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

N725256012

FACILITY: HRF Exploration & Production - TLC 20		**SRN / ID:** N7252
LOCATION: SW SE NW, T29N-R4E, Section 15, RUST TWP		**DISTRICT:** Gaylord
CITY: RUST TWP		**COUNTY:** MONTMORENCY
CONTACT: Brad Musser , Operations Manager		**ACTIVITY DATE:** 10/08/2020
STAFF: Sharon LeBlanc	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: FY 2021 Scheduled inspection and report review. sgl		
RESOLVED COMPLAINTS:		

On October 8, 2020, Gaylord District Staff conducted a self-initiated site inspection of the HRF Exploration & Production, LLC (HRF) Turtle Lake Hunt Club S. Rust 10C Central Processing Facility (CPF) (AKA Turtle Lake C-20 CPF or TLC 20 CPF)(N7252). The referenced Facility is in T29N-R4E, Section 15, SW, SE, NW, Rust Township, Montmorency County, Hillman, Michigan. The referenced facility operates Permit to Install (PTI) 104-03A.

The most recent site inspection was conducted on May 26, 2017 and May 7, 2020, no compliance issues were reported as a result of the referenced inspections. The May 26, 2017 document did indicate that the Facility has incorrectly been identified as a true minor Facility. The Facility is an opt-out based on FGENGINES Special Condition (S.C.) VII.1, which allows for replacement of engines with an equivalent or lower emitting engine, with notification to AQD District Staff.

A records request was submitted electronically, and the requested records were provided on October 27, 2020. This document reflects both the review of those records as well as the site inspection activities.

FACILITY

The Turtle Lake Hunt Club CPF is an unmanned Facility located amongst the extensive acreage of the hunt club. Natural Gas (NG) collected from Antrim NG wells in the area is dehydrated and compressed at the Facility prior to flowing to sales points.

Readily available aerials indicate that the Facility was constructed between May of 1992 and April of 1998. MAERS records would suggest that the Facility was constructed in 1995.

The Facility is located SW of Hillman, Michigan. To get to the Facility, District Staff traveled west of Hillman, Michigan on M-32 approximately 5-miles to Farrier Road. Making a left turn, Staff then traveled south on Farrier Road approximately 7 ¾- miles to the Hunt Club Gate. Access through the hunt club gate was provided by HRF staff. The Facility is reached by taking the first road/trail on the right, then the next two right hand turns a total of approximately 1.1 miles. It was noted that what may have been previous trails intersect with the road/trail but are no longer in use and have now went to grass. The road(s) to the CPF are single lane and well graded. It should be noted that the Hunt Club is reported to be approximately 25K acres or 36 square miles in size with gated entries requiring pass codes.

At the time of the inspection, the skies were sunny, but partly cloudy skies, temperatures in the mid 40s with winds of <5 mph. No visible emissions were noted from the engines, occasional puffs were noted from the glycol dehydrator associated with the site.

PERMITTING

Two permits are of record for the Facility. Permit to Install (PTI) 104-03 issued on June 27, 2003 was issued for three compressor engines and was voided upon issuance of 104-03A on January 21, 2011. PTI 104-03A was issued to allow for a change out of one of the three engines onsite. At the time of the more recent permit modification (PTI 104-03) the Facility was of record as having the following equipment onsite:

- EUDEHY – Glycol dehydration unit with reboiler
- Two Caterpillar 3516 TALE low emission, 4-stroke Reciprocating Internal Combustion Engines (RICE) rated at 1085 Hp. (EUENGINE7, EUENGINE8), and
- EUENGINE1 – Caterpillar 3516 TALE low emission, 4-stroke RICE, rated at 1085 HP to replace a previously operating engine.

FG-Facility includes not only the referenced engines and dehy unit, but any and all other exempt or unpermitted equipment onsite. Which includes Above ground Storage Tanks (ASTs) onsite used for storage of brine, used oil and "mung" oil by the Facility.

PTI 104-03A includes high-level citations for 40 CFR Part 63, Maximum Achievable Control Technology Standards (MACT):

- 40 CFR Part 63, Subpart HH (National Emission Standards for Hazardous Air Pollutants (NESHAP) for EUDEHY for area sources.
- 40 CFR Part 63, Subpart ZZZZ (NESHAP) for FGENGINES RICE MACT

Though not identified in the permit, the facility may be subject to additional Federal Regulation. Subparts frequently associated with oil and gas facilities are identified below. Note however, that compliance with these subparts has not been determined as part of this inspection.

