.5, tons/year)						635.46

Equations (Sheet 1 of 2)

Harrison Station Fugitive Emission Calculations

Paved Road, AP-42 Sect. 13.2.1.3

$$EF = k * (sL / 2) ^ 0.65 * (W / 3) ^ 1.5 - C$$

EF = particulate emission factor (lb/VMT)
sL = road surface silt loading, g/m^2
W = average weight of the vehicle traveling the road, tons
k = particle size multiplier
0.0024 particle size multiplier (PM2.5)
0.016 particle size multiplier (PM10)
0.082 particle size multiplier (TSP)
0.00036 emission factor for exhaust, brake wear and tire wear (PM2.5)
0.00047 emission factor for exhaust, brake wear and tire wear (PM10)
0.00047 emission factor for exhaust, brake wear and tire wear (TSP)

Vehicle Miles Travelled (VMT)

$$VMT_{yr} = TRP_{yr} * L_s$$
$$TRP_{yr} = Q_{Myr} / Q_{trp}$$

VMT_{yr}= Vehicle miles travelled per year
TRP_{yr}= Trips required in one year
L_s= Segment length
Q_{Myr}= Quantity of material transported per year (by truck)
Q_{trp}= Quantity of material transported per trip (by truck)

Unpaved Road, AP-42 Sect. 13.2.1

Emission Factor (lbs/VMT)

$$EF = ((k * (s / 12) ^ a * (W / 3) ^ b)) * ((365-p) / 365)$$

EF = particulate emission factor , lb / VMT
s = silt content of road surface material, %
W = mean vehicle weight, tons
p = number of days with at least 0.01 in. of precipitation per year
k = particle size multiplier (varies for TSP, PM10 and PM2.5 per Table 13.2.2-2)
a = constant (varies for TSP, PM10 and PM2.5 per Table 13.2.2-2)
b = constant (varies for TSP, PM10 and PM2.5 per Table 13.2.2-2)
c = constant (varies for TSP, PM10 and PM2.5 per Table 13.2.2-2)

Vehicle Miles Travelled (VMT)

$$VMT_{yr} = TRP_{yr} * L_s$$
$$TRP_{yr} = Q_{Myr} / Q_{trp}$$

VMT_{yr}= Vehicle miles travelled per year
TRP_{yr}= Trips required in one year
L_s= Segment length
Q_{Myr}= Quantity of material transported per year
Q_{trp}= Quantity of material transported per trip

Equations (Sheet 2 of 2)

Harrison Station Fugitive Emission Calculations

Material Transfers, AP-42 Sect. 13.2.4

EF = k * 0.0032 * ((U / 5) ^ 1.3 / (M/2) ^ 1.4)

EF = particulate emission factor , lb / ton
U = mean wind speed, mph
M = material moisture content, %
k = particle size multiplier
0.35 particle size multiplier (PM10)
0.74 particle size multiplier (TSP)
0.053 particle size multiplier (PM 2.5)

Conveyors

EF = 0.0030 PM (lb/ton) AP-42 Table 11.19.2-2
EF = 0.0011 PM-10 (lb/tor AP-42 Table 11.19.2-2
EF = 0.0001 PM-2.5 (lb/to AP-42 Table 11.19.2-2 says N.D./assume PM2.5 =10% of PM10

Crushers, AP-42, Sect. 11.19.2

EF = 0.0054 lb / ton (TSP) Table 11.19.2-2 Tertiary Crushing
EF = 0.0024 lb / ton (PM10) Table 11.19.2-2; Tertiary Crushing
EF = 0.0001 lb / ton (PM2.5) Table 11.19.2-2; Tertiary Crushing

Bulldozing, AP-42, Sect. 11.9.2

TSP EF = 78.4 * (s) ^ 1.2 / (M) ^ 1.3
PM10: EF = 0.75 * 18.6 * (s) ^ 1.5 / (M) ^ 1.4
PM2.5: EF = 0.022 * 18.6 * (s) ^ 1.5 / (M) ^ 1.4

Grading, AP-42, Sect. 11.9

Coal Pile Reclamation/Surface Bulldozing
Bulldozing, AP-42, Sect. 11.9

TSP: EF=0.040 * S^2.5 lb/VMT
PM10 EF=0.6*0.051 * S^2.0 lb/VMT
PM2.5 EF=0.031*0.051 * S^2.0 lb/VMT

EF = particulate emission factor (lb/hr)
S = vehicle speed in mph

Wind Erosion, AP-42, Sect. 13.2.5

EF = k * Sum (Pi), i = 1 to N

where: EF = particulate emission factor
N = number of disturbances per year
k = 1.0 for TSP
0.5 for PM-10
0.2 for PM-2.5
Pi = erosion potential correspnding to the ith period
between disturbances, g / m^2

Miscellaneous parameters: meteorology, silt values

Harrison Station Fugitive Emission Calculations

Meteorological Parameters

Avg. Days Of Precip > 0.01 inches	171.1	n/a	REF	
Average Wind Speed	6.2	mph	LCD - 1990 (Elkins, W.V)	
Peak Gust	55	mph	LCD - 1990 (Elkins, W.V)	
"Indoor Wind" Speed	1.3	mph	AP-42 Table 13.2.4-3	Lower bound of applicability of xfer eqn
Measurement anemometer height (za)	6.1	meters	LCD 1990 (Elkins, W.V)	

Silt/Dust Loading

Silt Loading - Paved Road	9.7	g/m^2	AP-42 Table 13.2.1-1	
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Silt Content Values

Paved Plant Road	9.7	pct	AP-42 Table 11.2.6-1	Mean of Iron & Steel Production
Unpaved Plant Road (Gravel)	6	pct	AP-42 Table 11.2.6-1	Mean of Iron & Steel Production
Fly Ash bulldozing	11.3	pct	AP-42 Table 11.9-3	Upper bound of applicability of bulldozing eqn
Delivered Coal	6.2	pct	AP-42 Table 13.2.4-1	Mean of coal at coal mining

Wind Erosion

Threshold wind speed for coal pile (u*)	1.12	m/s	AP-42 Table 13.2.5-2	Uncrusted coal pile
Roughness length for coal pile(z0)	0.3	cm	AP-42 Table 13.2.5-2	Uncrusted coal pile
Threshold wind speed for ash pile (u*)	1.02	m/s	AP-42 Table 13.2.5-2	Overburden
Roughness length for ash pile(z0)	0.3	cm	AP-42 Table 13.2.5-2	Overburden

Control Efficiencies Used In Emission Calculations

Harrison Station Fugitive Emission Calculations

Description	Value %	Reference	Comments
<u>Efficiencies Used for Harrison Station</u>			
Paved Haul Road	70	EPA 1985	Based on Road Watering
Unpaved disposal area haul road	85	EPA 1985	Based on Road Watering
Unpaved travel on coal pile	25	EPA 1985	Based on Moisture of coal
Wind Erosion	0	APS	
Fly Ash Loading into trucks	50	APS	
Fly Ash Unloading at disposal area	0	APS	
Enclosed Transfer - Mechanically Controlled	50	UARG 1981	
Outdoor Transfer - Uncontrolled	0	APS	
Enclosed Transfer - Partially Controlled	50	UARG 1981	
Coal bulldozing	0	APS	
Coal grading	0	APS	
Fly ash bulldozing	0	APS	
Conveyor (cover)	70	UARG 1981	
Coal crusher house	50	UARG 1981	

Truck Information

Harrison Station Fugitive Emission Calculations

Description	Value	Units	Reference	Comments
Fly Ash Disposal				
Average Vehicle Speed	15	mph	APS	
Average Number Of Wheels On Trucks	10		APS	
Average Weight Of Empty Trucks	16.5	tons	APS	
Average load	25	tons	APS	
Average Weight Of Loaded Trucks	41.5	tons	APS	
Bottom Ash Disposal				
Average Vehicle Speed	15	mph	APS	
Average Number Of Wheels On Trucks	10		APS	
Average Weight Of Empty Trucks	16.5	tons	APS	
Average load	25	tons	APS	
Average Weight Of Loaded Trucks	41.5	tons	APS	
Coal Delivery				
Average Vehicle Speed	5	mph	APS	
Average Number Of Wheels On Trucks	18		APS	
Average Weight Of Empty Trucks	15	tons	APS	
Average load	25	tons	APS	
Average Weight Of Loaded Trucks	40	tons	APS	
Oil Tanker Deliveries				
Average Vehicle Speed	25	mph	APS/same as Mitchell station	
Average Number Of Wheels On Trucks	n.a.		APS/same as Mitchell station	
Average Weight Of Empty Trucks	8	tons	APS/same as Mitchell station	
Max load	10	tons	APS/same as Mitchell station	
Max Weight Of Loaded Trucks	18	tons	APS/same as Mitchell station	
Lime Delivery Trucks				
Average Vehicle Speed	20	mph	APS/same as Mitchell station	
Average Number Of Wheels On Trucks	n.a.		APS/same as Mitchell station	
Average Weight Of Empty Trucks	15	tons	APS/same as Mitchell station	
Max load	25	tons	APS/same as Mitchell station	
Max Weight Of Loaded Trucks	40	tons	APS/same as Mitchell station	
Solid Waste Disposal Trucks				
Average Vehicle Speed	20	mph	APS/same as Mitchell station	
Average Number Of Wheels On Trucks	6		APS/same as Mitchell station	
Average Weight Of Empty Trucks	70	tons	Input parameter, revised permit application	
Max load	85	tons	Input parameter, revised permit application	
Max Weight Of Loaded Trucks	155	tons	APS/same as Mitchell station	
Miscellaneous Delivery Trucks				
Average Vehicle Speed	25	mph	Same as oil tankers	
Average Number Of Wheels On Trucks	n.a.		paved road only - not required for calc.	
Average Weight Of Empty Trucks	14.12	tons	Same as assumed for previous stations	
Max load	25.55	tons	Same as assumed for previous stations	
Max Weight Of Loaded Trucks	39.67	tons	Same as assumed for previous stations	
No. of misc. deliveries per year	260		One delivery per day per 5 days per week	
LDGV - (Pickups)				
Average Vehicle Speed	15	mph	APS	Same as assumed for other stations
Average Number Of Wheels On Trucks	4		APS	Same as assumed for other stations
Average Weight Of Empty Trucks	2.5	tons	APS	Same as assumed for other stations
Average load	0.5	tons	Estimate	Assuming 1000 lbs load
Average Weight Of Loaded Trucks	3	tons	APS	Same as assumed for other stations
Station Vehicle Comparable to a FORD F-800 Truck				
Average Vehicle Speed	15	mph	APS	
Average Number Of Wheels On Trucks	6		Ford	
Average Weight Of Empty Trucks	8.25	tons	Ford	
Average load	8.25	tons	Ford	
Average Weight Of Loaded Trucks	16.5	tons	Ford	
LDGV - Cars (employee vehicles and station cars)				
Average Vehicle Speed	15	mph		
Average Number Of Wheels On Cars	4			
Average Weight Of Cars	1.5	tons		
Average load	0.1	tons		
Average Weight Of Loaded Cars	1.6	tons		
No. Employees	110			
No. of days of employee traffic per year	260			

