DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
**ACTIVITY REPORT: Scheduled Inspection**

B400135950

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|---|---|---|
| **FACILITY:** LBWL, Erickson Station | | **SRN / ID:** B4001 |
| **LOCATION:** 3725 South Canal Road, LANSING | | **DISTRICT:** Lansing |
| **CITY:** LANSING | | **COUNTY:** EATON |
| **CONTACT:** Susan Pemberton , Environmental Engineer | | **ACTIVITY DATE:** 06/23/2016 |
| **STAFF:** Michelle Luplow | **COMPLIANCE STATUS:** Non Compliance | **SOURCE CLASS:** MAJOR |
| **SUBJECT:** Scheduled compliance inspection to determine compliance with LBWL Erickson Station's MI-ROP-B4001-2015. | | |
| **RESOLVED COMPLAINTS:** | | |

Inspected by: Michelle Luplow (author) & Breanna Bukowski (SIP)

Personnel Present: Mark Nelson (Power Plant & Ash Handling)
Dave Klemish, Foreman (power plant)
Keith Beson (Ash Handling site)

Other Relevant Personnel: Deb Allen, Plant Manager (das@lbwl.com)
Sue Pemberton, Environmental Compliance Specialist (slp1@lbwl.com)
Trista Gregorski, Engineer (tmg@lbwl.com)

**Purpose:** Conduct an announced, scheduled compliance inspection by determining compliance with the Lansing Board of Water and Light's Renewable Operating Permit MI-ROP-B4001-2015. Also, to continue follow-up on fugitive dust being released from the site's fly ash handling system in response to past complaints of fly ash/ coal dust fallout on complainant's nearby property.

**Facility Background/Regulatory Overview:**
The Erickson Station is a major source of criteria air pollutants NOx, SO2 and CO, and a major source of the HAPs hydrogen chloride (HCl) and hydrogen fluoride (HF).

The Erickson boiler, EU001, is considered an electrical generating unit (EGU) which is subject to 40 CFR 63 Subpart UUUUU NESHAP for Coal- and Oil-fired Electric Utility Steam Generating Units. Compliance was originally required by April 16, 2015; however, on September 28, 2012, Mark Matus requested an extension of the compliance deadline for the Federal Mercury and Air Toxics Standards (40 CFR 63 Subpart UUUUU, MATS) because of the need to stagger installation schedules so that reliable power can be provided during outage periods. The AQD granted an extension compliance date of April 16, 2016 on December 17, 2012. Additionally, EU001 is subject to the Acid Rain Program and the Cross-State Air Pollution Control Rule (CSAPR): Transport Rule NOx Annual Trading Program; Transport Rule NOx Ozone Trading Program; and the Transport Rule SO2 Group 1 Trading Program. The current ROP was renewed in October 2015.

LBWL Erickson had installed a carbon absorption system for Hg in order to comply with the MATS. RATA testing for Hg, and stack testing for HCl and PM will occur the first week of August. The stack testing for PM will encompass testing using test methods required by the MATS (3 2-hr runs), and another set of testing (3 1-hr runs) using test Method 5 required in MI-ROP-B4001-2015 for testing compliance with the 0.17 lb PM/1000 lb exhaust gas.

The Cleaver Brooks No.2 oil-fired auxiliary boiler, EUAUXBLR, is subject to the Boiler MACT subpart DDDDD (for major sources of HAPs) and was repermitted as a "limited use" boiler in May 2015 (PTI 71-15). The compliance date for this existing unit was January 31, 2016.

The Clark Fire Pump engine is used for emergency purposes only and is subject to NSPS IIII and MACT NESHAP Subpart ZZZZ.

**Inspection:** This was an announced compliance inspection. At approximately 8:45 a.m. on June 23, 2016 B. Bukowski and I met with Dave Klemish, shift foreman, and Mark Nelson at the LBWL Erickson Station office. A "DEQ Environmental Inspections: Rights and Responsibilities" brochure was provided during the 2015

inspection. M. Nelson took B. Bukowski and I for a tour of the plant and showed us the permitted equipment as well as the fly ash handling facility located on Millett Hwy.

**MI-ROP-B4001-2015 Emission Units Table**

| Emission Unit | Description | Installation/Mod Date | Flex Group |
|---|---|---|---|
| EU001 | Babcock & Wilcox 1668 MMBTU/hr pulverized coal-fire boiler. No. 2 fuel oil used for startup and flame stabilization | 7-1-1970 | NA |
| EUAUXBLR | Cleaver Brooks aux boiler, No. 2 fuel oil-fired. Supplies heat to plant | 5-7-1971 | NA |
| EUFPENGINE | John Deere Power Systems 175 bhp 4-stroke Diesel Compression Ignition Clark Fire Pump Emergency Engine, Model JU6H-UFADM8. Maximum heat input is approximately 1.4 MMBTU/hr with a 6.8 L/cylinder displacement. | 11-2013 | NA |
| EUASHDC1 | Ash handling equipment w/ particulate control device for transfer of ash from storage to load out silos | 10-1-1978/ 12-28-1991 | FGASHHANDLING |
| EUASHDC2 | Ash handling equipment w/ particulate control device for loading trucks from silos | 7-1-1970 | FGASHHANDLING |
| EUASHDC3 | Ash handling equipment w/ particulate control device for transfer of ash to storage silos | 10-1-1970/ 1-1-1982 | FGASHHANDLING |
| EUASHDC4 | Ash handling equipment w/ particulate control device for transfer of ash to mass storage building | 7-1-1970 | FGASHHANDLING |
| EUASHDC5 | Ash handling equipment w/ particulate control device for transfer of ash from Erickson to ash storage facilities | 7-1-1970 | FGASHHANDLING |
| EUCOLDCLEANER | Thirty gallon parts washer for cleaning/degreasing parts using Stoddard solvent/mineral spirits. | 1998 | FGCOLDCLEANERS |

**FGASHHANDLING: EUASHDC1, 2, 3, 4, 5 –Fly Ash Handling**

The LBWL Erickson Station has ash handling at both the power plant site and the Millett ash handling site, approximately a quarter mile northeast of the Erickson Station. Ash is transferred from the Erickson Station to the Millett facility through baghouses and pneumatic pipes to the storage building and used as a marketable product or is disposed of. EUASHDC1 is the main dust collector, EUASHDC2 is the load-out silo bin vent, EUASHDC3 is the truck unloading dust collector, EUASHDC4 is the mass storage dust collector, and EUASHDC5 is the Erickson Station fly ash system baghouse. There are 2 baghouses located at this facility: one baghouse is used for the silos above the truck loadout and the other is located within the mass storage building.

Since the finalization and compliance date of the Utility MACT (MATS), according to K. Beson, the LBWL has begun to purchase "concrete friendly carbon" for use in controlling mercury emissions. This type of carbon allows the LBWL to still produce sellable fly ash for use in concrete production. K. Beson said they go through ~ 22 tons/month of the carbon.

Once trucks are loaded with fly ash, the truck driver drives over to a platform **(photo attached)** where he climbs to the top of the truck to close the "lids" where fly ash loads into the truck. There is fugitive dust from this process (as witnessed during a 6/27/16 visit). K. Beson explained that the platform is required by OSHA.

