

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

N788833580

FACILITY: ALLOY RESOURCE CORPORATION		SRN / ID: N7888
LOCATION: 2281 PORT CITY BLVD, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Dennis Flanagan , VP/General Manager		ACTIVITY DATE: 02/01/2016
STAFF: Eric Grinstern	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Compliance Inspection		
RESOLVED COMPLAINTS:		

FACILITY DESCRIPTION

The facility is a secondary aluminum processor. The facility receives various forms of aluminum scrap which it processes through a reverberatory furnace from which sows are poured which can be used at Port City facilities or sold to outside entities.

REGULATORY ANALYSIS

The facility holds one PTI (No. 340-07C) that covers one existing 80k aluminum reverberatory furnace, one 50k aluminum reverberatory furnace and one zinc pot furnace. The zinc pot furnace has been removed from the facility. The facility was issued PTI 340-07C on January 30, 2015, replacing PTI 340-07B, which was issued on January 10, 2013. PTI No. 340-07C deleted mention of the rotary furnace that the facility installed but removed due to design issues. The facility has since submitted a permit application for a new rotary furnace. The application was subsequently withdrawn do to the need for additional information, and failed emissions testing conducted at the facility in September 2015. AQD has since received (February 5, 2016) a new PTI for the installation of a rotary furnace.

The 80k aluminum furnace is permitted as being subject to 40 CFR Part 63 Subpart RRR, Secondary Aluminum Production NESHAP.

The facility operates under an active consent order (AQD No. 31-2015) which was signed on October 27, 2015. The CO addressed violations associated with Subpart RRR and PTI requirements. The CO contains a SEP for the installation and operation of a baghouse carbon injection system. The facility did not operate the carbon injection system during the failed stack testing in September 2015. The facility was operating the carbon injection system as part of the testing conducted during this inspection.

At the time of this inspection the facility was in the process of retesting to demonstrate compliance with Subpart RRR and the requirements of PTI No. 340-07C. The facility was only operating the 80k reverberatory furnace during the testing.

COMPLIANCE EVALUATION

Facility compliance was evaluated during the compliance testing. Onsite during the inspection was Dennis Flannigan, VP/GM, Jerry Garman, EHS Coordinator, Hal Grant, PACE, Director of EHS, Tony Trask, ARC Operations Manager, and Bruce Bergeson, Bergeson Technology Services.

Below is an evaluation of the compliance requirements addressed as part of this inspection, based upon Permit to Install No. No. 340-07C and applicable NESHAP requirements.

EUALREVERB

EUALREVERB addresses the one 80k reverberatory furnace.

Emission/Material Limits

Emissions of PM, PM10, PM 2.5, HCL, HF, Cl, and D/F are restricted under EUALREVERB. Compliance with the emissions limits is demonstrated through compliance testing, throughput limitations and baghouse monitoring.

The facility conducted compliance testing on January 14-16, 2015. Results received on March 31, 2015 demonstrated compliance with the emission limits. The facility conducted compliance testing on September 23-24, 2015, to establish expanded operating limits. The test results showed exceedances of the emission limits for PM2.5, PM10 and D/F. A violation was issued in response to the failed testing. The facility reverted back to operating under the parameters established during the testing conducted in January 2015.

Flux Limits

Material throughput for chlorine flux injection rate, reactive flux usage and ammonia is limited within the permit. The facility is required to maintain records to demonstrate compliance with the throughput limits. The facility has reported that they have found it unnecessary to use ammonia. Facility records were requested subsequent to the inspection and provided by Bruce Bergeson on February 25, 2016.

The chlorine flux injection rate is determined by the amount of chlorine gas injected. The injection rate was limited to 20lb. /ton of aluminum charge in PTI No. 340-07C until a rate is established during stack testing, which is not to exceed the 20lb. /ton.

Staff calculated the flux injection rate to be 11.92 lb. /ton of aluminum during the three stack test runs conducted in January 2015, during which D/F and HCL were sampled. The facility however established the operating limit based on the 20lb. /ton and the amount of aluminum processed during stack testing. Review of chlorine gas injection records showed that the 11.92 lb. /ton limit was exceeded on 70 occasions from May 2015 through December 2015.

Evaluation of the facility records showed that they also exceeded the 20 lb. /ton limit on 31 occasions between May 2015 and December 2015.

The reactive flux usage rate is associated with the amount of solid flux used. The permit limits 360 pounds per hour until a rate is established during stack testing, which is not to exceed the 360 pound per hour limit.

Staff calculated the solid flux usage rate to be 118.86 pounds per hour or 34.26 pounds per ton of aluminum feed, based on the three stack test runs conducted in January 2015, during which D/F and HCL were sampled. The facility however established the operating limit based only on Run No. 1. Run No. 1 had the highest amount of flux usage out of the three runs, resulting in the facility establishing a flux usage limit of 190 pounds per hour and 4500 pounds per day.

Review of solid flux usage records showed that the 118.86 pounds per hour limit was exceeded on 134 occasions from May 2015 through December 2015.

