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

N600841390

FACILITY: Oakland Heights Development, Inc.		**SRN / ID:** N6008
LOCATION: 2350 Brown Road, AUBURN HILLS		**DISTRICT:** Southeast Michigan
CITY: AUBURN HILLS		**COUNTY:** OAKLAND
CONTACT: Robb Moore , Environmental Manager		**ACTIVITY DATE:** 08/14/2017
STAFF: Kerry Kelly	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FY 2017 scheduled inspection and FCE. Based on information gathered during the inspection and records reviewed, Oakland Heights and WMRE appear to be in compliance with the evaluated applicable Federal Clean Air Act, Michigan's Air Pollution Control Rules, and the conditions of MI-ROP-N6008-2015, and PTI No. 117-16.		
RESOLVED COMPLAINTS:		

On February 14, 2017, I, Kerry Kelly, Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD) and Robert Joseph, MDEQ-AQD conducted an inspection of Oakland Heights Development, Inc.(Oakland Heights), SRN: N6008, located at 2350 Brown Road, Auburn Hills, Michigan. The purpose of this inspection was to determine the facility's compliance with the Federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules, Renewable Operating Permit (ROP) No. MI-ROP-N6008-2015, Permit to Install (PTI) No. 117-16, and AQD consent order number 9-2017.

Upon arriving at the facility, Robert and I met with Mr. Robb Moore, Environmental Engineer – Republic Services, Mr. Andy Karg, Air Quality Specialist, Inc, Mr. Farid Abuchaibe, General Manager – Republic Services, and Mr. Bill Dolsen, Oakland Heights Development. According to the State of Michigan Department of Licensing and Regulatory Affairs, Oakland Heights Development is registered as a corporation. Many of the employees and officials representing Oakland Heights Development are employees of Republic Services.

Facility Overview

Oakland Heights is a municipal solid waste landfill located in central Oakland County. As a Type II Sanitary Landfill, Oakland Heights accepts and landfills municipal solid waste (MSW) and inert wastes such as construction debris, demolition debris, foundry sand, ash, and low-level contaminated soils. The landfill formerly accepted wastes containing asbestos. Oakland Heights surrounded by industrial/commercial properties to the south, west, and east and residential to the north. The closest residential area is approximately 500 feet north of Oakland Heights.

After waste is transported to the facility, it is placed in one of the active working areas (cells) and is covered daily with soil or other cover materials. Oakland Heights has two distinct sections: Phase 1 is closed, is clay-lined, has final cover, and still has gas collection. Oakland Heights began accepting waste in Phase 2 in approximately 1994. Phase 2 is divided into six cells: cells A through F. At the time of my inspection, waste was being placed in cell F, which is on the northern side of the property.

The landfill gas (LFG) is collected through an active landfill gas collection system, which consists of vertical wells, horizontal wells, tie-ins to leachate collection, headers, and gas mover equipment (blowers). According to Mr. Moore, there are currently 108 collection points. Typically, Oakland Heights uses its two newer blowers to remove the gas from the landfill. A third blower is used as back-up to the two blowers. LFG flow rates range between 2800-3300 scfm. The collected LFG goes to the on-site blower building. From the blower building, LFG can be routed to an open flare located on-site and/or the LFG to a treatment system owned and operated by Waste Management Renewable Energy (WMRE). LFG treated by WMRE is sold off-site to the General Motors Orion Assembly Plant (GM) for use as fuel in their boilers and/or reciprocating internal combustion engines. Currently, Oakland Heights sends gas to the flare 24 hours a day,

365 days a year. LFG is typically sent to GM Monday through Friday between 6:00 AM and 4:00PM at about 1,200 to 1,500 scfm.

Oakland Heights is subject to the National Standards of Performance for Municipal Solid Waste Landfills, 40 CFR, Part 60, Subpart WWW, and is permitted under ROP No. MI-ROP-N6008-2015. The ROP has enforceable limits/conditions for the following emission units: EULANDFILL, EUALGCS, EUPERENNIALFLARE, EULFG&EFLARE, and EUASBESTOS. In the 2015 ROP renewal, Section 2 was added for the treatment system (EUTREATMENTSYS).