Since December 15, 2014, the AQD has received 3 complaints from a complainant who owns a business directly east of the LBWL coal pile and fly ash handling facility. With all 3 complaints the complainant expressed concern about coal dust accumulating on his vehicles stored outside, deposits within his business via roof vents, as well as coal dust getting washed into his garage during rainy periods. His business involves restoring cars for sale and says that the coal dust/fly ash deposits on his newly finished and polished vehicles are hard to wash off and that he must cover all his vehicles to ensure that newly finished vehicles are not dirtied by the fallout. For each of the complaints, samples were taken to determine microscopic composition. For all 3 sets of samples, the fraction of the samples containing particulate similar in appearance to coal and similar in appearance to fused and unfused fly ash varied: Coal dust and fly ash (fused and unfused) composed ~ 10%-80% of the samples. Samples were taken in various locations around the property including soil, vehicles stored outdoors, off the pavement, etc.

Because of the concerns with fly ash on the complainant's properly I discussed with D. Allen the possible sources of the fly ash during the June 2015 inspection. D. Allen said that sometime either in February or March 2015 she noticed that fly ash was being emitted through the cracks in the seals of the Mass Storage building's vehicle entrance overhead doors. She said that she immediately had the system shut down, and kept it shut down until the baghouse was fixed, which she said involved replacing all the bags in the baghouse. She said that under normal operation the building is under vacuum, and when the baghouse malfunctioned it placed positive pressure on the system, forcing the fly ash out through the cracked seals on the door. D. Allen said that they have ordered new seals, door rollers, and a new door, all of which will be installed on the outside of the building so that visual inspection of the door and seals can be done more easily to detect any wear.

Another potential source of the fugitive fly ash that D. Allen pointed out during the June 2015 inspection was the loadout chute for the trucks. D. Allen pointed out that there were holes in the chute and in the seal that connects to the trucks for loadout of the fly ash. During the inspection D. Allen said that the new chute had already been ordered and would arrive in 4-5 weeks.

As follow-up to the June 2015 inspection, while onsite during the June 23, 2016 inspection, I took photos of the new door and loadout **chute (attached)**. Both appeared to be in good condition: there were no cracks or seal breakages that I could see. Additionally, K. Beson pointed out that the baghouse used for loadout control will be replaced within the next couple of weeks with a more efficiency baghouse that uses cartridges.

M. Nelson and Keith Beson showed B. Bukowski and I around the ash handling site. The new door to the main ash storage building was open, I did not see any opacity being emitted from the open door. M. Nelson explained that front-end loaders enter into the main ash storage building using this door. Once inside, the loaders push the fly ash over the grates located inside the building so that conveyors can carry the fly ash out of the storage building and into the storage silos or into the loadout silo. He said that any of the fly ash that becomes hardened and too compact to be pushed through the grates is pushed out of the main storage building and stored in a pile outside until a truck picks it up to be landfilled. He said that a truck comes once per week to pick up this pile of fly ash. **Attached is a photo of this pile.** The pile is not enclosed and is exposed to the elements.

*Sampling Discussion*
On June 27, 2016 Julie Brunner and I returned to the site to collect samples to determine if fly ash was located elsewhere on the property, in addition to determining how much fly ash was in the fly ash piles. K. Beson was not present for this, but a contractor was. We took samples from two sections of the fly ash pile, samples from the "dirt" underneath the loadout chute, and a sample from ventilation piping from the east blue loadout silo, where it appears that fly ash is escaping **(see attached photos)**. The sample results were received on July 12, 2016. The two samples from the fly ash pile contained 80% total fly ash (60% fused fly ash, 20% unfused fly ash). The sample from underneath the loadout chute also contained 80% fly ash (60% fused fly ash, 20% unfused fly ash). The remaining sample taken from the loadout silo ventilation piping contained 80% fly ash as well (50% fused fly ash, 30% unfused fly ash).

It was particularly dusty that day with high winds. Dust from the unpaved plant yard was blown around the property and to the east towards the complainant's property. Walking on the unpaved yard also created excessive amounts of dust.

As a result of observing how loose and air-borne the "dirt" on the plant yard could become during the 6/27/16 visit, I returned to the fly ash handling facility on June 30, 2016 to take additional samples from the unpaved parts of the road, which I had originally thought was only dirt. I received the results from this second round of samples on July 14, 2016. The contractor was the only personnel present onsite when I arrived, so he called Mark Nelson to come and provide supervision while I took samples. K. Beson later arrived at the site. The

sample from the unpaved portion of the plant yard, north of the fly ash storage piles contained 80% fly ash (60% fused fly ash, 20% unfused fly ash). The sample retrieved from the ground next to the walk-in door of the main storage building contained 80% fly ash (60% fused fly ash, 20% unfused fly ash). The remaining sample was taken from the unpaved portion of the road, south of the loadout silo and west of the main storage building and contained 80% fly ash (60% fused fly ash, 20% unfused fly ash). This sample's composition was determined after the laboratory screened out small stones and any other material greater than 450 um in diameter.

The results of both sets of samples indicate high concentrations of fly ash in the outside storage piles and on the unpaved plant yard areas. Storage of fly ash outside without containment and fly ash being present throughout the plant yard is considered a violation of Rule 370 which requires that the collection and disposal of air contaminants be done in a manner to minimize the introduction of the contaminants to the outer air. Additionally, this is considered a violation of Rule 901: failure to meet Rule 370 has caused fly ash to be dispersed to the surrounding area, including the complainant's property, where fly ash has been found in each sample that has been taken since December 2014, from various locations and objects on his property. This is considered a Rule 901 violation. **A violation notice will be sent to address violations of Rule 370 and Rule 901.**

*FGASHHANDLING Process/Operational Restrictions*
The LBWL is required to have an MAP implemented and maintained within 60 days of issuance of the ROP (12/8/16). S. Pemberton submitted the MAP and it was received by the Lansing District Office on February 3, 2016. S. Pemberton said in a memo dated 7/28/16 that this copy is the most recent copy of the MAP, but that it would be reviewed and updated within the next couple of months. See discussion under Monitoring/Recordkeeping for updates to the MAP that must be made and noted violations for failure to implement the MAP.

*FGASHHANDLING Testing/Sampling*
As long as the baghouses are properly functioning, LBWL should be meeting their particulate limit of 0.10 lb/1000 lbs boiler exhaust gases. See monitoring/recordkeeping section below for discussion on records of baghouse operation.

*FGASHHANDLING Monitoring/Recordkeeping*
LBWL is required to conduct random visible emissions observations at least once on a daily basis on EUASHDC1-5 and the results of these VE readings are to be recorded. LBWL is also required to record the differential pressure at least once daily, as acceptable CAM monitoring. Operating outside of 1-5" H2O pressure differential is considered an excursion per MI-ROP-B4001-2015, and an immediate VE observation is required to be conducted and the results recorded, including the device ID, time, date, pressure drop, duration in minutes and the initials of the observer for those periods of opacity outside of the indicator range. These two records are kept under LBWL's "Millet Ash Handling Daily Differential Pressure and Visible Emission Readings."

I requested these records for 1/1/16- 7/1/16 for all ash handling units. The acceptable pressure drop range specified in the ROP and the MAP is 1-5" H2O, but these records specify 0-5" H2O as the operating range. I will contact S. Pemberton and let her know that these records must be updated to match the acceptable pressure drop range called out in the ROP and MAP. The records indicate that all baghouses were operated within the 1-5" H2O acceptable pressure drop range, except during the period from 2/15/16 – 3/1/16, where the main storage building baghouse was operating at a pressure drop of 0" H2O. For these readings, it was noted that no VE's were seen, thus meeting the requirement to record the VE reading if an excursion occurred. These excursions should also be reported in the semi-annual CAM report due in September.