Evaluation of the facility records showed that they also exceeded the erroneously established 190 pounds per hour limit on 62 occasions between May 2015 and December 2015.

Testing/Sampling

The permit requires testing to demonstrate compliance with the state established emission limits within 90 days of permit issuance. The facility conducted testing on January 14-16, 2015, September 23-24, 2015 and on February 1-2, 2016.

Monitoring/Recordkeeping

The facility is required to maintain records of the following:

Hours of operation
Hourly melt/throughput rate
Aluminum charge rate
Types of material charged
Flux charge rates
Chlorine injection rate

The facility provided requested copies of the above records.

EUUTILITIES

Restricts natural gas-fired space heaters to not exceed 10 MMBtu/hour.

Staff did not observe any natural gas space heaters that appeared to exceed 10 MMBtu/hour.

FGFURANCES

Flex group includes EUALREVERB, EUZINC30, AND EUREVERB50.

Emission/Material Limits

Emissions of PM, PM10, PM 2.5, HCL, HF, Cl, and D/F are restricted under FGFURANCES. Compliance with the emissions limits is demonstrated through compliance testing, throughput limitations and baghouse monitoring.

The facility conducted compliance testing on January 14-16, 2015. Results received on March 31, 2015 demonstrated compliance with the emission limits. The facility conducted compliance testing on September 23-24, 2015, to establish expanded operating limits. The test results showed exceedances of the emission limits for PM2.5, PM10 and D/F. A violation was issued in response to the failed testing. The facility reverted back operating under the parameters established during the testing conducted in January 2015

Material throughput for aluminum melt, chlorine gas flux, and ammonia is limited within the permit. The facility is required to maintain records to demonstrate compliance with the throughput limits.

The permit established combined aluminum melt limit is 12,000 pound per hour. The facility established melt rate limit for EUALREVERB is 6,500 pounds per hour. This limit is based on the average charge rate during testing.

Review of facility records showed that the 12,000 pound per hour limit was exceeded on one occasion between May 2015 through December 2015. The 6,500 pound per hour limit for EUALREVERB was exceeded on 21 occasions between May 2015 and December 2015.

Process/Operational Restrictions/Design Parameters

Requires the facility to install and operate an automatic lime injection system on the baghouse. Requires a lime feed rate equal to or greater than necessary to achieve the hydrogen chloride emission limit as determined during stack testing.

Stack testing conducted in January 2015, during which HCL was sampled (Runs No. 1, 2 and 3 had a lime injection rate of 49.42 pounds per hour. The facility however based the lime injection rate on the amount used during test Runs No. 4, 5, and 6 when HCL was not being sampled.

Review of lime usage records showed that the 49.42 pounds per hour minimum was not

met on 152 occasions from May 2015 through December 2015.

Evaluation of the facility records showed that they also did not meet the erroneously established 22 pounds per hour minimum on 22 occasions between May 2015 and December 2015.

Monitoring/Recordkeeping

The facility is required to install and maintain a device to monitor pressure drop across the baghouse. The facility continuously monitors the pressure drop across the baghouse.

The facility is required to maintain daily records of the following:

Hours of operation
Hourly melt/throughput rate
Aluminum charge rate
Types of material charged
Flux charge rates
Chlorine injection rate

The facility provided requested copies of the above records.

FGMACT-RRR

Emission/Material Limits

Subpart RRR limits Dioxin/Furan emissions. Compliance testing was performed on January 14-16, 2015, at which time compliance was demonstrated. The facility conducted compliance testing on September 23-24, 2015, to establish expanded operating limits. The test results showed that they exceeded the emission limit for D/F. A violation was issued in response to the failed testing. The facility reverted back operating under the parameters established during the testing conducted in January 2015

Process/Operational Restrictions/Design Parameters/Records

Subpart RRR requires capture and collection systems meet specified standards. When the system was originally installed, the facility provided documentation of compliance with proper capture and collection standards. The facility is required to inspect the capture/collections and closed vent system at least once each calendar year in accordance with 40 CFR 63.1506(c). The facility conducted a capture and collection system evaluation in April 2015.

The facility has installed all required monitoring systems including:

Bagleak detection system
Baghouse inlet temperature monitor
Flux usage monitoring
Lime injection rate monitor

Baghouse inlet temperature: The facility reported 10 exceedances in 2015 of the 3-hour baghouse temperature limit. The facility reported that they applied proper SSM procedures during all but one of the exceedances.

Lime injection rate monitor: Review of the facility alarm report indicates that a vast majority of lime related alarms were "false alarms".

Bagleak detection system: Review of the facility alarm reports for the baghouse leak detection system shows that all alarms appeared to be associated with "false alarms".

As previously discussed in this report, the facility erroneously established maximum flux usage rates

and minimum lime injection rates. The resulting exceedance of flux usage and lime usage below the proper amount are violations of Subpart RRR.

FGFACILITY

FGFACILITY establishes opt-out limits for HAPs and requires records documenting compliance with the emission limits.