The flares conditions listed in the ROP are now obsolete. In 2015, Republic applied for a permit to replace the enclosed flares listed in the ROP with one 3,000 scfm utility (open) flare. PTI No 11-15 was issued to Oakland Heights on March 9, 2015 and contained enforceable limits/conditions for EUFLARE1. Following the February 17, 2016 inspection at Oakland Heights, it was discovered the design capacity of EUFLARE1 was 5,100 scfm, not 3,000 scfm. A violation notice was issued to Oakland Heights for installing the 5,100 scfm flare without first obtaining a permit to install. At the time there was concern the 5,100 scfm would not pass modelling for SO_2. Oakland Heights submitted a permit application (PTI 117-16) for the 5,100 scfm flare on August 2, 2016. PTI 117-16 was approved on December 1, 2016. The AQD and Oakland Heights entered into a consent order (9-2017) on April 20, 2017. The compliance program in the consent order requires compliance with PTI 117-16 and Rule 201 if equipment is installed, constructed, reconstructed, relocated, altered, or modified.

Oakland Heights Development, who operates the landfill, contracts the wellfield and flares monitoring to Monitoring Control and Compliance, Inc. (MCC) and testing/calibrations/records to Air Quality Specialist, Inc. (AQSI).

Mr. Moore and Mr. Karg presented all requested records while on-site at the time during my inspection. Copies of electronic documents were sent by Mr. Moore and Mr. Karg.

According to MI-ROP-N6008-2015, Section 2, on June 31, 2014, WMRE installed, and is currently operating, a LFG treatment system to treat the LFG before it is sold off-site to GM. Mr. Adam Stough, WMRE Gas Plant Manager/Pipeline Operator, provided records required in MI-ROP-N6008-2015, Section 2.

Summaries of the permit/Federal requirements, the records reviewed, and my inspection observations are provided in each section below.

MI-ROP-N6008-2015 - SECTION 1 and OTHER OAKLAND HEIGHTS EQUIPMENT
Landfill/Gas Collection System

Section 1 of MI-ROP-N6008-2015 includes the landfill and gas collection system (EULANDFILL, EUALGCS, and EUASBESTOS). 40 CFR, Part 60, Subpart WWW requires an appropriately sized and operated landfill gas collection system be installed. Quarterly scans for methane at the surface of the landfill, monthly landfill cover integrity checks, monthly perimeter probes for the presence of methane, and monthly monitoring of each wells' temperature, oxygen, and pressure are used to determine the effectiveness of the landfill gas collection system. A map of the collection system, required in the ROP, was provided by Mr. Moore (attachment 1).

The 2016 2nd, 3rd, and 4th quarter and 2017 1st and 2nd quarter methane surface scan reports, provided by Mr. Moore (attachment 2), state the scans indicate no areas had an excess of the 500 ppm (above background) methane. The map of the methane monitoring sampling shows the path includes the entire perimeter of the collection area and along a pattern that appears to traverses the landfill at 30 meter intervals. Mr. Moore said there was a reading of greater than 500 ppm above background during the most recent scan on August 7, 2017. The location of the

exceedance was in Cell F. According to Mr. Moore, Oakland Heights added more soil to the area and will re-test on August 17, 2017 as required.

To control off-site migration, Oakland Heights has 20 locations, along the perimeter, probed to check for the presence of methane. A copy of the 1st and 2nd quarter methane probe log was provided and reviewed (attachment 3). The report indicates no (0%) methane was detected at each of the 20 probes. Mr. Moore stated there haven't been any probes recently that have indicated the presence of methane. Probe 20 in Cell A was the most recent probe that was positive for methane. According to Mr. Moore, Oakland Heights had collection installed on the riser near probe 20 and they haven't had a problem since the installation.

Integrity checks of the landfill cover are conducted monthly (attachment 4) by MCC. The "Monthly Cover Integrity Report" indicates areas where the landfill cover material needs corrective actions. Corrective actions in response to the integrity check findings are performed by Oakland Heights employees as soon as conditions are safe, according to Mr. Moore. During my inspection, I noted many of the integrity check summaries had the same corrections from month to month; e.g. the slope near wells 7A and 8A. Mr. Moore told me the slope near wells 7A and 8A is not final cover and is where Oakland Heights keeps a clean soil stock pile. According to Mr. Moore, corrections are made to the slope near 7A and 8A, but slope erosion continues because soils are constantly being moved from the stock pile. This information is not communicated in the "Monthly Cover Integrity Report". As a result, it is unclear from the report whether corrective actions were taken and why some areas have recurrent integrity issues. Mr. Moore said he will be training employees on the integrity check and correction recordkeeping and in the future the corrective actions and comments will be included on the "Monthly Cover Integrity Report".