The records for EUASHDC5 are recorded under a separate set of recordkeeping sheets. S. Pemberton provided me these records as well for 1/1/16 – 7/1/16. All recorded pressure differential readings appear to be within the specified normal operating range of 1-15 psi. Visible emission results were also recorded, although I will contact S. Pemberton about some of the "results" as some are not legible and others have a date written in the "Weekly Visible Emission Result" box. I will ask for clarification if this means that a VE was detected, and if so, where the duration in minutes was recorded for these instances. While the results were within range and VE results were recorded, these were only done once per week. MI-ROP-B4001-2015 requires that the pressure differential and the VE readings be recorded on a **daily** basis. This was not done during the time period of records I requested. In the **violation notice I will include recordkeeping violations for failure to record pressure differentials and VE readings on a daily basis for EUASHDC5.** These will also need to be reported as deviations in the quarterly reporting and in the semi-annual CAM reporting.

The MAP will have to be updated to include EUASHDC5 and its operating parameters. I will inform S. Pemberton of this.

Upon arrival for the site visit at 1:40 pm on 6/27/16 when J. Brunner and I arrived to take samples around the plant yard, we noticed visible emissions from the exhaust of the loadout silo baghouse **(see attached photo for reference photo of baghouse with horizontal exhaust)**. Each time the baghouse pulsed (which was about every 10 seconds) dust would come out of the exhaust. The magnahelic gauge for the baghouse did not fluctuate when the system pulsed/emitted particulate from the exhaust. The gauge read consistently at 0.8" H2O before, during, and after each pulse. It would be expected that some type of change in pressure drop would be observed during the pulses. Because the baghouse was operating outside of the normal operating range of 1-5" H2O (less than 1" H2O), it is a violation of Monitoring/Recordkeeping condition 1. Upon arrival at 10:14 a.m. on 6/30/16 for the site visit for sampling, I did not observe any opacity being exhausted from the baghouse exhaust vent at any time during operation. The pulses at this time were ~ 20 seconds apart.

During the 6/30/16 visit, K. Beson was present and told me that he was not aware of the exhaust/particulate being emitted on 6/27/16. M. Nelson said if they had known about it, they would have fixed it right away. In the MAP, under "Corrective Maintenance" it also states that in the event a VE is observed, the cause of the VE shall be determined and a shutdown of the malfunctioning ash handling system will be immediately initiated. The ash marketing contractor was the only personnel present during the 6/27/16 visit. We made him aware of the particulate exhausting from the baghouse. According to the MAP, the fly ash marketing contractor is responsible for monitoring the dust collection equipment and recording the pressure differentials and conducting and recording VE observations, in addition to communicating the maintenance and operational issues with the ash coordinator. Because the contractor did not initiate actions to shut down the system immediately, this is a violation of the Process/Operational Restrictions condition 1, which requires that the MAP be implemented. **Failure to take corrective actions is a violation of the requirement to implement the MAP, and this will be included in the violation notice.**

The MAP also mentions a Fugitive Dust Log, where any emissions that reach the facility boundary shall be recorded. S. Pemberton said that because of the cyber hacking incident experienced by the LBWL in April, many of the files got corrupted, including the Fugitive Dust logs. They are currently rebuilding/recovering these files. I will create a separate activity for review of these records when they are received.

Although records for 6/27/16 indicate that the loadout silo baghouse was operating within the 1-5" H2O operating limits, the <1" H2O I observed onsite indicated otherwise. In addition to operating outside of the operating limits and not recording the time, date, duration in minutes and results of the VE reading (it was reported as "None"), this is also a violation of Rule 910, for failure to maintain and operate in any air cleaning device in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **In the violation notice I will include violations of SC VI.1 (Monitoring/Recordkeeping) and Rule 910 for this baghouse.**

Condition 5 requires that when the ash handling pneumatic piping is being operated, the permittee shall visually inspect the piping for leaks at least once per day and keep record of any visible emissions observed during these visual inspections. S. Pemberton provided me with daily shift logs from January 2016 – March 6, 2016. The "Shift Log" (see attachment for example) notes the days and the times when certain actions were performed during a specified shift (shifts are 12-hour days). "VEC," visible emissions check, is noted when the operators are checking the transport line. S. Pemberton said that if they spot dust or any other issues during this check, they enter a work order in LBWL work management system to address and fix the problem. The daily shift logs indicate that VE readings were conducted. Supplementary to these VE checks are the flyash transport line maintenance logs that S. Pemberton also provided. In the logs, various maintenance activities on the ash transport line were conducted between January 2016 and July 2016; leaks were noted and maintenance requests were made. LBWL is in compliance with condition 5 at this time.

Condition 8 requires that records of bag replacement and any other maintenance activities conduct on the baghouses in FGASHHANDLING be maintained. S. Pemberton provided these maintenance records to me. LBWL is in compliance with condition 8 at this time.

*FGASHHANDLING – Other*
Condition IX.1 requires a Fugitive Dust Control program. The current Fugitive Dust Plan was updated in March 2015 in response to the fugitive dust complaints. The plan currently states that the Millet Storage Facility operates within a range of 0-5" H2O. I will inform S. Pemberton that this must be updated to the new ROP requirement of 1-5" H2O.

**EU001 – Babcock Wilcox pulverized coal-fired boiler**

Since the 2015 inspection, the LBWL has tried multiple avenues for controlling coal dust and preventing it from leaving the property line, as a result of the complaints received and samples taken on the complainant's property.

To mitigate fugitive dust from strong prevailing winds, D. Allen said that since May 10, 2015 they have been maintaining the pile at a lower height, while keeping the berm higher than the tip of the coal pile. As soon as they offload the coal onto the pile, the coal is graded to maintain that height. This berm is flush with the top of the coal pile, so that any fugitive dust being blown off the coal pile hits the berm, thus preventing it from moving off the LBWL property. We may discuss at a later date how the coal dust from the berm can also be controlled.

In addition to the berm, the LBWL has also planted trees between the coal pile and ash handling site to create a wind break **(see attached photo)**. D. Allen said that the wind speeds can get up to 75 mph because the topography (buildings and flat land) surrounding the ash handling and coal pile creates a wind tunnel effect, in which she said there is really nothing to control the dust at those wind speeds, except potentially a wind break. Plans and photos of the final location of the trees were submitted in December 2015.

*EU001 - Process/Operational Restrictions*
EU001 uses Western coal from the Powder River Basin (PRB) in Wyoming. It is classified as sub-bituminous; sub-bituminous coal has a lower sulfur content.

LBWL Erickson is permitted to use additives labeled for the purpose of minimizing dust from, or improving the characteristics of fuel handling and storage, as long as they are used in accordance with the fugitive dust control plan required for EU001. According to the fugitive dust plan, LBWL Erickson currently uses GE Dustreat DC9139E and Dustreat DC 9138E. According to the plan Dustreat DC9138E is used for dust suppression at the coal loading and transfer points to minimize fugitive dust from the coal dumper and on the coal feed belts, and additive DC9139E is a crusting agent that minimizes fugitive dust emissions from the coal pile and haul roads. Each additive has its manufacturer's recommended feed rate. Any time the LBWL changes coal dust suppression/wetting agents they must change their fugitive dust plan to contain these suppressants as well as demonstrate Rule 285(b) exemption.

