M4545
MAWICA

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

M454530920

FACILITY: EQ-DETROIT INC.		**SRN / ID:** M4545
LOCATION: 1923 FREDERICK, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Krystal Brown , EHS Manager		**ACTIVITY DATE:** 08/27/2015
STAFF: Jonathan Lamb	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Compliance inspection, FY 2015		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, MDEQ/AQD; Todd Zynda, MDEQ/AQD
PERSONNEL PRESENT: Krystal Brown, EHS Manager; Jim Conn, CWT Program Manager; Raymond Landsburg, General Manager; Jim Pawlowski, ChemPre Operations Manager
FACILITY PHONE NUMBER: (313) 347-1328
FACILITY FAX NUMBER: (313) 923-0217
FACILITY WEBSITE: www.usecology.com
CONTACT EMAIL: krystal.brown@usecology.com

FACILITY BACKGROUND:

US Ecology Detroit (South) is a waste processing facility specializing in the treatment, stabilization, and solidification of various types of industrial wastes, including both hazardous and non-hazardous liquids, solids, sludges, soils, and debris.

This facility was previously known as EQ-Detroit and was owned and operated by EQ, Inc. until the site was acquired by US Ecology in June 2014. The facility is located in an industrial area of Detroit near the I-75/I-94 interchange, across from Detroit Renewable Power. Hours of operation are 6 a.m. to 8 p.m., Monday through Saturday. There are currently around 90 employees at this site.

US Ecology, Inc. is a waste management company based in Boise, Idaho which has facilities throughout North America. The company expanded into Michigan in the past few years by purchasing Dynecol in Detroit in 2012 before purchasing three EQ-owned sites in Detroit, Belleville, and Romulus in 2014.

COMPLAINT/COMPLIANCE HISTORY:

The facility has a long history of odor complaints, dating back to 1995. Most recently, the facility has been cited for R 901 violations once in 2014 and once in 2015, though numerous complaints have been received in the past two years. In addition, the facility was cited in 2014 for failing to maintain negative pressure in the ChemFix Building and allowing fugitive emissions to escape through the bay doors. These violations are currently considered resolved.

The facility also met with AQD in 2014 and 2015 to demonstrate how the company calculates VOC emissions from the processing of wastes. At the time of this inspection, AQD has accepted the company's methodology for calculating VOC and HAP emissions, though AQD will continue to evaluate this methodology to assure it is sufficient to demonstrate compliance.

Note: When investigating complaints alleging odors from US Ecology Detroit (South), the inspector should also consider Detroit Renewable Power (DRP) as a possible source, since both facilities have potential for off-site odors. However, the odor from each source is distinctly different in character; odors from US Ecology tend to be described as "chemical", "fishy" while odors from DRP typically described as "rotting" or "garbage".

PROCESS DESCRIPTION AND EQUIPMENT:

AQD Staff Jon Lamb and Todd Zynda met with Krystal Brown and Jim Conn of US Ecology for a pre-inspection meeting and to get an overview of operations at the facility. Ms. Brown informed us of actions taken by the

facility in response to recent odor complaints which has resulted in violation notices issued to the facility. These actions included the installation of two "quick closing doors" on the Chem-Fix building and a closer assessment of wastes received and processed to determine their potential for creating odor issues.

Wastes are received in both bulk (via tankers) and drums (via truck or railcar). Each tanker is weighed on the truck scale, and every waste is sampled and analyzed ("fingerprint analysis") upon arrival to make sure it matches the description on the manifest before it can be accepted for treatment. Once approved, the waste stream will be transferred to the appropriate process. Drums are unloaded at the ChemFix receiving dock while tankers are pumped directly to treatment or storage tanks.

There are two main waste treatment operations at the plant: ChemPre, where oily and non-oily wastes are treated and processed, and ChemFix, where waste stabilization/solidification is performed.

ChemPre:
We first went to the "Main Building" where chemical precipitation is performed on non-oily wastewater (both hazardous and non-hazardous, and emulsified and non-emulsified). There are eight tanks located in the Main Building, ranging from 15,000 to 20,000 gallons, used to hold and treat the liquid waste containing some solids. The tanks are labeled T-201 through T-206 and T-305 and T-306, and are loaded directly from tankers with incoming waste. For the chemical precipitation process, additives are put into the tanks and the contents are agitated (using eductors) to mix, causing the solids to precipitate from the liquid, creating a sludge. This sludge is transferred and stored in two 17,000-gallon tanks (T-24 and T-25) for non-hazardous waste or to a 17,000 gallon tank (T-208) for hazardous waste. The waste is then passed through one of two filter presses (designated for hazardous or non-hazardous waste) to separate the liquid and solid waste. The hazardous solids are sent off-site to another company for further treatment and disposal, while the non-hazardous solids are treated in the ChemFix Building. The filtered liquid waste is stored in two 20,000-gallon tanks (T-1 and T-2) located outside the west side of the Main Building. This waste is then tested to determine if it needs further treatment; if not, it is then discharged to the city sewer system. The filter presses are exempt from permit requirements under R.285 (m) and tanks T-1 and T-2 are exempt per R.284(i).

