DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B288168723

FACILITY: US Energy Distribution LLC - Novi Terminal		**SRN / ID:** B2881
LOCATION: 40600 Grand River Avenue, NOVI		**DISTRICT:** Warren
CITY: NOVI		**COUNTY:** OAKLAND
CONTACT: David Rodriguez , Assistant Terminal Manager		**ACTIVITY DATE:** 06/27/2023
STAFF: Noshin Khan	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: scheduled, on-site inspection		
RESOLVED COMPLAINTS:		

On Tuesday, June 27, 2023, I, Noshin Khan, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, performed a scheduled, on-site inspection of US Energy Distribution, LLC located at 40600 Grand River Avenue, Novi, Michigan 48375 (SRN: B2881). The purpose of the inspection was to determine the facility's compliance status with the requirements of the federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 Public Act 451, as amended (Act 451); the AQD administrative rules, and the conditions of Permit to Install (PTI) Number 1140-92E. During this visit I also observed the VOC emissions test that was required after installation of the vapor recovery unit (VRU) was completed and maximum operation was achieved, per PTI 1140-92E, EULOADRACK Special Condition (S.C.) V.1.

Inspection
I arrived at the facility around 10AM and met with David Rodriguez, Assistant Terminal Manager. US Energy Distribution is a bulk distribution terminal for ethanol, gasoline, diesel fuel, and Jet A fuel. According to David, the facility's hours of operation are 4AM-1AM, Monday through Friday, but loading operations occur 24/7 and facility staff are on-call 24/7. There are 10 administrative employees and 5 employees associated with loading operations. There are 7 above-ground storage tanks and 2 underground storage tanks to hold fuels, and 4 loading racks.

The facility's emissions controls include a vapor combustion unit (VCU), also known as a vapor destruction unit (VDU), and a vapor recovery unit (VRU), which is currently the primary control device. The VRU filters exhaust air by directing vapors through carbon beds for adsorption, and captured hydrocarbons are condensed and cycled back to storage tanks.

S.C. VII.1 required notification to the AQD District Supervisor within 30 days of installation of the VRU, which is considered to occur not later than the commencement of trial operation. David had informed me via email on January 16, 2023, that the facility was preparing to begin operation of the VRU, and in my reply I informed him of the requirement to provide a written notification to the District Supervisor. During my inspection on June 27, I informed David that a notification still had not been received, and he told me that he was under the impression that Terry Rosenfeldt, the previous Terminal Operations Manager, had sent one. On August 7, 2023, David provided a written notification to AQD Southeast District Supervisor, Joyce Zhu. The notification writes that trial operation of the VRU began on February 13, 2023. Because David provided prior notice regarding the VRU installation and submission of the official notification seemed to be delayed due to misunderstanding, I am utilizing enforcement discretion and not citing a violation for the late installation notification.

During the inspection, David took me outside for a site walkthrough. At the loading racks, a driver demonstrated how each station requires the driver to enter information into the security system before the loading process can begin. Once the loading hose is pressed and locked firmly into place as to form a vapor-tight connection, the driver is allowed to enter a unique driver number, PIN, and trailer ID number into the computer. The computer automatically checks information on the truck and driver's compliance and will lock out the driver if the truck's certification testing is expired or other requirements like driver safety certifications are not met. By locking out the driver, the safety system prevents a driver with a non-compliant truck to bypass the system by entering a fake trailer number. The system will only allow a PIN to be entered if the interlocking system is connected properly, and loading will only begin when the system light turns green after all information is entered and verified. I observed the driver enter an incorrect PIN to demonstrate a lock-out, and the system did not allow him to continue until facility staff

cleared his information. He also explained that a driver is required to enter a product number which prevents drivers from loading material that they are not assigned to.