Boiler cleaning solutions are also allowed to be combusted for the cleaning of internal surfaces of boiler tubes and related steam and water cycle components if the solution does not contain HAPs. S. Pemberton said that the Erickson boiler undergoes chemical cleaning approximately every 7 years with an EDTA chelating agent. D. Allen said that the last time the boiler was cleaned was in 2010, and is scheduled to be cleaned again in 2017/2018. D. Allen verified that LBWL still currently uses ChelClean 675. According to the SDS attached to the previous inspection report, tetraammonium ethylene diaminetetraacetate and ammonium hydroxide are the major components, but neither of these are considered HAPs by the EPA. D. Allen said that the LBWL will likely be using a different boiler cleaning solution in the future, as the one they currently use may no longer be produced. She said LBWL will contact AQD if/when they make the change to a new cleaning solution to ensure its use is in compliance with the permit conditions

LBWL Erickson Station is currently in compliance with the boiler's Process/Operational Restrictions at this time.

Design/Equipment Parameters
M. Nelson explained that each of the 5 fields contained in each of the 2 boxes can collect 80% of the fly ash entering the ESP. Arcing between the plates (spark) occurs when ash builds up on the plates. The sparking rate at the last of the 5 fields is lower than the first plate because less ash is collected at this last field.

The ROP requires that the ESP transformer-rectifier set be capable of operating in spark-limited mode and that the primary RMS voltage and amperage and the average secondary amperage be metered and displayed. M. Nelson explained that the ESP's transformer/rectifier set operates on spark-limited mode, but that they run on the current limit for the first field: they limit how much power is put through. The first field doesn't reach the limit. Both voltage and amperage are metered and displayed, for each of the 5 sections of the ESP. D. Klemish explained at the previous inspection that a remote computer is used to adjust power levels based on the sparking rate limits. The automatic controller employs solid-state circuitry to preset power levels based on sparking rate limits. The transformer-rectifier set is also equipped with a silicon-controlled rectifier linear reactor, which meets condition 2 of this section.

The maximum power the automatic controller is set to is 75 kV DC at full load. The maximum current is 1000 mAmps. The sparking rate limit is set lower than the maximum power. LBWL is in compliance with all Design/Equipment Parameters at this time.

*Testing/Sampling*
The PM emission limit is 0.17 lb/1000 lb of exhaust gas. A stack test was completed on May 19, 2010 for PM. The results showed 0.0085 lb PM/1000 lb exhaust gas, corrected to 50% excess air. The LBWL recently tested again on August 3, 2016 to meet the requirement of testing for PM emission rates within 12 months of issuance of the ROP. LBWL is in compliance with all Testing/Sampling conditions at this time.

*Monitoring/Recordkeeping*
As a result of the LBWL's compromised system from a cyber attack in April 2016, the COMS system was down. One of the operators in the control room said that during this period they took manual 6-minute opacity readings until the COMS system came back up online. Review of the quarterly report will allow for determination of compliance with continuous opacity monitoring.

The Table 1 lists the current CEMS/COMS monitors that are installed at this time based on results from a RATA letter dated November 5, 2014 for the August 19, 2014 RATA. (The newest RATA was conducted the first week of August 2016).

Table 1

| Parameter | Manufacturer | Serial No | Model |
|---|---|---|---|
| CO2 | Teledyne API | 63 | T360M |
| NOx | Teledyne API | 71 | T200 |
| SO2 | Teledyne API | 61 | T100H |
| Opacity | Teledyne | unknown | 560 Light Hawk |
| Gas Flow | Teledyne Ultraflow | 1501157 | 150 |

Whenever opacity exceeds 20%, a light comes on (visual alarm) in the control room to signal the operators that opacity limits have been exceeded. All excess emission reports list all exceedances of 20% opacity, the majority of the exceedances the result of boiler startup/shutdown or malfunction. D. Allen said that a "purge air heater" was installed in the fall 2013 after the February 2013 COMs failure from the exposure to extremely cold temperatures. This installment should prevent COMs failure in the event of subzero ambient temperatures.

A. Berg, at the previous inspection, explained that the COMS samples and analyzes every 2-3 seconds and then averages this data every 6 minutes. Daily zero and span checks are conducted and the records are stored in a data logger. A. Berg showed me the electronic records for the checks. Span checks are conducted throughout the night and the results are checked in the morning to determine if the calibration passed or not. He also said that a cabinet is kept with parts for routine repairs on the COM system, and an electronic list of all the parts is kept.

LBWL has met all requirements for operating and maintaining the COMS system at this time.

Conditions in the ROP also require various parameters and data be recorded on a daily basis. The following are examples of how the LBWL is meeting those requirements:

LBWL is required to keep daily records of the amount and type of coal combusted. S. Pemberton provided me with the requested data for March 2016 – June 2016 (I condensed the daily usages into monthly quantities), as required under Monitoring/Recordkeeping condition 9 (all coal burned is sub-bituminous):

| Month, 2016 | Coal burned (tons) |
|---|---|
| March | 34,273 |
| April | 50,469 |
| May | 50,551 |
| June | 53,218 |

Monitoring/Recordkeeping special condition 10 requires coal analysis records be kept and include the following data, which S. Pemberton provided for the past 3 deliveries of coal (July 16, July19, July 23, 2016). The permit

requires that records for each delivery of coal be kept and that wt% ash, sulfur, and moisture, and BTU/lb be reported.

| Date | Wt% Ash (dry) | Wt% sulfur (dry) | Wt% moisture | BTU/lb (wet) |
|---|---|---|---|---|
| 7/16/16 | 6.15 | 0.27 | 26 | 9035 |
| 7/19/16 | 6.48 | 0.31 | 26 | 9087 |
| 7/23/16 | 7.12 | 0.40 | 25 | 9044 |

The ROP also limits the amount of ash content in the coal to 14% (under *Material Limits*). The 3 shipments of coal that were shipped to the Erickson Station on 7/16/16, 7/19/16, and 7/23/16 from the Thunder Basin Coal Company (see attachment) contain coal analysis for the ash content (dry) (as seen in the table above). Maximum ash content was 7.12%.

The 24-hour average SO2 emission rate is required to be determined in order to determine compliance with the SO2 emission limits for both fuel oil (1.11 lb/MMBTU heat input) and coal combusted (1.67 lb/MMBTU heat input). S. Pemberton provided me with the SO2 CEMS data for January 2016 – June 2016. The highest 24-hour SO2 emission was 0.542 lb/MMBtu. S. Pemberton said that oil and coal are burned simultaneously when there is a megawatt load change. CEMS records SO2 from both fuel sources, therefore as long as the data does not exceed the lower limit of 1.11 lb SO2/MMBtu, LBWL is in compliance with both 24-hr avg emission limits. If there were exceedances of this limit, then LBWL would have to show compliance with both the oil SO2 limit and coal SO2 limit by conducting the required calculations in Appendices 7.1 and 7.2 of the ROP.

LBWL Erickson is in compliance with the material limits at this time.

*Other Requirements*
S. Pemberton provided me with LBWL Erickson's Malfunction Abatement Plan for particulate emissions in the ROP Renewal Application. The current version is August 2014. There has been no need to submit a Quality Improvement Plan to AQD because total hours of excursions in any given 6-month period have not exceeded 12 hours.

The LBWL maintains a copy of their Fugitive Dust Management Plan; revisions have been made to the plan in March 2015, to make updates that are consistent with CAM regulations.

As required under the Utility MACT, 40 CFR Part 63, Subpart UUUUU, a carbon absorption system has been installed to remove mercury from the boiler's exhaust stream. The RATA for Hg was conducted the first week of August 2016. M. Nelson explained that there are 4 injection ports for each ESP where the carbon is injected prior to the gas stream entering the ESP. The gas flow on the stack determines how much carbon is added to the system, but on average, 76 lbs of carbon is used per hour. Tests are run every week on the sorbent traps containing the mercury-laden carbon to determine mercury collection/control.

