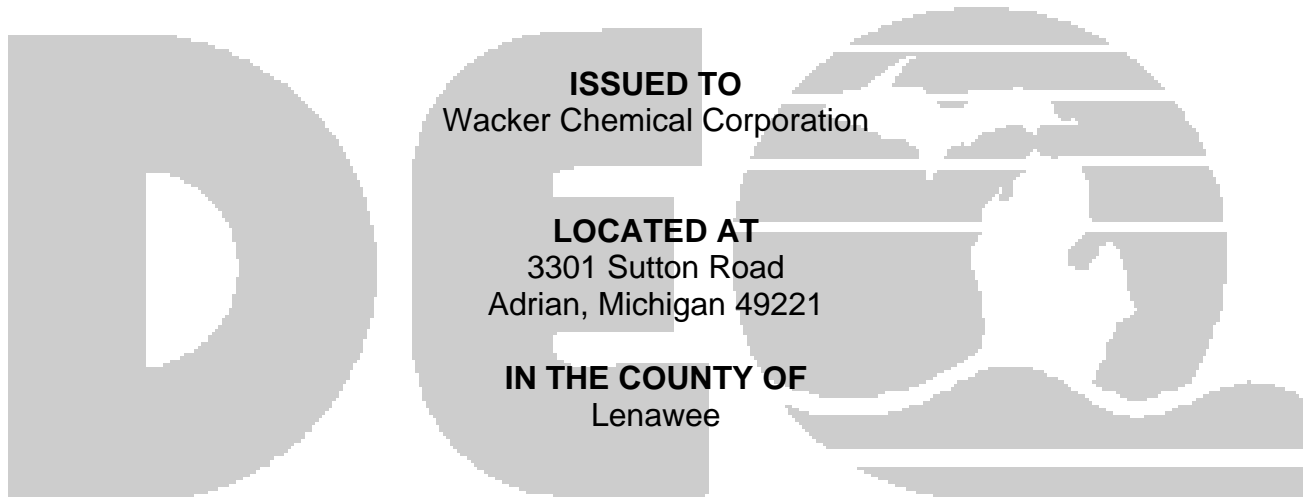


**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

October 24, 2007

**PERMIT TO INSTALL  
No. 285-07**



**ISSUED TO**  
Wacker Chemical Corporation

**LOCATED AT**  
3301 Sutton Road  
Adrian, Michigan 49221

**IN THE COUNTY OF**  
Lenawee

**STATE REGISTRATION NUMBER**  
A2849

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: <b>10/22/2007</b>	
DATE PERMIT TO INSTALL APPROVED: <b>10/24/2007</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

**Common Abbreviations / Acronyms**

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

\* 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 AQD District Supervisor shall be notified, in writing, of a change in ownership or operational control of the stationary source or emission unit(s) authorized by this Permit to Install pursuant to R 336.1219. The notification shall include all of the information required by R 336.1219(1)(a) and (b). In addition, a new owner or operator must submit a written statement pursuant to R 336.1219(1)(c), agreeing to and accepting the terms and conditions of this Permit to Install, and shall notify the AQD District Supervisor of any change in the contact person for this Permit to Install. **(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 nor does it affect any liability for past violations under the Natural Resources and Environmental Protection Act, 1994 PA 451.
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)**

**SPECIAL CONDITIONS**

**Emission Unit Identification**

<b>Emission Unit ID</b>	<b>Emission Unit Description</b>	<b>Stack Identification</b>
EUSOIL	Soil vapor extraction wells, air sparging, vacuum blower(s), and an air flow distribution system equipped with an activated carbon system consisting of two 5000 pound vessels configured in-series (i.e. "pre-treatment" carbon system) followed by an activated carbon system consisting of two 3000 pound vessels configured in-series (i.e. "main" carbon system).	SV1
EUGROUNDWATER	An in-situ air sparging system equipped with an activated carbon system consisting of two 3000 pound vessels configured in-series (i.e. "main" carbon system).	SV1
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 Identification**

<b>Flexible Group ID</b>	<b>Emission Units Included in Flexible Group</b>	<b>Stack Identification</b>
FGREMED	EUSOIL and EUGROUNDWATER	SV1

**The following conditions apply to: FGREMED**

**Emission Limits**

	<b>Pollutant</b>	<b>Limit</b>	<b>Time Period</b>	<b>Equipment</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirements</b>
1.1	VOC	1 tpy	12-month rolling time period as determined at the end of each calendar month.	FGREMED	SC 1.11	R 336.1702(a)