REGULATORY

classifications based on Potential to Emit (PTE) for the engines which are the biggest producers:

PARAMETER	CLASSIFICATION	EMISSIONS (per Engine)
NOx	Minor	21 TPY (PTE)/24 TPY LIMIT
SO2	Minor	
CO	Minor	18.9 TPY (PTE)/ 22 TPY LIMIT
Pb	Minor	
PM	Minor	
VOC	Minor	5 TPY
HAPs	Area	

Federal Regulations - The referenced facility does not process or store petroleum liquids and is therefore not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

- K, Ka or Kb (Storage vessels for Petroleum Liquids);
- KKK (Equipment Leaks of VOC from onshore NG Processing Plants);

- VV (Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry);

In addition, the Facility reports that the engines reported to have a manufacture date prior to June 12, 2006 that would exempt the RICE from NSPS Subparts JJJJ for Spark Ignition (SI) RICE.

With respect to Subpart HH, the affected unit is believed to be dehy units. HRF staff provided documentation dated December 6, 2019, that verifies that the Facility is not subject to Subpart HH as the flowrate to the dehy is under 85,000MMcf/day, and benzene emissions are under 0.90 megagrams/year.

With respect to Subpart ZZZZ, the Facility RICE are subject to 40 CFR Part 63, Subpart ZZZZ. The maintenance requirements under the subpart were not included as part of the Site Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) approved on February 23, 2011, by District Staff. The Facility reports that maintenance activities are sufficient to meet the subpart requirements, a determination has not been made regarding the requirements as part of this compliance evaluation. Activities conducted onsite are summarized later in this document.

EQUIPMENT

At the time of initial permitting, the Facility was operating with three existing NG-fired compressor engines. PTI 104-03A was issued for the replacement of an existing engine with a CAT 3516 TALE. Engines of record onsite consist of the following:

ID	ENGINE	INSTALLATION DATE*	REMOVAL DATE*
EUCOMP 14*	Superior 2408G	2001	NA
EUCOMP 5* EUENGINE1	CAT 3516 TALE 4SLB, 1085 HP No Catalyst	2011	NA
EUCOMP 7* EUENGINE7	CAT 3516 TALE 4SLB, 1085 HP No Catalyst	1995	NA
EUCOMP 8* EUENGINE8	CAT 3516 TALE 4SLB, 1085 HP No Catalyst	1995	NA

*MAERS Source of Information

At the time of the May 7, 2020 and October 8, 2020 site visit, both EUENGINE7 and EUENGINE8 were in operation and running at a range of approximately 1120 -1145 RPMs. EUENGINE1 was not in operation

Maintenance activities for engines onsite are presently contracted through Natural Gas Compression Systems. In addition, operators monitor the site daily for changes in operational parameters. Maintenance records for 2018 through 2020 were provided for review.

COMPLIANCE

No complaints, Notices of Violation, or enforcement activities are of record for the Turtle Lake Hunt Club CPF. Compliance status for the facility had been based on

information provided during the October 8, 2020, site inspection, as well as on supplemental data and reports submitted upon request or to meet permit requirements identified under PTI 104-03A.

MAERS- A review of annual emission reports, indicate that emissions were reported for the 2012 and 2013 calendar years as well as more recently for the 2019 calendar year. The Facility is also scheduled to report emissions for the 2020 calendar year.

EUDEHY- The referenced EU consists of one glycol dehydrator and associated reboiler which processes gas from the Antrim zone.

Permit conditions associated with the EU consist of a high-level citation to 40 CFR Part 63, Subpart HH (S.C. III.1). In addition, S.C. VII.1 requires the permittee to complete any 40 CFR Part 63, Subpart HH reporting required under 40 CFR 63.775. Records indicate that the Facility is not subject to the subpart as the Facility meet the exemption criteria of 40 CFR 63.764(e)(i) (S.C. VI.1) as it is below both the 85K scf/day flowrate (S.C. VI.2) and 0.90 megagram Benzene emissions per year (S.C. VI.3)

Stack Height for EUDEHY are not included as part of the PTI. Neither are there any emission or material limits.