**EUAUXBLR – Cleaver-Brooks Auxiliary Boiler**
The auxiliary boiler is used to supply the plant heat when EU001 is not operating. The unit is ignited with liquefied petroleum gasoline (LPG), but can also run on fuel oil (see attachment for photo of unit).

*Process/Operational Restrictions*
The current EUAUXBLR conditions (under "limited use" boiler, PTI 71-15, which was rolled into the ROP) no longer requires the fuel analysis be conducted on every delivery of fuel. In its place, LBWL is only required to show MSDS documentation that the fuel is "ultra-low sulfur diesel." The ROP requires that the maximum sulfur content in the liquid fuel shall not exceed 1 wt%. S. Pemberton provided me with the specifications sheet for ultra -low sulfur diesel (see attachment). Wt% of sulfur according to the analysis is 15 ppm or 0.0015%.

A tune-up is required on the boiler every 5 years. The next tune-up will be required by January 31, 2021. I will include an additional activity report on the procedures (63.7540(a)(10)(i) through (vi)) that have been conducted to meet the initial tune-up, which was required by no later than 1/31/16. This will also include whether the other boiler MACT requirements have been met (including recordkeeping and reporting). I reminded S. Pemberton in an email dated 7/22/16 that the annual compliance report submitted via CEDRI is due every 5 years and that I believed the first compliance report should be submitted by September 15, 2021 for January 31, 2016 – June 30,

2021. After this period, the report should be electronically submitted every 5 years by the 5th year's September 15 deadline.

M. Nelson said that Dean Boiler is contracted to come in and perform maintenance, tune-ups, and inspections on the auxiliary boiler. The last inspection by Dean Boiler was 10/6/15.

The auxiliary boiler is limited to 18,327,672,000 BTU/calendar year. S. Pemberton provided me with the monthly fuel use records for both LPG and fuel oil for the 2015 calendar year and well as the 2016 calendar year up through July and the actual heat input to EUAUXBLR for each calendar month, as requested. The total amount of fuel oil used for 2015 was 15,824 gallons, equating to an annual heat input of 3,575,000 MMBtu using a factor of 0.138 MMBtu/gal. The total amount of fuel oil used in 2016 (through July) was 2910 gallons, equating to an annual heat input of 401,580 Btu. The limit is 18,327,672,000 BTU per calendar year. LBWL is in compliance with their material limits and recordkeeping at this time. One deficiency that compliance will be determined for in the future is whether the records truly encapsulate the usage and MMBTU input from LP gas. Both sets of records show a consistent usage of LPG per month, even during the months where the boiler wasn't operated. This may be a recordkeeping deficiency. I will provide a follow-up report on this to determine further compliance once additional clarification on these records has been received from S. Pemberton.( LPG calculations are determined by multiplying usage in gallons by 0.092 MMBtu/gal).

**EUFPENGINE – John Deere CI Clark Fire Pump Emergency Engine**
The fire pump engine is exempt from obtaining a Permit to Install per Exemption Rule 285(g).

D. Klemish and M. Nelson said that this unit is only used in instances where there is a fire; however, at one time it was used for pumping water to clean off coal equipment. The fuel oil that is used for the aux boiler and for the EU001 boiler is also the fuel oil that is used in this unit, and is an ultra-low sulfur diesel with a cetane index of 40 mins. This meets the material limits for this unit.

This engine is allowed to be run for emergency operation, maintenance and readiness testing, and non-emergency situations not exceeding 50 hours per calendar year. The condition that allows them to operate for emergency demand response and for periods with voltage and frequency deviations have been vacated from NSPS IIII, as of May 1, 2015.

A non-resettable hours meter has been installed on the unit. S. Pemberton provided me with the "Erickson Fire Pump Engine Maintenance Record" where all engine operations are recorded. The majority of the operational hours were conducted for weekly testing on the engine (maintenance/readiness testing). Records were provided from 7/26/15 – 7/24/16.

LBWL is allowed 100 hours per calendar year for maintenance and readiness testing. Although there is not a full calendar year's worth of data, the data that is present suggests that LBWL would meet this requirement. From January – July 24, 2016, the engine operated 15.8 hours total, which is well below the 100-hour limit. LBWL is in compliance with the engine's operational restrictions at this time.

Attached to this report is a copy of the engine's manufacturer's operating and maintenance instructions.

**EUCOLDCLEANER**
The Erickson Station currently has 1 cold cleaner in their maintenance room that was installed in 1998, S. Pemberton provided me with the SDS of the Crystal Clean solvent, attached. The cover was closed, is not a heated unit, and is approximately 7.5 square feet of surface area. I gave D. Allen the DEQ AQD orange cold cleaner stickers containing operating procedures to place near the unit at the 2015 inspection. This unit is exempt from a permit to install per Rule 281(h) because the air/vapor interface is less than 10 $ft^2$. The reid vapor pressure for the mineral spirits (CAS 64742-47-8) is less than 0.1 psia at 38°C/100°F, which means that a mechanically-assisted cover is not required because the reid vapor pressure (based on another SDS found on the internet for this compound, also attached) is less than 0.3 psia and is not heated. LBWL Erickson is in compliance with Part 7 Rules for New Cold Cleaners.

**Compliance Statement:**
Currently the LBWL Erickson Station is in non-compliance with MI-ROP-B4001-2015 at this time. A violation notice will be sent that encompasses violations found in FGASHANDLING.

