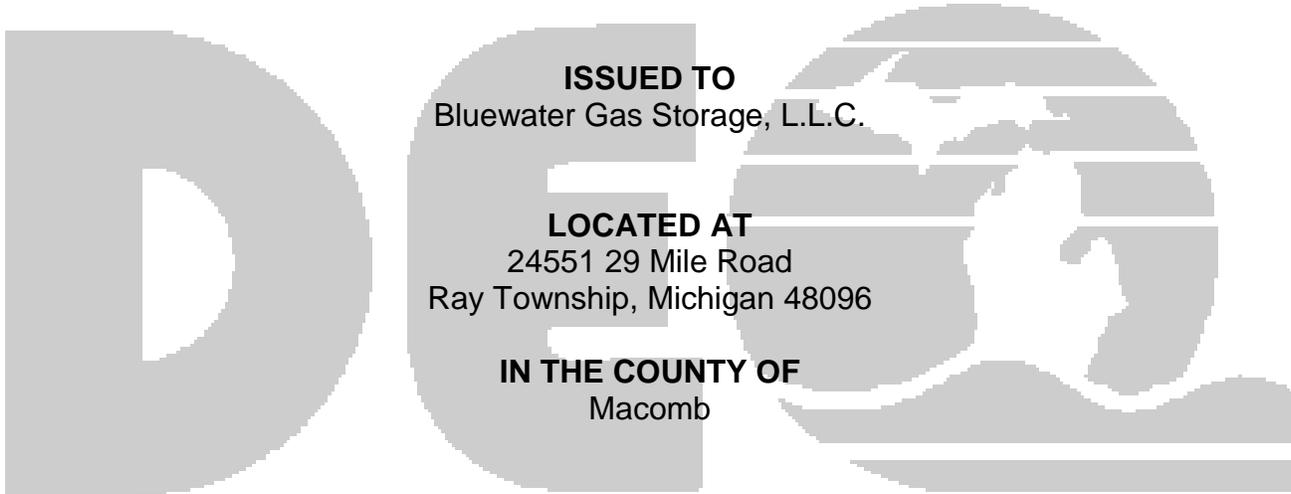


**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

June 26, 2008

**PERMIT TO INSTALL
No. 139-08**



ISSUED TO
Bluewater Gas Storage, L.L.C.

LOCATED AT
24551 29 Mile Road
Ray Township, Michigan 48096

IN THE COUNTY OF
Macomb

STATE REGISTRATION NUMBER
N8044

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: 5/28/2008 | |
| DATE PERMIT TO INSTALL APPROVED: 6/26/2008 | SIGNATURE: |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

PERMIT TO INSTALL

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 |
| MDEQ | Michigan Department of Environmental Quality | PM | Particulate Matter |
| MIOSHA | Michigan Occupational Safety & Health Administration | PM-10 | Particulate Matter less than 10 microns diameter |
| MSDS | Material Safety Data Sheet | pph | Pound per hour |
| NESHA | National Emission Standard for Hazardous Air Pollutants | ppm | Parts per million |
| P | | ppmv | Parts per million by volume |
| NSPS | New Source Performance Standards | ppmw | Parts per million by weight |
| NSR | New Source Review | psia | Pounds per square inch absolute |
| PS | Performance Specification | psig | Pounds per square inch gauge |
| PSD | Prevention of Significant Deterioration | scf | Standard cubic feet |
| PTE | Permanent Total Enclosure | sec | Seconds |
| PTI | Permit to Install | SO ₂ | Sulfur Dioxide |
| RACT | Reasonably Available Control Technology | THC | Total Hydrocarbons |
| ROP | Renewable Operating Permit | tpy | Tons per year |
| SC | Special Condition | µg | Microgram |
| SCR | Selective Catalytic Reduction | VOC | Volatile Organic Compounds |
| SRN | State Registration Number | yr | Year |
| TAC | Toxic Air Contaminant | | |
| TEQ | Toxicity Equivalence Quotient | | |
| 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 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

| Emission Unit ID | Emission Unit Description | Stack Identification |
|--|--|-----------------------------|
| EU-COMP | 10.1 MMBtu/hr heat input Caterpillar G3516 natural gas-fired 4-stroke, lean burn reciprocating compressor engine controlled with a catalytic oxidation system. | SV-COMP |
| 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. | | |

The following conditions apply to: EU-COMP

Emission Limits

| | Pollutant | Limit | Time Period | Equipment | Testing/ Monitoring Method | Applicable Requirement |
|-----|------------------|--------------|--------------------|------------------|---------------------------------------|-------------------------------|
| 1.1 | Formaldehyde | 0.22 lb/hr | Test protocol | EU-COMP | GC 13, SC 1.6 and 1.7 | R 336.1225 |

