## Schwartz, Colin

**From:** Shek Jain <shek.jain@biourja.com>
**Sent:** Tuesday, February 07, 2017 2:47 PM
**To:** Schwartz, Colin
**Subject:** Re: Dakota Intermodal Facility and Crude Oil Loadout Facility

You can use me -- I am Chief Operating Officer for BioUrja Trading, LLC, the parent company of BioUrja New Town Terminal, LLC, the new owner.

On Tue, Feb 7, 2017 at 5:46 PM, Schwartz, Colin <Schwartz.Colin@epa.gov> wrote:

I currently have Gabe Claypool, COO, as the facility contact. Is this up to date? Otherwise we could use your name as primary facility contact.

Colin C. Schwartz

Environmental Scientist

Air Permits Division

US EPA Region 8- Denver, CO

303-312-6043

**From:** Shek Jain [mailto:shek.jain@biourja.com]
**Sent:** Tuesday, February 07, 2017 2:43 PM

**To:** Schwartz, Colin <Schwartz.Colin@epa.gov>
**Subject:** Re: Dakota Intermodal Facility and Crude Oil Loadout Facility

I am the corporate representative (based out of Houston), but if you need a site representative for emergencies, I can provide an alternative.

On Tue, Feb 7, 2017 at 5:21 PM, Schwartz, Colin <Schwartz.Colin@epa.gov> wrote:

Shek,

Will you be the responsible official for this site? I am wondering who the cover letter should be addressed to.

Thanks again!

Colin C. Schwartz

Environmental Scientist

Air Permits Division

US EPA Region 8- Denver, CO

303-312-6043

**From:** Shek Jain [mailto:shek.jain@biourja.com]
**Sent:** Tuesday, February 07, 2017 12:46 PM
**To:** Schwartz, Colin <Schwartz.Colin@epa.gov>
**Subject:** Re: Dakota Intermodal Facility and Crude Oil Loadout Facility

Thanks Colin. Yes, we are requesting the change in the permit. Please let me know if you need anything further from us as you process the change.

cheers,

shék

On Tue, Feb 7, 2017 at 3:43 PM, Schwartz, Colin <Schwartz.Colin@epa.gov> wrote:

Hello,

I am contacting you regarding the Notice of Permit Transfer sent January 30, 2017 for the SMNSR-TAT-000285-2013.002 permit (Dakota Intermodal Facility and Crude Oil Loadout Facility). We are verifying that you are requesting an Administrative Revision for this permit with the necessary permit changes?

If so, I can be your point of contact for this, and I will proceed with the revisions.

Thank you,

Colin C. Schwartz

Environmental Scientist

Air Permits Division

US EPA Region 8- Denver, CO

303-312-6043

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BioUrja Trading, LLC

1080 Eldridge Parkway

Suite 1175

Houston, TX. 77077

832-775-9012 (direct)
832-413 BIO6 (2466) (alternate)

www.biourja.com

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OPRA



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direct dial: 407.649.4035
kramsey@bakerlaw.com

January 30, 2017

**VIA UPS NEXT DAY AIR**

Deb Thomas
Acting Regional Administrator
United States Environmental Protection Agency
- Region 8
1595 Wynkoop St.
Denver, CO 80202-1129

*Re: Synthetic Minor Source Permit Number SMNSR-TAT-000285-2013.002*
*Dakota Intermodal Facility and Crude Oil Loadout Facility New Town, ND*
*NOTICE OF PERMIT TRANSFER*

Dear Ms. Thomas:

Regarding the above-referenced permit, a copy of which is enclosed, please find this notice of the intention of our client and the current permittee, Dakota Plains Holdings, Inc., to transfer Synthetic Minor Source Permit Number SMNSR-TAT-000285-2013.002 ("Permit") to BioUrja New Town Terminal, LLC on March 1, 2017.

Also enclosed is a copy of an executed written agreement between the current permittee and new permittee regarding the March 1, 2017 transfer of Permit responsibility, coverage, and liability ("Transfer Agreement"). The contact information for BioUrja New Town Terminal, LLC, the new permittee, is:

| | |
|---|---|
| New Permittee Contact/Title: | BioUrja New Town Terminal, LLC |
| Mailing Address: | 1080 Eldridge Pkwy, Suite 1175, Houston, TX 77077 |
| Email Address: | shek.jain@biourja.com |
| Telephone Number: | 832-775-9000 |
| Facsimile Number: | 281-558-6920 |

As required by the Permit, a copy of this notice of change of ownership and permit transfer request, as well as a copy of the enclosed Permit and Transfer Agreement are also being provided to the United States Environmental Protection Agency, Region 8, Office of Partnerships and Regulatory Assistance, Tribal Air Permitting Program, 8P-AR, 1595 Wynkoop Street, Denver, Colorado 80202.

Sincerely,

Kristina R. Ramsey

Enclosures

cc: United States Environmental Protection Agency, Region 8, Office of Partnerships and Regulatory Assistance, Tribal Air Permitting Program, 8P-AR, 1595 Wynkoop Street, Denver, Colorado 80202 (*via overnight delivery*)

Dakota Plains Holdings, Inc. (*via electronic mail delivery)*

BioUrja New Town Terminal, LLC (*via electronic mail delivery)*

**United States Environmental Protection Agency**
**Region 8, Air Program**
**1595 Wynkoop Street**
**Denver, CO 80202**

**Air Pollution Control**
**Synthetic Minor Source Permit to Construct**

**40 CFR 49.151**

**#SMNSR-TAT-000285-2013.002**

**New Town Transfer Facility Modification**

*Synthetic Minor Permit to Construct to establish legally and practically enforceable restrictions on volatile organic compound (VOC) emissions to avoid the permitting requirements of the Prevention of Significant Deterioration Permit Program at 40 CFR Part 52 (PSD) for a modification, and to become a minor VOC source with respect to the Title V Operating Permit Program at 40 CFR Part 71 (Part 71).*

**Permittee:**

Dakota Plains Holdings, Inc.

