

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

September 30, 2011

PERMIT TO INSTALL
31-09D

ISSUED TO
Michigan Disposal, Inc.

LOCATED AT
49350 North I-94 Service Drive
Belleville, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
M4782

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

September 29, 2011

DATE PERMIT TO INSTALL APPROVED:

September 30, 2011

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDNRE	Michigan Department of Natural Resources and Environment (Department)	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than or equal to 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than or equal 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO ₂	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EU-FEEDBLDG	Enclosed area where oily waste is received and fed to EU-TDU. Building is maintained under negative pressure and vented to the regenerative thermal oxidizer (RTO). In the case of RTO shutdown, a flare may be used.	FG-TDU
EU-TDU	Thermal desorption unit. Organic compounds and water are vaporized off of oily wastes using heat. Heat is supplied by a natural gas-fired burner with a maximum heat input of 11 million Btu per hour. Residual solids from the TDU are quenched with water and particulate emissions are controlled by a cyclonic separator. Vapors are condensed into oil and water. During Regular Operation uncondensed VOCs are controlled by an RTO and a VCU. During Reduced Operation, uncondensed VOCs are controlled by the RTO without the VCU. In the case of RTO shut down, emissions may be vented to the flare during shut down of FG-TDU.	FG-TDU
EU-WATERTANK	Tank for storing condensed water. Emissions from Tank are controlled by the RTO. In the case of RTO shutdown, a carbon adsorption system may be used.	FG-TDU
EU-PHASETANK	Tank for storing condensed water and for phase separation. Emissions from tank are controlled by the RTO. In the case of RTO shutdown, a carbon adsorption system may be used.	FG-TDU
EU-OILTANK	Tank for storing condensed oil. Emissions from tank are controlled by the RTO. In the case of RTO shutdown, a carbon adsorption system may be used.	FG-TDU
EU-AIRSTRIPPER	Air stripper may be used for removing VOC from the condensed water. Air stripper is controlled by the RTO.	FG-TDU
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.		

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-TDU	All equipment related to the Thermal Desorption Unit. Emissions are routed to the RTO and/or the VCU as appropriate.	EU-FEEDBLDG, EU-TDU, EU-WATERTANK, EU-PHASETANK, EU-OILTANK, EU-AIRSTRIPPER

The following conditions apply to: FG-TDU

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	6.0 pph	Test Protocol	FG-TDU	V.1.	R 336.1225 R 336.1702
2. VOC	26.4 tpy	12-month rolling time period as determined at the end of each calendar month.	FG-TDU	V.1.	R 336.1225 R 336.1702
3. PM	0.10 lb /1,000 lbs of exhaust gas	Test Protocol *	Cyclonic Separator of EU-TDU	GC 11, GC 13	R 336.1225, R 336.1331

II. MATERIAL LIMITS

1. Regular Operation - Under regular operating conditions, when the process is controlled by both the RTO and the VCU, the permittee shall process no more than 8,000 pounds per hour of waste in FG-TDU. **(R 336.225(3)(a), R 336.702)**
2. Reduced Operation - Under reduced operating conditions, when the process is controlled by the RTO only, the permittee shall limit the feed rate to FG-TDU such that the temperature in the combustion chamber of the RTO does not exceed 2000°F. **(R 336.225(3)(a), R 336.702)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate FG-TDU unless all of the following operational procedures are followed:
 - a) Wastes will only be received and stored in closed containers.
 - b) Waste containers will only be opened and wastes handled in accordance with the applicable provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 61 Subpart FF. **(R 336.1901, 40 CFR Part 61 Subpart FF)**
2. The permittee shall maintain negative pressure in EU-FEEDBLDG during operation. This includes, but is not limited to, maintaining proper structural integrity of EU-FEEDBLDG. Negative pressure shall be verified using the procedure outlined in SC V.3. Operation is defined as any period that waste material in EU-FEEDBLDG:
 - a) Is uncovered.
 - b) Has been covered for less than two hours.
 In case of RTO malfunction and subsequent TDU shut-down, negative pressure is not required. **(R 336.1901)**
3. The permittee shall not operate FG-TDU unless the RTO is installed, maintained, and operated in a satisfactory manner, which includes maintaining a minimum temperature of 1,400°F (760°C) and a minimum retention time of 0.5 second in the combustion chamber. The following activities do not need to be controlled by an operating RTO because minimal emissions of air contaminants are anticipated from these activities:

- a) Pumping water from the EU-PHASETANK.
- b) Removing solid from the EU-TDU by covered roll-off or covered trailer.
- c) Other activity not generating emissions, subject to the approval of the AQD District Supervisor.