Mr. Moore provided the "LandGEM" emission model report for Oakland Heights (attachment 5). This document includes the estimated waste acceptance rates, waste in place, and landfill gas production. According to Mr. Moore, Oakland accepts approximately 800 tons of waste per day. The yearly acceptance rate is 207,735 tons of waste and currently there is approximately 16,869,372 cubic yards of waste in place. The most recent permitted design capacity was approved by staff in DEQ's Waste Division in December 2009. This expansion (cell F) brought Oakland Height's design capacity to 18,904,931 million cubic yards. Given this information, Mr. Moore expects the landfill will reach capacity in approximately 8 years.

Currently, Oakland Height's wellfield consists of 108 collection points (including some dual extraction wells). The most recent wells were installed in the spring of 2017. At the time of my inspection, only the back-up blower was being used the well field vacuum was at approximately 26.3 inches water column.

On a monthly basis, MCC monitors temperature, oxygen, and pressure for each NSPS subject well. Attachment B of the May and June 2017 Monthly LFG Report has NSPS well data (attachment 6). Six-month rolling wellhead data for all wells was also provided by Mr. Moore (attachment 7). The "Wellhead Data" report provided by Mr. Moore has the temperature, oxygen, and pressure for each well from March 2017 and August 2017. According to these records and Oakland Height's semi-annual reports, they appear to be documenting instances in which wells have temperature, oxygen, and/or pressure exceedances. In the instances in which an exceedance cannot be corrected within 15 days, Oakland Heights has requested higher operating variance, alternative timelines, and/or to decommission wells.

In the 2016 inspection report, it was noted AQSI would send an email with alternative timeline request to ensure the request is received in timely manner. I have been receiving alternative

timeline requests via email from Mr. Karg. A cursory review of the past few requests indicates the requests are received by AQD within 15 days of the first date of an exceedance. Mr. Karg also provided a list of wells currently operating under oxygen, pressure, and/or temperature variances (attachment 8). Currently, Oakland Heights has 10 wells operating under oxygen/pressure variances. The requests for 8 of the well variances were sent to the AQD in 2011 and still remain in effect. The remaining two variance requests were received in 2016 and 2017. The alternative operating scenario approved for well OAKL0088 in April 2017 expires June 1, 2018. Oakland Heights also has dual extraction wells located along the south slope in Phase I. Due to PCB contamination in this area, leachate from these dual extraction wells is sent to an activated carbon treatment system and is then discharged to DWSD (permitted through the City).

As required by the MI-ROP-N6008-2015, Oakland Heights has a Startup, Shutdown, and Malfunction Abatement Plant (SSM) for the gas collection and control system (GCCS). Mr. Karg sent me a copy of the SSM plan (attachment 9). The plan was last revised in February 2016.

In addition to the above mentioned records, the Monthly LFG Reports contain information on the flare, blower station, O and M discussions/concerns, and additional gas system monitoring data (attachment 6).

Flares, Blowers, and PTI No. 117-16

The enclosed flares permitted in MI-ROP-N6008-2015 (EUPERENNIALFLARE and EULFG&EFLARE), were reportedly dismantled on June 30, 2015, and July 14, 2015. During my inspection one of the enclosed flares was still standing. I did not see any piping leading to the remaining enclosed flare during my inspection and Mr. Moore said the LFG line to this flare had been removed. Google Earth aerial images from 2015 and 2016 support the information that the one of the enclosed flares and the gas lines to both flares had been removed in 2015. The conditions in the ROP for these emission units are, therefore, obsolete and were not evaluated.