**Permitted Facility:**

New Town Transfer Facility
Crude Oil Railcar Loading Operations
Fort Berthold Indian Reservation
Mountrail County, North Dakota

## Summary

Dakota Plains Holdings, Inc. (Dakota Plains) owns and operates the New Town Transfer Facility, an existing truck-to-railcar crude oil loading operation. The facility is located along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

On February 26, 2013, the EPA received a request from Dakota Plains Holdings, Inc., to revoke, revise and re-issue the September 20, 2012, permit #SMNSR-TAT-000285-2013.001 based on changes to the original construction plan. On March 22, 2012, Dakota Plains, Inc. merged with Dakota Plains Holdings, Inc. (Dakota Plains). The merger included the acquisition of approximately 125 acres of land to the south of the existing facility for a much larger expansion of operations than originally planned. With changed ownership and the addition of this new property, the operating plans for the facility have changed and expanded. Therefore, permit #SMNSR-TAT-000285-2013.001 no longer represents the new construction plans and has been terminated.

The EPA has approved the change to the crude oil transfer methodology at the facility from a direct truck-to-railcar loading model to operating more like a crude oil terminal with significant onsite storage, adding additional crude oil storage, and fixed loading arms to load the railcars directly from the storage tanks, rather than directly from trucks using portable loading units. As a back-up operating scenario, in the event that the storage tank-to-railcar transfer equipment is unavailable, the EPA has approved the limited use of the existing direct truck-to-railcar transfer operations. The EPA has also approved transfer of crude oil at the facility. Dakota Plains will bring crude oil on site by both truck and pipeline modes. The transfer of crude oil from the trucks to the storage tanks will be done using ten (10) stationary loading stations. The transfer of crude oil from the pipelines will be done using five (5) pipeline loading stations.

The primary air quality concerns with this modification are ozone and nitrogen dioxide ($NO_2$). Ambient monitoring data show that both ozone and $NO_2$ levels in North Dakota are below the National Ambient Air Quality Standards (NAAQS). Based on the existing air quality information and an analysis of the effects of the controlled emissions from this modification, the EPA determined that the approved modification will not contribute to an ozone or $NO_2$ NAAQS violation, or have potentially adverse effects on ambient air due to increases in $NO_x$ or VOC emissions. No further ambient impact analysis was required.

## Table of Contents

## I. Conditional Permit to Construct

### A. General Information

| | |
|---|---|
| Facility: | New Town Transfer Facility |
| Permit number: | SMNSR-TAT-000285-2013.002 |
| SIC Code and SIC Description: | 5171 – Petroleum Bulk Stations and Terminals |

Site Location:
New Town Transfer Facility
NW ¼ NW ¼ Sec 21 T152N R92W &
N ½ NE ¼ Sec 20 T152N R92W
Fort Berthold Indian Reservation
Mountrail County, ND

Corporate Office Location
Dakota Plains Holdings, Inc.
294 Grove Lane East
Wayzata, MN 55391

The EPA has approved the construction of the equipment listed in this permit to Dakota Plains Holdings, Inc. at the following location:

Latitude 47.977678N, Longitude -102.476119W

### B. Applicability

1. This Federal Permit to Construct is being issued under authority of the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (TMNSR) and replaces Permit #SMNSR-TAT-000285-2013.001, which was revoked and terminated for cause pursuant to TMNSR at §49.155(a)(7)(iv).

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions on VOC emissions to become a minor VOC source with respect to PSD and Part 71.

3. Any conditions established for this facility or any specific units at this facility pursuant to any Conditional Permit to Construct issued under the authority of PSD or TMNSR that are in effect shall continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

### C. Facility-Wide Requirements

1. Emissions Limit

   Facility-wide VOC emissions shall not exceed 97.0 tons in any consecutive 12-month period.

2. Construction and Operational Limits

   (a) *Crude Oil Storage Tanks:* The Permittee is authorized to install no more than three 90,000 bbls crude oil storage tanks.

(b) *Crude Oil Storage Tank Loading (truck-to-storage tank and pipeline-to-storage tank crude oil transfers):*

(i) The Permittee is authorized to install no more than ten (10) stationary loading stations to load the crude oil to the storage tanks directly from trucks;

*(A)* Each fixed loading arm shall be limited to a crude oil loading rate of no more than 400 gallons per minute (gpm); and

*(B)* Each station shall be operated with no detectable VOC emissions.

(ii) The Permittee is authorized to install crude oil pipeline transfer stations to load the crude oil directly to the storage tanks. Each station shall be operated with no detectable VOC emissions.

(c) *Stationary Crude Oil Railcar Loading (storage tank-to-railcar crude oil transfers):*

(i) The Permittee is authorized to install ten (10) railcar loading stations that use fixed loading arms to load the crude oil directly to the railcars from the storage tanks;

(ii) Each fixed loading arm shall be limited to a crude oil loading rate of no more than 700 gpm; and

(iii) The total volume of crude oil transferred to railcars from the storage tanks shall not exceed 32,850,000 bbls in any consecutive 12-month period.

(d) *Portable Crude Oil Railcar Loading (truck-to-railcar crude oil transfers):*

The Permittee is authorized to use portable loading units and pumping systems mounted to each truck to load crude oil directly to the railcars from the trucks. This method of railcar loading shall be limited as follows:

(i) Temporary Operations: Until the start-up of the stationary crude oil railcar loading stations (storage tank-to-railcar), the total crude oil loaded directly from the trucks to the railcars shall not exceed 17,000,000 bbls in any consecutive 12-month period. The Permittee shall discontinue the use of the portable crude oil loading units as the primary mode of railcar loading no later than 30 days after the EPA's receipt of a written notice from the Permittee that the stationary crude oil railcar loading station has commenced operation; and

(ii) Back-up Operations: Thirty days after the start-up of the fixed crude oil railcar loading stations (storage tank-to-railcar), the use of the portable crude oil railcar loading units may only be used when the fixed crude oil rail car loading stations (storage tank-to-railcar) are not operational and shall be limited to 5,475,000 bbls in any consecutive 12-month period.

(e) *Portable Diesel Fuel Truck Loading (railcar-to-truck diesel fuel transfers):*

The Permittee is authorized to use portable diesel fuel truck loading units and pumping systems mounted to each truck for railcar-to-truck diesel fuel transfers.

3. Monitoring and Testing Requirements

(a) The Permittee shall record the total volume of crude oil loaded, in bbls, at the end of each month, beginning with the first calendar month that permitted operations commence for each of the following operations:

(i) Storage tank loading (from tanker trucks and pipelines):

Total crude oil loaded to each storage tank shall be continuously measured using liquid flow meters.

(ii) Railcar loading from storage tanks (through railcar loading stations):

Total crude oil loaded to the railcars shall be continuously measured using liquid flow meters; and

(iii) Railcar loading from trucks (through portable units or by way of a truck mounted pumping system):

Total crude oil loaded to the railcars shall be measured each time a railcar is filled by manual gauging of the liquid level in the railcar.

