MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

June 5, 2008

PERMIT TO INSTALL
No. 136-07

ISSUED TO
Muskegon Development Company-Straub Facility

LOCATED AT
NE NW Sec 10, T20N, R3W
Houghton Lake, Michigan

IN THE COUNTY OF
Clare

STATE REGISTRATION NUMBER
N7790

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: **5/2/2008**	
DATE PERMIT TO INSTALL APPROVED: **6/5/2008**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

Section **Page**

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_2S	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	NOx	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
NESHAP	National Emission Standard for Hazardous Air Pollutants	ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	psia	Pounds per square inch absolute
PSD	Prevention of Significant Deterioration	psig	Pounds per square inch gauge
PTE	Permanent Total Enclosure	scf	Standard cubic feet
PTI	Permit to Install	sec	Seconds
RACT	Reasonably Available Control Technology	SO_2	Sulfur Dioxide
ROP	Renewable Operating Permit	THC	Total Hydrocarbons
SC	Special Condition	tpy	Tons per year
SCR	Selective Catalytic Reduction	µg	Microgram
SRN	State Registration Number	VOC	Volatile Organic Compounds
TAC	Toxic Air Contaminant	yr	Year
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
EUHEATERTREATER	350,000 Btu/hr heater treater for separating crude oil from water and natural gas. The heater treater may use sour gas as fuel.	SVHEATERTREATER
EUTANKS	(2) 210 barrel crude oil storage tanks	
EUFLARESYSTEM	Flare system is designed to burn the sour gas from the heater treater and vapors from various relief vents and tank vapors associated with the oil and brine storage tanks.	SVFLARE
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

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FGFACILITY	All process equipment at the facility including equipment covered by other permits, grand-fathered equipment and exempt equipment.	

The following conditions apply to: EUFLARESYSTEM

Material Usage Limits

1.1 The amount of hydrogen sulfide burned in EUFLARESYSTEM shall not exceed 258.8 pounds per calendar day. **(R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d))**

Process/Operational Limits

1.2 Within 30 calendar days of the date of permit approval, the permittee shall submit to the AQD District Supervisor, an approvable operation and maintenance plan for EUFLARESYSTEM. The plan shall contain the following:

a) Operation and maintenance criteria for EUFLARESYSTEM, the flare pilot burner, shut down device required by SC 3.5, and for the process and control device(s) monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;

b) The work practice standards for the flare, flare pilot burner, and monitoring equipment;

c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and

d) A systematic procedure for identifying process equipment, flare, flare pilot burner, and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**

Equipment

1.3 Within 90 days after permit issuance, the permittee shall equip and maintain EUFLARESYSTEM with a device to monitor and record the volumetric flow rate of gas going to the flare on a continuous basis. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

Monitoring

1.4 The permittee shall monitor, in a satisfactory manner, the daily volumetric flow rate of gas going to the EUFLARESYSTEM flare, as required by SC 1.3. The permittee shall also monitor the monthly representative hydrogen sulfide concentration using colorimetric detector tubes or their equivalent. **(R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

Recordkeeping/Reporting/Notification

1.5 The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

1.6 The permittee shall use the information required by SC 1.4 to calculate the daily hydrogen sulfide mass flow rate to EUFLARESYTEM to demonstrate compliance with SC 1.1. The permittee shall keep, in a satisfactory manner, the monthly records of the representative hydrogen sulfide concentrations, monthly records of the daily volumetric flow rate of gas going to the flare, monthly records of the daily hydrogen sulfide mass flow rate to the EUFLARESYSTEM flare, and supporting calculations. 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 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

1.7 The permittee shall conduct all necessary maintenance and make all necessary attempts to keep all components of EUFLARESYSTEM maintained and operating in a satisfactory manner at all times. The owner or operator shall maintain a log of all significant maintenance activities conducted and all significant repairs made to EUFLARESYSTEM. Maintenance records for EUFLARESYSTEM shall be consistent with the operation and maintenance plan required in SC 1.2. 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 336.1224, R 336.1225, R 336.1910, R 336.1911)**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.8	SVFLARE	NA	50	**R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d)**
	The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

The following conditions apply to: EUHEATERTREATER

Process/Operational Limits

2.1 Within 30 calendar days of the date of permit approval, the permittee shall submit to the AQD District Supervisor, an approvable operation and maintenance plan for EUHEATERTREATER. The plan shall contain the following:

a) Operation and maintenance criteria for EUHEATERTREATER, the pilot burner, the main burner, shut down device required by SC 2.4, and for the process monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;

b) The work practice standards for the heater treater, pilot burner, main burner, and monitoring equipment;

c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and

d) A systematic procedure for identifying process equipment, pilot burner, main burner, and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**

Equipment

2.2 The permittee shall not operate EUHEATERTREATER unless the flare in EUFLARESYSTEM is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

2.3 Within 90 days of permit issuance, the permittee shall equip and maintain EUHEATERTREATER with a device to monitor and record the volumetric flow rate of gas going to the pilot and main burners on a continuous basis when burning sour gas. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