Road Segment Information

Harrison Station Fugitive Emission Calculations

Description	Length (miles)		
	Value	Reference	
<u>Paved Roads</u>			
On plant site			
Coal Delivery - Back Entrance	1.01	APS/est	
Coal Delivery - Front Entrance	0.8	APS/est	
Fly Ash To Landfill	2.58	APS/est	
Fly Ash Sold	0.95	APS/est	
Bottom Ash To Landfill	2.2	APS/est	
Bottom Ash Sold	0.95	APS/est	
Solid Waste to Landfill	2.58	APS/est	
Lime to SWP Silos	0.89	APS/est	
Lime to Emergency Silos	0.72	APS/est	
Delivery Tankers including oil tankers	1.01	APS/calc	Conservative estimate for distance traveled on site
Miscellaneous delivery trucks	1.01	APS/calc	Conservative estimate for distance traveled on site
Pickups	42,545	Estimate	Based on 12 pickups traveling 36,000 ft per vehicle per day, 260 days per year; each for Harrison and Rivesville Station; Rivesville trucks fuel at Harrison.
F-800 trucks	21,273	Estimate	Based on 6 trucks traveling 36,000 ft per vehicle per day, 260 day per year; each for Harrison and Rivesville Station; Rivesville trucks fuel at Harrison.
Employee traffic to parking lot (round trip)	1.48	APS/calc	Conservative estimate for distance traveled on site
<u>Unpaved Roads</u>			
Off plant site (but on contiguous property)			
Coal Pile	0.2	APS/est	
Fly Ash To Landfill	0.3	APS/est	2000
Bottom Ash to/from landfill stockpile	1.15	APS/est	2000
Fly Ash or Bottom Ash off-site	0	APS/est	2000
FGD to Landfill	0.3	APS/est	2000

Bulldozer info

Harrison Station Fugitive Emission Calculations

Description	Value	Units	Reference	Comments
Coal pile				
No. 1				
Name & usage				Used for stock out & reclaiming coal
weight	104	tons	APS	
speed	5	mph	APS	
wheels	4	n/a	APS	
capacity	1,500	tons/hr	APS	
hrs/day	16		APS	
days/yr	548		APS	
hrs/yr	8,760	hrs	APS/calc	No Limit in Title V
No. 2				
Name & usage				Used for stock out & reclaiming coal
weight	104	tons	APS	
speed	5	mph	APS	
wheels	4	n/a	APS	
capacity	1,500	tons/hr	APS	
hrs/day	16		APS	
days/yr	548		APS	
hrs/yr	8,760	hrs	APS/calc	No Limit in Title V
No. 3				
Name & usage				Used for reclaiming coal & Side Slope Grading
weight	35	tons	APS	
speed	5	mph	APS	
wheels	2	n/a	APS	track vehicle
capacity	600	tons/hr	APS	
hrs/day	8		APS	
days/yr	1,095		APS	
hrs/yr	8,760	hrs	APS/calc	No Limit in Title V

Bulldozer info

Description	Value	Units	Reference	Comments
Ash disposal area				
No. 1				
Name & usage				Spreading Fly Ash & Bottom Ash
weight	23	tons	APS	
speed	5	mph	APS	range of 3-5 given
wheels	2	n/a	APS	tracked vehicle
capacity	200	tons/hr	APS	
hrs/day	8		APS	
days/yr	260		APS	
hrs/yr	80	hrs	APS/calc	TV Permit Limit
No. 2				
Name & usage				Spreading Fly Ash & Bottom Ash
weight	26	tons	APS	
speed	5	mph	APS	
wheels	4	n/a	APS	
capacity	250	tons/hr	APS	
hrs/day	4		APS	
days/yr	260		APS	
hrs/yr	80	hrs	APS/calc	TV Permit Limit

Coal Deliveries and Consumption

Harrison Station Fugitive Emission Calculations

Description	Annual Quantity	Units	Ref	Delivery Mode	Comments
Deliveries & Consumption	6,925,875	tons	APS	Total By Truck	Consumption Limit
	6,925,875	tons	APS	Back Entrance - Truck	Max PTE is this route
	0	tons	APS	Front Entrance - Truck	Not Max PTE route
	0	tons	APS	Mine Conveyor	Not Max PTE route
	0	tons	APS	Rail Car Delivery	Not Max PTE route
	6,925,875	tons	Calc/APS	Total Amount Delivered	
	6,925,875	tons	Calc/APS	Total Amount Reclaimed	
	6,925,875	tons	APS	Total By Truck	Amount of coal to transfer bin and through transfer bin crusher
	0	tons	APS	Mine Conveyor	Amount of coal to surge bin and through surge bin crusher
	6,925,875	tons	APS		Amount of coal stocked out to pile (C-12 and C-1)
	6,925,875	tons	APS		Amount of coal to boiler house (burn rate)

	Annual Quantity			Number of Transfers	Description
Material transfers for xfer equation	0	tons	APS/est	4	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer houses)
	6,925,875	tons	APS/est	1	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled
	0	tons	APS/est	1	Coal Railcar Unloading (indoor, assume partial control)
	0	tons	APS/est	9	Crusher house internal transfers (through surge bin)
	6,925,875	tons	APS/est	7	Crusher house internal transfers (through transfer bin)
	6,925,875	tons	APS/est	3	Coal Stock Out To Pile, Outdoor - Uncontrolled
	6,925,875	tons	APS/est	3	Boiler House transfers (assume 3 xfer, partial control)

	Annual Quantity	Units	Ref	Conveyor i.d.	From/To:
Conveying	0	tons	APS	C-12	From Surge Bin To Lowering Well #2 (C-12)
	6,925,875	tons	APS	C-1	From Crusher House To Lowering Well #2 (C-1)
	6,925,875	tons	APS	C-3a/b	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)
	6,925,875	tons	APS	C-4a/b	From Crusher House To Boiler House Conveyors (C-4a/b)
	0	tons	APS	RC-8	From Rail Dumper To Crusher House (RC-8)
	0	tons	APS	MC-7	From Mine To Crusher House (MC-7)
	3,462,938	tons	APS	C-2a	From Lowering Well #2 To Chute (C-2a)
	3,462,938	tons	APS	C-2b	From Chute To Lowering Well #1 (C-2b)
	0	tons	APS	C-10	Internal Crusher House Conveyor To Surge Bin (C-10)
	0	tons	APS	C-11	Internal Crusher House Conveyor From Surge Bin (C-11)
	6,925,875	tons	APS	BH Cnvs	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)

	Value	Units	Ref
Characteristics			
	Moisture	5.23	%
	Ash	12.74	%
	Coal Bulk Density	52	lb/ft3

Coal Pile Dimensions				
Annual Coal Usage	6,925,875	tons	266,379,808	ft3
Monthly Coal Usage	577,156	tons	22,198,317	ft3
Weekly Coal Usage	133,190	tons	5,122,689	ft3
Daily Coal Usage	18,975	tons	729,808	ft3

	Active Pile		Inactive Pile	
	133,190	tons	577,156	tons
	5,122,689	ft3	22,198,317	ft3
	250	w	800	w
	500	l	500	l
	41	h	55	h
	125,000	ft2	400,000	ft2
Active Pile	11,613	m^2		
	365	days/yr	Estimate	
Inactive Pile	37,161	m^2		
	12	days/yr	Estimate	

Ash Disposal

Harrison Station Fugitive Emission Calculations

Description	Value	Units	Reference	Comments
Fly ash truck disposal				
Sold	0	tons/year	APS	TV Permit Limit
Landfill	376,000	tons/year	APS	Max PTE is Landfill
Solid Waste Processing	818,739	tons/year	APS	station data
Total	1,194,739	tons/year	APS	sum
Fly ash transfers for xfer equation				
Transfer from storage silo to truck - Landfill	376,000	n/a	APS	
Dump from truck to disposal area	376,000	n/a	APS	
Transfer from storage silo to truck - Sold	0	n/a	APS	
Bottom ash truck disposal				
Bottom ash produced	192,000	tons/year	APS	Sum of "sold" and "to landfill"
Sold	0	tons/year	APS	station data
Plant to disposal area	192,000	tons/year	APS	TV Permit Limit
Characteristics				
Fly Ash moisture content (as disposed)	4	%	Based on 1993 survey	
Bottom Ash moisture content (as disposed)	27	%		
Flyash/Bottom Ash Bulk Density	65	lb/ft3		

Fly Ash Pile Dimensions - Landfill

Annual Ash Production	568,000	tons	17,476,923	ft3
Monthly Ash Production	47,333	tons	1,456,410	ft3
Weekly Ash Production	10,923	tons	336,095	ft3
Daily Ash Production	1,556	tons	47,882	ft3

Active Pile

10,923 tons
336,095 ft3
250 w
250 l
5 h
62,500 ft2

Inactive Pile

47,333 tons
1,456,410 ft3
250 w
500 l
12 h
125,000 ft2

Active Pile Surface Area	5,806	m^2	APS/Est	
Active Pile # Disturbances	365		estimate	1 disturbance per day
Inactive Pile Surface Area	11,613	m^2	APS/Est	
Inactive Pile # Disturbances	12		estimate	1 disturbance per month

Oil Consumption

Harrison Station Fugitive Emission Calculations 2025

Consumption/ deliveries	Value	Units	Reference	Comments
	0	gals/yr		Max PTE is coal firing
	0	tpy	AP-42 Appendix A	Based on Distillate Oil density of 7.05 lb/gal

Lime Deliveries

Harrison Station Fugitive Emission Calculations

Description	Annual Qty	Units	Ref	Delivery Mode	Comments
Deliveries					
Scrubber Lime	627,546	tons	APS/calc	Rail	TV Permit Limit
SWP (Fixation) Lime	0	tons	APS/calc	Truck	station data
Emergency Lime	0	tons	APS/calc	Truck	station data

Sludge Production
Harrison Power Station Fugitive Dust Calculations

Description	Annual Quantity	Units	Ref	Comments
Stabilized Sludge	3,000,000	tons	APS/calc	Based on TV Limit of 3,000,000
Moisture Content	30%		APS	Based on TV Permit Minimum Limit
Assume no transfer emissions from sludge due to the high moisture content.				