(b) Prior to 12 full months of crude oil loading data from each operation, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume for that month to the recorded crude oil loaded and/or transferred for each operation for all previous months since permitted operations commenced and record the total for each. Thereafter, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume of crude oil loaded for each operation for that month to the calculated volume from the preceding 11 months and record a new 12- month total for each.

(c) The Permittee shall conduct semiannual extended laboratory analysis of the crude oil received at the facility to obtain the actual physical and chemical properties of the hydrocarbon liquid and associated vapors to be used in calculating monthly VOC emissions.

(d) The Permittee shall maintain documentation, provided by the supplier, of the properties of the diesel fuel received from the supplier.

4. VOC Emissions Calculation Requirements

(a) Facility-wide VOC emissions shall be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that permitted operations commence.

(b) Prior to 12 full months of facility-wide VOC emissions calculations, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for the preceding 11 months and record a new 12-month total.

(c) VOC emissions from all controlled and uncontrolled emission sources at the facility shall be included in the monthly calculation, including, but not limited to: the crude oil storage tanks, storage tank loading operations, railcar loading operations, and diesel fuel truck loading operations.

(d) VOC emissions from each approved emitting unit shall be calculated as specified in this permit.

5. Recordkeeping Requirements

The Permittee shall maintain the following records:

(a) The actual monthly and rolling 12-month facility-wide VOC emissions, in tpy;

(b) The actual monthly and rolling 12-month volume of crude oil loaded to the storage tanks (from trucks and pipelines), in bbls;

(c) The actual monthly and rolling 12-month volume of crude oil loaded to railcars from the storage tanks, in bbls;

(d) The actual monthly and rolling 12-month volume of crude oil loaded to railcars directly from trucks, in bbls;

(e) The results of each extended laboratory analysis of the hydrocarbon liquids received at the facility; and

(f) All input parameters and methodologies used to calculate the facility-wide monthly VOC emissions from each VOC emitting unit identified in this permit.

**D. Requirements for Minimizing Fugitive Dust**

1. Work Practice and Operational Requirements

(a) The Permittee shall take all reasonable precautions to prevent fugitive dust emissions at the facility and shall construct, maintain, and operate the facility to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

(i) Using, where possible, water or suitable chemicals for control of dust during construction and operations, during grading of roads, or during clearing of land;
(ii) Applying asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and/or other surfaces located at the facility that can create airborne dust;
(iii) Promptly removing from paved streets, located at the facility, of earthen or other material that does or may become airborne; and
(iv) Restricting vehicle speeds at the facility.

(b) The Permittee shall prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.

2. Monitoring Requirements

(a) The Permittee shall survey the facility during construction and operation to determine if there are obvious visible dust plumes. This survey shall be done at a minimum once per week in all active areas and during daylight hours.

(b) The Permittee shall document the results of the survey, including the date and time of the survey, identification of the cause of any visible dust plumes observed, and the reasonable precautions taken to prevent continued fugitive dust emissions.

3. Recordkeeping Requirements

The Permittee shall maintain records for five (5) years that document the fugitive dust prevention plan, the periodic surveys and the reasonable precautions that were taken to prevent fugitive dust emissions.

**E. Requirements for Crude Oil Storage Tanks**

1. Installation and Operational Requirements

The Permittee shall install, operate and maintain each crude oil storage tank with a fixed roof in combination with an internal floating roof designed and operated as specified in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

2. Monitoring Requirements

(a) The Permittee shall visually inspect the internal floating roof, the seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of each storage tank with crude oil, at least once every six (6) months, after the initial fill, and each time a storage tank is emptied, degassed, and/or refilled.

(b) The Permittee shall repair any items before filling or refilling a storage tank with crude oil if one or more of the following are observed:

(i) Except in the case of floating roof landings, the internal floating roof is not resting on the surface of the liquid inside the storage tank;
(ii) There is liquid accumulated on the roof;
(iii) The seal is detached, or there are holes, tears, or other openings in the primary or secondary seal or seal fabric;
(iv) The gaskets no longer close off the liquid surfaces from the atmosphere; or
(v) The slotted membrane has more than 10% open area.

3. VOC Emissions Calculation Requirements

(a) VOC emissions from each crude oil storage tank at the facility due to working and breathing losses for each calendar month shall be calculated using the most current version of the EPA TANKS program (found at www.epa.gov/ttn/chief/efpac/efsoftware.html) and the following:

(i) The total measured volume of crude oil transferred to each storage tanks for the month; and
(ii) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility.

(b) VOC emissions from each crude oil storage tank at the facility due to roof landing losses for each calendar month shall be calculated using the techniques in AP-42, Chapter 7.1: Organic Liquid Storage Tanks for standing idle losses and filling losses for floating roof tanks and the actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility. Other techniques for calculating the roof landing losses may be used upon EPA's written approval.

(c) VOC emissions from each crude oil storage tank at the facility due to degassing for each calendar month shall be calculated. The emissions shall be calculated using the most current version of the EPA Tanks program and the actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility. Other techniques for calculating degassing emissions may be used upon EPA's written approval. The degassing emissions using the EPA Tanks program shall determined as follows:

(i) Determine emissions for one tank turnover;
(ii) Determine the emissions from the tank modeled as a fixed roof tank with a tank height equal to the height of the deck legs; and
(iii) Approximate the vapor displaced from the space under the floating roof by summing these two emission rates to determine degassing emissions.

3. Recordkeeping Requirements

(a) The Permittee shall document crude oil storage tank inspections. All crude oil storage tank inspection records shall include, at a minimum, the following information:

(i) The date of the inspection;
(ii) All documentation and/or images produced in the inspection;
(iii) The findings of the inspection;
(iv) Any corrective action taken; and
(v) The inspector's name and signature.

(b) The Permittee shall document and maintain a record of each time a storage tank's floating roof rests on the deck legs or other supports, a storage tank is degassed, and/or a storage tank is cleaned and refilled.

(c) The Permittee shall document and maintain a record of the monthly VOC emissions, in tons, from each crude oil storage tank, the emission calculations, all inspections, and any repairs.

## F. Requirements for Crude Oil Storage Tank Loading

1. Installation and Operations Requirements

(a) The Permittee shall install, operate and maintain a crude oil piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. A submerged fill pipe shall be no more than 12 inches from the bottom of each crude oil storage tank. The Permittee shall not conduct crude oil storage tank loading by either pipeline or truck unless bottom or submerged loading is used.