2.4 Within 90 days of permit issuance, the permittee shall operate a continuously burning pilot flame in EUHEATERTREATER when burning sour gas. In the event that the pilot flame is extinguished, shut down (or diversion to the EUFLARESYSTEM flare) of all gas fueling EUHEATERTREATER shall commence automatically within one second. The permittee shall not resume operation of EUHEATERTREATER unless the pilot flame is re-ignited and maintained. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

Monitoring

2.5 The permittee shall monitor, in a satisfactory manner, the daily volumetric flow rate of gas entering EUHEATERTREATER for combustion in the pilot and main burners. The permittee shall also monitor the monthly representative hydrogen sulfide concentration using colorimetric detector tubes or their equivalent. **(R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

Recordkeeping/Reporting/Notification

2.6 The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

2.7 The permittee shall use the information required by SC 2.5 to calculate the daily hydrogen sulfide mass flow rate to the EUHEATERTREATER pilot and main burners. The permittee shall use this information to calculate the sulfur dioxide emission rate from EUHEATERTREATER to demonstrate compliance with SC 3.1. The permittee shall keep, in a satisfactory manner, the monthly records of the representative hydrogen sulfide concentrations, monthly records of the daily volumetric flow rate of gas going to the EUHEATERTREATER pilot and main burners, monthly records of the daily hydrogen sulfide mass flow rate to the EUHEATERTREATER pilot and main burners, and supporting calculations. 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 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

2.8 The permittee shall conduct all necessary maintenance and make all necessary attempts to keep all components of EUHEATERTREATER maintained and operating in a satisfactory manner at all times. The owner or operator shall maintain a log of all significant maintenance activities conducted and all significant repairs made to EUHEATERTREATER. Maintenance records for EUHEATERTREATER shall be consistent with the operation and maintenance plan required in SC 2.1. 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 336.1224, R 336.1225, R 336.1910, R 336.1911)**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
2.9	SVHEATERTREATER	8	40	**R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d)**
	The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

Permit Dates

2.10 The minimum stack height above ground level listed in SC 2.9 shall apply within 90 days of issuance of this permit. **(R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

The following conditions apply to: FGFACILITY

Emission Limits

	Pollutant	Limit	Time Period	Equipment	Testing/ Monitoring Method	Applicable Requirement
3.1	SO_2	89 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC 3.10	**R 336.1205(3)**

Process/Operational Limits

3.2 On the date of issuance of this permit, FGFACILITY processes the wells listed below. The permittee shall not use FGFACILITY to process wells other than those specified below without prior notification to the AQD District Supervisor. **(R 336.1403, R 336.1901)**

- Douglass 2
- Holbrook-Bicknell 1
- Holbrook-Bicknell 2
- Second National Bank 1
- Stafford 3
- Straub 1

Equipment

3.3 The permittee shall not process oil in FGFACILITY unless the flare in EUFLARESYSTEM is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

3.4 The permittee shall not operate FGFACILITY unless all emergency relief valves, all storage tanks, and all dehydrators are vented to a flare, an incinerator or a vapor recovery system. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

3.5 The permittee shall operate a continuously burning pilot flame at the flare. In the event that the pilot flame is extinguished, a control valve located at the inlet to FGFACILITY shall automatically commence closure within one second and isolate FGFACILITY from all wells feeding FGFACILITY. Furthermore, each well feeding FGFACILITY shall shut down before the pressure reaches a company-determined safety set-point. The permittee shall not resume fluid flow into FGFACILITY unless the pilot flame is re-ignited and maintained. **(R 336.1224, R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

3.6 The permittee shall not load out any oil storage tank unless a vapor return system is installed, maintained and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1901)**

3.7 The permittee shall install and maintain fencing, warning signs, and/or other measures as necessary to prevent access to the equipment by unauthorized individuals. **(R 336.1201(3), R 336.1901)**

Monitoring

3.8 The permittee shall perform visible emission observations of the flare at least once each calendar day that FGFACILITY is operating. If excessive visible emissions are observed, the permittee shall implement the following procedures:

a) Determine the cause of the excessive visible emissions within 1 hour of discovery; and,

b) Identify, implement, and record the corrective measures to reduce/eliminate the excessive visible emissions within 5 hours.

c) If the excessive visible emissions cannot be reduced/eliminated within 5 hours, the permittee shall immediately cease fluid flow to FGFACILITY and not resume fluid flow to FGFACILITY until the excessive visible emissions have been reduced/eliminated. **(R 336.1225, R 336.1403, R 336.1901, R 336.1910)**

Recordkeeping / Reporting / Notification

3.9 The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last 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)**

3.10 The permittee shall calculate the SO_2 emission rates from FGFACILITY monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1205(3), R 336.1225)**

3.11 The permittee shall keep, in a satisfactory manner, records of each daily flare observation and each occurrence of implementing corrective measures taken to reduce/eliminate excessive visible emissions for the flare, as required by SC 3.8b. The record for each occurrence shall include the date, time, and duration of the occurrence. 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 336.1403, R 336.1901, R 336.1910)**

3.12 The permittee shall keep, in a satisfactory manner, a record of the wells FGFACILITY processes. For each well added, via SC 3.2, to those processed by FGFACILITY, the record shall include the initial hydrogen sulfide concentration of the gas and the initial volume (flow rate) of gas produced from the oil. 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 336.1403, R 336.1901)**