Paved Road, AP-42 Sect. 13.2.1

Harrison Station Fugitive Emission Calculations - Annual Emissions

TSP

EF = $[k * (sL / 2) ^ 0.65 * (W / 3) ^ 1.5 - C] / (1 - P / 4N)$
 0.082 k AP-42 table 13.2-1.1
 0.00047 C AP-42 table 13.2.1-2
 171.1 P LCD Value (Elkins, WV - 1990)
 365 N annual averaging period

Source id	Source Description	Particle Size Multiplier	Silt Loading (g/m^2)	Average Vehicle Weight (tons)	TSP EF lbs/MT	TPY Material Hauled	Tons Material Hauled/Trip	Calculated Trips Per Year	One Way Trip Distance (miles)	VTM per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	TSP Emission Rate (TPY)
On plant site													
pav01	Fly Ash To Disposal Area (Loaded)	0.082	9.7	41.50	10.39	0	25	0	2.58	0	0.00	70	0.00
pav02	Fly Ash To Disposal Area (Unloaded)	0.082	9.7	16.50	2.61	0	25	0	2.58	0	0.00	70	0.00
pav03	Fly Ash Sold, On-Site Travel (Loaded)	0.082	9.7	41.50	10.39	376,000	25	15,040	0.95	14,288	74.26	70	22.28
pav04	Fly Ash Sold, On-Site Travel (Unloaded)	0.082	9.7	16.50	2.61	376,000	25	15,040	0.95	14,288	18.61	70	5.58
pav05	Bottom Ash To Disposal Area (Loaded)	0.082	9.7	41.50	10.39	192,000	25	7,680	2.20	16,896	87.81	70	26.34
pav06	Bottom Ash To Disposal Area (Unloaded)	0.082	9.7	16.50	2.61	192,000	25	7,680	2.20	16,896	22.01	70	6.60
pav07	Bottom Ash Sold, On-Site Travel (Loaded)	0.082	9.7	41.50	10.39	0	25	0	0.95	0	0.00	70	0.00
pav08	Bottom Ash Sold, On-Site Travel (Unloaded)	0.082	9.7	16.50	2.61	0	25	0	0.95	0	0.00	70	0.00
pav09	Coal Delivery - Front Entrance (Loaded)	0.082	9.7	40.00	9.84	0	25	0	0.80	0	0.00	70	0.00
pav10	Coal Delivery - Front Entrance (Unloaded)	0.082	9.7	15.00	2.26	0	25	0	0.80	0	0.00	70	0.00
pav11	Coal Delivery - Back Entrance (Loaded)	0.082	9.7	40.00	9.84	6,925,875	25	277,035	1.01	279,805	1376.03	70	412.81
pav12	Coal Delivery - Back Entrance (Unloaded)	0.082	9.7	15.00	2.26	6,925,875	25	277,035	1.01	279,805	315.95	70	94.78
pav13	Oil delivery tankers (loaded)	0.082	9.7	18.00	2.97	0	10	0	1.01	0	0.00	70	0.00
pav14	Oil delivery tankers (unloaded)	0.082	9.7	8.00	0.88	0	10	0	1.01	0	0.00	70	0.00
pav15	Misc. delivery trucks (loaded)	0.082	9.7	39.67	9.71	n.a.	n.a.	260	1.01	263	1.28	70	0.38
pav16	Misc. delivery trucks (unloaded)	0.082	9.7	14.12	2.06	n.a.	n.a.	260	1.01	263	0.27	70	0.08
pav17	Station Pickups (loaded)	0.082	9.7	3.00	0.20	n.a.	n.a.	n.a.	n.a.	42,545	4.29	70	1.29
pav18	Station Pickups (unloaded)	0.082	9.7	2.50	0.15	n.a.	n.a.	n.a.	n.a.	42,545	3.26	70	0.98
pav19	Station F-800 trucks (loaded)	0.082	9.7	16.50	2.61	n.a.	n.a.	n.a.	n.a.	21,273	27.71	70	8.31
pav20	Station F-800 trucks (unloaded)	0.082	9.7	8.25	0.92	n.a.	n.a.	n.a.	n.a.	21,273	9.80	70	2.94
pav21	Employee vehicles and station cars (round trip)	0.082	9.7	1.60	0.08	n.a.	n.a.	260	1.48	385	0.02	70	0.00
pav22	Lime Delivery to SWP Silos (Loaded)	0.082	9.7	40.00	9.84	0	25	0	0.89	0	0.00	70	0.00
pav23	Lime Delivery to SWP Silos (Unloaded)	0.082	9.7	15.00	2.26	0	25	0	0.89	0	0.00	70	0.00
pav24	Emergency Lime Delivery (Loaded)	0.082	9.7	40.00	9.84	0	25	0	0.72	0	0.00	70	0.00
pav25	Emergency Lime Delivery (Unloaded)	0.082	9.7	15.00	2.26	0	25	0	0.72	0	0.00	70	0.00
pav26	Stabilized Sludge to Landfill (Loaded)	0.082	9.7	155.00	75.03	3,000,000	85	35,294	2.58	91,059	3416.00	70	1024.8
pav27	Stabilized Sludge to Landfill (Unloaded)	0.082	9.7	70.00	22.77	3,000,000	85	35,294	2.58	91,059	1036.72	70	311.02
													1918.2

Paved Road, AP-42 Sect. 13.2.1

Harrison Station Fugitive Emission Calculations - Annual Emissions

(Continued)

PM-10

$$EF = [k * (sL / 2) ^ 0.65 * (W / 3) ^ 1.5 - C](1-P/4N)$$

0.016 k AP-42 table 13.2-1.1

0.00047 C AP-42 table 13.2.1-2

Source id	Source Description	Particle Size Multiplier	Silt Loading (g/m^2)	Average Vehicle Weight (tons)	PM-10 EF lbs/VMT	TPY Material Hauled	Tons Material Hauled/Trip	Calculated Trips Per Year	One Way Trip Distance (miles)	VMТ per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	TSP Emission Rate (TPY)
On plant site													
pav01	Fly Ash To Disposal Area (Loaded)	0.016	9.7	41.50	2.03	0	25	0	2.58	0	0.00	70	0.00
pav02	Fly Ash To Disposal Area (Unloaded)	0.016	9.7	16.50	0.51	0	25	0	2.58	0	0.00	70	0.00
pav03	Fly Ash Sold, On-Site Travel (Loaded)	0.016	9.7	41.50	2.03	376,000	25	15,040	0.95	14,288	14.49	70	4.35
pav04	Fly Ash Sold, On-Site Travel (Unloaded)	0.016	9.7	16.50	0.51	376,000	25	15,040	0.95	14,288	3.63	70	1.09
pav05	Bottom Ash To Disposal Area (Loaded)	0.016	9.7	41.50	2.03	192,000	25	7,680	2.20	16,896	17.13	70	5.14
pav06	Bottom Ash To Disposal Area (Unloaded)	0.016	9.7	16.50	0.51	192,000	25	7,680	2.20	16,896	4.29	70	1.29
pav07	Bottom Ash Sold, On-Site Travel (Loaded)	0.016	9.7	41.50	2.03	0	25	0	0.95	0	0.00	70	0.00
pav08	Bottom Ash Sold, On-Site Travel (Unloaded)	0.016	9.7	16.50	0.51	0	25	0	0.95	0	0.00	70	0.00
pav09	Coal Delivery - Front Entrance (Loaded)	0.016	9.7	40.00	1.92	0	25	0	0.80	0	0.00	70	0.00
pav10	Coal Delivery - Front Entrance (Unloaded)	0.016	9.7	15.00	0.44	0	25	0	0.80	0	0.00	70	0.00
pav11	Coal Delivery - Back Entrance (Loaded)	0.016	9.7	40.00	1.92	6,925,875	25	277,035	1.01	279,805	268.45	70	80.53
pav12	Coal Delivery - Back Entrance (Unloaded)	0.016	9.7	15.00	0.44	6,925,875	25	277,035	1.01	279,805	61.60	70	18.48
pav13	Oil delivery tankers (loaded)	0.016	9.7	18.00	0.58	0	10	0	1.01	0	0.00	70	0.00
pav14	Oil delivery tankers (unloaded)	0.016	9.7	8.00	0.17	0	10	0	1.01	0	0.00	70	0.00
pav15	Misc. delivery trucks (loaded)	0.016	9.7	39.67	1.90	n.a.	n.a.	0	1.01	0	0.00	70	0.00
pav16	Misc. delivery trucks (unloaded)	0.016	9.7	14.12	0.40	n.a.	n.a.	0	1.01	0	0.00	70	0.00
pav17	Station Pickups (loaded)	0.016	9.7	3.00	0.04	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav18	Station Pickups (unloaded)	0.016	9.7	2.50	0.03	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav19	Station F-800 trucks (loaded)	0.016	9.7	16.50	0.51	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav20	Station F-800 trucks (unloaded)	0.016	9.7	8.25	0.18	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav21	Employee vehicles and station cars (round trip)	0.016	9.7	1.60	0.01	n.a.	n.a.	0	1.48	0	0.00	70	0.00
pav22	Lime Delivery to SWP Silos (Loaded)	0.016	9.7	40.00	1.92	0	25	0	0.89	0	0.00	70	0.00
pav23	Lime Delivery to SWP Silos (Unloaded)	0.016	9.7	15.00	0.44	0	25	0	0.89	0	0.00	70	0.00
pav24	Emergency Lime Delivery (Loaded)	0.016	9.7	40.00	1.92	0	25	0	0.72	0	0.00	70	0.00
pav25	Emergency Lime Delivery (Unloaded)	0.016	9.7	15.00	0.44	0	25	0	0.72	0	0.00	70	0.00
pav26	Stabilized Sludge to Landfill (Loaded)	0.016	9.7	155.00	14.64	3,000,000	85	35,294	2.58	91,059	666.52	70	199.96
pav27	Stabilized Sludge to Landfill (Unloaded)	0.016	9.7	70.00	4.44	3,000,000	85	35,294	2.58	91,059	202.27	70	60.68
													371.51

Paved Road, AP-42 Sect. 13.2.1

Harrison Station Fugitive Emission Calculations - Annual Emissions

(Continued)

