

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

B182738937

FACILITY: EMPIRE IRON MINING PARTNERSHIP		SRN / ID: B1827
LOCATION: EMPIRE MINE RD, ISHPEMING		DISTRICT: Upper Peninsula
CITY: ISHPEMING		COUNTY: MARQUETTE
CONTACT: THOMAS W O'BRIEN , ENVIRONMENTAL ENGINEER		ACTIVITY DATE: 03/15/2017
STAFF: Ed Lancaster	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Conducted compliance inspection/file review.		
RESOLVED COMPLAINTS:		

Directions: Empire Mining Partnership (Empire) is located adjacent to the Village of Palmer, in Marquette County, west of M-35, at 101 Empire Mine Road.

Facility: Empire operates an open-pit, iron ore mine to produce magnetite iron ore pellets. August 3, 2016 was the last day of production at the Empire Mine, when the Mine was placed into an "indefinite idle".

Permits: Empire's ROP renewal MI-ROP-B1827-2015 was issued on June 4, 2015. The company requested a minor modification to remove/transfer ownership of EUBOILERS6&7 to Tilden Mine. The modification was approved on November 1, 2016, as MI-ROP-B1827-2015a.

Inspection: On March 15, 2017, I spoke, by phone, with Mr. Tom O'Brien, Cliffs Natural Resources, Environmental Engineer, regarding the annual and semi-annual ROP certifications and MAERS for Empire and Tilden Mines. During our conversation Mr. O'Brien, confirmed that Empire's last day of production was August 3, 2016, and all activity has ceased at the plant, except for possibly a few, remaining piles of finished pellets to be sold and shipped.

As the plant is not currently operating and access is limited, my inspection for this year will be focused on a file review of the facility.

EU-UNIT2-FURNACE:

Special Conditions (SC) I.1 and V.1: Particulate Matter (PM) Emission Limit: 0.15 pounds per 1,000 pounds of exhaust gases. Compliant

On May 15, 2015, Empire conducted PM stack tests to demonstrate compliance with their PM emission limit for EU-UNIT2-FURNACE. The average PM emission rate was 0.0019 pounds per 1,000 pounds of exhaust gases.

SC III.1: Shall not exceed a total heat input rate of 250 million Btu/hour (MMBtu/hr). Compliant

During the May 2015 stack test Furnace 2 was operating at 123 MMBtu/hr.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications.

Reports were received on March 15, 2017 and processed on March 17th.

EU-UNIT3-FURNACE:

Special Conditions (SC) I.1 and 2, and V.1: Nitrogen oxides (NOx) and PM Emission Limits: 1,114 pounds hour, and 0.10 pounds per 1,000 pounds of exhaust gases, respectively. Compliant

Based on review of the Company's 2016 MAERS, the average hourly NOx emissions were 410.8 pounds/hour. The results of the May 14, 2015, PM stack test for EU-UNIT3-FURNACE were 0.0045 pounds per 1,000 pounds of exhaust gases.

SC III.1: Shall not operate Furnace 3 unless the electrostatic precipitator (ESP) is operating properly. Compliant

ESP operational data was recorded during the May 2015 stack test showing proper operation.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications.

Reports were received on March 15, 2017 and processed on March 17th.

EU-UNIT4-FURNACE:

Special Conditions (SC) I.1 and V.1: PM Emission Limit: 0.10 pounds per 1,000 pounds of exhaust gases. Compliant

On May 13, 2015, Empire conducted PM stack tests to demonstrate compliance with their PM emission limit for EU-UNIT4-FURNACE. The average PM emission rate was 0.0043 pounds per 1,000 pounds of exhaust gases.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications.

Reports were received on March 15, 2017 and processed on March 17th.

SC VII.4: Submit summary report within 60 days of each ozone control period. Compliant.

On October 28, 2016, AQD received Empire's summary report showing a 36% NOx emissions reduction, from baseline, during the 2016 Ozone Season.