Process/Operational Limits

1.2 No later than 60 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a preventative maintenance / malfunction abatement plan (PM / MAP) for EU-COMP. After approval of the PM / MAP by the AQD District Supervisor, the permittee shall not operate EU-COMP unless the PM / MAP, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

- a. Identification of the equipment and, if applicable, air-cleaning device and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.
- b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.
- c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.
- d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.
- e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the PM / MAP to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. **(R 336.1205, R 336.1225, R 336.1910, R 336.1911, R 336.1912)**

- 1.3 The permittee shall not operate EU-COMP for more than 200 hours per year without the catalytic oxidation system consistent with the PM / MAP (pursuant to SC 1.2). The 200 hours shall include times after general maintenance performed as allowed by the PM / MAP. The hours per year limit is based on a 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, R 336.1225)**

Equipment

- 1.4 The permittee shall not operate EU-COMP device unless the catalytic oxidation system is installed, maintained, and operated in a satisfactory manner, except as specified in SC 1.3. Satisfactory operation includes performing the manufacturer’s recommended maintenance on the control device and operating in conjunction with the PM / MAP specified in SC 1.2. **(R 336.1205, R 336.1225, R 336.1910)**

Monitoring

- 1.5 The permittee shall monitor, in a satisfactory manner, the natural gas usage for EU-COMP on a continuous basis. **(R 336.1205, R 336.1225)**

Recordkeeping/Reporting/Notification

- 1.6 The permittee shall maintain a log of all maintenance activities conducted according to the PM / MAP (pursuant to SC 1.2). The permittee shall keep this log on file at a location approved by the AQD District Supervisor for a period of at least five years and make it available to the Department upon request. **(R 336.1205, R 336.1225)**
- 1.7 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the hours that EU-COMP is operated without the catalytic oxidation system. The permittee shall keep all records on file at a location approved by the AQD District Supervisor for a period of at least five years and make them available to the Department upon request. **(R 336.1205, R 336.1225)**
- 1.8 The permittee shall keep, in a satisfactory manner, monthly fuel use records for EU-COMP. The permittee shall keep all records on file at a location approved by the AQD District Supervisor for a period of at least five years and make them available to the Department upon request. **(R 336.1205, R 336.1225)**

Stack/Vent Restrictions

| | Stack & Vent ID | Maximum Diameter (inches) | Minimum Height Above Ground Level (feet) | Applicable Requirement |
|---|----------------------------|----------------------------------|---|-------------------------------|
| 1.9 | SV-COMP | 11 | 28 | R 336.1225 |
| The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air. | | | | |

**Preventative Maintenance / Malfunction Abatement Plan (PM / MAP)
Content Checklist for Engines Required to Submit a PM / MAP**

| PM / MAP Content | | Location | |
|------------------------|--|----------|-----------------|
| | | Page | Section / Table |
| 1 | Contact Person | | |
| Engines | | | |
| 2 | Engine Identification: Include the engine make / model and type of engine (i.e. rich or lean burn). Identify engines with add on control and AFRC. If add on control is present, identify type of control. | | |
| 3 | Engine Operating Variables To Be Monitored. Include a copy of the normal engine maintenance log. | | |
| 4 | Corrective procedures or operational changes that will be taken in the event of a malfunction. | | |
| 5 | Major parts replacement inventory for engines. | | |
| Add-On Controls | | | |
| 6 | Catalytic Converter operating variables to be monitored. Include the method and frequency of monitoring these variables; provide the normal operating range of these variables. | | |
| 7 | Corrective actions to be taken in event of malfunction of the catalytic converter. | | |
| 8 | AFRC O ₂ Sensor replacement schedule or operating variables to be monitored. | | |
| 9 | Corrective actions to be taken in event of malfunction of the AFRC. | | |
| 10 | Emission testing utilizing portable analyzer. | | |
| 11 | Scheduled maintenance of control equipment. | | |
| 12 | Major parts replacement inventory for add on control. | | |
| 13 | Identify supervisory personnel responsible for overseeing inspection, maintenance and repair of add on controls. | | |
| 14 | Recordkeeping and retention of records. | | |
| 15 | Updates of PM / MAP as necessary. | | |

**Guidance Document For
Preventative Maintenance / Malfunction Abatement Plan (PM / MAP) Checklist**

1. Contact Person: Include the name, title, telephone number (extension if applicable) and e-mail address for the person that may be contacted with questions regarding this Preventative Maintenance / Malfunction Abatement Plan (PM / MAP) with the transmittal letter accompanying the PM / MAP rather than within the body of the PM / MAP.