After my last inspection in August 2022, David sent me pictures via email that showed that written operational procedures required by EU-LOADRACK S.C. III.1.c. had been posted at each rack. During this inspection, I noticed that the written procedures were not posted, and David told me that they had been taken down after being defaced and he had forgotten to post them again. David replaced the written procedures at each rack while I was on site.

David showed me the lines at each rack used to extract vapors from the trucks. A daily rack walk is performed to inspect vapor collection hoses for cracks, breaks, or fuel odor, and that repairs are made based on those inspections. He noted that this tubing is checked and replaced, if necessary, before each winter. Vapors are primarily conveyed to the VRU, and the VCU is currently kept as a backup. The racks utilize submerged fill pipes for loading material into trailers, and a probe inside each truck prevents overfilling.

Racks 2 and 3 load gasoline, diesel, and jet fuel. Rack 4 loads gasoline, diesel, and turbo blue racing fuel, although David noted that the racing fuel is currently out of service. Rack 5 loads gasoline and diesel. In the area adjacent to the loading racks, we observed some smaller storage tanks which David explained contain additives which are conveyed into the racks and loaded along with fuel as specified by company formulations. According to David, the largest of these additive tanks has a maximum capacity of 6000 gallons. David provided SDS's for these additives and most are petroleum blends and include compounds including cumene and xylene. These additives are not currently permitted and have the potential to emit air contaminants. The facility should submit a Permit to Install application, per Rule 201, for this process.

Next, David walked me to the VCU. On the way, David pointed out the valves which are used to switch vapor direction between the VCU and VRU. Vapors were directed to the VRU during my visit for the stack test. At the VCU, I observed the magnehelic pressure differential gauge on the unit. David explained that the release of vapors through the VCU is regulated by a control valve; this opens when the pressure in the unit reaches about 8 PSI and vapors are burned off. David also noted that daily checks are performed on the VCU including making sure that the flame is lit, the blower is on, the glycol level is appropriate, and that the pressure gauge is functioning properly.

A few of the large storage tanks were visible from this area. David confirmed the following details for the 7 storage tanks:

101 – holds ethanol; has an internal floating roof
102 – holds jet A fuel; no internal floating roof
103 – holds diesel; no internal floating roof
104 – holds regular gasoline; has an internal floating roof
105 – holds regular gasoline; has an internal floating roof
106 – holds premium gasoline; has an internal floating roof
107 – holds diesel; no internal floating roof

The facility performs butane blending into regular gasoline (tanks 104 and 105) from approximately September to May. The blend is up to 5% butane and does not increase the throughput of the loading rack. Butane is injected into tanks 104 and 105 and is blended by continuous mixers in the tanks. This process was included in the application for the current permit, and permit evaluation documents account for increased RVP with butane blending.

During the walkthrough, I also observed the VRU. Darryl Miller, Engineer, explained how vapors are directed upwards through one of two carbon beds for adsorption of hydrocarbons, and filtered air is released through the stack. About every 12 minutes, a vacuum desorbs the carbon bed saturated with hydrocarbons in a process called regeneration. While one carbon bed undergoes regeneration, the other undergoes adsorption and the process continues as they alternate. After regeneration, hydrocarbon vapors are condensed and discharged to a storage tank. Currently, recovered gas is directed to tank 105, and David told me that the facility plans to alternate storage of recycled gas between tanks 104 and

105. I observed multiple pressure gauges on the VRU to monitor for proper operation. David told me that daily checks for the VRU include checking the control monitor for alarms, checking pressure gauges, and checking that valves are opening properly. The control monitor is located in a trailer next to the VRU, and David showed me how the system tracks any operating issues that arise.

David informed me that due to increasing business, the facility is planning to apply for a permit modification for an increased gasoline throughput limit. The facility may add another loading station at the rack and install more fuel storage tanks.