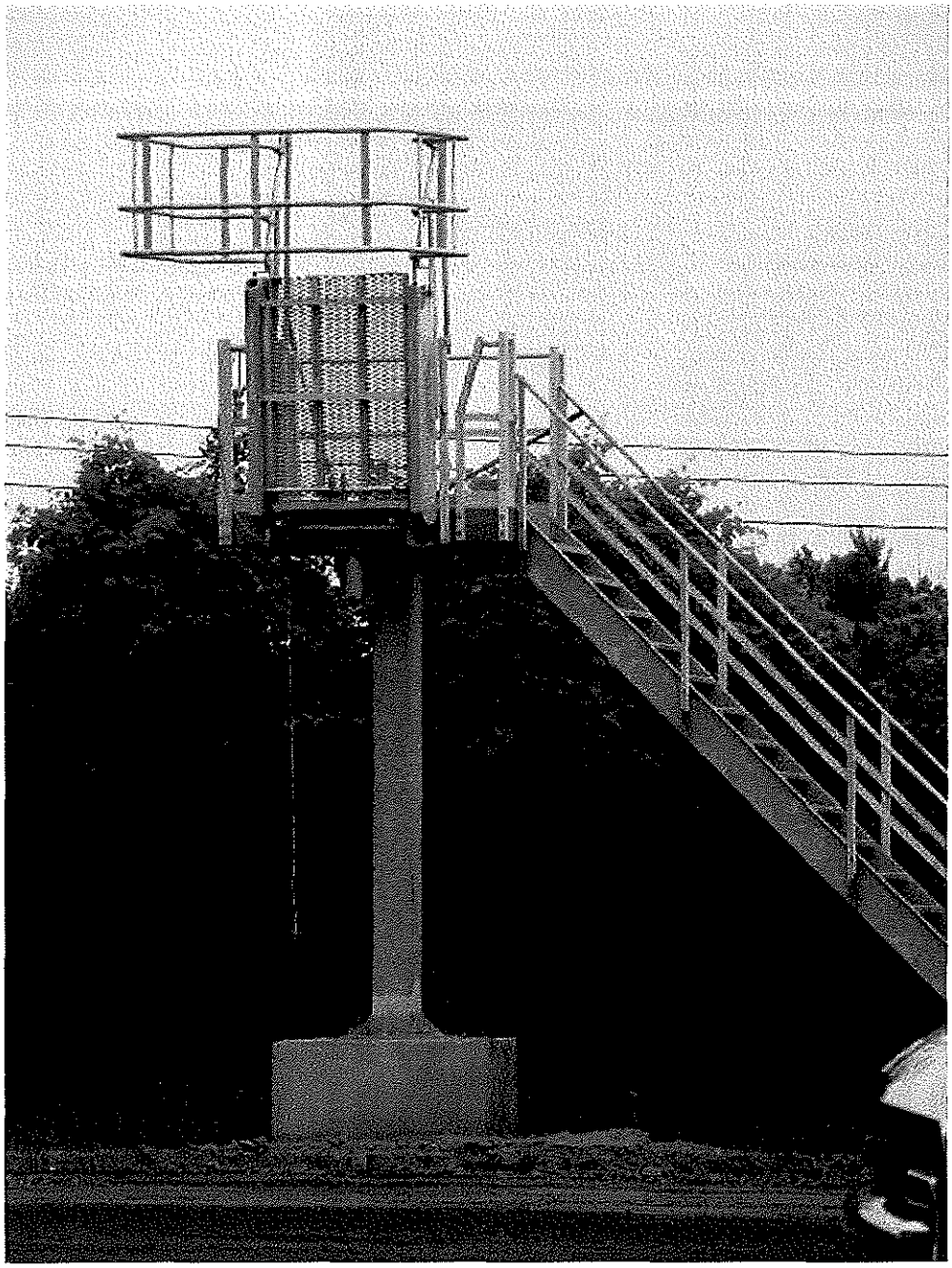

**Image 1(FGASHHANDLING) :** Platform where loaded trucks park for truck driver to shut the "lids" where flyash is loaded into truck.

**Image 2(FGASHHANDLING) :** Fly ash loadout chute with new seals

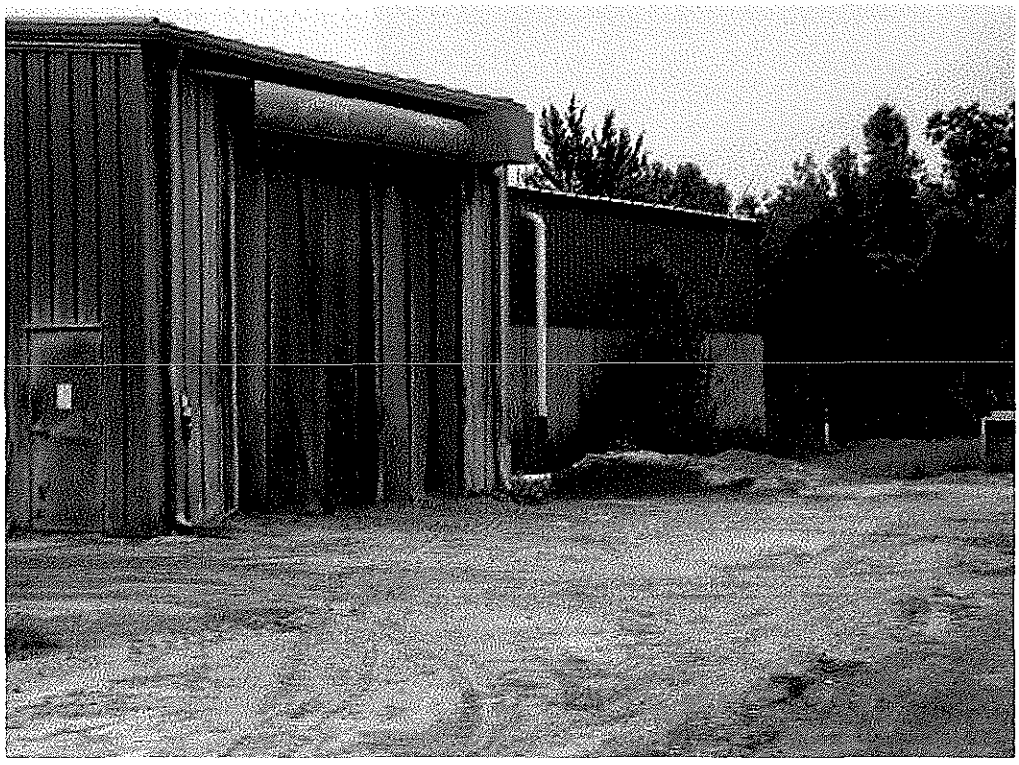

**Image 3(FGASHHANDLING) :** Repaired door with new seals, door rollers, new door. Front end loaders enter mass storage building through this entrance.