Engines

2. Engine Identification: For each engine at the facility, list the engine manufacturer, model and type of engine (rich burn or lean burn) and the type of add-on control equipment used (oxidation catalyst, three-way catalyst), if any. Also, identify each engine with an air to fuel ratio controller (AFRC).
3. Engine operating variables to be monitored: Provide the normal engine maintenance log.
4. Corrective procedures in the event of an engine malfunction: Provide a brief summary of the procedures that will take place in the event of an engine malfunction. A malfunction is defined in Rule 113(d) of the State of Michigan Air Pollution Control Rules which states, in part, any sudden, infrequent and not reasonable preventable failure of the equipment to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operations are not malfunctions.'
5. Major parts replacement inventory: Provide a list of major replacement parts that shall be maintained in inventory for quick replacement. If no replacement parts are kept on site provide a statement that no parts shall be kept.

Add-On Controls

6. Catalytic converter operating variables to be monitored: Provide the following:
 - a. A list of variables that will be monitored to measure catalytic converter performance including the catalytic converter inlet and outlet temperature, pressure differential across the catalytic converter, and any other relevant catalytic converter variables that are monitored.
 - b. The normal operating range that has been developed for each variable; acceptable ranges shall include documentation as to how the range was determined (i.e. manufacturer's recommendations or determined in the field with documentation or testing).
 - c. The method of monitoring the variables, and
 - d. The frequency of monitoring the variables.
7. Corrective procedures in the event of a malfunction of the catalytic converter: Malfunction is defined in number four above. Provide information on what steps shall be taken when a variable is out of range. This could include monitoring of emissions or cleaning and/or replacement of the catalytic converter.
8. AFRC O₂ sensor replacement schedule or operating variables to be monitored: Chose either (a) or (b).
 - a. O₂ sensor replacement interval or sensor life detector
 - b. If monitoring, provide:
 - i. A list of variables monitored to measure AFRC performance (i.e. millivolt output, O₂, and/or any other relevant AFRC variables that are monitored).
 - ii. The normal operating range that has been developed for each variable; acceptable ranges shall include documentation as to how the range was determined (i.e.

manufacturer's recommendations or determined in the field with documentation or testing).

- iii. The method of monitoring the variables.
- iv. The frequency of monitoring the variables.

9. Corrective procedures in the event of a malfunction of the AFRC: Malfunction is defined in number 4 above. If choosing monitoring in paragraph 8.b above, provide information on what steps shall be taken when a variable is out of range.
10. Emission checks: Describe when a portable analyzer would be used and how it will be used to determine if the catalytic converter is operating correctly.
 - a. Calibration of the analyzer will be conducted as required by manufacturer's specifications. Records shall be kept on file and made available to the Air Quality Division upon request.
 - b. Checks for CO.
 - c. Checks to be used to:
 - i. Check performance if monitored parameter is out of normal range, e.g. low inlet temperature (an engine specific minimum inlet temperature could then be established).
 - ii. When vendor cleaned catalyst is installed. This check will normally occur in the 12-18 month window as specified for routine cleaning.
 - d. Companies may choose to perform any of following the three valid methods:
 - i. Inlet and outlet checks and estimate destruction efficiency.
 - ii. Outlet testing and check for g/hp-hr compared to levels used for permitting.
 - iii. Outlet testing and use the uncontrolled vendor data to establish destruction efficiency.
11. Scheduled maintenance: Describe the scheduled cleaning and/or replacement of the catalytic converter.
 - a. Frequency of catalytic converter inspection and field catalyst media cleaning (vacuum catalyst face): Follow vendor recommendations, typically 12-18 months unless parameters (pressure drop, temperature deviations, etc) indicate otherwise.
 - b. Catalyst media removal and wash in chemical solution by manufacturer (if catalyst media does not respond to field cleaning). A replacement catalyst media will be used during the cleaning process.
 - c. Catalytic converter gasket replacement: Follow vendor recommendations, typically 12-18 months when catalyst is serviced.
 - d. Replace catalyst media if not functioning properly after vendor cleaning, or in lieu of vendor cleaning.
12. Major parts replacement inventory: Provide a list of major replacement parts that shall be maintained in inventory for quick replacement. If no replacement parts are kept on site provide a statement that no parts shall be kept.
13. Supervisory personnel responsible for maintenance of the control equipment: Include the contact information. This person or position can be a company employee or contractor and may or may not be the same person / position listed in number one above.
14. Retention of records: Records shall be kept on file and retained as described in the permit.
15. Updates of PM / MAP: Any updates to the plan shall be submitted to the AQD District Supervisor for written approval as required in the permit (the Department of Environmental Quality recommends the PM / MAP be reviewed annually).