

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

N295430970

FACILITY: Cargill Salt - Hersey		SRN / ID: N2954
LOCATION: 1395 135th Ave, HERSEY		DISTRICT: Cadillac
CITY: HERSEY		COUNTY: OSCEOLA
CONTACT: Karl J. Tomaszewski , Facility Manager		ACTIVITY DATE: 08/25/2015
STAFF: Rob Dickman	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection of this ROP source.		
RESOLVED COMPLAINTS:		

Inspected this source as per ROP number MI-ROP-N2954-2014b which was issued in September 2014 and revised September 2014 and March 2015. Prior to entering the facility property, it was noted at two separate observation points that there were no significant fugitive emissions from any point at the facility. Winds at the time of the inspection were out of the west at about 10 mph and it was raining.

On previous inspections, I was able to obtain electronic copies of records to review and provide examples in the inspection report. The current owners, Cargill, preferred to have the last 12 months of records reviewed on site. The records, as a whole were available upon request and appeared complete and accurate. A sample of how these records are kept is attached to this report. Any unrequired data was removed from them prior to being given to me.

Following are the findings of the inspection by permit condition:

#### SOURCE-WIDE CONDITIONS

##### I. EMISSION LIMIT(S)

Not applicable source wide.

##### II. MATERIAL LIMIT(S)

Not applicable source wide.

##### III. PROCESS/OPERATIONAL RESTRICTION(S)

A Malfunction Abatement Plan (MAP) is required for the facility. This was submitted in August 2003. It has been reviewed annually and amended as needed. The most recent revision was submitted with the ROP Application in 2014.

##### IV. DESIGN/EQUIPMENT PARAMETER(S)

Not applicable source wide.

##### V. TESTING/SAMPLING

Not applicable source wide.

##### VI. MONITORING/RECORDKEEPING

Not applicable source wide.

##### VII. REPORTING

All required deviation reporting for this source has been submitted in a timely manner. See MACES for more detail on this reporting.

#### VIII. STACK/VENT RESTRICTION(S)

Not applicable source wide.

#### IX. OTHER REQUIREMENT(S)

A Malfunction Abatement Plan (MAP) is required for the facility. This was submitted in August 2003. It has been reviewed annually and amended as needed. The most recent revision was submitted with the ROP Application in 2014.

**EUSOLMINING** - This emission unit contains equipment used to strip hydrogen sulfide from the mined sour brine used to make potash and sodium chloride salt. Most of the equipment in this emission unit has been removed from site. The facility currently has an ROP revision submitted to remove this EU from the ROP.

##### I. EMISSION LIMIT(S)

There are no emission limits associated with this EU.

##### II. MATERIAL LIMIT(S)

There are no material limits associated with this EU.

##### III. PROCESS/OPERATIONAL RESTRICTION(S)

The permittee shall not operate EUSOLMINING unless the associated evaporators and storage tanks vent to the caustic scrubber that contains a caustic solution with a minimum of 7 percent, by weight, sodium hydroxide (1.7 Molar), except when bypassing the caustic scrubber due to a non-detectable H<sub>2</sub>S concentration. Testing for this is performed at least weekly and review of records over the last 12 months indicated compliance. An approximate average noted during records review was 18%.

The permittee shall not process sweet brine in EUSOLMINING unless the caustic scrubber is installed, maintained, and operated in a satisfactory manner. The permittee may bypass the caustic scrubber if the H<sub>2</sub>S concentration in the sweet brine is non-detectable. The brine shall be considered sweet when the H<sub>2</sub>S concentration is below 60 parts per million, by volume. There is no time in which the scrubber was bypassed as there is no way of efficiently testing brine to "non detect". This is an error in the permitting that is currently being addressed.

##### IV. DESIGN/EQUIPMENT PARAMETER(S)

There are no equipment restrictions on this EU.

##### V. TESTING/SAMPLING

There are no testing requirements on this EU.

## VI. MONITORING/RECORDKEEPING

The permittee shall monitor and record the sodium hydroxide concentration of the caustic scrubber liquid at a minimum of once per week. Records indicate that this is being performed at least weekly and review of records over the last 12 months indicated compliance.

The permittee shall monitor and record the brine feed H<sub>2</sub>S concentration on a daily basis. Records indicate that this is being performed and the concentration averages 3-4 ppmv.