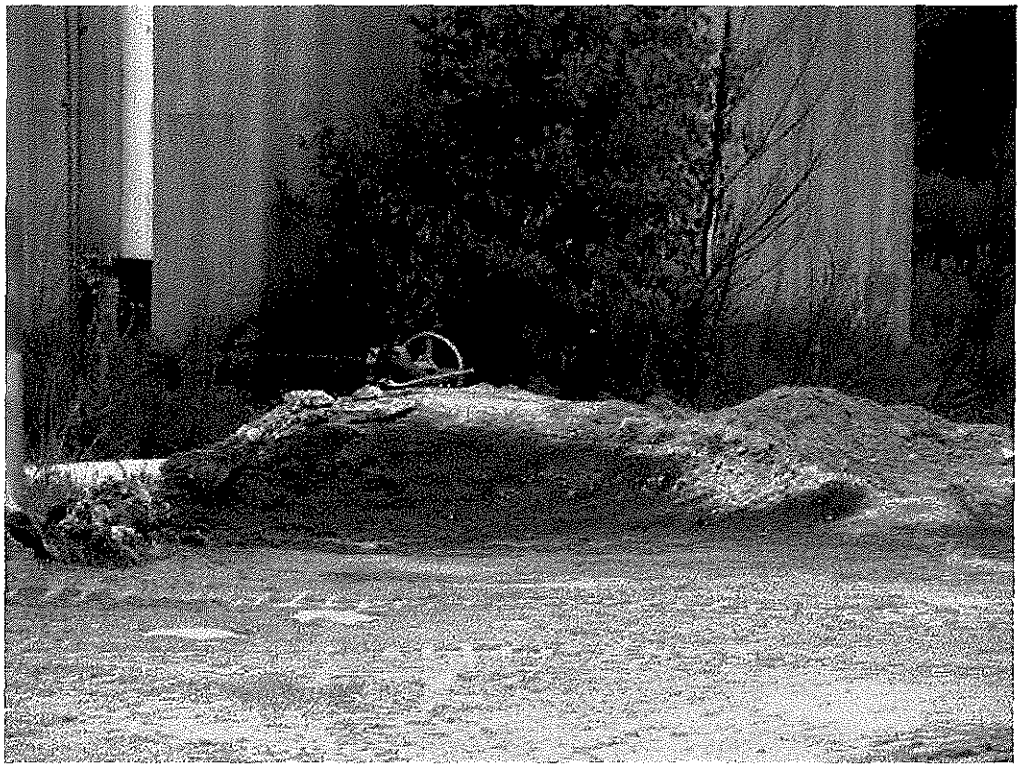

**Image 4(FGASHHANDLING) :** Fly ash pile being stored just outside the mass storage building.

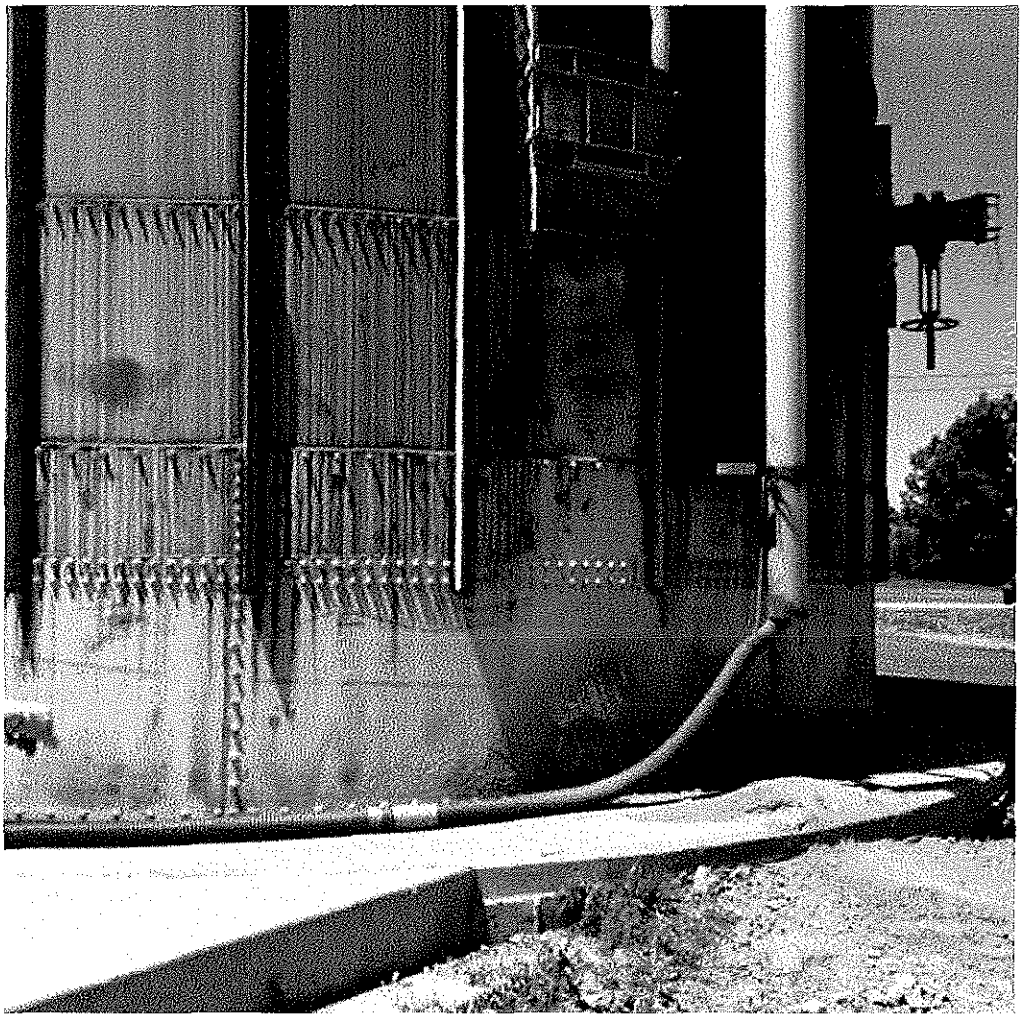

**Image 5(FGASHHANDLING) :** Storage silo with ventilation piping. Appears to be "leaking" fly ash onto cement pad.

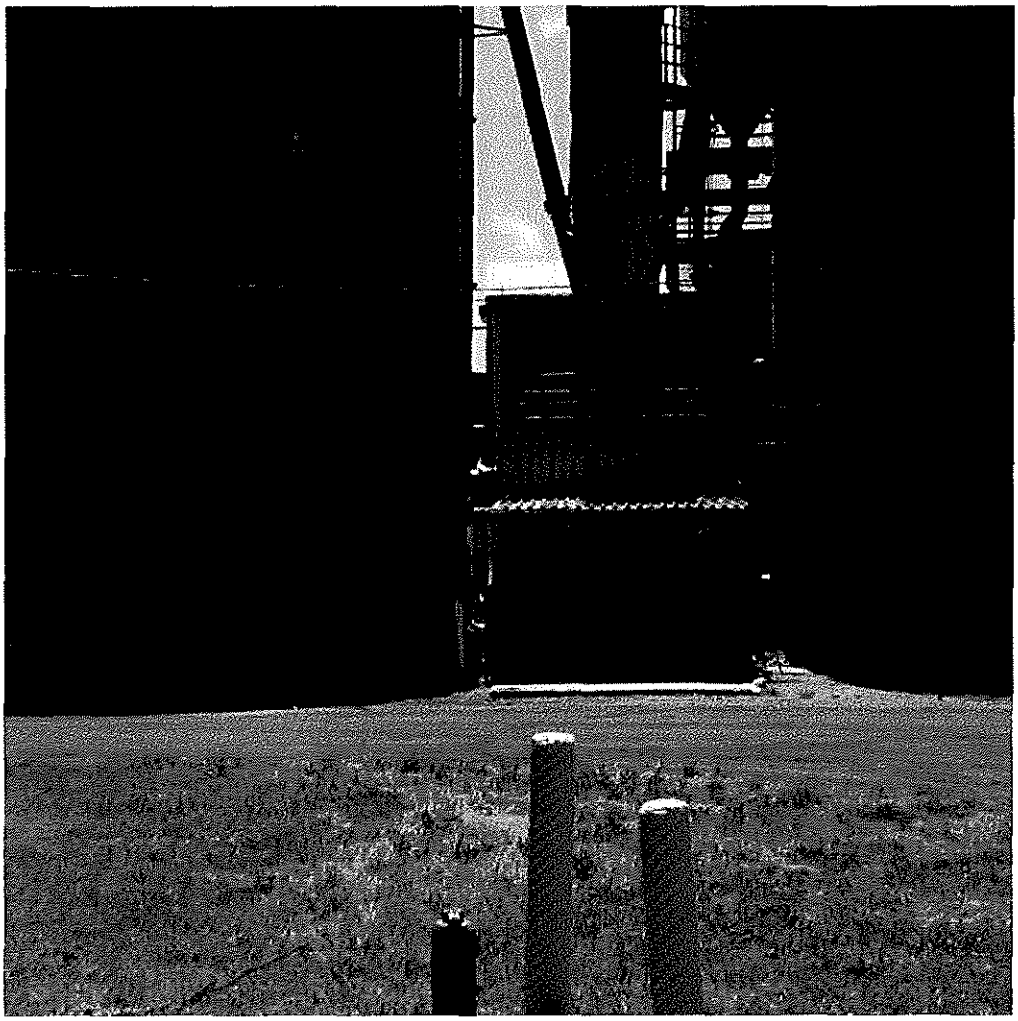

**Image 6(FGASHHANDLING) :** Loadout silo baghouse exhaust without opacity

**Image 