AIR EMISSION PERMIT NO. 11900029- 004

IS ISSUED TO

Border Viking Company - Owner
Viking Gas Transmission Company - Operator

VIKING GAS TRANSMISSION - ANGUS
County Road 20
Angus, Polk County, MN 56712

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date	Issue Date	Action Number
Total Facility Operating Permit	10/02/2002	See below	004

This permit authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/Major for NSR

Issue Date: August 13, 2003

Expiration: August 13, 2008

All Title I Conditions do not expire.

Ann M. Foss
Major Facilities Section Manager
Majors and Remediation Division

for Sheryl Corrigan
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

The Angus facility is a natural gas compressor station consisting of three 2-stroke lean burn reciprocating internal combustion compressor engines, one water jacket heater, one 4-stroke rich burn reciprocating internal combustion engine emergency generator, and one lean pre-mix combustion turbine compressor engine. All units combust only pipeline natural gas obtained from the pipeline. The four compressors pressurize the natural gas in the pipeline causing it to flow to the next compressor station. The water jacket heater provides heat when the compressor engines and turbine are not operating.

This facility is located on a natural gas pipeline with compressor stations located from north to south, at Humboldt, Angus, Ada, Frazee, Cushing, and Milaca.

PER 004

PER 004 is a reissuance of the part 70 total facility operating permit and includes an administrative amendment application for an ownership name change.

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 1
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping: Retain all records at the stationary source, or a designated site, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at the stationary source, or a designated site, include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Subject Item: **GP 001 Reciprocating Internal Combustion Engines (RICE)**

Associated Items: EU 001 RICE #1A 2SLB Clark 14 mmBtu/hr

EU 002 RICE #2A 2SLB Clark 14 mmBtu/hr

EU 003 RICE #3A 2SLB Clark 28 mmBtu/hr

EU 005 RICE-Emergency Generator 4SRB 3mmBtu/hr

EU 006 Turbine Engine #1 lean pre-mix Solar 45 mmBtu/hr

What to do	Why to do it
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input (applies individually to each emission unit in GP 001).	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained (applies individually to each emission unit in GP 001).	Minn. R. 7011.2300, subp. 1
Fuel Type Restriction: Pipeline natural gas only	Minn. R. 7007.0800, subp. 2
Temporary Reciprocating Internal Combustion Engines (TRICE): The Permittee may operate a pipeline natural gas-fired two-stroke lean burn TRICE at the facility in place of EU 001, 002, or 003 for up to 12 consecutive months. TRICE shall: 1. meet requirements of 40 CFR part 63, subp. ZZZZ when and if applicable; 2. meet all applicable requirements in this subject item; 3. exhaust through a stack with a height no less, a diameter no greater, and an exhaust temperature no less than the stack for the RICE it replaces; 4. not operate at the same time as the engine it replaces, except for up to eight hours during startup and shutdown transitions; 5. have potential emission rates (in lb/hr) for all pollutants equal to or less than permit emission limits and potential emission rates of the engine it replaces. For each TRICE record start & stop dates, manufacturer, model & serial numbers, and the lb/hr potential emission rates for all pollutants.	Minn. R. 7007.0800, subp. 2
Refer to Subject Item EU 005 and EU 006 for additional requirements that apply to EU 005 and EU 006.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Subject Item: **EU 004 Water Jacket Heater**

Associated Items: SV 004

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0510, subp. 2
Operating Hours: less than or equal to 2150 hours/year for EU004 when EU001, EU002, EU003, or EU006 are also in operation. This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.	Minn. R. 7009.0020; Minn. R. 7009.0080
Recordkeeping:. By the end of each month, calculate and record the EU005 operating hours for the previous month, for all periods when EU001, EU002, EU003, or EU006 were also operating. By January 30th of each calendar year, calculate and record the EU004 operating hours for the previous calendar year for all periods when EU001, EU002, EU003, or EU006 were also operating.	Minn. R. 7007.0800, subp. 5(C)
Fuel Type Restriction: Natural Gas Only	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Subject Item: **EU 005 RICE-Emergency Generator 4SRB 3mmBtu/hr**

Associated Items: GP 001 Reciprocating Internal Combustion Engines (RICE)