Stack Test
I checked in with Erthwrks testing staff, Joshua Castillo, shortly after arriving at the facility. He showed me certifications for calibration gases and informed me that testing began at 8:05AM and calibrations were performed around 9 and 10AM. I asked about leak testing that was required to be performed before testing began, and he told me that a few leaks were detected and fixed at Racks 2 and 3, with the highest measuring around 200 ppm. Joshua informed me that rack back pressure was being monitored, as required, but I did not ask to see the current results. I asked Joshua to provide a copy of throughput and emissions results up until that point. These results show that 111,451 gallons of fuel were loaded by 10:28AM, and the VOC emissions were averaging at 0.66 mg per liter of fuel loaded.

On June 29, 2023, David called me and said that Erthwrks informed him that the test results were showing non-compliance for the back pressure component. The back pressure exceeded 450 mm H2O for Rack 4, and David said that the problem was identified and fixed as soon as they found out. A violation will be issued for the back pressure exceedance.

The test report was received on July 18, 2023 and showed the following results:

Regulation	Measured Results	Applicable Limit
Method 21 – Vapor Leak	200 ppm	500 ppm
Rack Back Pressure	Highest Pressure: 1366 mm H2O	450 mm H2O
TOC Emissions	1.08 mg/Liter loaded	10.0 mg/Liter of Gasoline
Volume Loaded	902,537 Liters of Gasoline	300,000 Liters of Gasoline
Compliance Test Time	>6 hours	Minimum 6 hours

The back pressure results graph showed that the first exceedance occurred around 8:45AM, and only Rack 4 experienced back pressure exceedances.

After discussion with AQD Southeast District Supervisor, Joyce Zhu, and AQD Technical Programs Unit Supervisor, Jeremy Howe, we decided that it would be appropriate for the facility to conduct all parts of the test again rather than only re-testing back pressure.

Erthwrks performed this re-test on Thursday, August 10, 2023. I arrived at the facility around 10:30AM. David accompanied me to the testing trailer, where I spoke to Erthwrks staff. He informed me that the test had started at 7:30AM. I asked about leak testing, the amount of fuel loaded, VOC emissions results, and back pressure results. He said that no leaks had been detected, and the back pressure was under the limit with the highest value around 250 mm H2O for Rack 2. The data showed that by 9:40AM, the VOC emissions were averaging at 1.8 mg/L for a total amount of 88,000 gallons of fuel loaded. By 10:30AM, the data showed VOC emissions averaging at 1.6 mg/L and 124,500 gallons had been loaded.

The tester showed me a list of locations where leak testing was performed at each rack, including at the coupler, hose, swivel joint, flame arrestors, and gauges.

I checked in again around 12:30PM. At this point, 148,068 gallons were loaded, the VOC emissions were averaging at 1.7 mg/L, and I observed the back pressure monitoring graph that showed that all bays were still under the applicable limit.

The test results on August 10 were indicating compliance, but a final determination will be made upon receiving the final test report.

During my visit on August 10, I noticed that the stack for the VRU has an elbow piece at the top which results in exhaust gas discharging horizontally. I informed David that this violates the requirement in the permit (S.C. VIII.2) for the stack to be discharged unobstructed vertically upward.

Permit Compliance
Emission Limits
Per EU-LOADRACK S.C. I.1, the facility has a VOC emission limit of 17.4 tpy based on a 12-month rolling time period as determined each calendar month. David provided throughput and emissions records, in accordance with EU-LOADRACK S.C. VI.2 and VI.3. These calculations indicate that from August 2022 through May 2023, the 12-month rolling VOC emissions were 2.79 tons as calculated in May 2023.

Per EU-LOADRACK S.C. I.2, the VCU and VRU have a VOC emission limit of 10 mg/L of organic compounds loaded. The last stack test for the VCU from May 2021 reports an observed VOC emission rate of 1.95 mg/L of all fuels loaded. The testing performed on June 27, 2023 and August 10, 2023 for the VRU also indicate compliance with this limit.