(b) The Permittee shall monitor all lines, connections, fittings, valves, or any other appurtenance employed to collect, contain, and/or move crude oil at each truck loading station for crude oil leaks during all crude oil loading events using olfactory, visual, and auditory techniques. If a crude oil leak is detected, the Permittee shall discontinue the use of the station and repair the leak prior to resuming use of the truck loading station.

(c) The Permittee shall monitor each pipeline storage tank loading station for crude oil leaks on a weekly basis during crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a crude leak is detected, the Permittee shall discontinue the use of the station and repair the leak prior to resuming the use of the pipeline storage tank loading station.

2. VOC Emissions Control Requirements

(a) The Permittee shall install, maintain, and operate all crude oil storage tank loading stations (truck and pipeline loading stations) with no detectable VOC emissions.

(b) The Permittee shall install, operate and maintain each truck storage tank loading unit using the following design criteria:

(i) All vapor connections and lines on the trucks and storage tanks shall be equipped with closures that seal upon disconnect; and

(ii) The vapor line from the trucks to the storage tanks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors.

(c) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain, collect, and remove gases, vapors, and fumes from the trucks and/or pipeline stations to the storage tanks shall be maintained and operated during any time any crude oil storage tank is being loaded.

(d) If any crude oil storage tank loading station (truck and pipeline) contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from the trucks or pipelines to the atmosphere, the Permittee shall meet one of the following requirements for each bypass device:

(i) At the inlet to the bypass device that could divert the stream into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted into the atmosphere; or

(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. Monitoring Requirements

The Permittee shall monitor each crude oil storage tank loading station (truck and pipeline stations) to ensure that they are operating with no detectable VOC emissions as follows:

(a) The Permittee shall monitor each truck storage tank loading station for gas leaks during all crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a gas leak is detected, the Permittee shall discontinue the use of the truck loading station and repair the gas leak prior to resuming use of the truck loading station.

(b) The Permittee shall monitor each pipeline storage tank loading station for gas leaks weekly during crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a gas leak is detected, the Permittee shall discontinue the use of the pipeline loading station and repair the gas leak prior to resuming use of the pipeline loading station.

(c) On a semiannual basis the Permittee shall conduct a visual inspection of each flow indicator and associated alarm for each bypass device, where applicable, to ensure proper operation and a visual inspection of each car-seal or lock-and-key configuration on each by-pass device, where applicable, to insure that the bypass device is in a non-diverting position.

(d) On a semiannual basis and during a storage tank loading event (truck and pipeline stations), the Permittee shall ensure that the concentration at all potential leak sources on each truck and pipeline loading station is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source. If a leak is detected, the Permittee shall repair the leak prior to using the storage tank loading station again.

4. VOC Emissions Calculation Requirements

VOC emissions from the each pipeline and truck storage tank loading station shall be considered to be undetectable (0 tpy) unless a leak was detected. If a leak was observed, the VOC emissions shall be calculated using the length of time of the leak from each equipment type and the following emission factors from the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017, November 1995, Table 2-3 (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf) as follows:

| Equipment Type | Emission Factor (lb/hr/source)[a] |
|---|---|
| Valves | 0.0000947 |
| Pump Seals | 0.0011904 |
| Fittings (connectors and flanges) | 0.0000176 |
| Other (any equipment type other than fittings, pumps, or valves) | 0.0002866 |

a. These factors are for total organic compound emission rates including non-VOCs such as methane and ethane.

5. Recordkeeping Requirements

(a) The Permittee shall keep records of the day, time, and results of all monitoring performed at each station and the protocol used for the inspection.

(b) The Permittee shall keep records of all instances where a leak of gases, vapors, or fumes was detected at a crude oil storage tank truck and pipeline loading station. The records shall include a description of each leak, including the equipment type, the length of time of the leak, and the corrective measures taken to address the leak.

(c) The Permittee shall keep a monthly record of the estimated VOC emissions where a leak of gases, vapors, or fumes was detected for that month.

## G. Requirements for Stationary Crude Oil Railcar Loading

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe shall be no more than 12 inches from the bottom of each railcar. The Permittee shall not conduct railcar loading operations unless submerged loading is used.

(b) The Permittee shall monitor all lines, connections, fittings, valves, or any other appurtenance employed to collect, contain, and/or move crude oil at each railcar loading station for crude oil leaks during all crude oil loading events using olfactory, visual, and auditory techniques. If a crude oil leak is detected, the Permittee shall discontinue the use of the railcar loading station and repair the leak prior to using the railcar loading station for the next railcar.

2. VOC Emissions Control Requirements

VOC emissions from the stationary railcar loading operations at the facility shall be continuously controlled using a closed-vent system that routes vapors to an enclosed combustion device designed, operated, and maintained to reduce the mass content of VOC emissions in the vapors by at least 98.0 %.

(a) Closed-Vent System Installation and Operation Requirements

(i) The closed-vent system shall be designed and maintained to operate with no detectable emissions. All piping connections, fittings, valves, or any other appurtenance employed to contain and collect vapors and transport them to the enclosed combustion device shall be connected and operational during any time the control equipment is operating.

(ii) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the enclosed combustion device, the Permittee shall meet one of following requirements for each bypass device:

*(A)* At the inlet to each bypass device that could divert the stream away from the enclosed combustion device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the enclosed combustion device and into the atmosphere; or

*(B)* Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

(b) Enclosed Combustion Device Installation and Operation Requirements

(i) The enclosed combustion device shall be designed to minimize visible smoke emissions and have sufficient capacity to achieve at least 98.0 % VOC emissions destruction efficiency for the minimum and maximum hydrocarbon mass flow routed to the device.

(ii) The enclosed combustion device shall be equipped with an automatic ignition system or continuous burning pilot flame, a thermocouple, or similar temperature sensing device, to detect the presence of a flame; and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame.

(iii) The enclosed combustion device shall be maintained in a leak-free condition.

(iv) The Permittee shall follow the manufacturer's written operating instructions, procedures and maintenance schedule for the enclosed combustion device, to ensure good air pollution control practices for minimizing emissions.

(v) A control device other than the enclosed combustion device that is capable of achieving a control efficiency equivalent to that specified in this permit may be used upon EPA approval.