The permittee shall maintain records indicating the hours of operation while bypassing the caustic scrubber. Records indicate no time in the last 12 months that the scrubber was in bypass

## VII. REPORTING

All required deviation reporting for this source has been submitted in a timely manner. See MACES for more detail on this reporting.

Records indicate the last stack testing performed on this EU was during May of 2013 and the report of this testing was submitted in a timely manner. See MACES for details.

## VIII. STACK/VENT RESTRICTION(S)

Stack parameters at the facility do not appear to have changed and appear correct.

## IX. OTHER REQUIREMENT(S)

The property fence around the perimeter of this facility is required to be in good repair and signed properly.

EUNACLREFINERY This emission unit contains equipment used to refine mined brine to salt.

### I. EMISSION LIMIT(S)

The most recent emissions testing of this equipment was performed in 2013. Continuous compliance with emissions limits is assured through control equipment operation, maintenance, and monitoring. Please see attached Table 1.

### II. MATERIAL LIMIT(S)

The facility is required to use on only pipeline quality natural gas as described in 40 CFR 60 Subpart GG. Records provided by the facility indicate this is the only type of gas used.

### III. PROCESS/OPERATIONAL RESTRICTION(S)

The permittee shall not operate EUNACLREFINERY unless the salt cooler scrubber, the salt compaction scrubber, and the salt dryer scrubber are installed and operating properly. Proper operation includes maintaining scrubber parameters as listed in Section VI. Below.

The permittee shall maintain the sodium chloride storage area with a covering dome to

reduce fugitive particulate emissions. This dome exists and no fugitive emissions from it were noted at the time of the inspection.

The permittee shall maintain the salt cooler scrubber inlet pressure, fan differential pressure, and fan spray nozzle pressure within the normal operating ranges identified in the Source-Wide MAP. Records review at the facility indicates this is being performed.

The permittee shall maintain the salt dryer scrubber inlet pressure, fan differential pressure, and fan spray nozzle pressure within the normal operating ranges identified in the Source-Wide MAP. Records review at the facility indicates this is being performed.

The permittee shall maintain the salt compaction scrubber inlet pressure, fan differential pressure, and fan spray nozzle flow within the normal operating ranges identified in the Source-Wide MAP. Records review at the facility indicates this is being performed.

It was noted during review that there are some typographical errors in the permit regarding monitored parameters, specifically the fan spray nozzles. At the salt cooler and salt dryer scrubbers, the measured parameter should be fan spray nozzle pressure and at the salt compaction scrubber, it should be fan spray nozzle flow. This error was brought to the attention of the facility. They are considering an administrative amendment to the ROP to clarify their requirements.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

The permittee shall install, maintain, and operate the salt cooler scrubber, salt dryer scrubber, and the salt compaction scrubber with an inlet pressure gauge, fan differential pressure gauge, fan spray nozzle pressure gauge and fan spray nozzle flow rate gauge. These gauges were installed and appear to be operating properly.

#### V. TESTING/SAMPLING

The permittee shall use USEPA Method 22 to determine fugitive visible emissions on an annual basis. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes. This testing was performed in November 2014 and demonstrated no emissions.

The permittee shall conduct performance tests every five years, in a manner acceptable to the AQD, for verification of the NO<sub>x</sub> emissions. This testing was performed in 2013 and demonstrated compliance.

The permittee shall conduct performance tests every five years, in a manner acceptable to the AQD, for verification of the particulate matter emission rates. This testing was performed in 2013 and demonstrated compliance.

#### VI. MONITORING/RECORDKEEPING

The facility is required to monitor parameters such as pressure drop, fan spray nozzle pressure, fan spray nozzle flow, and inlet pressure on the three scrubbers controlling this emission unit. Most of the gauges required for these measurements were checked during the course of the inspection and all of these appeared in working order.

While all records in the last 12 months (July 2014 to July 2015) were reviewed, March 20, 2015 was selected at random to demonstrate records required for this EU. Please see

attached Table 2.

The permittee shall maintain on file the natural gas fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the natural gas specifying the maximum total sulfur content. The most recent certificate indicates compliance and is attached to this report.

The owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the EUNACLREFINERY is operating. Records indicate this is being performed.

