

Steven J. Mulkey  
Clark Refining, Inc. Station #379  
8182 Marylan Avenue  
St. Louis, MO 63105

Re: Registered Construction and Operation Status,  
141-11903-00193

Dear Mr. Mulkey:

The application from Clark Refining, Inc. Station #379, received on February 18, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the following operation of an air stripper and remediation of groundwater following removal of under ground storage tanks (USTs), to be located at 2701 Lincoln Way West, South Bend, Indiana, is classified as registered:

- (a) Air stripper, identified as air stripper 1, with a maximum capacity of thirty (30) gallons per minute, and exhausting to stack S-1.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. Pursuant to 326 IAC 2-6(Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual statement must be submitted to:

Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve(12) consecutive month time period starting December 1 and ending November 30.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Management that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3) . The annual notice shall be submitted to:

Compliance Data Section  
Office of Air Management  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

Spahi

cc: File - St. Joseph County  
St. Joseph County Health Department  
Air Compliance - Paul Karkiewicz  
Northern Regional Office  
Permit Tracking - Janet Mobley  
Technical Support and Modeling - Michele Boner  
Compliance Data Section - Karen Nowak

Clark Refining, Inc. Station #379  
South Bend, Indiana  
Permit Reviewer: Spahi

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**Registration  
Annual Notification**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

<b>Company Name:</b>	<b>Clark Refining, Inc. Station #379</b>
<b>Address:</b>	<b>2700 Lincoln Way West</b>
<b>City:</b>	<b>South Bend, Indiana</b>
<b>Authorized individual:</b>	<b>Steven J. Mulken</b>
<b>Phone #:</b>	<b>(314) 719-2322</b>
<b>Registration #:</b>	<b>141-11903-00193</b>

I hereby certify that Clark Refining, Inc. Station #379 is still in operation and is in compliance with the requirements of Registration 141-11903-00193.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

## Indiana Department of Environmental Management Office of Air Management

### Technical Support Document (TSD) for a *Registration*

#### Source Background and Description

**Source Name:** *Clark Service Station #379*  
**Source Location:** *2701 Lincoln Way West, South Bend, Indiana*  
**County:** *St. Joseph*  
**SIC Code:** *5541*  
**Operation Permit No.:** *141-11903-00193*  
**Permit Reviewer:** *Spahi*

The Office of Air Management (OAM) has reviewed an application from Clark Service Station #379 relating to the construction and operation of air stripping of petroleum impacted groundwater and land farming of petroleum impacted soils plant.

#### Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Air stripper, identified as air stripper 1, with a maximum capacity of thirty (30) gallons per minute, and exhausting to stack S-1.

#### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-1	Air Stripper	25	0.25	140	Ambient

#### Enforcement Issue

There are no enforcement actions pending.

#### Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 18, 2000, with additional information received on March 3, 2000.

**Emission Calculations**

See Appendix A of this document for detailed emissions calculations (1 Page.)

**Potential To Emit**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.0
PM-10	0.0
SO <sub>2</sub>	0.0
VOC	15.155
CO	0.0
NO <sub>x</sub>	0.0

HAP's	Potential To Emit (tons/year)
Benzene	0.362
Toluene	1.709
Ethyl Benzene	0.158
Xylene	0.802
TOTAL	3.031

- (a) The potential to emit (as defined in 326 IAC 2-5.1-2) of VOC is less than twenty-five (25) tons per year and equal to or greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2.

**Limited Potential to Emit**

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
Air Stripper	0.0	0.0	0.0	15.155	0.0	0.0	0.362 <sup>1</sup>
							1.709 <sup>2</sup>
							0.158 <sup>3</sup>
							0.802 <sup>4</sup>
<b>Total Emissions</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>15.155</b>	<b>0.0</b>	<b>0.0</b>	<b>3.031</b>

Note: 1= Benzene, 2 = Toluene, 3 = Ethyl Benzene and 4 = Xylene

**County Attainment Status**

The source is located in St. Joseph County.