**Equipment**

- 1.2 The permittee shall not operate FGREMED (that is both EUSOIL and EUGROUNDWATER) unless the main activated carbon system is installed, maintained, and operated in a satisfactory manner. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.3 The permittee shall equip and maintain the main activated carbon system with a monitor capable of detecting breakthrough of the carbon and capable of initiating system shutdown if breakthrough occurs. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**

- 1.4 The permittee shall not operate EUSOIL unless the pre-treatment carbon system is installed, maintained, and operated in a satisfactory manner. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.5 The permittee shall equip and maintain the pre-treatment activated carbon system with a monitor capable of detecting breakthrough of the carbon and capable of initiating system shutdown if breakthrough occurs. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**

### **Monitoring**

- 1.6 The permittee shall monitor, in a satisfactory manner, the flow rate, the total VOC concentration and the VOC concentration of the influent stream to EUSOIL. This shall be done on a weekly basis until four valid samples, which pass all quality assurance and quality control requirements have been obtained. Thereafter, the permittee shall monitor the influent stream to the EUSOIL for these parameters on a monthly basis until demonstrating this data passes all quality assurance and quality control requirements. Thereafter, the permittee shall monitor the influent stream to the EUSOIL for these parameters on a quarterly basis. The permittee shall submit any request for a change in the sampling frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.7 The permittee shall collect, analyze, and monitor, in a satisfactory manner, vapor samples collected in soil vapor extraction (SVE) well No. SVE-8B on a monthly basis for at least six months following permit issuance. The vapor samples shall be analyzed for VOCs, especially for vinyl chloride, using USEPA Method TO15. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**

### **Testing**

- 1.8 The permittee shall test, in a satisfactory manner, the dual-stage pre-treatment activated carbon system for breakthrough of the first canister at least once per week. The permittee shall evaluate breakthrough via Tedlar bag sampling followed by laboratory analysis; by use of a hand-held instrument capable of detecting concentrations at the levels expected; or an equivalent method. The permittee shall conduct an initial test and shall record the initial reading as soon as the process has reached a steady state condition, but not later than 12 hours after start-up of the process. Breakthrough is considered a reading at the point between the first and second canisters that is 20 percent or more of the influent concentration into the first canister. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first canister has been replaced and the operating order of the vessels has been reversed. The permittee shall repeat the initial test each time a carbon canister is replaced and shall use the resulting influent concentration to establish breakthrough. The permittee shall submit any request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.9 The permittee shall test, in a satisfactory manner, the dual-stage main activated carbon system for breakthrough of the first canister at least once per week. The permittee shall evaluate breakthrough via Tedlar bag sampling followed by laboratory analysis; by use of a hand-held instrument capable of detecting concentrations at the levels expected; or an equivalent method. The permittee shall conduct an initial test and shall record the initial reading as soon as the process has reached a steady state condition, but not later than 12 hours after start-up of the process. Breakthrough is considered a reading at the point between the first and second canisters that is 20 percent or more of the influent concentration into the first canister. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first canister has been replaced and the operating order of the vessels has been reversed. The

permittee shall repeat the initial test each time a carbon canister is replaced and shall use the resulting influent concentration to establish breakthrough. The permittee shall submit any request for a change in the testing frequency to the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**

**Recordkeeping / Reporting / Notification**

- 1.10 The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3), R 336.1225, R 336.1702(a), R 336.1901)**
- 1.11 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period calculations of VOC emission rates for FGREMED, as required by SC 1.1. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1205(3), R 336.1225, R 336.1702(a), R 336.1901)**
- 1.12 The permittee shall record the flow rate and the VOC concentration of the influent stream to EUSOIL. This shall be done on a weekly basis until four valid samples have been obtained. Thereafter, the permittee shall record these parameters on a monthly basis, then on a quarterly basis. The permittee shall keep these records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.13 The permittee shall keep, in a satisfactory manner, records of each change of carbon and of each measurement of the vapor influent concentration into the first stage contactor of the pre-treatment carbon control system. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.14 The permittee shall keep, in a satisfactory manner, records of each change of carbon and of each measurement of the vapor influent concentration into the first stage contactor of the main carbon control system. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
- 1.15 The permittee shall submit the SVE vapor sample(s) data to the Supervisor of the AQD Technical Program Unit as required in SC 1.7 in an acceptable format within 30 days following the end of the month in which the records were collected. **(R 336.1225, R 336.1702)**

**Stack/Vent Restrictions**

	<b>Stack &amp; Vent ID</b>	<b>Maximum Diameter (inches)</b>	<b>Minimum Height Above Ground Level (feet)</b>	<b>Applicable Requirements</b>
1.16	SV1	4	20	R 336.1225, R 336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

