

M4347
Merrilla

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

M434748715

FACILITY: PRAXAIR, INC	SRN / ID: M4347
LOCATION: 300 E GREAT LAKES ST., RIVER ROUGE	DISTRICT: Detroit
CITY: RIVER ROUGE	COUNTY: WAYNE
CONTACT: Jim Smith , Operations Director	ACTIVITY DATE: 04/30/2019
STAFF: Jorge Acevedo	COMPLIANCE STATUS: Compliance
	SOURCE CLASS: SM OPT OUT
SUBJECT:	
RESOLVED COMPLAINTS:	

COMPANY NAME : Praxair

FACILITY ADDRESS : 300 Great Lakes Avenue, Ecorse, MI
STATE REGISTRAT. NUMBER : M4347
SIC CODE : 2819
EPA SOURCE CLASS : B
EPA POLLUTANT CLASS : C
LEVEL OF INSPECTION : PCE
DATE OF INSPECTION : 4/30/2019
TIME OF INSPECTION : 11:20 AM
DATE OF REPORT : 6/25/19
REASON FOR INSPECTION : Scheduled Inspection.
INSPECTED BY : Jorge Acevedo
PERSONNEL PRESENT :
FACILITY PHONE NUMBER : 313-849-4207
FACILITY FAX NUMBER : 313-849-4330

INSPECTION NARRATIVE:

On April 30, 2019, I conducted a scheduled initiated inspection of Praxair. I met with Jim Smith, Facility Superintendent, and Jose Mendez, SES specialist at 11:37AM. I explained that the purpose of my visit was to conduct an inspection to determine Praxair's compliance with Part 55, Air Pollution Control, of ACT 451(Natural Resources and Environmental Protection Act), and the federal Clean Air Act.

We went into Praxair's conference room and discussed Praxair's operations and equipment. I asked Mr. Smith about any changes since the last inspection in 2010. Mr. Smith explained that the facility installed a new air separation unit. The project involved installing a new vaporizer and was put into service in January 2018. The facility closed two of the older plants. Currently only Plants 5, 6, 7, and 8 were operating.

After our discussion of Praxair's equipment and operations, Mr. Mendez accompanied me on the inspection.

Outside, Mr. Mendez pointed out the four plants. Each plant generally operates in the same fashion. I observed Plant 8, which was began operating in 2018. Plant 8 has a larger capacity than the existing plants- Plant 8 can produce 1600 Tons Per Day of Oxygen whereas Plants 5-7 produce around 400 Tons Per Day of Oxygen. Mr. Mendez pointed out the new Plant 8 and related vaporizer. The vaporizer turns liquid Nitrogen and Oxygen to a gas.

Next, I observed a liquid Nitrogen and Oxygen truck loading station. Next, I observed two liquid hydrogen storage tanks. These tanks are used for emergencies during high demand.

Next we observed Boiler #3. The boiler is used to provide building heat. I also observed a Oxygen Thermax Vaporizer, which converts liquid oxygen into a gas. I then saw Boiler #2 and horizontal oxygen tanks. The tanks provide a buffer to pulsating demand.

I received a log of the meter readers that staff keeps in the control room. I requested two years to date natural gas usage for the facility and records required by their Permit to Install. I left the facility at 1:18PM.

FACILITY BACKGROUND:

Praxair is a producer of atmospheric gasses(Nitrogen, Oxygen, Argon) and specialty ^{gases} gasses (CO2, Helium, Hydrogen). Ambient air is captured and processed into the individual components using purification, compression, cooling, distillation, and condensation.

Praxair is East of W. Jefferson, South of Belanger Park, and West of the Detroit River, in Ecorse.

COMPLAINT/COMPLIANCE HISTORY:

Praxair was last inspected in 2015.

There have not been any citizen complaints registered nor violations issued against Praxair.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOVs

None

OPERATING SCHEDULE/PRODUCTION RATE:

Praxair operates 24 hours a day, 7 days a week.

PROCESS DESCRIPTION:

Praxair uses centrifugal air compressors to compress ambient air. The compressed ambient air is then cooled using heat exchangers. Water vapor and carbon dioxide are removed using a molecular sieve pre purification unit. This system also removes other contaminants. Heat transfer is used to cool the air to cryogenic temperatures. Distillation columns are then used to separate the air into desired products.

