

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

B723455221

FACILITY: GREAT LAKES GAS TRANSMISSION		SRN / ID: B7234
LOCATION: WORTH RD, MORAN TWP		DISTRICT: Marquette
CITY: MORAN TWP		COUNTY: MACKINAC
CONTACT: Casey Shanley , Electrical Instrument Controls Technical		ACTIVITY DATE: 07/16/2020
STAFF: Joe Scanlan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Announced inspection of Moran Station 10A to ensure compliance with PT# 214-80		
RESOLVED COMPLAINTS:		

FACILITY: Great Lakes Gas Transmission—Brevort Compressor Station 10A

INSPECTION DATE: 7/16/2020

MDEQ-AQD STAFF: Joseph Scanlan, EQA

FACILITY REPRESENTATIVES: Casey Shanley, Electrical Instrument Controls Technician for Compressor Stations 10 and 10A; Ruth Jensen, Air Quality Specialist (TC Energy)

LOCATION:

Great Lakes Gas Transmission Brevort Compressor Station 10A is located on Worth Road in Moran Township, Mackinac County.

SOURCE DESCRIPTION

To ensure essential natural gas transmission throughout the Upper Midwest, Great Lakes Gas Transmission (GLGT), owned by TC Energy, operates compressor stations to maintain ideal operating pressure within the GLGT Pipeline System. The GLGT Pipeline originates in Emerson, Manitoba, and traverses Minnesota, Wisconsin, and Michigan, terminating at St. Clair, Michigan. The GLGT Pipeline consists of 2100 miles of two 36" diameter pipelines with a peak capacity of 2.3 Bcf/d.

The Brevort compressor station is the smallest of five compressor stations in the Upper Peninsula and is often unmanned and remotely operated, either from the Naubinway Compressor Station or from TC Energy's main operations facility in Houston, Texas. GLGT has regional offices in Duluth, Minnesota, and Troy, Michigan.

At the Brevort Station, pressure in the mainline is maintained via two Saturn model 1,100 horsepower turbine-powered compressors. The two turbines were manufactured by Solar Turbine International, a Caterpillar subsidiary. The facility also has a natural gas-fired emergency generator used to produce electrical power to the station in the event of a power outage.

REGULATORY APPLICABILITY:

The stationary source is located in Mackinac County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

Brevort Compressor Station operates two turbine compressors, UNIT 10A01 and UNIT 10A02, which do not have potential emissions of NOx and CO that exceed 100 tons per year and therefore the facility is not subject to 40 CFR, Part 70, and is a minor source.

CS-10A BREVORT Auxiliary Power Unit (APU) is subject to the stationary RICE emergency generator MACT standards, 40 CFR part 63 subpart ZZZZ.

INSPECTION

On 7/16/2020 I conducted a scheduled visit to the GLGT Brevort facility in central Mackinac County. PPE worn during this inspection included steel-toed boots, facemask, safety vest, safety glasses, hardhat, and hearing protection.

Occasionally this station is unmanned and gated; however due to Covid-19 issues I had contacted the company in advance to comply with their health policy and ensure someone was on site the day of my visit. I met with Electrical Instrument Controls Technician Mr. Casey Shanley upon entering the office and turbine control room. Mr. Shanley confirmed there had been no changes in operation and or equipment modified/added/deleted since the last inspection.

At the time of inspection Unit 10A-A-01 was operating; Unit 10A-A-02 was idle but had been operating as recently as 3:34 AM that morning. SC 9 of PTI #214-80 specifies opacity shall be less than or equal to 20%. I observed no opacity from the stack for Unit 10A-A-01. SC 10 has stack height and diameter restrictions, however the stacks have not been modified since their original installation.

We did not access the turbine house for safety reasons. It is against company policy to enter the turbine house while the turbine is operating due to the high RPMs of the units; if a mechanical failure occurred the result could be catastrophic. The Saturn turbine compressor units have had no major overhauls recently and have undergone only regular maintenance.

Mr. Shanley and I inspected the 125 horsepower Caterpillar natural gas-fired emergency generator and 85 KW alternator set (CS-10A BREVORT APU) and went over the maintenance records. The engine log showed the generator set is operated bi-weekly for less than 1 hour for RICE MACT requirements and to ensure reliability and was last run on 7/02/2020. The most recent mechanical inspection and oil change was 10/23/2019. The maintenance and records are consistent with the requirements of the RICE MACT and records are on file in the Brevort facility.

Mr. Shanley has access to pertinent records referenced in PTI 241-80 on file in the Brevort facility. However, I received the bulk of this information from Ms. Ruth Jensen who is based out of the TC Energy office in Omaha, Nebraska. Ms. Jensen provided me with the information within 24 hours of my email request. Ms. Jensen is currently handling all GLGT Michigan facilities for air permit compliance issues.