PM-2.5

$$EF = [k * (sL / 2) ^ 0.65 * (W / 3) ^ 1.5 - C](1-P/4N)$$

0.0024 k AP-42 table 13.2-1.1

0.00036 C AP-42 table 13.2.1-2

Source id	Source Description	Particle Size Multiplier	Silt Loading (g/m^2)	Average Vehicle Weight (tons)	PM-2.5 EF lbs/VMT	TPY Material Hauled	Tons Material Hauled/Trip	Calculated Trips Per Year	One Way Trip Distance (miles)	VMT per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	TSP Emission Rate (TPY)
On plant site													
pav01	Fly Ash To Disposal Area (Loaded)	0.0024	9.7	41.50	0.30	0	25	0	2.58	0	0.00	70	0.00
pav02	Fly Ash To Disposal Area (Unloaded)	0.0024	9.7	16.50	0.08	0	25	0	2.58	0	0.00	70	0.00
pav03	Fly Ash Sold, On-Site Travel (Loaded)	0.0024	9.7	41.50	0.30	376,000	25	15,040	0.95	14,288	2.17	70	0.65
pav04	Fly Ash Sold, On-Site Travel (Unloaded)	0.0024	9.7	16.50	0.08	376,000	25	15,040	0.95	14,288	0.54	70	0.16
pav05	Bottom Ash To Disposal Area (Loaded)	0.0024	9.7	41.50	0.30	192,000	25	7,680	2.20	16,896	2.57	70	0.77
pav06	Bottom Ash To Disposal Area (Unloaded)	0.0024	9.7	16.50	0.08	192,000	25	7,680	2.20	16,896	0.64	70	0.19
pav07	Bottom Ash Sold, On-Site Travel (Loaded)	0.0024	9.7	41.50	0.30	0	25	0	0.95	0	0.00	70	0.00
pav08	Bottom Ash Sold, On-Site Travel (Unloaded)	0.0024	9.7	16.50	0.08	0	25	0	0.95	0	0.00	70	0.00
pav09	Coal Delivery - Front Entrance (Loaded)	0.0024	9.7	40.00	0.29	0	25	0	0.80	0	0.00	70	0.00
pav10	Coal Delivery - Front Entrance (Unloaded)	0.0024	9.7	15.00	0.07	0	25	0	0.80	0	0.00	70	0.00
pav11	Coal Delivery - Back Entrance (Loaded)	0.0024	9.7	40.00	0.29	6,925,875	25	277,035	1.01	279,805	40.23	70	12.07
pav12	Coal Delivery - Back Entrance (Unloaded)	0.0024	9.7	15.00	0.07	6,925,875	25	277,035	1.01	279,805	9.20	70	2.76
pav13	Oil delivery tankers (loaded)	0.0024	9.7	18.00	0.09	0	10	0	1.01	0	0.00	70	0.00
pav14	Oil delivery tankers (unloaded)	0.0024	9.7	8.00	0.03	0	10	0	1.01	0	0.00	70	0.00
pav15	Misc. delivery trucks (loaded)	0.0024	9.7	39.67	0.28	n.a.	n.a.	0	1.01	0	0.00	70	0.00
pav16	Misc. delivery trucks (unloaded)	0.0024	9.7	14.12	0.06	n.a.	n.a.	0	1.01	0	0.00	70	0.00
pav17	Station Pickups (loaded)	0.0024	9.7	3.00	0.01	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav18	Station Pickups (unloaded)	0.0024	9.7	2.50	0.00	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav19	Station F-800 trucks (loaded)	0.0024	9.7	16.50	0.08	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav20	Station F-800 trucks (unloaded)	0.0024	9.7	8.25	0.03	n.a.	n.a.	n.a.	n.a.	0	0.00	70	0.00
pav21	Employee vehicles and station cars (round trip)	0.0024	9.7	1.60	0.00	n.a.	n.a.	0	1.48	0	0.00	70	0.00
pav22	Lime Delivery to SWP Silos (Loaded)	0.0024	9.7	40.00	0.29	0	25	0	0.89	0	0.00	70	0.00
pav23	Lime Delivery to SWP Silos (Unloaded)	0.0024	9.7	15.00	0.07	0	25	0	0.89	0	0.00	70	0.00
pav24	Emergency Lime Delivery (Loaded)	0.0024	9.7	40.00	0.29	0	25	0	0.72	0	0.00	70	0.00
pav25	Emergency Lime Delivery (Unloaded)	0.0024	9.7	15.00	0.07	0	25	0	0.72	0	0.00	70	0.00
pav26	Stabilized Sludge to Landfill (Loaded)	0.0024	9.7	155.00	2.20	3,000,000	85	35,294	2.58	91,059	99.97	70	29.99
pav27	Stabilized Sludge to Landfill (Unloaded)	0.0024	9.7	70.00	0.67	3,000,000	85	35,294	2.58	91,059	30.33	70	9.10
													55.70

Unpaved Roads, AP-42 Sect. 13.2.2
Harrison Station Fugitive Emission Calculations - Annual Emissions

TSP
EF = ((k * (s / 12) ^ a * (W/ 3) ^ b)) * ((365-p) / 365)
4.9 k
0.7 a
0.45 b

Note: vehicle speeds less than 15 mph multiply by vehicle speed divided by 15 (AP-42 13.2.2-4)

Source id	Source Description	Particle Size Multiplier	s Road Silt Content (%)	Vehicle Speed (mph)	W Mean Vehicle Weight (tons)	Number Of Wheels	p Precip Days > 0.01 in.	TSP EF lbs/VMT	TPY Material Hauled	Tons Material Hauled/Trip	Calculated Trips Per Year	Round Trip Distance (miles)	VMT per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	TSP Emission Rate (TPY)
Trucks																
unp01	Coal Delivery - Travel on Pile	4.9	9.7	5	27.5	18	171.1	2.03	6,925,875	25	277035.0	0.4	110814	112.26	25	84.20
unp02	Fly Ash To Landfill	4.9	9.7	15	29	10	171.1	6.23	376,000	25	15040.00	0.6	9024.0	28.09	85	4.21
unp03	Bottom Ash to/from Landfill Stockpile	4.9	9.7	15	29	10	171.1	6.23	192,000	25	7680.00	2.3	17664.0	54.98	85	8.25
unp04	Solid Waste To Landfill	4.9	9.7	20	112.5	6	171.1	11.46	3,000,000	85	35294.12	0.6	21176.5	121.32	85	18.20
																114.86

PM 10
EF = ((k * (s / 12) ^ a * (W/ 3) ^ b)) * ((365-p) / 365)
1.5 k
0.9 a
0.45 b

Note: vehicle speeds less than 15 mph multiply by vehicle speed divided by 15 (AP-42 13.2.2-4)

Source id	Source Description	Particle Size Multiplier	s Road Silt Content (%)	Vehicle Speed (mph)	W Mean Vehicle Weight (tons)	Number Of Wheels	p Precip Days > 0.01 in.	TSP EF lbs/VMT	TPY Material Hauled	Tons Material Hauled/Trip	Calculated Trips Per Year	Round Trip Distance (miles)	VMT per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	PM-10 Emission Rate (TPY)
Trucks																
unp01	Coal Delivery - Travel on Pile	1.5	9.7	5	27.5	18	171.1	0.59	6,925,875	25	277035.0	0.4	110814.0	32.93	25	24.70
unp02	Fly Ash To Landfill	1.5	9.7	15	29	10	171.1	1.83	376,000	25	15040.00	0.6	9024.0	8.24	85	1.24
unp03	Bottom Ash to/from Landfill Stockpile	1.5	9.7	15	29	10	171.1	1.83	192,000	25	7680.00	2.3	17664.0	16.13	85	2.42
unp04	Solid Waste To Landfill	1.5	9.7	20	112.5	6	171.1	3.36	3,000,000	85	35294.12	0.6	21176.5	35.59	85	5.34
																33.69

PM 2.5
EF = ((k * (s / 12) ^ a * (W/ 3) ^ b)) * ((365-p) / 365)
0.15 k
0.9 a
0.45 b

Note: vehicle speeds less than 15 mph multiply by vehicle speed divided by 15 (AP-42 13.2.2-4)

Source id	Source Description	Particle Size Multiplier	s Road Silt Content (%)	Vehicle Speed (mph)	W Mean Vehicle Weight (tons)	Number Of Wheels	p Precip Days > 0.01 in.	TSP EF lbs/VMT	TPY Material Hauled	Tons Material Hauled/Trip	Calculated Trips Per Year	Round Trip Distance (miles)	VMT per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	PM-2.5 Emission Rate (TPY)
Trucks																
unp01	Coal Delivery - Travel on Pile	0.15	9.7	5	27.5	18	171.1	0.06	6,925,875	25	277035.0	0.4	110814.0	3.29	25	2.47
unp02	Fly Ash To Landfill	0.15	9.7	15	29	10	171.1	0.18	376,000	25	15040.00	0.6	9024.0	0.82	85	0.12
unp03	Bottom Ash to/from Landfill Stockpile	0.15	9.7	15	29	10	171.1	0.18	192,000	25	7680.00	2.3	17664.0	1.61	85	0.24
unp04	Solid Waste To Landfill	0.15	9.7	20	112.5	6	171.1	0.34	3,000,000	85	35294.12	0.6	21176.5	3.56	85	0.53
																3.37

Material Transfers, AP-42 Sect. 13.2.4

Harrison Station Fugitive Emission Calculations - Annual Emissions

EF = k * 0.0032 * (U / 5) ^ 1.3 / (M/2) ^ 1.4)
0.35 particle size multiplier (PM10)
0.74 particle size multiplier (TSP)
0.053 particle size multiplier (PM 2.5)