There are also tanks used to store and treat light wastewaters, including leachate, which do not contain solids. Four of these tanks are 78,000 gallons and are designated as T-19, T-20, T-21, and T-22, and are the four big blue tanks located in front (east) of the oil processing area. Two 78,000 gallon tanks (T-3 and T-4) are also used as holding tanks for light wastewater. These tanks are located behind (west of) the Main Building next to tanks T-1 and T-2. Tanks T-3, T-4, and tanks T-19 through T-22 are not permitted. Based on discussions between AQD and consultants for the previous owner, EQ-Detroit, AQD had accepted the company's determination that these tanks are exempt from permitting per R.285(m) because of the minimal amount of VOCs in the waste steam and the purpose of the tanks is for storage and settling, not to treat VOCs.

The additives and reagents used in the chemical precipitation process are stored in various tanks, which are exempt under R.284(h) and R.284(i). These tanks are labeled A-1, CST-1 through CST-5, and C-1. The tanks range in size from 4,150 to 6,000 gallons, except for C-1, which is 14,000 gallons.

Inside the Main Building, there are two 8,000-gallon acid neutralization tanks (T-301 and T-302) and two 6,500-gallon acid storage tanks (T-303 and T-304) located in the "Acid Room". These tanks are considered part of the ChemFix process, not ChemPre. Wastes stored in these tanks are disposed of either in the waste stabilization process or sent off-site for deep well disposal. Tanks T-301 and T-302 are exempt from permitting under R. 284 (i) and tanks T-303 and T-304 are exempt under R.284(h).

The oil recovery process is used to reclaim fuel oil from oily wastewaters and waste oil. There are six primary treatment tanks (FGPRIMARYTANKS) located outside which are used for the treatment of oily wastewaters (three 150,000-gallon tanks and three 100,000-gallon tanks). The primary tanks are designated T-13 through T-18 and are also referred to as the "6-Pack". Each tank is heated and holds a different type of oily wastewater, including rag oil, decanted water, and lighter oil.

There are four 15,000-gallon secondary treatment tanks (FGSECONDARYTANKS) located inside the Oil Treatment Room which are used to treat waste oil and synthetic coolants. The secondary tanks are designated as T-120 through T-123. Each tank is heated and equipped with an impeller (for agitation) and a temperature gauge, which can be checked from a central computer in the Oil Treatment Room. The separation of oil during secondary treatment can take from three hours to three days.

Note: the primary and secondary treatment tanks are separate and individual operations and not part of a sequential process as the terms "primary" and "secondary" normally infer for wastewater treatment.

There are seven 22,000-gallon non-permitted tanks used for storage only. Of the seven non-permitted tanks, five (T-111 through T-115) are used to store pre-treated oily wastes and are exempt per R 284(i), while two (T-116 and T-117) are used to store treated outbound oil (product) and are exempt per R 284(d). Oil product includes fuel-grade oil and rag oil, which is sold as fuel to various customers.

Emissions from the FGPRIMARYTANKS and FGSECONDARYTANKS are controlled by a 5000 cfm scrubber. The scrubber is equipped with a monitor which shows pH, flow rate, ORP (oxidation-reduction potential), and change in pressure. These operating parameters are checked and recorded on a daily basis. There is also a second scrubber on-site which is not currently in use.

ChemFix:
Once we finished with the oil recovery process, we inspected the waste stabilization/solidification process, which is performed in the ChemFix Building. The facility can process both hazardous and non-hazardous materials in the ChemFix Building, but most of the material processed is non-hazardous.

There are six vaults (below-ground "pits") ranging in capacity from 150 to 460 cubic yards in which wastes are processed. Waste type dictates pre-treatment prior to solidification. Acids and bases are neutralized, while characteristic wastes are treated to eliminate the hazardous characteristic before solidification. These wastes are then allowed to be disposed of as non-hazardous wastes. Listed wastes, however, are simply solidified and then disposed of as hazardous waste. Some sludge waste is also stored in a 144,500-gallon underground storage tank (T-901) located underneath the baghouse. This waste is screw conveyed directly to the vaults inside the ChemFix Building for treatment.