Material Limits
Per EU-LOADRACK II.1, the facility has a gasoline material limit of 250 million gallons per year based on a 12-month rolling time period as determined each month. The facility's throughput records indicate that from August 2022 through May 2023, the highest 12-month rolling gasoline throughput was 169,097,342 gallons as calculated in May 2023.

Per EU-LOADRACK II.2, the facility has a diesel material limit of 100 million gallons per year based on a 12-month rolling time period as determined each month. The facility's throughput records indicate that from August 2022 through May 2023, the highest 12-month rolling diesel throughput was 22,397,970 gallons as calculated in December 2022.

Per EU-LOADRACK II.3, the facility has an ethanol material limit of 80 million gallons per year based on a 12-month rolling time period as determined each month. The facility's throughput records indicate that from August 2022 through May 2023, the highest 12-month rolling ethanol throughput was 18,726,903 gallons as calculated in May 2023.

Per EU-LOADRACK II.4, the facility has a Jet A fuel material limit of 50 million gallons per year based on a 12-month rolling time period as determined each month. The facility's throughput records indicate that from August 2022 through May 2023, the highest 12-month rolling Jet A fuel throughput was 9,699,764 gallons as calculated in December 2022.

Process/Operational Restrictions
Per PTI 1140-92E, the facility is subject to Michigan Administrative Part 6 and 7 rules for gasoline loading and storage.

EU-LOADRACK S.C. III.1 requires compliance with Rule 706. Rule 706 requires that delivery vessels loading any organic compound that has a true vapor pressure of more than 1.5 psia at a facility that has a throughput of 5,000,000 or more gallons per year is controlled by a vapor recovery system and vapor-tight collection line so that emissions to the atmosphere do not exceed 0.7 lb of organic vapor per 1000 gallons of organic compounds loaded.

As discussed previously, a vapor-tight collection line is implemented into the loading system at the facility. Also discussed above was the VOC emission rate of 1.95 mg/L of fuels loaded that was observed for the 2021 stack test for the VCU. This translates to a VOC emission rate of 0.016 lb/1000 gallons. The highest average VOC emissions value I recorded while observing the VRU stack test on August 10, 2023, was 1.8 mg/L of fuels loaded, which translates to an emission rate of 0.015 lb/1000 gallons. Rule 706 also requires that delivery vessels are filled by a submerged fill pipe, which David explained is the case for the loading racks.

EU-LOADRACK S.C. III.2 requires compliance with Rule 627. Rule 627 requires that delivery vessels are pressure/vacuum tested annually. David explained that companies send US Energy Distribution vapor testing and certification information for loading trucks and provided an example tank-truck inspection report. The document specifies test compliance conditions for the vapor pressure system, vacuum, and internal vapor valve. It also includes certified inspection requirements including testing the overfill protection probe and checking for a functional brake interlock system on the loading header and vapor recovery hose. Electronic data is updated and if any certifications are expired for a truck, it will be locked out from the fuel loading process. This procedure indicates that the facility is in compliance with Rule 627, as only trucks with up-to-date testing can load fuels.

S.C. III.2 also requires that there shall be no visible leaks, except for a few drops from the disconnection of bottom loading dry breaks and from raising top loading vapor heads. Per S.C. III.2, no gas detector reading (from a combustible gas detector according to Rule 2005 procedure) greater than or equal to the lower explosive limit (LEL) at a distance of 1 inch from the location of a potential leak in the vapor collection system. I did not observe any leaks during my inspection. As discussed, David said that staff perform daily rack walks to inspect vapor collection hoses for cracks, breaks, or fuel odor, and that repairs are made based on those inspections. He said that a combustible gas detector is used when work (such as a repair) is being done at the rack to ensure that readings are well below the LEL. He said the facility does not keep records of these readings. David did provide a weekly log of repairs done on vapor hoses at each loading rack.