TSP

Source id	Source Description	Particle Size Multiplier	Mean Wind Speed (mph)	Mean Moisture Content (%)	TSP EF lbs / ton Unloaded	Material Transferred (TPY)	Number of Transfers	Net Quantity (TPY)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	TSP Emission Rate (TPY)
Station:											
xfr01	Fly Ash Transfer To Trucks - Landfill	0.35	6.2	4	0.000561	376,000	1	376,000	0.1055	50	0.05
xfr02	Fly Ash Transfer To Trucks - Sold	0.35	6.2	4	0.000561	0	1	0	0.0000	50	0.00
xfr03	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer houses)	0.35	1.3	5.23	5.06E-05	0	4	0	0.0000	50	0.00
xfr04	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled	0.35	6.2	5.23	0.000386	6,925,875	1	6,925,875	1.3355	0	1.34
xfr05	Coal Railcar Unloading (indoor, assume partial control)	0.35	1.3	5.23	5.06E-05	0	1	0	0.0000	50	0.00
xfr06	Crusher house internal transfers (through surge bin)	0.35	1.3	5.23	5.06E-05	0	9	0	0.0000	50	0.00
xfr07	Crusher house internal transfers (through transfer bin)	0.35	1.3	5.23	5.06E-05	6,925,875	7	48,481,125	1.2268	50	0.61
xfr08	Coal Stock Out To Pile, Outdoor - Uncontrolled	0.35	6.2	5.23	0.000386	6,925,875	3	20,777,625	4.0066	0	4.01
xfr09	Boiler House transfers (assume 3 xfer, partial control)	0.35	1.3	5.23	5.06E-05	6,925,875	3	20,777,625	0.5258	50	0.26
											6.27
Landfill:											
xfr10	Fly Ash Unloading At Disposal Site	0.35	6.2	4	0.000561	376,000	1	376,000	0.1055	0	0.11

PM10

Source id	Source Description	Particle Size Multiplier	Mean Wind Speed (mph)	Mean Moisture Content (%)	PM10 EF lbs / ton Unloaded	Material Transferred (TPY)	Number of Transfers	Net Quantity (TPY)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	PM10 Emission Rate (TPY)
Station:											
xfr01	Fly Ash Transfer To Trucks - Landfill	0.74	6.2	4	0.001187	376,000	1	376,000	0.2231	50	0.11
xfr02	Fly Ash Transfer To Trucks - Sold	0.74	6.2	4	0.001187	0	1	0	0.0000	50	0.00
xfr03	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer houses)	0.74	1.3	5.23	0.000107	0	4	0	0.0000	50	0.00
xfr04	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled	0.74	6.2	5.23	0.000815	6,925,875	1	6,925,875	2.8237	0	2.82
xfr05	Coal Railcar Unloading (indoor, assume partial control)	0.74	1.3	5.23	0.000107	0	1	0	0.0000	50	0.00
xfr06	Crusher house internal transfers (max transfers for mine coal)	0.74	1.3	5.23	0.000107	0	9	0	0.0000	50	0.00
xfr07	Crusher house internal transfers (max transfers for rail coal)	0.74	1.3	5.23	0.000107	6,925,875	7	48,481,125	2.5938	50	1.30
xfr08	Coal Stock Out To Pile, Outdoor - Uncontrolled	0.74	6.2	5.23	0.000815	6,925,875	3	20,777,625	8.4710	0	8.47
xfr09	Boiler House transfers (assume 3 xfer, partial control)	0.74	1.3	5.23	0.000107	6,925,875	3	20,777,625	1.1116	50	0.56
											13.26
Landfill:											
xfr10	Fly Ash Unloading At Disposal Site	0.74	6.2	4	0.001187	376,000	1	376,000	0.2231	0	0.2231

PM2.5

Source id	Source Description	Particle Size Multiplier	Mean Wind Speed (mph)	Mean Moisture Content (%)	PM2.5 EF lbs / ton Unloaded	Material Transferred (TPY)	Number of Transfers	Net Quantity (TPY)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	PM2.5 Emission Rate (TPY)
Station:											
xfr01	Fly Ash Transfer To Trucks - Landfill	0.053	6.2	4	8.5E-05	376,000	1	376,000	0.0160	50	0.01
xfr02	Fly Ash Transfer To Trucks - Sold	0.053	6.2	4	8.5E-05	0	1	0	0.0000	50	0.00
xfr03	Coal Transfers From Mine, Enclosed - Mechanically Controlled (4 xfer houses)	0.053	1.3	5.23	7.66E-06	0	4	0	0.0000	50	0.00
xfr04	Coal Transfer From Truck To Pile, Outdoor - Uncontrolled	0.053	6.2	5.23	5.84E-05	6,925,875	1	6,925,875	0.2022	0	0.20
xfr05	Coal Railcar Unloading (indoor, assume partial control)	0.053	1.3	5.23	7.66E-06	0	1	0	0.0000	50	0.00
xfr06	Crusher house internal transfers (max transfers for mine coal)	0.053	1.3	5.23	7.66E-06	0	9	0	0.0000	50	0.00
xfr07	Crusher house internal transfers (max transfers for rail coal)	0.053	1.3	5.23	7.66E-06	6,925,875	7	48,481,125	0.1858	50	0.09
xfr08	Coal Stock Out To Pile, Outdoor - Uncontrolled	0.053	6.2	5.23	5.84E-05	6,925,875	3	20,777,625	0.6067	0	0.61
xfr09	Boiler House transfers (assume 3 xfer, partial control)	0.053	1.3	5.23	7.66E-06	6,925,875	3	20,777,625	0.0796	50	0.04
											0.95
Landfill:											
xfr10	Fly Ash Unloading At Disposal Site	0.053	6.2	4	8.5E-05	376,000	1	376,000	0.0160	0	0.0160

Dust Collectors

Harrison Station Fugitive Emission Calculations - Annual Emissions

Calculations

TSP, PM10 & PM2.5

Collector id	Emission id	Sources Venting to This Collector	Number of Collectors	Flow (CFM)	Outlet Grain Loading (gr/cf)	Emission Rate (lbs/hr)	Hours of Operation (hrs/yr)	TSP Emission Rate TPY	PM10 Emission Rate TPY	PM 2.5 Emission Rate TPY
Lime handling		LIME UNLOADING LIMITED TO 2920 HOURS/YEAR								
6ca, 6cb, 6cc	6e	Railcar transfer hoppers	1	175000	0.009	13.50	2920	19.71	19.71	19.71
		Hopper to Conveyor Transfers								
		Lime unloading conveyor belts								
		Lime unloading transfer points								
6cd	6e	Lime unloading building vacuum system	1	947	0.18	1.46	2920	2.13	2.13	2.13
8c	8e	Lime and dribble conveyor	1	28000	0.003	0.72	2920	1.05	1.05	1.05
		Lime and dribble conveyor drop to chute								
		Chute to conveyor								
		Lime Storage conveyor								
9c	9e	Lime storage conveyor to silo transfer	1	10000	0.003	0.26	2920	0.38	0.38	0.38
		Lime delivery transfer point								
10c	10e	Lime conveyor to silo transfer	1	10000	0.003	0.26	2920	0.38	0.38	0.38
		Lime delivery transfer point								
11c	11e	Lime unloading transfer	1	2100	0.003	0.05	2920	0.08	0.08	0.08
12c	12e	Lime unloading transfer	1	2100	0.003	0.05	2920	0.08	0.08	0.08
13c	13e	Lime crusher operation	1	600	0.003	0.02	8760	0.07	0.07	0.07
14c	14e	Lime crusher operation	1	600	0.003	0.02	8760	0.07	0.07	0.07
15c	15e	SWP Lime silo- transfer from silo	1	2700	0.003	0.07	8760	0.30	0.30	0.30
		SWP Lime silo- transfer from truck								
16c	16e	SWP Lime silo- transfer from silo	1	2700	0.003	0.07	8760	0.30	0.30	0.30
		SWP Lime silo- transfer from truck								
17c	17e	SWP Lime silo- transfer from silo	1	2700	0.003	0.07	8760	0.30	0.30	0.30
		SWP Lime silo- transfer from truck								
18c	18e	SWP Fly Ash Silo- transfer	1	6400	0.003	0.16	8760	0.70	0.70	0.70
		SWP Fly Ash Silo- emergency transfer								
19c	19e	SWP Fly Ash Silo- transfer	1	6400	0.003	0.16	8760	0.70	0.70	0.70
		SWP Fly Ash Silo- emergency transfer								
20c	20e	SWP Fly Ash Silo- transfer	1	6400	0.003	0.16	8760	0.70	0.70	0.70
		SWP Fly Ash Silo- emergency transfer								
21c	21e	SWP pug mill operation	1	2000	0.03	0.51	8760	2.25	2.25	2.25
22c	22e	SWP pug mill operation	1	2000	0.03	0.51	8760	2.25	2.25	2.25
23c	23e	SWP pug mill operation	1	2000	0.03	0.51	8760	2.25	2.25	2.25
24c	24e	Ball Mill slaker operation	1	1000	0.009	0.08	8760	0.34	0.34	0.34
25c	25e	Ball Mill slaker operation	1	1000	0.009	0.08	8760	0.34	0.34	0.34
26c	26e	Ball Mill slaker operation	1	1000	0.009	0.08	8760	0.34	0.34	0.34
27c	27e	Ball Mill slaker operation	1	1000	0.009	0.08	8760	0.34	0.34	0.34
28c	28e	Coal Auger house vacuum	1	335	0.015	0.04	8760	0.19	0.19	0.19
								35.25	35.25	35.25

Crushers, AP-42, Sect. 11.19.2

Harrison Station Fugitive Emission Calculations - Annual Emissions

TSP	0.0054 (lb/ton)	Table 11.19.2-2; Tertiary Crushing
PM10	0.0024 (lb/ton)	Table 11.19.2-2; Tertiary Crushing
PM2.5	0.0001 (lb/ton)	Table 11.19.2-2; Tertiary Crushing

TSP

Source id	Source Description	Material Crushed (TPY)	TSP EF (lb / ton)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
cru01	Transfer Bin Crushers 1 & 2	6,925,875	0.0054	18.70	50	9.35
cru02	Surge Bin Crusher	0	0.0054	0.00	50	0.00
						9.35

PM-10

Source id	Source Description	Material Crushed (TPY)	PM-10 EF (lb / ton)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
cru01	Transfer Bin Crushers 1 & 2	6,925,875	0.0024	8.31105	50	4.16
cru02	Surge Bin Crusher	0	0.0024	0	50	0
						4.16

PM-2.5

Source id	Source Description	Material Crushed (TPY)	PM-2.5 EF (lb / ton)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
cru01	Transfer Bin Crushers 1 & 2	6,925,875	0.0001	0.34629375	50	0.17
cru02	Surge Bin Crusher	0	0.0001	0	50	0
						0.17

Conveyors

Harrison Station Fugitive Emission Calculations - Annual Emissions

0.0030 PM (lb/ton)
0.0011 PM-10 (lb/ton)
0.0001 PM-2.5 (lb/ton)

AP-42 Table 11.19.2-2
AP-42 Table 11.19.2-2
AP-42 Table 11.19.2-2 says N.D./assume PM2.5 =10% of PM10