The facility provided emission records that appeared to demonstrate compliance.

Summary

Below is a summary of documented violations:

Lime Injection Requirements –

Permit Requirements:

NSR PTI No. 340-07C, FGFURNACES IV.2

2. The permittee shall not operate FGFURNACES unless the automatic lime injection system associated with the baghouse is installed, operating and maintained in accordance with manufacturer's instructions and in accordance with the approved System Startup, Shutdown, and Malfunction Plan. Proper operation includes operation of the lime injection system such that the lime feed rate is equal to or greater than necessary to achieve the hydrogen chloride emission limit specified in SC I.5, as determined during stack testing.
(R 336.1205(3), R 336.1224, R 336.1225)

NSR PTI No. 340-07C, EUALREVERB V.2

2. Within 90 days of initial startup, verification of the required lime and ammonia injection rates to meet the emission limits as specified in SC I.4-I.7 from EUALREVERB, by testing at owner's expense, in accordance with Department requirements will be required. Not less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R 336.1205, R 336.1331, R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21 (c) & (d))

Subpart RRR Requirements:

§63.1506 Operating requirements

(m) *Group 1 furnace with add-on air pollution control devices.* The owner or operator of a group 1 furnace with emissions controlled by a lime-injected fabric filter must:

(4) For a continuous lime injection system, maintain free-flowing lime in the hopper to the feed device at all times and maintain the lime feeder setting at or above the level established during the performance test.

HCL and D/F testing conducted during Runs #1-#3 during January 2015 testing.

Average lime rate: 49.42 lb. /hr.

Facility established lime injection rate (22 lb. /hr.) based on Runs #4-#6, when D/F and HCL were not being tested.

(September 2015 testing: 40 lb. /hr.)
 (January 2016 testing: 37.7 lb. /hr.)

Month (2015) Days below 49.42 lb. / hr.

May	22
June	19
July	10
August	24
September	20
October	24 (3)
November	20 (20)
<u>December</u>	<u>13 (13)</u>
	152 (36)

Flux Usage Rate –

Permit Requirements:

NSR PTI No. 340-07C, EUALREVERB II.4

- The permittee shall comply with the flux usage limits as specified in SC II.1 and II.2 until the stack test as required by 40 CFR Part 63 Subpart RRR has been completed. After the stack test has been completed the permittee shall comply with the flux usage that was established during the test, which shall not be greater than the flux limits specified in SC II.1 and II.2. (R 336.1225, R 336.1331, 40 CFR 63 Subpart RRR)

Subpart RRR Requirements:

§63.1506 Operating requirements

(m) *Group 1 furnace with add-on air pollution control devices.* The owner or operator of a group 1 furnace with emissions controlled by a lime-injected fabric filter must:

(5) Maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the performance test.

HCL and D/F testing conducted during Runs #1-#3 during January 2015 testing.

Facility established Cl gas usage 20 lb. /ton based on permit, not Runs #1-#3
Facility based solid flux rate on Run #1 alone.

Runs #1-#3

Average Cl gas usage rate: 11.92 lb. / ton Al
 Average Solid flux usage: 34.26 lb. / ton AL

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<u>Month (2015)</u>	<u>Gas above</u>	<u>Solid above (days)</u>
May	19	20
June	15	15
July	0	11
August	2	22
September	8	18
October	3 (2)	20 (3)
November	14 (14)	15 (15)
December	9 (9)	13 (13)
	70 (25)	134 (31)

Aluminum Charge Limit –

The 12,000 pound per hour limit was exceeded on one occasion between May 2015 through December 2015. The 6,500 pound per hour limit for EUALREVERB was exceeded on 21 occasions between May 2015 and December 2015.

Compliance summary – facility established operating parameters:

Facility established solid flux limit as 2.6 % of charge, 190 lbs. / hr. and 4500 lbs. /day.

<u>Month (2015)</u>	<u>Above 2.6%</u>	<u>Above lb. /hr.</u>	<u>Above lb. /day</u>
May	19	5	5
June	10	5	2
July	8	2	1
August	21	10	7
September	17	11	8
October	19 (3)	18 (3)	16 (2)
November	11 (11)	6 (6)	5 (5)
December	10 (10)	5 (5)	5 (5)
	115 (24)	62 (14)	49 (12)

Facility established Cl₂ gas injection rate 20 lb. / ton from PTI

<u>Month (2015)</u>	<u>Above 20 lb. / ton</u>
May	14
June	8
July	0
August	0
September	4
October	1(1)
November	4 (4)
December	0 (0)
	31 (5)

Facility established lime injection rate 22 lb. /hr.

<u>Month (2015)</u>	<u>Below 22 lb. / hr.</u>
May	6

June	9
July	1
August	0
September	0
October	0
November	4 (4)
December	2 (2)
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	22 (6)

The facility will be issued a violation notice for the above listed violations.

NAME  DATE 3/22/16 SUPERVISOR PAB