FGENGINES- The referenced Flexible Group (FG) consists of three NG-fired, CAT 3516 TALE, low emissions, 1085 Hp, RICE (EUENGINE1, EUENGINE7 and EUENGINE8). No pollution control devices are associated with the RICE onsite. No material limits are associated with FGENGINES.

EMISSION LIMITS – Emission limits under FGENGINES include NOx and CO emissions (S.C. I.1 & 2, respectively) for each engine in FGENGINES. Emissions for RICE associated with the Facility are calculated using emission factors from Manufacturer Spec sheets (SC VI.6, VI.7 and Appendix A) when available and are based on NG usage documented (SC IV.2 and SC VI.2).

EU	MAERS Calendar Year	NOx (TPY)	CO (TPY)
EUENGINE1	2013	16.07	14.47
EUENGINE1	2019	0.42	3.71*
EUENGINE7	2013	14.92	13.43
EUENGINE7	2019	17.5	15.75
EUENGINE8	2013	15.1	13.59
EUENGINE8	2019	17.91	16.11
LIMIT	--	24 (S.C. I.1)	22 (S.C. I.2)

*EUENGINE1 was reported to have been put into long term shutdown as of October 22, 2019, and remains in that status to the present.

Note that annual emissions reports for the Facility still includes the Compressor 14 (Superior 2408G), which has been reported to have not operated for any of the reported calendar years but remains onsite.

S.C. IV.2, VI.2 and VI.5 requires that the permittee installs, calibrates, maintains and operates in a satisfactory manner a device to continuously record the NG usage for

each engine. S.C. IX.1 requires that the gas monitoring devices for FGENGINES is installed within 90 days of permit issuance. Records provided were sufficient to confirm compliance with permit conditions. Compliance with the 90-day completion is unknown.

Permit conditions for FGENGINES include the following special conditions for engines with an add-on control device. As no control devices are associated with the engines onsite they are not applicable:

- **Operational limit of 200 hours per year for engine without it's control device. (SC III.2)**
- **Proper installation, operation and maintenance of the add-on control device (SC IV.1 and VI.3)**
- **Documentation of the hours of engine operation without it's control device (SC VI.4)**

OPERATION LIMITS – No later than 60 days after the issuance of Permit 104-03A the permittee is required to submit for review and approval a Preventative Maintenance/Malfunction Abatement Plan (PM/MAP). Records indicate that the required document was submitted in a timely manner (approved on February 23, 2011) in compliance with the permit condition. (SC III.1) As previously indicated the required document has been submitted and is considered to have met the permit condition.

A review of maintenance records for FGENGINES indicates that regularly scheduled visits by the maintenance contractor (Natural Gas Compression Systems) have occurred, and that in addition to monthly checks, the Facility conducts at minimum the equivalent of a 1500 and 3000 hour service calls for engine maintenance, which would appear to indicate general compliance with the MAP.

TESTING ACTIVITIES – Under the present permit verification of NOx and CO emissions are required upon request of the AQD District Supervisor. (SC V.1) District files contain no copies of written requests for verification testing, and the permit condition not applicable at the time of report preparation.

MONITORING/RECORDKEEPING –Permit requirements for monitoring and recordkeeping include the following:

- **Completion of all required calculations by the last day of the calendar month for the month prior and made available to AQD staff upon request, (SC VI.1)**
- **Monitor and record NG usage for each engine in FGENGINES on a continuous basis (SC IV.2, VI.2 and VI.5)**
- **Maintain a log of all maintenance activities conducted according to the PM/MAP (SC VI.3) and**
- **Monthly and 12-month rolling time period NOx and CO emission calculation records for each engine in FGENGINES as required by SC I.1 and SCI.2 and Appendix A. (SC VI.6 and SC VI.7)**

Records provided by the Facility were sufficient to indicate compliance with the above referenced permit conditions. These records with respect to emission calculations and NG usage are summarized on spreadsheets generated monthly, which summarizes all the required information, as well as equipment descriptions and emission factor sources. Totals generated for the month of September 2020 include:

	EUENGINE1	EUENGINE7	EUENGINE8

NG Used (monthly)	0	5.5	5.5
NG Used (12-month total)	0	68.2	51.6
NOx (ton/Month)	0	1.5	1.51
NOx (ton/12 Month)	0	18.56	14.03
CO (ton/Month)	0	1.35	1.36
CO (ton/12 Month)	0	16.70	12.63
VOC (ton/Month	0	0.36	0.36
VOC (ton/12 Month)	0	4.45	3.37