Pollutant	Status
PM-10	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. St. Joseph County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) St. Joseph County has been classified as attainment or unclassifiable for volatile organic compounds (VOC). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

**Source Status**

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	0.0
PM10	0.0
SO <sub>2</sub>	0.0
VOC	15.155
CO	0.0
NO <sub>x</sub>	0.0
Single HAP	1.709*
Combination HAPs	3.031

Note: Single HAP, \* = Toluene is the largest HAP emitted.

- (a) This new source is not a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

**Part 70 Permit Determination**

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,

- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

### **Federal Rule Applicability**

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

### **State Rule Applicability - Entire Source**

#### **326 IAC 2-6 (Emission Reporting)**

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons of volatile organic compounds (VOCs) per year and it is located in St. Joseph County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

#### **326 IAC 5-1 (Visible Emissions Limitations)**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### **State Rule Applicability - Individual Facilities**

#### **326 IAC 8-1-6(BACT)**

This source does not have the potential to emit more than twenty-five (25) tons of VOC per year. Therefore, 326 IAC 8-1-6 does not apply.

### **Conclusion**

The construction and operation of this air stripping of petroleum impacted groundwater and land farming of petroleum impacted soils plant shall be subject to the conditions of the attached proposed Registration 141-11903-00193.

### HAPs Calculations:

Concentration of Benzene in water = 5.5 PPM  
Concentration of Toluene in water = 26.0 PPM  
Concentration of Ethyl Benzene in water = 2.4 PPM  
Concentration of Xylene in water = 12.2 PPM

\* Note: The data above was provided by the source and it was recorded during a pilot study.

1 liter of water = 1000 grams x 1000 micrograms/ 1milligram x 1000 milligrams/1 gram  
=  $10^{+9}$  micrograms

Weight of Benzene =  $5.5/10^{+6} \times 10^{+9}$  micrograms/1 liter = 5,500 micrograms/liter  
Weight of Toluene =  $26.0/10^{+6} \times 10^{+9}$  micrograms/1 liter = 26,000 micrograms/liter  
Weight of Ethyl Benzene =  $12.2/10^{+6} \times 10^{+9}$  micrograms/1 liter = 2,400 micrograms/liter  
Weight of Xylene =  $2.4/10^{+6} \times 10^{+9}$  micrograms/1 liter = 12,200 micrograms/liter

Maximum flow rate of water through the Air stripper = 30 gallons/minute

Potential to Emit of Benzene = 5,500 micrograms/liter x 3.785 liter/gal x 1 gram/ $10^6$  micrograms x  
1 lb/454 grams x 30 gallons/minute x 60 minute/hr x 8760 hrs/yr x 1ton/2000 lbs  
= 0.362 tons of Benzene/yr

Potential to Emit of Toluene = 26,000 micrograms/liter x 3.785 liter/gal x 1 gram/ $10^6$  micrograms x  
1 lb/454 grams x 30 gallons/minute x 60 minute/hr x 8760 hrs/yr x 1ton/2000 lbs  
= 1.709 tons of Toluene/yr

Potential to Emit of Ethyl Benzene = 2,400 micrograms/liter x 3.785 liter/gal x 1 gram/ $10^6$  micrograms x  
1 lb/454 grams x 30 gallons/minute x 60 minute/hr x 8760 hrs/yr x 1ton/2000 lbs  
= 0.158 tons of Ethyl Benzene/yr

Potential to Emit of Xylene = 12,200micrograms/liter x 3.785 liter/gal x 1 gram/ $10^6$  micrograms x  
1 lb/454 grams x 30 gallons/minute x 60 minute/hr x 8760 hrs/yr x 1ton/2000 lbs  
= 0.802 tons of Xylene/yr

### VOC Calculations:

Benzene, Toluene, Ethyl Benzene and Xylene compromises 20% of gasoline.

Total of BTEX = (0.362 tons of Benzene/yr + 1.709 tons of Toluene/yr + 0.158 tons of Ethyl Benzene/yr  
+ 0.802 tons of Xylene/yr) = 3.031 tons/yr

So Total VOC emissions = 3.031 tons/yr x 1/0.20 = 15.155 tons of VOC/yr