Records were requested for the last 12 months, from July 2019 through June 2020. Total operating hours for UNIT 10A-A-01 from July 2019 through June 2020 were 920.5. Total operating hours for UNIT 10A-A-02 were 3,318.4 hours. Total turbine compressor operating hours (both units) was 4,238.9 hours.

12-month total fuel usage for UNIT 10A-A-01 was 11,253 MCF; for UNIT 10A-A-02 48,741 MCF. Total 12-month natural gas fuel usage for both turbine compressor units was 59,994 MCF.

SC 11 has NOx limits of 5 lbs/hr or 22 tons per year. 12-month total NOx emissions for UNIT 10A-A-01 was 0.821 tons. 12-month total NOx emissions for UNIT 10A-A-02 was 2.759 tons. Total NOx emissions for the facility were 3.58 tons over a 12-month rolling time period from July 2019 through June 2020. These NOx emissions were calculated using test results from 9/12/1995 when both units were tested. The NOx emission totals for the facility are well below the emission limits set forth in the PTI.

SUMMARY

No violations or issues were observed during the compliance inspection and records review. The facility appears to be in compliance with PTI# 214-80.

Description of Emission Unit	PTI#/Reg	Installation/Modification Date	Compliance Status
Two (2) Solar Turbine International Saturn Model T-SA-2 Natural Gas-fired IC Turbine	241-80	January 1981	C
125 HP Caterpillar Nat Gas-fired engine w/85 KW alternator Emergency Generator	RICE MACT	January 1981	C

TRANS-CANADA OPERATIONS		Task Order (Form 20)	
Title: RICE MACT Maintenance Record Sheet		Page 1 of 3	
Revision: 01		Effective Date: 21/03/2017	
TOP Contact: Chris Walmsley			
Important:			
1. This form is to be completed in conjunction with the TOP initiated RICE MACT Maintenance (EDMS No. 008029868)			
2. Save this form using the following naming convention:			
<ul style="list-style-type: none"> Task Title_CMMS Facility ID_yyyy_mm_dd (e.g. RICE MACT Maintenance_0005_2014_07.doc) Attach completed form to SAP Work Center Refr. # IPBCCA (Identify Plan Schedule Execute Close Analyze) Work Management Quick Reference Guide Page 88 			
3. For information on filing and the on-site/off-site retention requirements, please refer to the "Trans-Canada Facility Filing Structure Reference" compliance list (EDMS No. 003794096).			
Facility:	004234 Brevort CS10A	Engine S/N:	74709
Engine Type:	CAT 3306		
Activity	Date Completed	Technician	Remarks/Deficiencies:
Spark Plug Inspection (Natural Gas or Propane-Fired Engines)	10/23/19	112153	CHECKED/OK
Air Cleaner Inspection (Diesel-Fired Engines)	N/A	N/A	N/A
Belts and Hoses Inspection	10/23/19	112153	CHECKED/ALL OK
Oil Sample Taken*	N/A	N/A	N/A
Oil Changed*	10/23/19	112153	OIL CHANGED

*An oil sample should be sent for analysis or changed.

Note: Prior to use, please validate paper security against the information (Doc ID: 003794096)

Image 2(B10A2) : Brevort RICE MACT maintenance record

NGT Compressor Station NOx Emission July 2019 through June 2020

Monthly Operating Hours													
Year		2019						2020					
Station	Unit	July	August	September	October	November	December	January	February	March	April	May	June
Brevort	1	28	157	179	13	192	97	63	218	38	12	0.5	6
	2	0.4	13	79	213	363	443	581	677	451	181	62	215
													4234.9

Monthly Total Fuel (MMBtu)													
Year		2019						2020					
Station	Unit	July	August	September	October	November	December	January	February	March	April	May	June
Brevort	1	178.89	1337.81	1838.03	128.72	1188.71	1256.11	534.14	2774.07	1176.23	209.75	7.50	0.88
	2	5.31	249.81	827.02	2732.21	7432.53	6567.53	2278.43	6751.92	7818.23	3283.00	923.26	4243.32
													11741.01

NOx Emissions (ppm)													
Year		2019						2020					
Station	Unit	July	August	September	October	November	December	January	February	March	April	May	June
Brevort	1	0.317	0.145	0.132	0.009	0.187	0.152	0.179	0.202	0.083	0.015	0.001	0.166
	2	0.500	0.009	0.049	0.133	0.421	0.377	0.457	0.594	0.138	0.186	0.051	0.242
													1.890

Emissions are based on testing on Unit 1 at full load on 8/12/1995 that measured 143 lb/MMBtu and for Unit 2 at full load on 9/13/1995 that measured 111 lb/MMBtu.
 Heat content of gas is 1020 Btu/scf.

Image 3(B10A3) : Brevort turbine hours/fuel usage/NOx emissions

NAME Joe Scanlan
EDL

DATE 10/1/20

SUPERVISOR *EDL*