(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910, 40 CFR 61.349(b), 40 CFR 63.693(f)(1)(iii))

4. The permittee shall not process waste in FG-TDU at a rate greater than the rate that would result in a temperature in the combustion chamber of the RTO greater than 2000°F unless the VCU is installed, maintained, and operated in a satisfactory manner, which includes maintaining a minimum temperature of 1,400°F (760°C) and a minimum retention time of 0.5 second in the combustion chamber. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910, 40 CFR 61.349(b), 40 CFR 63.693(f)(1)(iii))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip the RTO with a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in °C or ± 0.5 C, whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910, 40 CFR §61.354(c)(1))**
2. The permittee shall equip the VCU with a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in °C or ± 0.5 C, whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910, 40 CFR §61.354(c)(1))**
3. FG-TDU shall be designed and installed so that:
 - (1) Regular Operation – All emissions are ducted to the RTO and VCU
 - (2) Reduced Operation – All emissions are ducted to the RTO.
 - (3) RTO shutdown – EU-TDU ducted to VCU, or to the flare if the VCU simultaneously shuts down, until waste in the feed hopper is processed through the EU-TDU; emissions from EU-WATERTANK, EU-PHASETANK and EU-OILTANK may be routed to the carbon adsorption system. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910, 40 CFR §61.349(a))**
4. The permittee shall operate the flare only in the event of a shutdown. **(R 336.1901)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 90 days after the issuance date of this permit, the permittee shall verify the VOC emission rate by testing, at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1225, R 336.2001, R 336.2003, R 336.2004)**
2. Upon AQD request, the permittee shall verify and quantify odor emissions from FG-TDU, by testing at owner's expense, in accordance with Department requirements. Within 60 days after AQD request, the permittee shall submit to the AQD, a complete stack sampling and odor threshold analysis plan using the Dynamic Dilution Method. The stack sampling plan shall include provisions for various plant operating conditions, and odor neutralizer system operation (if any). The AQD must approve the final plan prior to testing. Verification of emissions includes the submittal of a complete report of

the test results to the AQD within 60 days of the test. **(R 336.1901, R 336.2001, R 336.2003, R 336.2004)**

3. Verification of the VOC capture efficiency of the exhaust system by testing, at owner's expense, in accordance with Department requirements, will be required for operating approval. The VOC capture efficiency of the exhaust system shall be determined in accordance with Procedure T, found in 40 CFR 52.741 Appendix B, or an alternative method as approved by the AQD, and by visual observation of the air movement and direction. Alternative testing procedures for VOC capture efficiency and associated operational parameters must have prior approval by the AQD District Supervisor. Permittee shall conduct the verification tests at least once every calendar year. **(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003)**
4. Verification that the closed vent system is operated with no detectable emissions by testing, at owner's expense, in accordance with Department requirements, may be required on an annual basis. The testing shall be conducted utilizing the procedure specified in 40 CFR §63.694(k). **(40 CFR §63.693(c)(1)(i))**
5. Within 90 days after the issuance date of this permit, the permittee shall verify the mercury emission rates from the condensers of FG-TDU by testing at owner's expense, in accordance with Department requirements. Verification shall include establishing the concentration of mercury in the waste processed during the testing. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1225)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the following information:
 - a) The amount of VOC present in each waste stream in percent by weight
 - b) The temperature of the RTO at a representative location in the combustion chamber on a continuous basis and shall record five minute block averages of the monitored temperature in a manner and with instrumentation acceptable to the AQD District Supervisor.
 - c) The temperature of the VCU at a representative location in the combustion chamber on a continuous basis and shall record five minute block averages of the monitored temperature in a manner and with instrumentation acceptable to the AQD District Supervisor.**(R 336.1225, R 336.1299, R 336.1702, R 336.1901, 40 CFR 61.356(j)(4))**
2. The permittee shall calculate the VOC emission rate from FGTDU monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
3. The permittee shall keep records of the waste throughput and the hours of operation under each operating scenario, on a daily basis:
 - (a) Regular operation (controlled by the RTO and VCU)
 - (b) Reduced operation (controlled by the RTO)**(R 336.1225, R 336.1702, R 336.1901)**
4. The permittee shall keep records of the time period during which the EU-TDU is in shutdown mode. **(R 336.1225, R 336.1702, R 336.1901)**

VII. REPORTING

1. Within 90 days of commencement of operation, the permittee shall submit to the department the portion of the Startup, Shutdown and Malfunction (SSM) Plan, as required by 40 CFR §63.6(e)(3) which pertains to FGTDU. **(R 336.1910, 40 CFR §63.6(e)(3)(v))**
2. If an action taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the owner or operator must record the actions taken for that event and must report such actions within two working days after commencing actions inconsistent with the plan, followed by a letter within seven working days after the end of the event, in accordance with §63.10(d)(5) (unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator). **(R 336.1910, 40 CFR §63.6(e)(3)(iv))**
3. The permittee shall satisfy all applicable reporting requirements contained in and referenced by 40 CFR §61.357. **(40 CFR Part 61 Subparts A and FF)**
4. The permittee shall satisfy all applicable reporting requirements contained in and referenced by 40 CFR §63.697(b). **(40 CFR Part 63 Subparts A and DD)**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-RTO	18	40	R 336.1225, R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
2. SV-VCU	60	25	R 336.1225, R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
3. SV-CYCLONE	9.5	28.8	R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Benzene Waste Operations as specified in 40 CFR Part 61 Subparts A and FF. **(40 CFR Part 61 Subparts A & FF)**
2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations as specified in 40 CFR Part 63 Subparts A and DD. **(40 CFR Part 63 Subparts A & DD)**