FG-MATERIAL HANDLING:

Special Conditions (SC) I.1 and V.1: Particulate Matter (PM) Emission Limit: 0.10 pounds per 1,000 pounds of exhaust gases. Compliant

On January 24, 2012, Empire conducted PM stack tests to demonstrate compliance with their PM emission limit for FG-MATERIAL HANDLING on Unit 2 Discharge Scrubber #6 (SV-UNIT2COOLER). The average PM emission rate reported was 0.00092 grains/dscf which converts to 6.9×10^{-6} pounds per 1,000 pounds of exhaust gases.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications.

Reports were received on March 15, 2017 and processed on March 17th.

FG-FURNACES:

Special Conditions (SC) I.1 and 2: Sulfur dioxide (SO₂) Emission Limit: 19,200 pounds per calendar day from each furnace, and 28,704 pounds per calendar day from all furnaces combined. Compliant

On May 13-15, 2015, Empire conducted SO₂ stack tests to demonstrate compliance with their SO₂ emission limits for FG-FURNACES. The average SO₂ emission rates for FURNACE2, 3, and 4 were 340.8, 247.2, and 477.6 pounds of SO₂ per calendar day, respectively. Empire's 2016 MAERS show the calendar averages of 500.8, 491.1, and 2,846.8 pounds per day, and a calendar day total average of 3,838.7 pounds of SO₂ per day.

SC III.1: Shall not operate FG-FURNACES unless the ESPs are operating properly. Compliant

ESP operational data was recorded during the May 2015 stack test showing proper operation.

SC VI.1 and 2: Obtain and keep records of the sulfur content of the coal, petroleum coke, and fuel oil burned in FG-FURNACES. Compliant

All of the furnaces were fired on 100% natural gas for the reporting year 2016.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications. Compliant

Reports were received on March 15, 2017 and processed on March 17th.

SC VII.4: Any sulfur dioxide emissions in excess of limitations specified in this table shall be reported to the AQD District Supervisor within 15 days after the end of the calendar month. Compliant.

As reported above, each furnace was in compliance with its individual SO₂ emission limit and combined daily limit.

FG-BOILERS1-3:

SC II.1: Shall burn only natural gas or fuel oil in FG-BOILERS1-3. Compliant

BOILERS1-3 consumed 60 MMCF of natural gas in 2016.

SC II.2 and VI.1: Fuel oil shall not exceed sulfur content of 1.5 percent by weight. Compliant

No fuel oil was burned in BOILERS1-3 in 2016.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications. Compliant

Reports were received on March 15, 2017 and processed on March 17th.

SC IX.1: Comply with the applicable requirements of 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. Compliant

FG-BOILERS4-5:

SC II.1: Shall burn only natural gas or fuel oil in FG-BOILERS4-5. Compliant

BOILERS4-5 consumed 63 MMCF of natural gas in 2016.

SC II.2 and VI.1: Fuel oil shall not exceed sulfur content of 1.5 percent by weight. Compliant

No fuel oil was burned in BOILERS4-5 in 2016.

SC VII.1-3: Prompt reporting of deviations and semiannual and annual compliance certifications. Compliant

Reports were received on March 15, 2017 and processed on March 17th.

SC IX.1: Comply with the applicable requirements of 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. Compliant

FG-TACONITEMACT:

SC I.1 and V.1: PM Emission Limit: 0.010 grains per dry standard cubic foot (dscf) for Furnaces 2, 3, and 4. Compliant

The PM emissions established during the May 2015 stack tests were 0.0010 grains per dry standard cubic foot for Unit 2, 0.0024 grains for Unit 3, and 0.0023 grains for Unit 4.

SC I.2 and 3 and V.2 and 3: The PM emissions for the Ore Crushing and Handling emission units (SC I.2) and the Finished Pellet Handling emission units (SC I.3) have not been established per testing as required in SC Nos. V. 2 and 3.

SC Nos. III, VI and IX: I was unable to observe the performance of the control equipment as outlined in SC Nos. III, and VI, due to the facility entering the "Indefinite Idle" in August 2016.

After careful review of Empire's required reporting and recordkeeping the facility appears to be in compliance with their ROP and the applicable requirements of 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters and National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing.

NAME

Ed Lancaster

DATE

3/24/17

SUPERVISOR

[Signature]