Per EU-LOADRACK S.C. III.3, the facility is subject to 40 CFR Part 60 Subpart XX. Based on the system checks I observed during my inspection, the facility appears to operate in compliance with the specific conditions listed in the permit for operating a vapor collection system. This rule establishes a 35 mg/L VOC emission limit. The VCU stack test values of 1.95 mg/L of all fuels loaded and 3.26 mg/L of gasoline loaded indicate that the facility is meeting this criteria. The VOC emission rates I observed on August 10 for the VRU also indicate compliance with this limit.

EU-LOADRACK S.C. III.4 requires that the permittee operate with an approved preventative maintenance/malfunction abatement plan (PM/MAP). David provided a copy of this Malfunction Abatement Plan, dated October 14, 2020. The plan includes descriptions for topics required by this condition and by Rule 911. The plan only covers information for the VDU, and lists Terry Rosenfeldt (who retired in July 2023) as supervisory personnel, so I'll request that David update the MAP to account for operation of the VRU and updated personnel responsibilities.

Design/Equipment Parameters
EU-LOADRACK S.C. IV.1 requires that no product be loaded into trucks unless the VRU or VDU are installed, maintained, and operated in a satisfactory manner, which includes maintaining each control device in accordance with the MAP. As previously discussed, facility staff perform daily checks for both the VRU and VDU. David provided weekly logs for the daily inspections performed on the VRU and copies of field service tickets for maintenance and repairs done on the VRU. While on-site, I observed a written log for repairs done on the VDU that identifies the date of the repair, what was repaired, how long the unit was down, and who performed the repair. Based on the regular checks and maintenance performed on the control units, the facility is in compliance with this condition.

Monitoring/Recordkeeping
Per EU-LOADRACK S.C. VI, the facility is in compliance with recordkeeping requirements. The facility provided records for monthly VOC emissions and 12-month rolling emission rates (S.C. VI.2); they also provided throughput records for gasoline, diesel, ethanol, and jet A fuel that included 12-month rolling values (S.C. VI.3). As previously discussed, facility staff perform daily checks of the loading racks and control devices, and David provided records for inspections and repairs done on the vapor collection system (S.C. VI.4). These records indicate that for leaks detected, repairs are done within the same week. While I was on-site, David showed me a log noting when product is loaded when the VDU is operating instead of the VRU, in compliance with S.C. VI.5. As discussed, the facility maintains a procedure for keeping tank truck certifications up to date, indicating compliance with S.C. VI.6.a and VI.7. David also provided records for repairs and maintenance on control devices that included descriptions of the issues found (S.C. VI.6.b and VI.6.c), and VRU/VDU emission test results (S.C. VI.6.d).

Other Requirements
The facility is subject to 40 CFR Part 63 Subpart BBBBBB. The AQD hasn't accepted delegation to enforce this rule, so compliance with this rule was not evaluated.

Per FG-GASOLINETANKS S.C. IV.1, the permittee shall not store gasoline in tanks 104, 105, or 106 unless internal floating roofs are installed, maintained, and operated in a satisfactory manner. During the facility inspection, David confirmed that tanks 104, 105, and 106 have internal roofs installed. David also provided records noting most-recent and scheduled in-service and out-of-service inspection dates. In-service inspections were performed on tanks 101 through 107 in 2022 and are next due for 2027. The most recent out-of-service inspection was in 2020 for tank 101, and the soonest scheduled out-of-service inspection is in 2025 for tank 106. The facility is in compliance with this condition.

The facility is currently in violation of EU-LOADRACK S.C. VIII.2 for emissions discharged horizontally rather than vertically upwards from its VRU stack, as required by the permit. The facility is also in violation of Rule 201 for the loading of additives, which may emit air contaminants, without a Permit to Install. During testing on June 27, 2023, facility exceeded the back pressure limit of 450 mmH2O, as specified in the procedures in 40 CFR 60.503(d)(1) and 40 CFR 63.11092(a)(1). A violation notice will be issued.

NAME Mashia Khan DATE 10/02/2023 SUPERVISOR K. Kelly