PTI No. 117-16, for the flare at Oakland Heights, has not yet been incorporated into MI-ROP-N6008-2015. PTI 117-16 includes enforceable limits and conditions for EUFLARE1 including the following: a visible emissions limit of 0% opacity, SO2 limit of 89.4 tons/year, a net heating value of LFG greater than or equal to 200 btu/scf, landfill gas limit of 2,680 MMscf/year, and H2S limit of 400 ppmvd. Compliance with these limits is demonstrated through testing and recordkeeping.

I inspected the nameplate on the open flare which indicated the flare was a "John Zink" Model ZEF 16 x 45 Serial Number 9017520 manufactured in March 2004.

On July 28, 2015, Oakland Heights completed the installation of the utility flare and on September 28, 2015, AQSI conducted a performance evaluation test on the utility flare to demonstrate compliance with the net heating value, visible emissions, and H2S or TRS limits in PTI 11-15 and requirements in 40 CFR Part 60, Subpart WWW. The reported results indicate the flare is in compliance with PTI 11-15 and 40 CFR Part 60, Subpart WWW (see details of the report in the 2015 Stack Test File). PTI 117-16 requires the same testing as PTI 11-15. AQSI, on behalf of Oakland Heights, requested the 2015 test be used to demonstrate compliance with PTI 117-16 visible emissions and net heating value testing conditions (Special Conditions V.1, V.2, and V.3.) because it is the same flare operating under similar flow rates as it was to demonstrate compliance with PTI 11-15. Should the monthly average gas flow rate to the flare exceed 3,000 scfm, Oakland Heights will retest the flare to demonstrate compliance with PTI 117-16. The AQD allowed the 2015 to be used to show compliance with the visible emission and net heating value testing requirements in 117-16 because it is the same flare operating at about the same flow and Oakland Heights agreed to retest if the average flow increases. AQSI did sample the gas on

February 14, 2017 to determine the H2S or TRS content in compliance with PTI 117-16 Special Condition V.3. The results of this test indicate the TRS was 215 ppmv and 225 ppmv, which is below the 400 ppmv permit limit.

EUFLARE1 is continuously monitored for flow and continuous pilot flame. Two thermocouples installed on the flare are used to indicate the continuous presence of a flame according to Mr. Moore. Records of the flow to the flare, presence of a pilot flame, daily gas usage and hours of operation for EUFLARE1 are included in the Monthly LFG Reports. Mr. Moore also stated flare downtime is reported in the annual/semi-annual reports. According to Mr. Chad Miller, MCC, the thermocouples extend into the flame zone of the flare and he believes the current setting is 200 degrees Fahrenheit to indicate a flame is present. The thermocouples, according to Mr. Moore, are replaced when they fail and are not calibrated between installation and failure. Manufacturer installation and maintenance recommendations were provided by Mr. Moore (attachment 10). According to this document, proper maintenance for applicable to the thermocouples at Oakland Heights includes monthly maintenance checks. Mr. Chad Miller, MCC, stated the flare is inspected and thermocouple monitoring data is reviewed every time an MCC representative is at the site, which is at least monthly. According to Mr. Miller, if there is a break in the circuit of the thermocouple, the monitor will report it as an error. If a thermocouple breaks, it is replaced, according to Mr. Moore. Mr. Miller stated he spoke with the flare manufacturer who provided the thermocouple maintenance information, and with a representative at another thermocouple company, Pyromation, about recommended thermocouple calibration. According to Mr. Miller, he was unable to find any information about calibration recommendations. In addition to monthly maintenance checks, the manufacturer recommends type K thermocouples (the type used at Oakland Heights) not be exposed to temperatures of 1600 degrees Fahrenheit or higher if used for accurate measurements below 1,000 degrees Fahrenheit. The monthly monitoring reports provided indicate the thermocouples are not exposed to temperatures above 1600 degrees Fahrenheit.

PTI No. 117-16 also requires monthly records of the average btu content of the LFG, 12-month rolling heat input calculations, and the monthly and 12-month rolling SO_2 emission rates. Mr. Moore and Mr. Karg gave me the aforementioned records for July 2015 through July 2017 (attachment 11). These records state the average methane content of the LFG ranged from 46-54%, the average btu/cf ranged from 469-546 btu/cf, the heat input ranged from 9,028 to 61,844 MMBtu, and the 12-month rolling heat input was 573,654 MMBtu in July 2017. The highest monthly and 12-month rolling SO_2 emissions reported were 2.85 tons/ month in July 2016 and 25.07 tons/12-month rolling in February 2017. The highest 12-month rolling gas flow reported was 1127.46 MMcf reported in July 2017. The records provided indicate the flare is operating within the SO_2 emission limits and the monthly gas usage limits in PTI 117-16.