SV 005

What to do	Why to do it
Operating Hours: less than or equal to 720 hours/year for EU005 when EU001, EU002, EU003, or EU006 are also in operation. This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.	Minn. R. 7009.0020; Minn. R. 7009.0080
Recordkeeping: By the end of each month, calculate and record the EU005 operating hours for the previous month, for all periods when EU001, EU002, EU003, or EU006 were also operating. By January 30th of each calendar year, calculate and record the EU005 operating hours for the previous calendar year for all periods when EU001, EU002, EU003, or EU006 were also operating.	Minn. R. 7007.0800, subp. 5(C)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Subject Item: **EU 006 Turbine Engine #1 lean pre-mix Solar 45 mmBtu/hr**

Associated Items: CE 001 Other

GP 001 Reciprocating Internal Combustion Engines (RICE)

SV 006

What to do	Why to do it
Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
Analysis of fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels , or an approved alternative method. The reference methods are: ASTM D1072-80; ASTM D3246-81; and ASTM D4084-82 as referenced in 40 CFR Section 60.335(b)(2).	40 CFR Section 60.334(d); Minn. R. 7011.2350
Sulfur Content of Fuel: less than or equal to .8 percent by weight	40 CFR Section 60.333(b); Minn. R. 7011.2350
Reporting: If there is a change in fuel supply, the Permittee must notify the MPCA of such change for re-examination of the custom fuel monitoring schedule. A substantial change in fuel quality shall be considered as a change in the fuel supply.	40 CFR 60.334(b); Minn. R. 7011.2350
Retain Records: Any owner or operator subject to the provisions of this part shall maintain records of the occurence and duration of malfunction in the operation of an affected facility; any malfunction in the operation of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)
Recordkeeping: Records of sample analysis and fuel supply pertinent to the custom fuel monitoring schedule shall be retained for a period of five (5) years, and be available for inspection by personnel of federal, state and local air pollution control agencies.	40 CFR Section 334(b); Minn.R. 7011.2350
Sulfur Monitoring: Shall be conducted twice monthly for six months. If this monitoring show little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters. The Permittee has met this requirement prior to issuance of this permit (permit No. 11900029-004). The Permittee will be subject to this requirement if the Permittee receives results from an analysis of natural gas that exceeds the sulfur content limit in 40 CFR Section 60.333(b).	40 CFR Section 334(b); Minn.R. 7011.2350
Sulfur Monitoring: If the first two years of sulfur monitoring shows little variability in the fuel sulfur content and indicates consistent compliance with 40 CFR 60.333, the sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year. The Permittee has shown the sulfur content of the natural gas has little variability and is consistently compliant with the sulfur content limit in 40 CFR Section 60.333(b), and therefore shall conduct sampling and analysis during the first and third quarters of each calendar year until the Permittee receives results from an analysis of natural gas that exceeds the sulfur content limit in 40 CFR Section 60.333(b).	40 CFR Section 334(b); Minn.R. 7011.2350
Notification of Noncompliance: Should any sulfur analysis indicate noncompliance with 40 CFR Section 60.333, the Permittee shall notify the MPCA of such excess emissions and the custom fuel monitoring schedule shall be re-examined by the Adminstrator.	40 CFR 60.334(b); Minn. R. 7011.2350
Temporary Combustion Turbine Compressor Engine (TCT): The Permittee may install and operate a pipeline natural gas-fired TCT in place of EU 006 for up to 12 consecutive months. The TCT shall: 1. meet all applicable requirements in this subject item; 2. meet the NOx limit in 40 CFR Section 60.332(a)(2) if initial construction or reconstruction (as defined in 40 CFR Section 60.15) of the TCT commenced on or after October 3, 1982; 3. conduct NOx testing as required by 40 CFR Sections 60.335 and 60.8, if initial construction or reconstruction of the TCT commenced on or after October 3, 1982, and NOx testing has not been conducted after the construction or reconstruction; 4. exhaust through a stack with dispersion characteristics equal to or better than SV 006; (continued)	Minn. R. 7007.0800, subp. 2