3. Monitoring Requirements

(a) On a semiannual basis and during a railcar loading event, the Permittee shall conduct a visual inspection of each flow indicator and associated alarm for each bypass device, where applicable, to ensure proper operation and a visual inspection of each car-seal or lock-and-key configuration on each by-pass device, where applicable, to insure that the bypass device is in a non-diverting position.

(b) The Permittee shall continuously monitor the blower fan on the closed-vent system to ensure that it is operating at all times a railcar loading event is occurring using vacuum pressure measurement upstream of the blower fan. In the event that the blower fan is not operational, the Permittee shall immediately shut down all railcar loading operations and repair the blower fan. Railcar loading operations shall not resume until the blower fan is repaired and operational.

(i) The Permittee shall demonstrate that the enclosed combustion device achieves the 98.0 % VOC emission destruction efficiency requirement by performing an initial performance test of the device within 180 days of commencing operation of a new, repaired, or replaced unit. Subsequent performance tests of the enclosed combustion device shall be conducted every 3 years thereafter.

(ii) Subsequent performance tests are not required for an enclosed combustion device that is model tested under and meets the criteria of the New Source Performance Standard for Crude Oil and Natural Gas Production, Transmission and Distribution (NSPS OOOO) at §60.5413(d).

(iii) The Permittee shall demonstrate that the enclosed combustion device achieves the 98.0 % VOC emissions destruction efficiency requirement using the following performance test methods and procedures:

*(A)* Method 1 or 1A, as appropriate for the selection of the sampling sites;
*(B)* Method 2, 2A, 2C, or 2D, of 40 CFR part 60, Appendix A to determine gas volumetric flow rate;
*(C)* Method 18 at 40 CFR Part 60, Appendix A, Method 25A at 40 CFR Part 60, Appendix A, ASTM D6420-99 (2004), or any other method or data that have been validated according to the applicable procedures in Method 301 at 40 CFR Part 63, Appendix A, to determine compliance with the 98.0 % VOC emissions destruction efficiency requirement.

(iv) The Permittee shall monitor the enclosed combustion device to confirm proper operation as follows:

*(A)* Continuously monitor the pilot flame using a thermocouple, or other temperature sensing device, and recording device that indicates the continuous ignition of the pilot flame at all times the enclosed combustion device is operating;
*(B)* Check the recording device to insure proper operation once per day;
*(C)* Check the auto-ignition system, where applicable, to insure proper operation once per day;
*(D)* Check the pilot flame to insure proper operation once per day; and
*(E)* Correct a pilot flame failure and auto-ignitions system, where applicable, when notified by the malfunction alarm, as soon as possible, but no longer than five (5) days from the day of the notification.

4. <u>VOC Emissions Calculation Requirements</u>

VOC emissions from railcar loading operations for each calendar month shall be calculated using the following:

(a) The total measured volume of crude oil loaded for the month (bbls);

(b) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;

(c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND;

(d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading;

(e) The most current tested VOC emission destruction efficiency of the enclosed combustor; and

(f) If a leak was observed, the VOC emissions shall be calculated using the length of time of the leak from each equipment type and the following emission factors from the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017, November 1995, Table 2-3 (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf) as follows:

| Equipment Type | Emission Factor (lb/hr/source)[a] |
|---|---|
| Valves | 0.0000947 |
| Pump Seals | 0.0011904 |
| Fittings (connectors and flanges) | 0.0000176 |
| Other (any equipment type other than fittings, pumps, or valves) | 0.0002866 |

a. These factors are for total organic compound emission rates including non-VOCs such as methane and ethane.

5. Recordkeeping Requirements

The Permittee shall keep the following records for the stationary railcar loading operations:

(a) The day and time of all testing, monitoring, and inspections, the results of all testing, monitoring, and inspections performed, and the protocols used for each. All exceedances of the annual hydrocarbon liquid railcar loading limit as specified in this permit.

(b) The site specific design input parameters provided by the manufacturer or vendor, and used to properly size the enclosed combustor to assure the 98.0 % minimum VOC emissions destruction efficiency requirement in this permit and any instances in which any parameter was exceeded.

(c) Any instances in which the enclosed combustion device was bypassed or down in each calendar month during stationary railcar loading operations, the reason for each incident, its duration, and the corrective actions taken or the preventative measures adopted to avoid such bypasses or downtimes.

(d) Any instances in which the pilot flame is not present in the enclosed combustion device while it is operating, the date and times that the flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the flame.

(e) Any instances in which the thermocouple, or other temperature sensing device, installed to detect the presence of a flame in the enclosed combustion device, is not operational while the enclosed combustion device is operating, the time period during which it was not operational, and the corrective measures taken.

(f) All required testing and monitoring. The records shall include the following:

(i) The date, place, and time of observations, sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The companies or entities that performed observations and the analyses;

(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

## H. Requirements for Portable Crude Oil Railcar Loading

1. Installation and Operational Requirements

The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe shall be no more than 12 inches from the bottom of the railcar. The Permittee shall not conduct portable railcar loading unless submerged loading is used.

2. VOC Emission Control Requirements

(a) All VOC emissions from all portable railcar loading at the facility shall be continuously controlled using vapor balance control systems designed and operated to reduce the mass content of VOC emissions by at least 90.0 %. The Permittee shall not conduct portable crude oil railcar loading unless the vapor balance control system is used.

(b) Any planned release of vapor from the trucks following vapor balance during portable crude oil railcar loading prior to leaving the facility shall be controlled using an enclosed combustion device that is installed, operated, monitored, and tested as specified in the section labeled, **Requirements for Stationary Crude Oil Railcar Loading**.

(c) The Permittee shall install, operate and maintain each vapor balance control system using the following design criteria:

(i) All vapor connections and lines on the trucks and railcars shall be equipped with closures that seal upon disconnect;
(ii) The vapor line from the railcars to the trucks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors; and
(iii) The vapor balance control system shall be designed such that the pressure in the tank of the trucks does not exceed the maximum allowable tank pressure (design pressure) of the truck during the portable railcar loading so that tank relief valves on the trucks are not activated.

3. Monitoring Requirements

(a) The Permittee shall monitor each vapor balance control system during each portable railcar loading operation to confirm proper operation as follows:

(i) Measure the pressure in the tank of the trucks to ensure that the each truck's tank design pressure is not being exceeded; and
(ii) Inspect each vapor return line for leaks using olfactory, visual, and auditory techniques. If a leak is detected, the Permittee shall repair the leak prior to portable railcar loading from the next truck using the same vapor return line.