TSP

Source id	Source Description	Thru-Put Per Year	EF Pounds Per Ton Conveyed	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
cnv01	From Surge Bin To Lowering Well #2 (C-12)	0	0.0030	0.0000	70	0.00
cnv02	From Crusher House To Lowering Well #2 (C-1)	6,925,875	0.0030	10.3888	70	3.12
cnv03	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)	6,925,875	0.0030	10.3888	70	3.12
cnv04	From Crusher House To Boiler House Conveyors (C-4a/b)	6,925,875	0.0030	10.3888	70	3.12
cnv05	From Rail Dumper To Crusher House (RC-8)	0	0.0030	0.0000	70	0.00
cnv06	From Mine To Crusher House (MC-7)	0	0.0030	0.0000	70	0.00
cnv07	From Lowering Well #2 To Chute (C-2a)	3,462,938	0.0030	5.1944	70	1.56
cnv08	From Chute To Lowering Well #1 (C-2b)	3,462,938	0.0030	5.1944	70	1.56
cnv09	Internal Crusher House Conveyor To Surge Bin (C-10)	0	0.0030	0.0000	70	0.00
cnv10	Internal Crusher House Conveyor From Surge Bin (C-11)	0	0.0030	0.0000	70	0.00
cnv11	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)	6,925,875	0.0030	10.3888	70	3.12
						15.58

PM 10

Source id	Source Description	Thru-Put Per Year	EF Pounds Per Ton Conveyed	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
cnv01	From Surge Bin To Lowering Well #2 (C-12)	0	0.0011	0.0000	70	0.00
cnv02	From Crusher House To Lowering Well #2 (C-1)	6,925,875	0.0011	3.8092	70	1.14
cnv03	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)	6,925,875	0.0011	3.8092	70	1.14
cnv04	From Crusher House To Boiler House Conveyors (C-4a/b)	6,925,875	0.0011	3.8092	70	1.14
cnv05	From Rail Dumper To Crusher House (RC-8)	0	0.0011	0.0000	70	0.00
cnv06	From Mine To Crusher House (MC-7)	0	0.0011	0.0000	70	0.00
cnv07	From Lowering Well #2 To Chute (C-2a)	3,462,938	0.0011	1.9046	70	0.57
cnv08	From Chute To Lowering Well #1 (C-2b)	3,462,938	0.0011	1.9046	70	0.57
cnv09	Internal Crusher House Conveyor To Surge Bin (C-10)	0	0.0011	0.0000	70	0.00
cnv10	Internal Crusher House Conveyor From Surge Bin (C-11)	0	0.0011	0.0000	70	0.00
cnv11	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)	6,925,875	0.0011	3.8092	70	1.14
						5.71

PM 2.5

Source id	Source Description	Thru-Put Per Year	EF Pounds Per Ton Conveyed	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
cnv01	From Surge Bin To Lowering Well #2 (C-12)	0	0.0001	0.0000	70	0.00
cnv02	From Crusher House To Lowering Well #2 (C-1)	6,925,875	0.0001	0.3809	70	0.11
cnv03	From Coal Reclaim To Crusher House Transfer Bin (C-3a/b)	6,925,875	0.0001	0.3809	70	0.11
cnv04	From Crusher House To Boiler House Conveyors (C-4a/b)	6,925,875	0.0001	0.3809	70	0.11
cnv05	From Rail Dumper To Crusher House (RC-8)	0	0.0001	0.0000	70	0.00
cnv06	From Mine To Crusher House (MC-7)	0	0.0001	0.0000	70	0.00
cnv07	From Lowering Well #2 To Chute (C-2a)	3,462,938	0.0001	0.1905	70	0.06
cnv08	From Chute To Lowering Well #1 (C-2b)	3,462,938	0.0001	0.1905	70	0.06
cnv09	Internal Crusher House Conveyor To Surge Bin (C-10)	0	0.0001	0.0000	70	0.00
cnv10	Internal Crusher House Conveyor From Surge Bin (C-11)	0	0.0001	0.0000	70	0.00
cnv11	Boiler House Conveyors (S-1a/b, S-2a/b, S3-a/b, C-5a/b, C-6a/b)	6,925,875	0.0001	0.3809	70	0.11
						0.57

Bulldozing emissions

Harrison Station Fugitive Emission Calculations - Annual Emissions

Coal Pile Reclamation/Surface Bulldozing Bulldozing, AP-42, Sect. 11.9.2

TSP EF = $78.4 * (s)^{1.2} / (M)^{1.3}$
 PM10: EF = $0.75 * 18.6 * (s)^{1.5} / (M)^{1.4}$
 PM2.5: EF = $0.022 * 18.6 * (s)^{1.5} / (M)^{1.4}$

TSP

Source id	Source Description	Silt Content (%)	Moisture Content (%)	lbs TSP Per Hour	Hours Per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
bull1	Dozer #1 - Stock Out / Reclamation	6.2	5.23	81.5	8760	356.97	25	267.73
bull2	Dozer #2 - Stock Out / Reclamation	6.2	5.23	81.5	8760	356.97	25	267.73
bull3	Ash Dozer #1 - Spreading	11.3	4	237.32	80	9.49	0	9.49
bull4	Ash Dozer #2 - Spreading	11.3	4	237.32	80	9.49	0	9.49
								554.4

PM10

Source id	Source Description	Silt Content (%)	Moisture Content (%)	lbs PM10 Per Hour	Hours Per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
bull1	Coal Dozer #1 - Stock Out / Reclamation	6.2	5.23	21.25	8760	93.05	25	69.79
bull2	Coal Dozer #2 - Stock Out / Reclamation	6.2	5.23	21.25	8760	93.05	25	69.79
bull3	Ash Dozer #1 - Spreading	11.3	4	76.09	80	3.04	0	3.04
bull4	Ash Dozer #2 - Spreading	11.3	4	76.09	80	3.04	0	3.04
								145.67

PM 2.5

Source id	Source Description	Silt Content (%)	Moisture Content (%)	lbs PM2.5 Per Hour	Hours Per Year	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
bull1	Coal Dozer #1 - Stock Out / Reclamation	6.2	5.23	0.62	8760	2.73	25	2.05
bull2	Coal Dozer #2 - Stock Out / Reclamation	6.2	5.23	0.62	8760	2.73	25	2.05
bull3	Ash Dozer #1 - Spreading	11.3	4	2.23	80	0.09	0	0.09
bull4	Ash Dozer #2 - Spreading	11.3	4	2.23	80	0.09	0	0.09
								4.27

Grading

Harrison Station Fugitive Emission Calculations - Annual Emissions

Coal Pile Reclamation/Surface Bulldozing

Grading, AP-42, Sect. 11.9.2

TSP: $EF=0.040 * S^{2.5}$ lb/VMT, S = vehicle speed in mph

TSP:

Source id	Source Description	Vehicle Speed (mph)	lbs TSP Per VMT	Hours per Year	VMT Per Yr (miles)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
grad1	Dozer #3 - Coal Pile Sides	5	2.23607	8760	43800	48.97	0	48.97
								48.97

PM10 $EF=0.6*0.051 * S^{2.0}$ lb/VMT, S = vehicle speed in mph

PM10

Source id	Source Description	Vehicle Speed (mph)	lbs PM10 Per VMT	Hours per Year	VMT Per Yr (miles)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
grad1	Dozer #3 - Coal Pile Sides	5	0.765	8760	43800	16.75	0	16.75
								16.75

PM2.5 $EF=0.031*0.051 * S^{2.0}$ lb/VMT, S = vehicle speed in mph

PM2.5

Source id	Source Description	Vehicle Speed (mph)	lbs PM10 Per VMT	Hours per Year	VMT Per Yr (miles)	Uncontrolled Emissions (TPY)	Control Efficiency (%)	Emission Rate (TPY)
grad1	Dozer #3 - Coal Pile Sides	5	0.03953	8760	43800	0.87	0	0.87
								0.87

Coal pile equation determination	
Active pile:	Flat Pile
Inactive pile:	Flat Pile

MGW Anemometer Height (m):	6.10
Active Threshold Fric. Vel.(m/s):	0.62
Inactive Threshold Fric. Vel.(m/s):	1.12
Roughness Height (m):	0.003
(from AP-42 Table 13.2.5-2)	

Harrison Coal Pile Assumptions			Harrison Coal Pile Assumptions		
Surface Roughness @ piles: 0.003 m.			Surface Roughness @ piles: 0.003 m.		
Coal Pile - Active Portion			Coal Pile - Reserve Portion		
Coal Pile Classification:		Flat Pile	Coal Pile Classification:		Flat Pile
Threshold Friction Velocity:		0.54 m/s	Threshold Friction Velocity:		1.12 m/s
Pile Area:		11,613 sq. m	Pile Area:		37,161 sq. m
# of disturbances:		1/day	# of disturbances:		1/month
min 2-min wind for erosion:		22 mph	min 2-min wind for erosion:		45 mph

Pile size based on previous fugitive dust calculations

	DISTURBANCES DATA			AREA OF DISTURBANCE		EROSION POTENTIAL (P)	TSP		PM-10		PM-2.5	
	Days		Height (ft)	FT ²	M ²	P g/m ²	lb/yr	tons/yr	lb/yr	tons/yr	lb/yr	tons/yr
	Per Week	Per Year										
ACTIVE PILE												
TOP	7	365	0.00	124,997	11,613	119.5	3,061	1.53	1,529	0.76	612	0.31
INACTIVE PILE												
TOP	n/a	12	0.00	399,990	37,161	27.7	2,266	1.13	1,132	0.57	453	0.23
Totals:							5,327	2.66	2,661	1.33	1,064	0.53

TSP and PM-10 results based on equations from AP-42 Section 13.2.5, "Industrial Wind Erosion"

Wind Data from 2-Minute Windspeed Worst of 1991-1995 (Year 1994) from Morgantown Airport

INACTIVE COAL PILE CALCULATIONS (12 Disturbances / Year)

Period	LCD Fastest Mile u ⁺		Fastest Mile u ⁺ ₁₀		Coal Pile Friction Velocity (u*)				Coal Pile Erosion P (g/m ²)			
	MPH	m/s	MPH	m/s	Conical Coal Pile (u [*] =(0.1*u ⁺ ₁₀)*(u _g /u _r))			Flat Pile	Conical Coal Pile			Flat Pile
					u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	u [*] _{=0.053u⁺₁₀}	u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	Flat Pile
1	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
2	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
3	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
4	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	13.83
5	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
6	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	13.83
7	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
8	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
9	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
10	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
11	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
12	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
Sum:									n/a	n/a	n/a	27.66