Temporary Combustion Turbine Compressor Engine (TCT) - continued: 5. restrict simultaneous operation with EU 006 to eight hours during startup and shutdown transitions; 6. have potential emission rates (in lb/hr) for all pollutants equal to or less than permit emission limits and potential emission rates of EU 006. For each TCT notify the MPCA and U.S. EPA Chicago prior to installation, and record start and stop dates, manufacturer, model and serial numbers, lb/hr potential emission rates for all pollutants, and date of commencement of initial construction (the date the manufacturer first constructed the turbine; this is not the date of the last refurbishment/overhaul of the turbine) or reconstruction of the TCT.	Minn. R. 7007.0800, subp. 2
Replacement Combustion Turbine Compressor Engine (RCT): The Permittee may install and operate a pipeline natural gas-fired RCT at the facility as a permanent replacement for EU 006 (the RCT becomes EU 006 upon replacement). The RCT shall: 1. only be a Solar model 40-T4700S lean pre-mix unit; 2. meet applicable emission limits and fuel requirements in this subject item; 3. meet the NOx limit in 40 CFR Section 60.332(a)(2) if initial construction or reconstruction (as defined in 40 CFR Section 60.15) of the RCT commenced on or after October 3, 1982; 4. conduct NOx testing as required by 40 CFR Sections 60.335 and 60.8, if initial construction or reconstruction of the RCT commenced on or after October 3, 1982, and NOx testing has not been conducted after the construction or reconstruction; (continued)	Minn. R. 7007.0800, subp. 2
Replacement Combustion Turbine Compressor Engine (RCT) - continued: 5. exhaust through a stack with dispersion characteristics equal to or better than SV 006; 6. have potential emission rates (in lb/hr) for all pollutants equal to or less than permit emission limits and potential emission rates of EU 006. The Permittee shall notify the MPCA and the US. EPA Chicago office prior to making the replacement. The Permittee shall record the date of commencement of initial construction (the date the manufacturer first constructed the turbine; this is not the date of the last refurbishment/overhaul of the turbine) or reconstruction of the RCT.	Minn. R. 7007.0800, subp. 2

TABLE B: SUBMITTALS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:
- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility

TABLE B: RECURRENT SUBMITTALS

08/13/03

Facility Name: Viking Gas Transmission - Angus

Permit Number: 11900029 - 004

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 10/08/1997 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 10/08/1997 (for the previous calendar year). To be submitted on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL
Facility Name:Viking Gas Transmission - Angus
Permit Number: 11900029-004

INSIGNIFICANT ACTIVITIES REQUIRED TO BE LISTED

Insignificant Activity Citation	Insignificant Activity	Applicable Minn. Standard of Performance
Minn. R. 7007.1300, subp. 2(B)	Maintenance Activities	
Minn. R. 7007.1300, subp. 3.A	Turbine building space heater 0.324 mmBtu/hr Two compressor shop space heaters 0.155 mmBtu/hr each Office space heater 0.035 mmBtu/hr Office space heater 0.065 mmBtu/hr Pipeline shop space heater 0.075 mmBtu/hr Pipeline shop space heater 0.10 mmBtu/hr Welding shop space heater 0.15 mmBtu/hr	Minn. R. 7011.0510
Minn. R. 7007.1300, subp. 3.H(1)	usage of less than 200 gal/yr VOC-containing material	Minn. R. 7011.0715
Minn. R. 7007.1300, subp. 3.H.(4)	welders (1) and acetylene torches (1)	Minn. R. 7011.0715

TECHNICAL SUPPORT DOCUMENT
For
DRAFT AIR EMISSION PERMIT NO. 11900029-004

This technical support document is for all the interested parties of the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 4922)
Owner: Border Viking Company P.O. Box 542500 Omaha, Nebraska 68154 Operator: Viking Gas Transmission Company 825 Rice Street St. Paul, MN 55117 Mr. Michael Jablonske, VP Operations (651) 229-2254	County Road 20 Angus Polk County

1.2. Description of the facility

This facility is located on a natural gas pipeline with compressor stations located from north to south, at Humboldt, Angus, Ada, Frazee, Cushing, and Milaca.