Pipelines are used to transfer the products to refineries, steel mills, and other customers. Products such as liquid oxygen are shipped in tanker trucks to supply hospitals. Boilers are used to produce steam to convert cryogenic liquids into gas in the case that the plant loses to ability to produce the liquid.

The Steam Methane Reformer converts natural gas into hydrogen through a catalyst reaction.

EQUIPMENT AND PROCESS CONTROLS

The plant has several steam boilers.

The plant has several tanks containing the liquid gases.

The plant has a steam methane generator where pure hydrogen is produced using natural gas and steam.

The plant has a 5000 gallon diesel tank.

The plant has seven electrically driven centrifugal air compressors.

The plant has equipment which is used to separate ambient air into its fractional components.

APPLICABLE RULES/PERMIT CONDITIONS:

Praxair is currently operating under PTI 71-12.

The following conditions apply Source-Wide to: FGFACILITY

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Compliance Determination
1. Carbon Dioxide Equivalent (CO ₂ e)	89,000 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	Compliance-- Records received showed CO2 emissions were well below 89,000 TPY.

II. MATERIAL LIMITS

1. The natural gas usage for FGFACILITY shall not exceed 1,405,166,040 cubic feet per year based on a 12- month rolling time period as determined at the end of each calendar month. (R 336.1205(3))

Compliance- Records were received- NG usage was well below 1.4 billion cubic feet per year.

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1205(3))

Compliance- Records are kept

2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO₂e emission calculation records for FGFACILITY/, as required by SC I.1. The permittee shall keep all records on file at a location approved by the AQD District Supervisor and make them available to the Department upon request. (R 336.1205(3))
Compliance- Records are kept

3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period natural gas usage records for FGFACILITY. The permittee shall keep all records on file at a location approved by the AQD District Supervisor and make them available to the Department upon request. (R 336.1205(3))

Compliance- Records are kept.

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

The 5000 gallon diesel tank is exempt from permitting under Rule R 336.284(d)

The liquid nitrogen, oxygen, hydrogen, argon, and gas oxygen storage tanks on the plant are exempt from permitting under Rule R336.1284(j)

The following fuel burning equipment are exempt under Rule R336.1282(b)(i):

<u>Fuel Burning Equipment</u>	<u>Heat Input Capacity</u>	<u>Year Installed</u>
Boiler #1	16.74 MMBTU/hr	1961
Boiler #2	13.39 MMBTU/hr	1966
Boiler #3	16.74 MMBTU/hr	1976
N2 Thermax	8 MMBTU/hr	1990
O2 Thermax	15 MMBTU/hr	1990
O2 Sellers #1	20.9 MMBTU/hr	1994
O2 Sellers #2	20.9 MMBTU/hr	1994
#6 Plant Regen Heater	8.4 MMBTU/hr	1994
N2 Sellers #3	29.3 MMBTU/hr	1997
N2 Sellers #4	29.3 MMBTU/hr	1997
#7 Plant Regeneration Heater	7.97 MMBTU/hr	2003
Steam Methane Reformer Heater	10.9 MMBTU/hr	1996
# 8 Plant Regeneration Heater	6.6 MMBTU/hr	2018

There are several boilers that have a heat input capacity of 10 MMBTU/hr or greater but since each one was installed before 1989, they are not subject to 40 CFR §60.40c. Each boiler uses natural gas.

The equipment used to separate ambient air into the fractional components of air is exempt under R336.1285(II).

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

Praxair has a fugitive dust control plan on file. Most of their plant is paved. I did not observe any excess opacity on the plant.

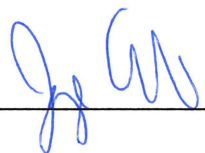
MAERS REPORT REVIEW

SOURCE REPORTED EMISSIONS 2018		
Pollutant	Amount(lbs)	Unit

AMMONIA	737.03	LB
CO	35062.88	LB
LEAD	0.01	LB
NOX	22557	LB
PM10,PRIMARY	1713.93	LB
PM2.5,PRIMRY	1713.93	LB
SO2	132.94	LB
VOC	1238.63	LB

FINAL COMPLIANCE DETERMINATION:

The facility is operating in compliance with applicable regulations.

NAME 

DATE 6-25-19

SUPERVISOR 