ACTIVE COAL PILE CALCULATIONS (365 Disturbances / Year)

Period	LCD Fastest Mile u ⁺		Fastest Mile u ⁺ ₁₀		Coal Pile Friction Velocity (u*)				Coal Pile Erosion P (g/m ²)			
	MPH	m/s	MPH	m/s	Conical Coal Pile (u [*] =(0.1*u ⁺ ₁₀)*(u _g /u _r))			Flat Pile	Conical Coal Pile			Flat Pile
					u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	u [*] _{=0.053u⁺₁₀}	u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	Flat Pile
1	19	8.5	20.2	9.0	n/a	n/a	n/a	0.48	n/a	n/a	n/a	0.00
2	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
3	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
4	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
5	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
6	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
7	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
8	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
9	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
10	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
11	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
12	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
13	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
14	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
15	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
16	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
17	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
18	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
19	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
20	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
21	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
22	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
23	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
24	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
25	4	1.8	4.3	1.9	n/a	n/a	n/a	0.10	n/a	n/a	n/a	0.00
26	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
27	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
28	19	8.5	20.2	9.0	n/a	n/a	n/a	0.48	n/a	n/a	n/a	0.00
29	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
30	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
31	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
32	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
33	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
34	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
35	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
36	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
37	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
38	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
39	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
40	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
41	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
42	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
43	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
44	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
45	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
46	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
47	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
48	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
49	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
50	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
51	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
52	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
53	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
54	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
55	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
56	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
57	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00

58	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
59	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
60	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
61	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
62	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
63	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
64	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
65	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
66	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
67	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
68	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
69	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
70	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
71	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
72	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
73	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
74	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
75	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
76	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
77	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
78	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
79	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
80	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
81	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
82	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
83	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
84	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
85	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
86	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
87	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
88	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
89	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
90	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
91	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
92	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	59.29
93	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
94	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
95	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
96	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
97	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
98	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
99	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
100	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
101	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
102	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
103	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
104	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
105	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
106	26	11.6	27.7	12.4	n/a	n/a	n/a	0.66	n/a	n/a	n/a	0.98
107	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
108	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
109	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
110	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
111	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
112	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
113	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
114	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
115	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
116	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
117	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
118	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
119	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
120	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
121	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
122	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
123	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
124	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
125	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
126	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
127	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
128	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
129	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
130	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
131	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
132	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
133	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
134	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
135	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
136	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
137	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
138	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
139	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
140	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
141	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
142	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
143	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
144	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
145	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
146	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
147	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
148	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
149	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
150	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
151	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
152	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
153	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
154	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
155	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
156	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
157	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
158	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
159	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
160	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
161	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
162	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
163	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
164	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
165	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
166	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	59.29

167	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
168	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
169	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
170	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
171	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
172	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
173	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
174	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
175	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
176	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
177	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
178	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
179	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
180	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
181	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
182	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
183	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
184	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
185	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
186	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
187	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
188	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
189	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
190	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
191	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
192	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
193	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
194	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
195	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
196	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
197	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
198	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
199	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
200	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
201	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
202	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
203	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
204	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
205	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
206	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
207	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
208	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
209	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
210	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
211	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
212	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
213	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
214	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
215	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
216	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
217	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
218	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
219	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
220	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
221	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
222	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
223	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
224	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
225	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
226	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
227	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
228	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
229	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
230	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
231	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
232	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
233	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
234	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
235	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
236	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
237	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
238	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
239	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
240	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
241	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
242	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
243	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
244	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
245	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
246	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
247	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
248	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
249	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
250	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
251	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
252	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
253	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
254	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
255	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
256	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
257	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
258	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
259	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
260	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
261	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
262	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
263	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
264	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
265	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
266	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
267	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
268	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
269	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
270	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
271	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
272	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
273	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
274	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
275	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00

276	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
277	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
278	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
279	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
280	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
281	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
282	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
283	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
284	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
285	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
286	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
287	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
288	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
289	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
290	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
291	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
292	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
293	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
294	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
295	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
296	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
297	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
298	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
299	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
300	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
301	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
302	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
303	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
304	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
305	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
306	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
307	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
308	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
309	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
310	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
311	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
312	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
313	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
314	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
315	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
316	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
317	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
318	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
319	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
320	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
321	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
322	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
323	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
324	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
325	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
326	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
327	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
328	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
329	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
330	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
331	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
332	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
333	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
334	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
335	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
336	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
337	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
338	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
339	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
340	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
341	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
342	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
343	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
344	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
345	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
346	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
347	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
348	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
349	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
350	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
351	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
352	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
353	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
354	3	1.3	3.2	1.4	n/a	n/a	n/a	0.08	n/a	n/a	n/a	0.00
355	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
356	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
357	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
358	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
359	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
360	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
361	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
362	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
363	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
364	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
365	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
57 max								Sum:	n/a	n/a	n/a	119.55

Ash pile equation determination	
Active pile:	Flat Pile
Inactive pile:	Flat Pile

MGW Anemometer Height (m):	6.10
Active Threshold Fric. Vel.(m/s):	0.54
Inactive Threshold Fric. Vel.(m/s):	1.02
Roughness Height (m):	0.003
(from AP-42 Table 13.2.5-2)	

Harrison FlyAsh Pile Assumptions		Harrison FlyAsh Pile Assumptions	
Surface Roughness @ piles: 0.003 m.		Surface Roughness @ piles: 0.003 m.	
FlyAsh Pile - Active Portion		FlyAsh Pile - Inactive Portion	
Flyash Pile Classification:	Flat Pile	Flyash Pile Classification:	Flat Pile
Threshold Friction Velocity:	0.54 m/s	Threshold Friction Velocity:	1.02 m/s
Pile Area:	5,806 sq. m	Pile Area:	11,613 sq. m
# of disturban	1/day	# of disturban	1/month
min 2-min wind for erosion:	22 mph	min 2-min wind for erosion:	41 mph

Pile size based on previous fugitive dust calculations

	DISTURBANCES DATA			AREA OF DISTURBANCE		EROSION	TSP		PM-10		PM-2.5	
	Days		Height (ft)	FT ²	M ²	POTENTIAL (P) P g/m ²	lb/yr	tons/yr	lb/yr	tons/yr	lb/yr	tons/yr
	Per Week	Per Year										
ACTIVE PILE												
TOP	7	365	0.00	62,498	5,806	146.6	1,877	0.94	937	0.47	375	0.19
INACTIVE PILE												
TOP	n/a	12	0.00	124,997	11,613	41.20	1,055	0.53	527	0.26	211	0.11

Totals:	2,931	1.47	1,464	0.73	586	0.29
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TSP and PM-10 results based on equations from AP-42 Section 13.2.5, "Industrial Wind Erosion"

Wind Data from 2-Minute Windspeed Worst of 1991-1995 (Year 1994) from Morgantown Airport

INACTIVE PILE CALCULATIONS (12 Disturbances / Year)

Period	LCD Fastest Mile u ⁺		Fastest Mile u ⁺ ₁₀		Pile Friction Velocity (u [*])				Pile Erosion P (g/m ²)			
	MPH	m/s	MPH	m/s	Conical Coal Pile (u [*] =(0.1*u ⁺ ₁₀)*(u _g /u _r))		Flat Pile		Conical Coal Pile			Flat Pile
					u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	u [*] _{=0.053u⁺₁₀}	u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	
1	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
2	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
3	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
4	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	20.60
5	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
6	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	20.60
7	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
8	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
9	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
10	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
11	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	0.00
12	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
								Sum:	n/a	n/a	n/a	41.20

ACTIVE PILE CALCULATIONS (365 Disturbances / Year)

Period	LCD Fastest Mile u ⁺		Fastest Mile u ⁺ ₁₀		Pile Friction Velocity (u [*])				Pile Erosion P (g/m ²)			
	MPH	m/s	MPH	m/s	Conical Coal Pile (u [*] =(0.1*u ⁺ ₁₀)*(u _g /u _r))		Flat Pile		Conical Coal Pile			Flat Pile
					u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	u [*] _{=0.053u⁺₁₀}	u _g /u _r : 0.2	u _g /u _r : 0.6	u _g /u _r : 0.9	
1	19	8.5	20.2	9.0	n/a	n/a	n/a	0.48	n/a	n/a	n/a	0.00
2	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
3	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
4	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
5	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
6	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
7	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
8	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
9	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
10	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
11	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
12	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
13	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
14	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
15	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
16	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
17	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
18	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
19	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
20	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
21	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
22	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
23	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
24	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
25	4	1.8	4.3	1.9	n/a	n/a	n/a	0.10	n/a	n/a	n/a	0.00
26	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
27	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
28	19	8.5	20.2	9.0	n/a	n/a	n/a	0.48	n/a	n/a	n/a	0.00
29	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
30	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
31	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
32	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
33	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
34	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
35	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
36	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
37	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
38	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
39	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
40	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
41	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
42	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
43	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
44	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
45	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
46	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
47	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
48	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
49	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
50	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
51	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
52	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
53	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00

54	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
55	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	1.10
56	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
57	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
58	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
59	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
60	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
61	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
62	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
63	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
64	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
65	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
66	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
67	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
68	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
69	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
70	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
71	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
72	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
73	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
74	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
75	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
76	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
77	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
78	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
79	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
80	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
81	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
82	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
83	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
84	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
85	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
86	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
87	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
88	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
89	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
90	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
91	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
92	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	69.25
93	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
94	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
95	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
96	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
97	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
98	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
99	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
100	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
101	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
102	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
103	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
104	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
105	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	1.10
106	26	11.6	27.7	12.4	n/a	n/a	n/a	0.66	n/a	n/a	n/a	3.68
107	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
108	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
109	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
110	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
111	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
112	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
113	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
114	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
115	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
116	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
117	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
118	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
119	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
120	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
121	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
122	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
123	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
124	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
125	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
126	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
127	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
128	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
129	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
130	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
131	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
132	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
133	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
134	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
135	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
136	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
137	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
138	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
139	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
140	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
141	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
142	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
143	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
144	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
145	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
146	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
147	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
148	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
149	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
150	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
151	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
152	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
153	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
154	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
155	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
156	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
157	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
158	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00