The Angus facility is a natural gas compressor station consisting of three 2-stroke lean burn reciprocating internal combustion compressor engines, one water jacket heater, one 4-stroke rich burn reciprocating internal combustion engine emergency generator, and one lean pre-mix combustion turbine compressor engine. All units combust only pipeline natural gas obtained from the pipeline. The four compressors pressurize the natural gas in the pipeline causing it to flow to the next compressor station. The water jacket heater provides heat when the compressor engines and turbine are not operating.

1.3. Description of any changes allowed with this permit issuance

A requirement authorizing the use of temporary reciprocating internal combustion compressor engines and a temporary combustion turbine compressor engine has been added to the permit. The Permittee will use a temporary engine in place of a permanent engine when repairs are being made to a permanent engine.

1.4. Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

Permit Number and Issuance Date	**Action Authorized**
11900029-003 June 28, 1999	Amending of Fuel Type Recordkeeping requirement for EU 004.
11900029- 002 June 8, 1999	Limits and recordkeeping for operating hours for EU 004 and EU 005 to avoid violation of NOx ambient air quality standard.

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary:

	PM tpy	PM_{10} tpy	SO_2 tpy	NOx tpy	CO tpy	VOC tpy	Pb tpy	Formalde-hyde tpy	Total HAPs tpy
Total Facility Limited Potential Emissions	10.7	10.7	0.8	945.9	156.7	36.4	0	13.7	21.5
Total Facility Actual Emissions*	2.07	2.07	0.3	581.1	69.5	18.6	0	NR	NR

*2001 emission inventory data

Table 2. Facility(TF) and Permit Classification

Classification	Major/Affected Source	*Synthetic Minor	*Minor
PSD	NOx		PM, PM_{10}, SO_2, CO, VOC, Pb
NAAR	NA	NA	NA
Part 70 Permit Program	NOx, CO, Single HAP		PM_{10}, SO_2, VOC, Pb Total HAP

* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR § pt. 51 Appendix S, and 40 CFR § pt. 70.

2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

Regulatory Overview of Facility

*EU, GRP, or SV #	Applicable Regulations	**Comments:
GP 001	Minn. R. 7007.0800, subp. 2 Minn. R 7011.2300	Provision for temporary reciprocating internal combustion compressor engines Fuel restricted to pipeline natural gas Standards of performance for stationary internal combustion engines
EU 005	Minn. R. 7009.0020	Operating hours limit to avoid NOx NAAQS violation
EU 004	Minn. R. 7009.0020 Minn. R. 7011.0510	Operating hours limit to avoid NOx NAAQS violation Standards of performance for existing indirect heating equipment
EU 006	Minn. R. 7007.0800, subp. 2	Provision for temporary combustion turbine compressor engine Fuel restricted to pipeline natural gas

3. Technical Information

NSR: The facility is an existing major source under the New Source Review (NSR) permitting program, but this permitting action does not trigger any NSR permitting requirements. Although EU 006 was installed in 1997, NOx testing in 1998 demonstrated that NOx emissions were not significant (NOx was measured at 6.74 lb/hr).

NSPS: EU 006 is subject to 40 CFR § pt. 60 subp. GG for gas turbines. However, it was determined to be exempt from the NO_x requirement in 40 CFR § 60.332 during a previous permitting action (Permit No. 10700012-001) because the original date of manufacture is before October 3, 1982.

EU 006 also provides for operation of a temporary or replacement gas turbine. The Permittee has indicated that replacement of the gas turbine with an identical gas turbine is a routine procedure. The Permittee has a contract with Solar to periodically replace the Solar gas turbine at the facility, with an identical refurbished replacement gas turbine. According to the Permittee, the gas turbine is replaced after 30,000 to 50,000 operating hours. The Permittee also indicated that occasionally a temporary gas turbine would be used when EU 006 was down for repair, but not replacement.

Requirements to ensure compliance with the NOx limit and performance testing requirements in 40 CFR § subp. GG are included, in case the temporary or replacement gas turbine was manufactured or reconstructed after October 3, 1982.

The Permittee has already conducted several years of natural gas sulfur analysis as required by the custom monitoring plan. All results have shown compliance with the 0.8% sulfur by weight limit in subp. GG, and have demonstrated that the natural gas meets the definition of pipeline natural gas in 40 CFR §72.2. Analysis of 54 natural gas samples taken since November 1997 at the Permittee's Milaca and Ada facilities have yielded total sulfur contents in the range of below detectable limit to the highest 4 samples of 0.05 to 0.10 grains per 100 standard cubic foot. The current definition in §72.2 for pipeline natural gas limits total sulfur to 0.5 gr/100 scf.