During processing, compatible wastes are dumped into the vault, treated (if necessary), and then mixed with fly ash or cement kiln dust to solidify. There are five 5,500 cubic foot silos outside the south side of the ChemFix building. Four of the silos store cement kiln dust and lime, while a fifth holds hazardous waste dust. Once the cement kiln dust or fly ash is added, the contents of the vault are then mixed and allowed to cure before the waste is dug out using a front-end loader and put into a trailer. The stabilized wastes are then tested to make sure they meet federal disposal requirements, and are then sent to landfill (currently, non-hazardous wastes are taken to Arbor Hills in Northville and hazardous wastes are sent to US Ecology Belleville). Waste streams not treated at this site include biological, radioactive, and oxygen-generating wastes.

Particulate emissions from the ChemFix building are controlled by an 180,000 cfm baghouse, which was installed in July 2006. Particulate wastes collected in the baghouse are then used in the ChemFix process, so no off-site disposal is required.

Outside the east side of the ChemFix building is the drum receiving and storage area. The drums are segregated according to waste type, such as acids, flammable liquids, non-hazardous, corrosives and toxics, oils, cyanide, caustics, and characteristic metals. Flammable liquids, corrosives, and toxics are not treated at this site, but are temporarily stored here before being shipped out for off-site treatment and disposal. Drum waste which is able to be treated on-site are dumped into the vaults of the ChemFix building.

Lab De-Pack/Transfer and Processing:
The Lab De-Pack Building, now known as "Detroit Service Station", is located at the northeast corner of the property (near Ferry St. and St. Aubin St.) and is considered a separate entity from the Detroit (South) facility. This area is used for storage and de-packaging of small-quantity wastes (including some unknown wastes), and household hazardous waste drop-off. These wastes are consolidated and shipped off for disposal at another site. Outside the Lab De-Pack Building is the Transfer and Processing Area, where drums and other containers are stored on a short-term basis. This area is permitted through WHMD for 10-day storage. EQ has submitted a demonstration which shows that the Lab De-Pack and Transfer and Processing areas are exempt from permitting via R.290. Records are maintained to show that emissions are below R.290 limits and all materials processed have screening levels above the threshold limits allowed in R.290. The exemption demonstration shows VOC emissions to be less than 10 pounds per year.

APPLICABLE RULES/ PERMIT CONDITIONS:

Permit to Install No. 269-04E was issued on August 21, 2014, which was a modification to PTI No. 269-04D to remove conditions relating to a centrifuge which was never installed. This permit kept the limits on VOCs and HAPs which maintained the facility's synthetic minor status.

PTI No. 269-04E; Special Conditions:

EUTREATMENT

I. Emission Limits

Condition	Pollutant	Permit Limit	Actual Emissions	Compliance Status
1.	PM	0.002 gr/dscf	0.0005 gr/dscf[1]	IN COMPLIANCE
2.	PM	4.3 pph	0.75 pph[1]	IN COMPLIANCE
3.	VOC	25.0 pph	7.32 pph[2]	IN COMPLIANCE

[1] Stack testing on November 8 and 9, 2006, showed the particulate emission rates to be 0.0005 grains/dscf and 0.75 lb/hr.
[2] Stack testing on June 26, 2007, measured the VOC emission rate to be 7.32 lb/hr.

II. Material Limits

1. IN COMPLIANCE. Facility does not process hazardous waste with a VOC content over 500 ppm in EUTREATMENT.
2. IN COMPLIANCE. Facility does not process non-hazardous waste with a VOC content over 5.0% in EUTREATMENT.
3. IN COMPLIANCE. Facility does not process any wastes listed in this condition, regardless of concentration.

III. Process/Operational Restrictions

1. IN COMPLIANCE. Facility implements and maintains a fugitive dust plan. A wet sweeper is used on site. During the inspection, no issues with fugitive dust were observed.
2. IN COMPLIANCE. During the inspection, no more than one bay door was open during normal operation.
3. IN COMPLIANCE. EUTREATMENT was under negative pressure at the time of inspection.

IV. Design/Equipment Parameters

1. IN COMPLIANCE. Baghouse appeared to be operating properly at the time of inspection.

V. Testing/Sampling

1. IN COMPLIANCE. Testing to verify negative pressure in EUTREATMENT was performed on December 21, 2013, and December 7, 2014, by Horizon Environmental.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. The following records are maintained in a format acceptable to AQD:
a. VOC content of waste streams received for treatment in EUTREATMENT.
b. Calendar month summaries of the VOC in liquid waste received for treatment in EUTREATMENT.
c. Daily and monthly total records of type and amount of waste processed in EUTREATMENT.
d. Annual determination of negative pressure in EUTREATMENT.
c. VOC calculations on a monthly and 12-month rolling basis for EUTREATMNET.

