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Facility Name: **Aurora Energy Ltd - Crossroads**

Application Number: **03-3140**

Date: **March 17, 1999**

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations.

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Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

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BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

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The air contaminant emissions units listed below comprise the Permit to Install for **Aurora Energy Ltd - Crossroads** located in **Henry** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

<u>Ohio EPA Source Number</u>	<u>Source Identification Description</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P001	255 horse-power Natural Gas compressor	Use of catalytic converter and compliance with the permit allowable emission rates and Additional Special Terms & Conditions of this permit	3745-31-05	1.13 lbs nitrogen oxides (NO _x)/hr and 4.95 tons NO _x /yr 1.12 lbs carbon monoxide (CO)/hr and 4.91 tons CO/yr 0.20 lbs organic compounds (OC)/hr and 0.88 tons OC/yr 0.06 lbs particulate emissions (PE)/hr and 0.26 ton PE/yr
			3745-17-11 (B)(5) 3745-17-07 (A)(1)	* 20% opacity, as a six-minute average
T001	16,800 gallon fixed roof brine water storage tank	Use of submerged fill and compliance with the permit allowable emission rates	3745-31-05 40 CFR part 60 Subpart Kb, 60.116b	0.36 ton OC/yr Maintain records showing the dimensions of

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
T001 cont'd		and Additional Special Terms & Conditions of this permit	(a) and (b)	the storage vessel and an analysis showing the capacity of the storage vessel
T002	16,800 gallon fixed roof brine water storage tank	Use of submerged fill and compliance with the permit allowable emission rates and Additional Special Terms & Conditions of this permit	3745-31-05 40 CFR part 60 Subpart Kb, 60.116b (a) and (b)	0.36 ton OC/yr Maintain records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel

* The emission limitation established in accordance with OAC Rule 3745-31-05 is more stringent than the requirements of OAC Rule 3745-17-11(B)(5).

SUMMARY

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
NO _x	4.95
CO	4.91
OC	1.60
PE	0.26

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NSPS REQUIREMENTS

The following sources are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60.

<u>Source Number</u>	<u>Source Description</u>	<u>NSPS Regulation (Subpart)</u>
T001, T002	Fixed roof brine water storage tanks	Kb, 40 CFR 60, 116 b(a) and (b)

The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and
- d. date of performance testing (If required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Permit Management Unit
P.O. Box 163669
Columbus, OH 43216-3669

and **OHIO EPA, Northwest District Office**
347 North Dunbridge Road
Bowling Green, Ohio 43402
Bowling Green,

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Ohio EPA Northwest District Office, 347 North Dunbridge Road, Bowling Green, Ohio 43402.**

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WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Ohio EPA Northwest District Office, 347 North Dunbridge Road, Bowling Green, Ohio 43402.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

NEW SOURCE PERFORMANCE STANDARD SUBPART Kb

The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

In accordance with 40 CFR 60.116b(a) and (b), the owner and operator of the following storage vessel(s) shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage vessel for the life of each source.

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<u>Source Number(s)</u>	<u>Tank Size</u>
T001	16,800 gal
T002	16,800 gal

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

INTRODUCTION: This PTI is for the installation of emissions unit P001, which involves a 255 horsepower natural gas compressor with a catalytic converter; and installation of emissions units T001 and T002, which are fixed roof brine water storage tanks, each with a capacity of 16,800 gallons.

A. Applicable Emission Limitations and/or Control Requirements

1. No additional applicable emission limitations and/or control requirements than those specified in the air emissions summary.

B. Operational Restrictions

1. The maximum amount of natural gas processed through the compressor shall not exceed 2 million standard cubic feet per day.
2. Pursuant to Engineering Guide #69, modeling to demonstrate compliance with the Ohio EPA's Air Toxic Policy was not necessary since the maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior

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to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

3. The pressure drop across the catalytic converter associated with emissions unit P001 shall be maintained within the range of * inches of water while the emissions unit is in operation.

* Not more than 180 days following the initial startup of the emissions unit, the permittee shall notify the Ohio EPA in writing of the pressure drop across the catalytic converter. The permittee shall operate the catalytic converter in accordance with these reported values.

4. The operating temperature of the catalytic converter shall be maintained within the range of 750 to 1,350 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the catalytic converter while the associated emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the catalytic converter on a monthly basis.
2. The permittee shall properly install, operate, and maintain equipment to monitor the catalyst inlet operating temperature and the catalyst outlet operating temperature while the associated emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with

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the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the catalyst inlet and catalyst outlet operating temperatures on a monthly basis.