The permittee shall properly maintain the monitoring systems, including keeping necessary parts for routine repair of the monitoring equipment. Records indicate this is being performed.

#### VII. REPORTING

All required deviation and CAM reporting for this source has been submitted in a timely manner. See MACES for more detail on this reporting.

#### VIII. STACK/VENT RESTRICTION(S)

Stack parameters at the facility do not appear to have changed and appear correct.

#### IX. OTHER REQUIREMENT(S)

The existing CAM plan has been adequate to date and the facility has complied with it.

EUTURBINE – Natural gas fired turbine for electric generation

#### I. EMISSION LIMIT(S)

NOx emissions from the EU are limited to 0.168 pounds per MMBtu and 11.9 pounds per hour, particulate matter emissions from the EU are limited to 0.0226 pounds per MMBtu and 1.6 pounds per hour. Testing performed in April of 2011 indicate NOx emissions of 0.049 pounds per MMBtu and 3.36 pounds per hour, and particulate matter emissions to 0.0015 pounds per MMBtu and 0.26 pounds per hour.

#### II. MATERIAL LIMIT(S)

The facility is required to use only pipeline quality natural gas as described in 40 CFR 60 Subpart GG. Facility records indicate this is the only type of gas used.

#### III. PROCESS/OPERATIONAL RESTRICTION(S)

There are no process restrictions for this EU.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

There are no equipment restrictions for this EU.

#### V. TESTING/SAMPLING

Testing of this equipment is required every five years. The last test was performed in

2011, and demonstrated compliance. See MACES for further details.

#### VI. MONITORING/RECORDKEEPING

The facility is required to use only pipeline quality natural gas as described in 40 CFR 60 Subpart GG. Facility records indicate this is the only type of gas used.

Records of natural gas usage are required to be kept and were reviewed. These records appeared complete. The turbine and HRSG consume approximately 15,000 cu. ft. per day.

#### VII. REPORTING

All required deviation reporting for this source has been submitted in a timely manner. See MACES for more detail on this reporting.

#### VIII. STACK/VENT RESTRICTION(S)

Stack parameters at the facility do not appear to have changed and appear correct.

#### IX. OTHER REQUIREMENT(S)

There are no other requirements associated with this EU.

EUHRSG – Heat recovery steam generation unit associated with the Turbine.

#### I. EMISSION LIMIT(S)

NOx emissions from the EU are limited to 0.161 pounds per MMBtu and 13.4 pounds per hour. Testing performed in April of 2011 indicate emissions of 0.121 pounds per MMBtu and 9.12 pounds per hour.

#### II. MATERIAL LIMIT(S)

The facility is required to use only pipeline quality natural gas as described in 40 CFR 60 Subpart GG. Facility records indicate this is the only type of gas used.

#### III. PROCESS/OPERATIONAL RESTRICTION(S)

There are no operational restrictions associated with this EU.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

There are no equipment parameters associated with this EU.

#### V. TESTING/SAMPLING

Testing of this equipment is required every five years. Testing performed in April of 2011 indicate emissions of 0.121 pounds per MMBtu and 9.12 pounds per hour. NOx emissions from the EU are limited to 0.161 pounds per MMBtu and 13.4 pounds per hour.

#### VI. MONITORING/RECORDKEEPING

Records of natural gas usage are required to be kept. A records review indicated that

gas meter reading are being taken and recorded daily.

**VII. REPORTING**

All required deviation reporting for this source has been submitted in a timely manner. See MACES for more detail on this reporting.

Records of natural gas usage are required to be kept and were reviewed. These records appeared complete. The turbine and HRSG consume approximately 15,000 cu. ft. per day.

**VIII. STACK/VENT RESTRICTION(S)**

Stack parameters at the facility do not appear to have changed and appear correct.

**IX. OTHER REQUIREMENT(S)**

There are no other requirements associated with this EU.

FGCOLDCLEANERS - Parts washer used in maintenance department.

There two small cold cleaners at the facility and both are serviced by an outside contractor. They appeared in good repair, and were not in use at the time of the inspection. The lids on both were down and procedures for use were printed on top of the lids.

At the time of the inspection this facility was in compliance with their ROP.

NAME 

DATE 9/2/18 SUPERVISOR 