VII. Reporting

NA

VIII. Stack/Vent Restrictions

1 and 2. Baghouse stacks meet the dimensions required in the permit.

IX. Other Requirements

NA

FGOILRECOVERY (EUOILRECOVERY, FGPRIMARYTANKS, FGSECONDARYTANKS)

I. Emission Limits

NA

II. Material Limits

1. IN COMPLIANCE. Facility did not exceed the permit limit of 73,000,000 gallons per 12-month rolling in FGPRIMARYTANKS. The highest 12-month rolling total since September 2013 was 13,756,040 gallons in October 2014. The 12-month rolling total as of July 2015 was 10,286,161 gallons.
1. IN COMPLIANCE. Facility did not exceed the permit limit of 36,500,000 gallons per 12-month rolling in FGSECONDARYTANKS. The highest 12-month rolling total since September 2013 was 3,851,691 gallons in October 2014. The 12-month rolling total as of July 2015 was 2,880,125 gallons.

III. Process/Operational Restrictions

1. IN COMPLIANCE. FGPRIMARYTANKS are kept below 190 F. Records were reviewed during the inspection.
2. IN COMPLIANCE. FGSECONDARYTANKS are kept below 210 F. Records were reviewed during the inspection.

IV. Design/Equipment Parameters

1. IN COMPLIANCE. Tanks in FGOILRECOVERY are controlled by a scrubber, and the scrubber is properly operated and maintained. At the time of inspection, the scrubber operating parameters were in compliance with permit specifications, though the pH probe was malfunctioning and a new one was on order. The facility was using pH strips to monitor the pH until the probe can be replaced.
a. pH maintained at 5.0 or higher (pH strips showed pH was over 5.0).
b. ORP maintained at 350 mV or higher (715 at time of inspection).
c. Flow rate maintained between 100-135 gpm (128 gpm at time of inspection).
d. Pressure drop maintained between 4" and 6.5" wg (4.8" wg at time of inspection).

V. Testing/Sampling

1. NOT EVALUATED. Odor testing has not been requested by AQD. However, due to ongoing odor complaints and verified odors, AQD may request testing prior to next inspection if odor complaints continue.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Temperatures of the tanks in FGOILRECOVERY are monitored continuously and recorded periodically throughout the day.
2. NOT IN COMPLIANCE. Equipment to monitor scrubber operating parameters is installed, but the pH probe was not working at the time of inspection. A new probe was already on order prior to the date of inspection.
3. IN COMPLIANCE. The following records are maintained in a format acceptable to AQD:
a. Daily records of oil/water waste processed in FGPRIMARYTANKS and FGSECONDARYTANKS.
b. Temperature of the tanks in FGOILRECOVERY is recorded at least once per day.
c. Date and amount of additions to the scrubber liquid.
d. Scrubber operating parameters (pH, ORP, flow rate, and pressure drop) are recorded at least once per day.

VII. Reporting

NA

VII. Stack/Vent Restrictions

1. IN COMPLIANCE. Scrubber stack dimensions appear to meet permit specifications.

IX. Other Requirements

NA

FGFACILITY

I. Emission Limits

Condition	Pollutant	Limit	Highest 12-month total	Compliance Status
1.	VOC	89.9 tons per 12-month rolling	19.75 tons (July 2015)	In compliance
2.	Individual HAP	< 9.0 tons per 12-month rolling	All HAPS below 1 ton	In compliance
3.	Total HAPs	< 22.5 tons per 12-month rolling	3.0 tons (Sept. 2014)	In compliance

II. Material Limits

NA

III. Process/Operational Restrictions

1. IN COMPLIANCE. Malfunction Abatement Plan (MAP) was submitted to AQD, and is maintained and implemented by the facility.

IV. Design/Equipment Parameters

NA

V. Testing/Sampling

NA

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Monthly and 12-month rolling time period calculations of VOC and HAP emissions from FGFACILITY are maintained, as required. AQD has accepted the company's methodology for calculating VOC and HAP emissions, though AQD will continue to evaluate this methodology to assure it is sufficient to demonstrate compliance.

VII. Reporting

NA

VIII. Stack/Vent Restrictions

NA

IX. Other Requirements

NA

FINAL COMPLIANCE DETERMINATION:

At the time of inspection, US Ecology Detroit (South) in compliance with Permit to Install No. 269-04E, except for

Special Condition No. FGOILRECOVERY, VI.2, due to the pH probe not functioning properly. However, since the facility was aware of the issue and had the part on order and were still monitoring the pH levels as required, the facility is considered to be in compliance with PTI No. 269-04E.

NAME _____ DATE 9-28-15 SUPERVISOR JK