3. The permittee shall maintain annual records of the amount of natural gas processed, in standard cubic feet, for emissions unit P001.
4. The permittee shall maintain monthly records of the number of gallons of oil and brine water produced in each of the storage tanks T001 and T002.
5. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

D. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the catalytic converter did not comply with the allowable range specified in section B.3. These reports shall be submitted in accordance with the requirements of section D.3.
2. The permittee shall submit operating temperature deviation (excursion) reports that identify all periods of time during which the catalytic converter operating temperature did not comply with the allowable range specified in section B.4. These reports shall be submitted in accordance with the requirements of section D.3.

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3. The permittee shall submit quarterly written reports for emissions units P001 of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)
4. The permittee shall submit annual deviation (excursion) reports which identify any exceedance of the throughput restriction contained in section B.1. for emissions unit P001. These reports shall include the corrective actions that were taken to achieve compliance and shall be submitted by January 31 of each year.
5. All reports, notifications, etc., required by the above terms and conditions are to be submitted to the Ohio Environmental Protection Agency, Northwest District Office, Division of Air Pollution Control, 347 North Dunbridge Road, Bowling Green, Ohio, 43402.

E. Testing Requirements/Compliance Method Requirements

1. Compliance with the emissions limitations in this permit to install shall be determined in accordance with the following methods:

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a. Emissions Unit P001:

- i. Emission Limitation: 1.13 lbs NOx/hr
Applicable Compliance Method:

The NOx lbs/hr limitation was developed by applying an 83.33 percent control efficiency for use of the catalytic converter to an uncontrolled emission factor of 12.0 grams/brake horsepower-hr and a rated maximum capacity for the natural gas compressor of 255 brake horsepower. Compliance shall be demonstrated by parametric monitoring required in section C.1 and C.2.

- ii. Emission Limitation: 4.95 tons NOx/yr

Applicable Compliance Method:

The annual NOx emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8,760 hrs/yr, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with hourly limitation, compliance will also be shown with the annual limitation.

- iii. Emission Limitation: 1.12 lbs CO/hr

Applicable Compliance Method:

The CO lbs/hr limitation was developed by applying an 80 percent control efficiency for use of the catalytic converter to an uncontrolled emission factor of 10.0 grams/brake horsepower-hr and a rated maximum capacity for the natural gas compressor of 255 brake horsepower. Compliance shall be demonstrated by parametric monitoring required in section C.1 and C.2.

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iv. Emission Limitation: 4.91 tons CO/yr

Applicable Compliance Method:

The annual CO emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8,760 hrs/yr, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with hourly limitation, compliance will also be shown with the annual limitation.

v. Emission Limitation: 0.20 lbs OC/hr

Applicable Compliance Method:

The OC lbs/hr limitation was developed by applying a 30 percent control efficiency for use of the catalytic converter to an uncontrolled emission factor of 0.5 grams/brake horsepower-hr and a rated maximum capacity for the natural gas compressor of 255 brake horsepower. Compliance shall be demonstrated by parametric monitoring required in section C.1 and C.2.

vi. Emission Limitation: 0.88 tons OC/yr

Applicable Compliance Method:

The annual OC emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8,760 hrs/yr, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with hourly limitation, compliance will also be shown with the annual limitation.

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- vii. Emission Limitation: 20 percent opacity as a six-minute average

Applicable Compliance Method:

Compliance with visible emission limitations shall be determined in accordance with 40 CFR 60, Appendix A-Method 9.

- viii. Emission Limitation: 0.06 lbs PE/hr

Applicable Compliance Method:

The PE lbs/hr limitation was developed by multiplying an emission factor of 0.1 grams/brake horsepower-hr to the rated maximum capacity for the natural gas compressor of 255 brake horsepower. Compliance shall be demonstrated by parametric monitoring required in section C.1 and C.2.

- ix. Emission Limitation: 0.26 tons PE/yr

Applicable Compliance Method:

The annual PE emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8,760 hrs/yr, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with hourly limitation, compliance will also be shown with the annual limitation.

- b. Emissions Unit T001:

- i. 0.36 tons OC/yr

Applicable Compliance Method:

The annual OC emission limitation was developed by multiplying an emission factor of 0.02 lbs per gallon of oil, and an emission factor of 0.001 lbs per gallon of brine water, times maximum annual throughputs of 34,500

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gallons of oil and 34,500 gallons of brine water. Compliance shall be demonstrated by the recordkeeping required in section C.4.

c. Emissions Unit T002:

i. 0.36 tons OC/yr

Applicable Compliance Method:

The annual OC emission limitation was developed by multiplying an emission factor of 0.02 lbs per gallon of oil, and an emission factor of 0.001 lbs per gallon of brine water, times maximum annual throughputs of 34,500 gallons of oil and 34,500 gallons of brine water. Compliance shall be demonstrated by the recordkeeping required in section C.4.

F. Miscellaneous Requirements

None