7(FGASHHANDLING) :** Trees planted between ash handling facility and coal pile to provide windbreak

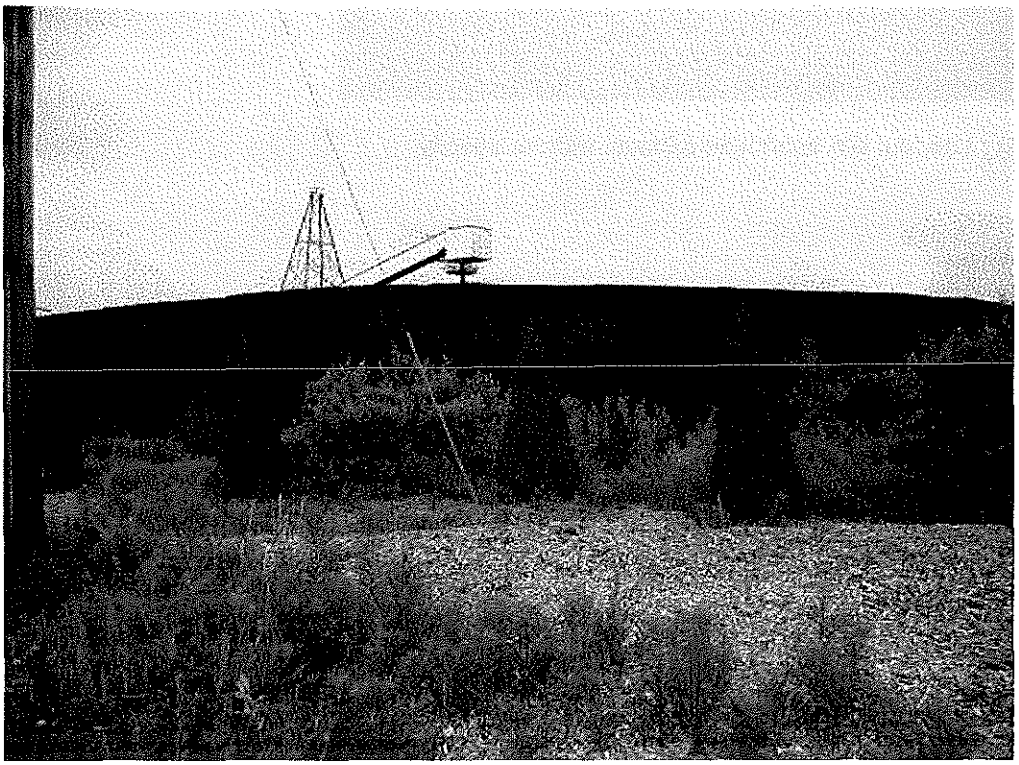

**Image 8(EU001) :** Coal berm

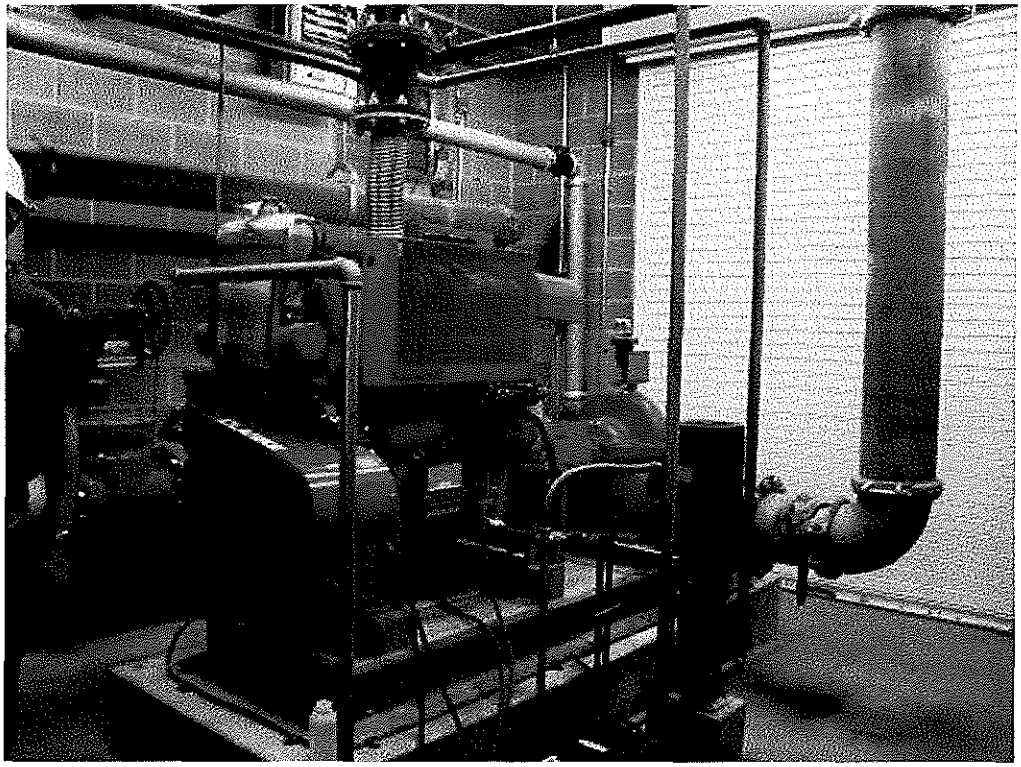

**Image 9(EUFPENGINE) :** Fire Pump Engine

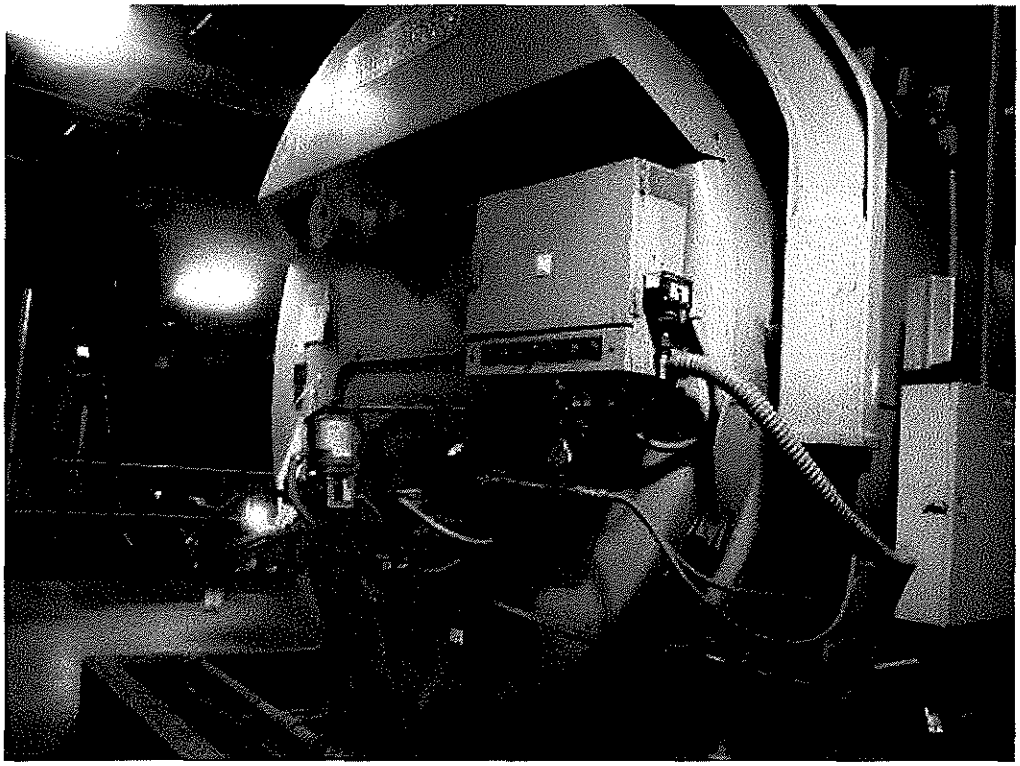

**Image 10(EUAUXBLR) :** Auxiliary Boiler

NAME Megan Lyskey DATE 8/12/16 SUPERVISOR Peer - Julie P.
Kristen Brown