(b) On a semiannual basis and during a portable railcar loading event, the Permittee shall ensure that the concentration at all potential leak sources on each portable loading unit is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source.

4. VOC Emissions Calculation Requirements

VOC emissions from the portable railcar loading for each calendar month shall be calculated using the following:

(a) The total measured volume of crude oil loaded via a portable unit for the month (bbls);

(b) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;

(c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND;

(d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading; and

(e) The 90.0% vapor balance control efficiency, unless a leak in a vapor return line on any one portable railcar loading unit was visibly observed or measured during any one portable railcar loading event; in which case, the vapor balance control efficiency shall be considered 0.0% for the actual measured volume of crude oil loaded during that event.

6. Recordkeeping Requirements

The Permittee shall keep the following records for portable railcar loading operations:

(a) The day and time of all testing, monitoring, and inspections, the results of all testing, monitoring, and inspections performed, and the protocols used for each.

(b) All exceedances of the crude oil truck-to-railcar limit as specified in this permit.

(c) All instances where a leak was visually observed or tested during a portable railcar loading event, the corrective measures taken, and the volume of crude oil loaded with the leaking vapor balance control system.

(d) The required vapor tight testing of each portable railcar loading unit and shall include the following:

(i) The date, place, and time of observations, sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The companies or entities that performed observations and the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

## I. Requirements for Portable Diesel Fuel Truck Loading

1. The Permittee shall install, operate and maintain a piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe shall be no more than 12 inches from the bottom of each truck. The Permittee shall not conduct diesel fuel filling operations unless submerged loading is used.

2. The total diesel fuel loaded to the trucks shall, at a minimum, be measured by manual gauging of the liquid level in the railcar and recorded at the end of each calendar month.

3. VOC emissions from the portable diesel fuel truck loading for each calendar month shall be calculated using the following:

   (a) The total measured volume of diesel fuel loaded for the month (bbl);

   (b) The actual physical and chemical properties of the diesel fuel and its associated vapors from the most recent analysis of the diesel fuel received from the supplier;

   (c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND; and

   (d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading.

4. The Permittee shall document and maintain a record of the monthly VOC emissions from all diesel fuel truck loading and the emission calculations.

## J. Requirements for Records Retention

1. The Permittee shall retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records shall be kept at the facility or the location that has day-to-day operational control over the facility.

## L. Requirements for Reporting

1. Annual Emission Reports

   (a) The Permittee shall submit a written annual report of the actual annual VOC emissions from all emission units at the facility each year no later than April 1st. The annual report shall cover the period for the previous calendar year. All reports shall be certified to truth and accuracy by the responsible official.

   (b) The report shall be submitted to:

   U.S. Environmental Protection Agency, Region 8
   Office of Partnerships and Regulatory Assistance
   Tribal Air Permitting Program, 8P-AR

1595 Wynkoop Street
Denver, Colorado 80202

The report may be submitted via electronic mail to r8AirPermitting@epa.gov.

2. All other documents required to be submitted under this permit, with the exception of the Annual Emission Reports, shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Documents may be submitted electronically to r8airreportenforcement@epa.gov.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to r8airreportenforcement@epa.gov as follows:

   (a) Within 30 days from the discovery of a deviation that would cause the Permittee to exceed the emission limits or operational limits if left un-corrected for more than five (5) days after discovering the deviation;

   (b) Within 30 days from the discovery of an equipment leak as a result of monitoring; and

   (c) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee's ability to meet the emission limits.

4. The Permittee shall submit a written report for any required performance tests to the EPA within 60 days after completing the tests.

5. The Permittee shall submit any record or report required by this permit upon EPA request.

## II. General Provisions

### A. Conditional Approval:

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants this permit to construct. This authorization is expressly conditioned as follows:

1. *Document Retention and Availability:* This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.

2. *Permit Application:* The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified 10 days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.

3. *Permit Deviations:* The issuance of this permit may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. *Compliance with Permit:* The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted facility/source. Noncompliance with any permit term or condition is a violation of this permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. *Fugitive Emissions:* The Permittee shall take all reasonable precautions to prevent and/or minimize fugitive emissions during the construction period.

6. *National Ambient Air Quality Standard and PSD Increment:* The permitted source shall not cause or contribute to a National Ambient Air Quality Standard violation or a PSD increment violation.

7. *Compliance with Federal and Tribal Rules, Regulations, and Orders:* Issuance of this permit does not relieve the Permittee of the responsibility to comply fully with all other applicable federal and tribal rules, regulations, and orders now or hereafter in effect.

8. *Enforcement:* It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. *Facility/Source Modifications:* For proposed modifications, as defined at §49.152(d), that would increase an emissions unit allowable emissions of a PSD, TMNSR, or HAPs above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to the TMNSR regulations approving the increase. For a proposed modification that is not otherwise subject to review under the PSD or TMNSR regulations, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at §49.159(f).

10. *Relaxation of Legally and Practically Enforceable Limits:* At such time that a new or modified source within the permitted facility/source or modification of this permitted facility/source becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of this permitted facility/source to otherwise emit a pollutant, such as a restriction on hours of operation, then the requirements of the PSD regulations shall apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if this permit contains a material mistake or the Permittee fails to assure compliance with the applicable requirements.

12. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

13. *Property Rights:* This permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating this permit or to determine compliance with this permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with 40 CFR Part 2, Subpart B.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect this permitted facility/source during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:

    (a) Enter upon the premises where a permitted facility/source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of this permit;

    (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;

    (c) Inspect, during normal business hours or while the permitted facility/source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

    (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements; and

    (e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the proposed permit, in which case this permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within 30 days of receipt of this permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

    U.S. Environmental Protection Agency, Region 8
    Office of Partnerships and Regulatory Assistance
    Tribal Air Permitting Program, 8P-AR
    1595 Wynkoop Street
    Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of the permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project. The Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up*: The Permittee shall submit a notification of the anticipated date of initial start-up of the permitted source to the EPA within 60 days of such date.