STACK/VENT - Permit 104-03A (SC VIII.1 – VIII.3) limits the exhaust dimensions for the stacks associated with FGENGINES to:

Emission Unit	Exhaust Diameter (inches)	Minimum Height Above Land Surface (feet)	Source
EUENGINE1	12-inch	36 feet	Facility
EUENGINE7	12-inch	36 feet	Facility
EUENGINE8	12-inch	36 feet	Facility
LIMIT (for all three RICE)	12-inch Maximum	36-feet Minimum	

OTHER- S.C. VII.1 allows for the swap out or exchange of EUENGINE1 with an engine of equivalent or lower emissions. Documentation of the activity and emissions for the engine to be provided within 30-days of the change. District Staff in conjunction with the May 7, 2020 site inspection and records request clarified a misconception regarding like-for- like engine swings. HRF reported that they were under the understanding that like-for-like engine swings did not require written notification. District Staff clarified that any swap or exchange of an engine requires notification, and requested documentation of the unreported swings which is summarized below:

Emission Unit	New Serial Number	Old Serial Number	Date of Swing
EUENGINE1	3RC00703	3RC00667	7/8/2013
EUENGINE7	4EK01436	4EK00447	2/26/2014
EUENGINE8	4EH00777	EK00022	5/13/2014

The Facility reports no swings have occurred since those in 2014.

FGFACILITY – This FG encompasses both permitted, grandfathered and exempt EUs onsite. Permit conditions associated with the FG include:

- **Permittee is prohibited from use of sour gas as fuel (SC II.1)**

Sour gas is defined as H2S content of 1 grain or total sulfur content of 10 grains or more per 100 scf. Verification testing of H2S or total sulfur content may be required of the Facility under S.C. V.1. The Facility is reported as processing Antrim formation NG. No request of verification testing was found in district files. Laboratory analysis for incoming samples collected on October 3, 2019, reported H2S concentrations of non-detect indicating compliance with the permit condition.

SUMMARY

On October 8, 2020, Gaylord District Staff conducted a self-initiated site inspection of the HRF Exploration & Production, LLC (HRF) Turtle Lake Hunt Club S. Rust 10C Central Processing Facility (CPF) (AKA Turtle Lake C-20 CPF or TLC 20 CPF)(N7252). The referenced Facility is in T29N-R4E, Section 15, SW, SE, NW, Rust Township, Montmorency County, Hillman, Michigan. The referenced facility operates Permit to Install (PTI) 104-03A.

The most recent site inspection was conducted on May 26, 2017 and May 7, 2020, no compliance issues were reported as a result of the referenced inspections. The May 26, 2017 document did indicate that the Facility has incorrectly been identified as a true minor Facility. The Facility is an opt-out based on FGENGINES Special Condition (S.C.) VII.1, which allows for replacement of engines with an equivalent or lower emitting engine, with notification to AQD District Staff.

A records request was submitted electronically, and the requested records were provided on October 27, 2020. This document reflects both the review of those records as well as the site inspection activities.

The Turtle Lake Hunt Club CPF is an unmanned Facility located amongst the extensive acreage of the hunt club. Natural Gas (NG) collected from Antrim NG wells in the area is dehydrated and compressed at the Facility prior to flowing to sales points.

Readily available aerials indicate that the Facility was constructed between May of 1992 and April of 1998. MAERS records would suggest that the Facility was constructed in 1995.

At the time of the inspection, the skies were sunny, but partly cloudy skies, temperatures in the mid 40s with winds of <5 mph. No visible emissions were noted from the engines, occasional puffs were noted from the glycol dehydrator associated with the site.

Information obtained as a result of the site inspection and records review appears to indicate that the facility is operating in general compliance with their permit and applicable federal subparts.

NAME _____ DATE _____ SUPERVISOR _____

Sharon LeBlanc

Digitally signed by: Sharon LeBlanc
DN: CN = Sharon LeBlanc email = leblancs@michigan.gov C = US O = EGLE OU = AQD
Date: 2020.12.04 15:02:30 -05'00'

Shane Nixon

Digitally signed by: Shane Nixon
DN: CN = Shane Nixon email = nixons@michigan.gov C = US O = EGLE OU = Air Quality Division
Date: 2020.12.04 15:02:56 -05'00'