CONVERSION OF NATURAL GAS SULFUR ANALYSIS RESULTS
TO PERCENT SULFUR BY WEIGHT

According to AP-42 Appendix A, natural gas has a density of 1 lb/23.8 scf

At 1 lb/23.8 scf, 100 scf has a mass of 29,411.8 grains based on the following:

1 lb/23.8 scf * 7000 gr/lb * 100 scf/100 scf = 29,411.8 gr/100 scf

A total sulfur concentration of 0.10 gr/100 scf is 0.00034% sulfur by weight based on the following:

0.10 gr total sulfur/100 scf * 100 scf natural gas/29,411.8 gr * 100%/1.00 = 0.00034% total sulfur by weight

As a result, the custom monitoring schedule requirements have been revised, so that the permit clearly states that the Permittee is only required to monitor twice a year, unless an analysis shows noncompliance with the subp. GG limit in Section 60.333(b).

Part 63 NESHAP and HAPs: As defined in proposed part 63 subp. YYYY at § 63.6090(a)(1), EU 006 (Solar gas turbine compressor) is an existing lean pre-mix combustion turbine which does not meet any of the exceptions in § 63.6090(b). According to the Permittee, the rated power output is 4719 horsepower which is approximately 3.5 megawatts based on the Permittee's conversion factor of 0.746 kilowatt-hour per 1 hp-hour. The entire facility potential emissions of formaldehyde are greater than 10 tons per year, and therefore EU 006 will be an affected facility as defined in proposed part 63 subp. YYYY. However, none of the existing three 2-stroke lean burn spark ignition reciprocating engines at the facility will be subject to the proposed subp. ZZZZ RICE MACT. This is because the RICE are existing units and the proposed rule at 40 CFR § 63.6590(b)(2)(i) exempts these units. In addition, the water jacket heater is exempt from the proposed industrial boiler MACT at part 63 subp. DDDDD.

The Permittee does not want limitations to avoid being a major source under the proposed part 63 subp. YYYY. The Permittee plans to conduct formaldehyde emissions performance testing after the effective date but before the first compliance date of subp. YYYY, to determine unit-specific emission factors for the reciprocating and turbine engines. After emission factors are determined, the Permittee will decide how to comply or avoid the proposed subp. YYYY MACT standard.

For RICE total Hazardous Air Pollutant (HAP) emission data in Delta, total HAP emissions were calculated using a total HAP emission factor (8.6712 E-02 lb/mmBtu) for the 2-stroke lean burn engines (EU 001 - 003). This factor is a sum of the HAP factors in AP-42 Table 3.2-1, and includes formaldehyde (5.52 E-02 lb/mmBtu).

For combustion turbine total HAP emissions data in Delta, total HAP emission were calculated using a total HAP emission factor (1.0273 E-03 lb/mmBtu) for EU 006 pipeline natural gas-fired gas turbine. This factor is a sum of the HAP factors in AP-42 Table 3.1-3, and includes formaldehyde (7.1 E-04 lb/mmBtu).

Environmental Review: This permitting action does not require environmental review.

Minn. R. ch. 7007 and NAAQS: EU 004 and EU 005 operating hours limits are necessary to ensure that the facility does not cause or contribute to a violation of the annual NOx national ambient air quality standard. These limits were incorporated into the original title V permit by a major amendment in 1999, based on the results of NOx modeling required by PER 11900029-001.

Minnesota Standards of Performance: The engines are subject to the Internal Combustion Rule at 7011.2300, and the water jacket heater is subject to the Minn. Indirect Heating Equipment Rule at 7011.0500.

Part 64 CAM: This facility is a major source under part 70, but does not use control equipment to comply with an applicable standard. Therefore, CAM does not apply to this facility.

No comments were received during the public notice or EPA review.

4. Conclusion

Based on the information provided by the Border Viking Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 11900029-004 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Marshall Cole, Cary Hernandez

Attachment: Emissions Data