159	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
160	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
161	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
162	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
163	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
164	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
165	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
166	57	25.5	60.7	27.1	n/a	n/a	n/a	1.44	n/a	n/a	n/a	69.25
167	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
168	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
169	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
170	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
171	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
172	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	1.10
173	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
174	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
175	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
176	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
177	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
178	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
179	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
180	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
181	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
182	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
183	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
184	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
185	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
186	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
187	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
188	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
189	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
190	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
191	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
192	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
193	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
194	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
195	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
196	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
197	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
198	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
199	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
200	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
201	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
202	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
203	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
204	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
205	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
206	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
207	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
208	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
209	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
210	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
211	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
212	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
213	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
214	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
215	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
216	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
217	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
218	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
219	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
220	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
221	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
222	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
223	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
224	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
225	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
226	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
227	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
228	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
229	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
230	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
231	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
232	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
233	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
234	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
235	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
236	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
237	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
238	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
239	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
240	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
241	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
242	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
243	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
244	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
245	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
246	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
247	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
248	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
249	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
250	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
251	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
252	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
253	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
254	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
255	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
256	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
257	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
258	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
259	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
260	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
261	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
262	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
263	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00

264	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
265	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
266	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
267	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
268	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
269	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
270	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
271	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
272	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
273	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
274	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
275	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
276	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
277	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
278	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
279	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
280	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
281	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
282	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
283	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
284	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
285	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
286	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
287	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
288	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
289	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
290	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
291	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
292	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
293	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
294	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
295	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
296	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
297	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
298	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
299	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
300	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
301	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
302	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
303	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
304	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
305	16	7.2	17.0	7.6	n/a	n/a	n/a	0.40	n/a	n/a	n/a	0.00
306	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
307	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
308	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
309	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
310	21	9.4	22.4	10.0	n/a	n/a	n/a	0.53	n/a	n/a	n/a	0.00
311	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
312	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
313	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
314	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
315	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
316	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
317	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
318	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
319	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
320	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
321	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
322	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
323	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
324	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
325	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
326	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
327	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
328	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
329	14	6.3	14.9	6.7	n/a	n/a	n/a	0.35	n/a	n/a	n/a	0.00
330	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
331	18	8.0	19.2	8.6	n/a	n/a	n/a	0.45	n/a	n/a	n/a	0.00
332	23	10.3	24.5	10.9	n/a	n/a	n/a	0.58	n/a	n/a	n/a	1.10
333	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
334	9	4.0	9.6	4.3	n/a	n/a	n/a	0.23	n/a	n/a	n/a	0.00
335	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
336	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
337	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
338	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
339	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
340	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
341	17	7.6	18.1	8.1	n/a	n/a	n/a	0.43	n/a	n/a	n/a	0.00
342	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
343	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
344	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
345	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
346	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
347	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
348	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
349	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
350	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
351	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
352	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
353	13	5.8	13.8	6.2	n/a	n/a	n/a	0.33	n/a	n/a	n/a	0.00
354	3	1.3	3.2	1.4	n/a	n/a	n/a	0.08	n/a	n/a	n/a	0.00
355	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
356	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
357	8	3.6	8.5	3.8	n/a	n/a	n/a	0.20	n/a	n/a	n/a	0.00
358	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
359	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
360	6	2.7	6.4	2.9	n/a	n/a	n/a	0.15	n/a	n/a	n/a	0.00
361	7	3.1	7.5	3.3	n/a	n/a	n/a	0.18	n/a	n/a	n/a	0.00
362	15	6.7	16.0	7.1	n/a	n/a	n/a	0.38	n/a	n/a	n/a	0.00
363	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
364	11	4.9	11.7	5.2	n/a	n/a	n/a	0.28	n/a	n/a	n/a	0.00
365	10	4.5	10.6	4.8	n/a	n/a	n/a	0.25	n/a	n/a	n/a	0.00
57 max								Sum:	n/a	n/a	n/a	146.59

Cooling tower particulate emissions

Harrison Station Fugitive Emission Calculations - Annual Emissions

cool01 Two Cooling Towers

Circulating water rate (design)	585,000 gpm	both towers
Weight of water	8.337 lbs/gal	
Circulating water	292628700 lbs/hr	
Drift rate (design)	0.03%	
Water released to atmosphere via droplets	74,283 lbs/hr	
Total dissolved solids	1639 ppm	
Conservative estimate of total emissions	121.749 lbs/hr	
hours per year	8760	
Total TSP	533.26 tons	
Total PM 10	533.26 tons	
Total PM 2.5	533.26 tons	

**HARRISON POWER STATION
EMERGENCY DIESEL FIRE PUMP (FP-01)
MAX PTE EMISSIONS CALCULATIONS**

PARAMETER		FP-01 SPECS	UNITS
Manufacturer		Clarke (John Deere)	n/a
Engine Model		JX6H-UFAD60	n/a
Full Standby Load		510	bhp
Diesel Fuel Firing Rate @ 1,760 RPM		22.0	gal/hr
Maximum Operating Time		500	hrs/year
Maximum Diesel Fuel Use		11,000	gal/year
BSFC		5,910	Btu/bhp-hr
ULSD Fuel Heat Input Factor		137,000	Btu/gal
Hourly Heat Input		3.0	MMBtu/hr
Maximum Annual Heat Input		1,507	MMBtu/year
POLLUTANT	Emission Factor (g/HP-hr)	FP-01 Emission Rate (lb/hr)	FP-01 Emission Rate (tons/yr)
NO _x +NMHC (a)	3.0	3.37	0.84
PM (a)	0.15	0.17	0.04
	(lb/MMBtu)		
SO ₂ (b)	0.29000	0.87	0.22
CO (b)	0.95000	2.86	0.72
TOC/VOC (b)	0.35000	1.05	0.26
GHG (CO ₂ e) (b)	164.0	494.3	123.6
Formaldehyde (c)	0.001180	0.0036	0.0009
Benzene (c)	0.000933	0.0028	0.0007
Toluene (c)	0.000409	0.0012	0.0003
Xylenes (c)	0.000285	0.0009	0.0002
Total HAPs (d)	0.002975	0.0090	0.0022

FOOTNOTES:

- (a) Emission limit factors from Table 4 to 40 CFR Part 60, Subpart IIII, Emergency Fire Pump Engines, 2009+
- (b) Emission factors from EPA AP-42, Table 3.3-1, for Uncontrolled Diesel Industrial Engines
- (c) Emission factors from EPA AP-42, Table 3.3-2, for Uncontrolled Diesel Engines
- (d) Total HAPs = Total VOC HAPs + Total PAH from EPA AP-42, Table 3.3-2

**HARRISON POWER STATION
EMERGENCY DIESEL FIRE PUMP (FP-02)
MAX PTE EMISSIONS CALCULATIONS**

PARAMETER		FP-02 SPECS	UNITS
Manufacturer		855 Cummins	n/a
Engine Model		NTC335	n/a
Full Standby Load		335	bhp
Diesel Fuel Firing Rate @ 1,760 RPM		18.0	gal/hr*
Maximum Operating Time		500	hrs/year
Maximum Diesel Fuel Use		9,000	gal/year
BSFC		7,361	Btu/bhp-hr
ULSD Fuel Heat Input Factor		137,000	Btu/gal
Hourly Heat Input		2.5	MMBtu/hr
Maximum Annual Heat Input		1,233	MMBtu/year
POLLUTANT	Emission Factor (lb/MMBtu)	FP-02 Emission Rate (lb/hr)	FP-02 Emission Rate (tons/yr)
NOx (a)	4.41	10.88	2.72
PM (a)	0.31	0.76	0.19
SO ₂ (a)	0.29000	0.72	0.18
CO (a)	0.95000	2.34	0.59
TOC/VOC (a)	0.35000	0.86	0.22
GHG (CO ₂ e) (a)	164.0	404.4	101.1
Formaldehyde (b)	0.001180	0.0029	0.0007
Benzene (b)	0.000933	0.0023	0.0006
Toluene (b)	0.000409	0.0010	0.0003
Xylenes (b)	0.000285	0.0007	0.0002
Total HAPs (c)	0.002975	0.0073	0.0018

FOOTNOTES:

- * Source: "Diesel Service and Supply," Approximate Fuel Consumption Chart at Full Standby Load
- (a) Emission factors from EPA AP-42, Table 3.3-1, for Uncontrolled Diesel Industrial Engines
- (b) Emission factors from EPA AP-42, Table 3.3-2, for Uncontrolled Diesel Engines
- (c) Total HAPs = Total VOC HAPs + Total PAH from EPA AP-42, Table 3.3-2

**HARRISON POWER STATION LANDFILL
LEACHATE COLLECTION/CONVEYANCE SYSTEM EMERGENCY GENERATOR (EG-2)
MAX PTE EMISSIONS CALCULATIONS**

PARAMETER		EG-2 SPECS	UNITS
Manufacturer		Kohler Power Systems	n/a
Engine Model		400REZXB	n/a
Full Standby Load while Burning LPG		605	bhp
LPG Conversion Factor		36.39	ft ³ /gal
Gas Fuel Firing Rate @ 100% Standby Load		1,409	ft ³ /hr
Liquid Fuel Firing Rate @ 100% Standby Load		38.72	gal/hr
Maximum Operating Time		500	hrs/year
Maximum Liquid Fuel Use		19,360	gal/year
BSFC		5,856	Btu/bhp-hr
LPG Fuel Heat Input Factor		91,502	Btu/gal
Maximum Gas Fuel Use		0.705	MMft ³ /year
POLLUTANT	Emission Factor (g/HP-hr)	EG-2 Emission Rate (tons/yr)	EG-2 Emission Rate (lb/hr)
NOx (a)	2.0	0.67	2.67
CO (a)	4.0	1.33	5.33
VOC (a)	1.0	0.33	1.33
	(lb/MMBtu)		
SO ₂ (b)	0.00059	0.0005	0.002
PM ₁₀ (b)	0.00950	0.0084	0.034
PM _{2.5} (b)	0.00950	0.0084	0.034
Methane (b)	0.02300	0.0204	0.081
GHG (CO ₂ e) (b)	110.0	97.4	389.7
Formaledehyde (b)	0.020500	0.018157	0.073
Benzene (b)	0.001580	0.001399	0.006
Toluene (b)	0.000558	0.000494	0.002
Ethylbenzene (b)	0.000025	0.000022	0.0001
Xylenes (b)	0.000195	0.000173	0.001
Total HAPs (b)	0.022858	0.020246	0.081

MMBtu/hr = 3.54
MMBtu/yr = 1,771.5

FOOTNOTES:

- (a) Emission limit factors from Table 1 to 40 CFR Part 60, Subpart JJJJ, SI Emergency Engines
(b) No available LPG Factors; NG emission factors from EPA AP-42, Table 3.2-3, for Rich-Burn Engines.