**B. Authorization:**

Authorized by the United States Environmental Protection Agency, Region 8

8/6/13

Derrith R. Watchman-Moore
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Date

# AGREEMENT FOR PERMIT TRANSFERS

**THIS AGREEMENT FOR PERMIT TRANSFERS** ("Agreement") dated as of January 30, 2017 is entered into by and between Dakota Plains Holdings, Inc., a Nevada corporation ("Dakota Plains"), Dakota Petroleum Transport Solutions, LLC, a Minnesota limited liability company ("Dakota Petroleum"), BioUrja Trading, LLC, a Delaware limited liability company ("BioUrja"), and BioUrja New Town Terminal, LLC, a Delaware limited liability company ("BioUrja NTT"). Dakota Plains, Dakota Petroleum, BioUrja, and BioUrja NTT are sometimes referred to herein collectively as the "Parties".

**WHEREAS**, the Dakota Plains, Dakota Petroleum, and BioUrja entered into an Asset Purchase Agreement dated December 19, 2016 wherein Dakota Plains and Dakota Petroleum agreed to sell substantially all of their assets to BioUrja ("Purchase Agreement");

**WHEREAS**, the Purchase Agreement provides for the transfer and acquisition of certain permits, including United States Environmental Protection Agency Synthetic Minor Source Permit Number SMNSR-TAT-000285-2013.002 ("Synthetic Minor Source Permit"), United States Environmental Protection Agency National Pollutant Discharge Elimination System Industrial Stormwater Discharge Permit Number ND-0031119 ("NPDES Industrial Permit"), United States Environmental Protection Agency National Pollutant Discharge Elimination System General Permit for Discharges from Construction Activities ("NPDES General Construction Permit"), and United States Department of Army Corps of Engineers Section 404 Permit Number NWO-2013-0318-BIS, which includes and incorporates a United States Environmental Protection Agency Section 401 Water Quality Certification ("Wetlands Permit"), for operations located at the Dakota Intermodal and Crude Oil Loadout Facility located in New Town, North Dakota ("Facility"); and

**WHEREAS**, BioUrja has designated its affiliate, BioUrja NTT, as the transferee of all the assets acquired from Dakota Plains and Dakota Petroleum, including the above permits, as part of the transfer of assets from Dakota Plains and Dakota Petroleum, pursuant to the Purchase Agreement.

**NOW THEREFORE**, in consideration of the mutual covenants and promises contained herein and in the Purchase Agreement, the Parties hereto agree as follows:

## 1. Permit Transfers

1.1 The Parties agree that the transfer of permit responsibility, ownership, and liability to BioUrja NTT for the Synthetic Minor Source Permit, the NPDES Industrial Permit, the NPDES General Construction Permit, and the Wetlands Permit shall be March 1, 2017.

1.2 The Parties agree that beginning on March 1, 2017, liability for the operations of the Facility governed by the Synthetic Minor Source Permit, the NPDES Industrial Permit, the NPDES General Construction Permit, and the Wetlands Permit shall be borne by and be the sole responsibility of BioUrja NTT.

1.3 Each of the Parties agree that each will timely undertake its respective responsibilities under the law and pursuant to applicable regulations to ensure the timely transfer of each permit addressed in this Agreement.

1.4 In the event the Purchase Agreement does not close, this Agreement shall be void and of no effect.

**2. Miscellaneous**

2.1 This Agreement may be executed in any number of counterparts, and if so executed, shall be effective as against each of the respective parties when that party has executed at least one such counterpart. Execution may be accomplished by the use of PDF and electronic signatures. It shall not be necessary when making proof of this Agreement to produce counterparts with original signatures, it being agreed that photocopies of signatures or signatures received by electronic transmission shall have the same effect as original signatures.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the date first written above.

DAKOTA PLAINS HOLDINGS, INC.

By: Gabe Claypool

Name: GABRIEL G. CLAYPOOL

Title: PRESIDENT, CEO & COO

BIOURJA TRADING, LLC

By: Shék Jain

Name: Shék Jain

Title: Chief Operating Officer

DAKOTA PETROLEUM TRANSPORT SOLUTIONS, LLC

By: Gabe Claypool

Name: GABRIEL G. CLAYPOOL

Title: MANAGER

BIOURJA NEW TOWN TERMINAL, LLC

By: Shék Jain

Name: Shék Jain

Title: Chief Operating Officer

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 8**
1595 Wynkoop Street
Denver, Colorado 80202-1129
Phone (800)-227-8917
http://www.epa.gov/region08

Ref: 8P-AR

Mr. Gabe Claypool, COO
Dakota Plains Holdings, Inc.
294 Grove Lane East
Wayazata, Minnesota 55391

AUG 6 2013

Re: Dakota Plains Holdings, Inc.
New Town Transfer Facility
Permit # SMNSR-TAT-000285-2013.002
Proposed Synthetic Minor New Source Review Permit

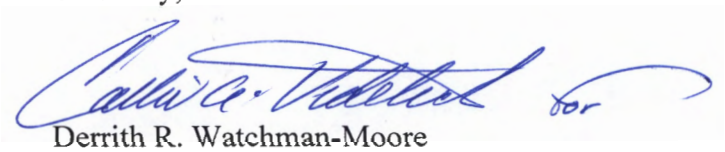
Dear Mr. Claypool:

The Environmental Protection Agency, Region 8 (EPA) has completed its review of Dakota Plains Holdings, Inc. (Dakota Plains) request to obtain a synthetic minor New Source Review (NSR) permit pursuant to 40 CFR Part 49 for the modification of the New Town Transfer Facility. Based on the information submitted in Dakota Plain's application the EPA hereby issues the enclosed permit to construct. No comments were received during the 30-day public comment period on the proposed permit. Therefore, the final permit is effective on August 6, 2013.

Enclosed you will find the final Part 49 pre-construction permit for the New Town Transfer Facility modification. Please review each condition carefully and note any restrictions placed on this source.

If you have any questions concerning the enclosed final permit please contact Kathleen Paser of my staff at (303) 312-6526.

Sincerely,



Derrith R. Watchman-Moore
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosure

**United States Environmental Protection Agency**
**Region 8, Air Program**
**1595 Wynkoop Street**
**Denver, CO 80202**

**Air Pollution Control**
**Synthetic Minor Source Permit to Construct**

**40 CFR 49.151**

**#SMNSR-TAT-000285-2013.002**

# New Town Transfer Facility Modification

*Synthetic Minor Permit to Construct to establish legally and practically enforceable restrictions on volatile organic compound (VOC) emissions to avoid the permitting requirements of the Prevention of Significant Deterioration Permit Program at 40 CFR Part 52 (PSD) for a modification, and to become a minor VOC source with respect to the Title V Operating Permit Program at 40 CFR Part 71 (Part 71).*

**Permittee:**

Dakota Plains Holdings, Inc.