At the time of my inspection, the vacuum of the wellfield was at 26.3 inches water column and the flow meter indicated the flow was 3308 scfm (2860 scfm to flare and 500 scfm to treatment system). According to Mr. Moore, one of the new blowers is being repaired. The old blower was being used until the new blower is operational.

Asbestos

At this time, Oakland Heights does not accept friable asbestos waste. The flexible group conditions are listed in the ROP because in the past asbestos waste was accepted up until 1998. Mr. Moore explained that because of old records and waste settling/movement, Oakland Heights is conservative when it comes to drilling new wells and submits an asbestos notification for all well drilling projects. According the Mr. Dolsen, the asbestos waste is in the bottom of Cell A and has about 60 – 70 feet of cover on top.

Exempt Equipment
There is one cold cleaner located in the garage. The cold cleaner appears to be exempt from obtaining a PTI pursuant to Rule 285(r)(iv). During the inspection I observed the air/vapor interface was less than ten square feet, the lid was closed, operating procedures were posted, and there was a rack for drying parts. Mr. Moore gave me a copy of the SDS for the solvent used in the cold cleaner (attachment 12). Based on my observations, the cold cleaner appears to be in compliance with the conditions listed in the ROP under FGCOLDCLEANERS.

The landfill also three 10,000 Btu/hr natural gas heaters located in the buildings on-site (these are not listed in the ROP). This equipment appears to be exempt from obtaining a Permit to Install pursuant to Rule 282(b)(i).

A 300 gallon gasoline tank and 500 gallon diesel tank are located near the garage. The fuel in these tanks is used to fill on-site vehicles and heavy equipment. These storage tanks appear to be exempt from Rule 201 per Rule 284(2)(g)(ii). The gasoline fueling/storage tank may be subject to 40 CFR Part 63 Subpart CCCCCC, the National Emission Standards for Hazardous Air Pollutants for Gas Dispensing Facilities at Area Sources. In the past 12 months, Oakland Heights used a total of 927 gallons of gasoline according to records provided by Mr. Dolsen (attachment 13). Compliance with 40 CFR Part 63 Subpart CCCCCC was not evaluated because the AQD has not accepted delegation for this regulation at area sources of hazardous air pollutants.

MAERS
Oakland Heights submitted the 2016 MAERS report on time and the reported throughput and SO_2 emissions coincide with records provided during my inspection.

MI-ROP-N6008-2015 - SECTION 2 – WMRE
According to AQD records, Oakland Heights previously sent untreated LFG to GM Lake Orion for use in their boilers. In 2014, GM installed five LFG fueled engines at their Lake Orion facility. To achieve compliance with federal regulations and ensure proper combustion, the LFG must be treated before using it as fuel in the engines. WMRE installed and is currently operating the LFG treatment system. The system is located next to the blower station and, according to MI-ROP-N6008-2015, Section 2, removes particulate to at least the 10 micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of the landfill gas when used as fuel off-site.

At this time, WMRE is responsible for operating and maintaining the treatment system. The treatment system is permitted under Section 2 of MI-ROP-N6008-2015. The ROP requires a SSM Plan and records of maintenance activities. On August 16, 2017, Mr. Stough, WMRE, emailed me copies of the maintenance schedule and dates of the weekly checks of the system/maintenance activities conducted (attachment 14 and attachment 11). WMRE submitted the 2016 annual report and SSM plan on time (March 14, 2017). It appears WMRE is in compliance with the applicable requirements in MI-ROP-N6008-2015.

Conclusion
Based on information gathered during the inspection and records reviewed, Oakland Heights and WMRE appear to be in compliance with the evaluated applicable Federal Clean Air Act, Michigan's Air Pollution Control Rules, and the conditions of MI-ROP-N6008-2015, and PTI No. 117-16.

NAME K. Kelly DATE 9/7/17 SUPERVISOR SK