**Permitted Facility:**

New Town Transfer Facility
Crude Oil Railcar Loading Operations
Fort Berthold Indian Reservation
Mountrail County, North Dakota

## Summary

Dakota Plains Holdings, Inc. (Dakota Plains) owns and operates the New Town Transfer Facility, an existing truck-to-railcar crude oil loading operation. The facility is located along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

On February 26, 2013, the EPA received a request from Dakota Plains Holdings, Inc., to revoke, revise and re-issue the September 20, 2012, permit #SMNSR-TAT-000285-2013.001 based on changes to the original construction plan. On March 22, 2012, Dakota Plains, Inc. merged with Dakota Plains Holdings, Inc. (Dakota Plains). The merger included the acquisition of approximately 125 acres of land to the south of the existing facility for a much larger expansion of operations than originally planned. With changed ownership and the addition of this new property, the operating plans for the facility have changed and expanded. Therefore, permit #SMNSR-TAT-000285-2013.001 no longer represents the new construction plans and has been terminated.

The EPA has approved the change to the crude oil transfer methodology at the facility from a direct truck-to-railcar loading model to operating more like a crude oil terminal with significant onsite storage, adding additional crude oil storage, and fixed loading arms to load the railcars directly from the storage tanks, rather than directly from trucks using portable loading units. As a back-up operating scenario, in the event that the storage tank-to-railcar transfer equipment is unavailable, the EPA has approved the limited use of the existing direct truck-to-railcar transfer operations. The EPA has also approved transfer of crude oil at the facility. Dakota Plains will bring crude oil on site by both truck and pipeline modes. The transfer of crude oil from the trucks to the storage tanks will be done using ten (10) stationary loading stations. The transfer of crude oil from the pipelines will be done using five (5) pipeline loading stations.

The primary air quality concerns with this modification are ozone and nitrogen dioxide ($NO_2$). Ambient monitoring data show that both ozone and $NO_2$ levels in North Dakota are below the National Ambient Air Quality Standards (NAAQS). Based on the existing air quality information and an analysis of the effects of the controlled emissions from this modification, the EPA determined that the approved modification will not contribute to an ozone or $NO_2$ NAAQS violation, or have potentially adverse effects on ambient air due to increases in $NO_x$ or VOC emissions. No further ambient impact analysis was required.

## Table of Contents

## I. Conditional Permit to Construct

### A. General Information

| | |
|---|---|
| Facility: | New Town Transfer Facility |
| Permit number: | SMNSR-TAT-000285-2013.002 |
| SIC Code and SIC Description: | 5171 – Petroleum Bulk Stations and Terminals |

Site Location:
New Town Transfer Facility
NW ¼ NW ¼ Sec 21 T152N R92W &
N ½ NE ¼ Sec 20 T152N R92W
Fort Berthold Indian Reservation
Mountrail County, ND

Corporate Office Location
Dakota Plains Holdings, Inc.
294 Grove Lane East
Wayzata, MN 55391

The EPA has approved the construction of the equipment listed in this permit to Dakota Plains Holdings, Inc. at the following location:

Latitude 47.977678N, Longitude -102.476119W

### B. Applicability

1. This Federal Permit to Construct is being issued under authority of the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (TMNSR) and replaces Permit #SMNSR-TAT-000285-2013.001, which was revoked and terminated for cause pursuant to TMNSR at §49.155(a)(7)(iv).

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions on VOC emissions to become a minor VOC source with respect to PSD and Part 71.

3. Any conditions established for this facility or any specific units at this facility pursuant to any Conditional Permit to Construct issued under the authority of PSD or TMNSR that are in effect shall continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

### C. Facility-Wide Requirements

1. Emissions Limit

   Facility-wide VOC emissions shall not exceed 97.0 tons in any consecutive 12-month period.

2. Construction and Operational Limits

   (a) *Crude Oil Storage Tanks:* The Permittee is authorized to install no more than three 90,000 bbls crude oil storage tanks.

(b) *Crude Oil Storage Tank Loading (truck-to-storage tank and pipeline-to-storage tank crude oil transfers):*

(i) The Permittee is authorized to install no more than ten (10) stationary loading stations to load the crude oil to the storage tanks directly from trucks;

*(A)* Each fixed loading arm shall be limited to a crude oil loading rate of no more than 400 gallons per minute (gpm); and

*(B)* Each station shall be operated with no detectable VOC emissions.

(ii) The Permittee is authorized to install crude oil pipeline transfer stations to load the crude oil directly to the storage tanks. Each station shall be operated with no detectable VOC emissions.

(c) *Stationary Crude Oil Railcar Loading (storage tank-to-railcar crude oil transfers):*

(i) The Permittee is authorized to install ten (10) railcar loading stations that use fixed loading arms to load the crude oil directly to the railcars from the storage tanks;

(ii) Each fixed loading arm shall be limited to a crude oil loading rate of no more than 700 gpm; and

(iii) The total volume of crude oil transferred to railcars from the storage tanks shall not exceed 32,850,000 bbls in any consecutive 12-month period.

(d) *Portable Crude Oil Railcar Loading (truck-to-railcar crude oil transfers):*

The Permittee is authorized to use portable loading units and pumping systems mounted to each truck to load crude oil directly to the railcars from the trucks. This method of railcar loading shall be limited as follows:

(i) Temporary Operations: Until the start-up of the stationary crude oil railcar loading stations (storage tank-to-railcar), the total crude oil loaded directly from the trucks to the railcars shall not exceed 17,000,000 bbls in any consecutive 12-month period. The Permittee shall discontinue the use of the portable crude oil loading units as the primary mode of railcar loading no later than 30 days after the EPA's receipt of a written notice from the Permittee that the stationary crude oil railcar loading station has commenced operation; and

(ii) Back-up Operations: Thirty days after the start-up of the fixed crude oil railcar loading stations (storage tank-to-railcar), the use of the portable crude oil railcar loading units may only be used when the fixed crude oil rail car loading stations (storage tank-to-railcar) are not operational and shall be limited to 5,475,000 bbls in any consecutive 12-month period.

(e) *Portable Diesel Fuel Truck Loading (railcar-to-truck diesel fuel transfers):*

The Permittee is authorized to use portable diesel fuel truck loading units and pumping systems mounted to each truck for railcar-to-truck diesel fuel transfers.

3. Monitoring and Testing Requirements

(a) The Permittee shall record the total volume of crude oil loaded, in bbls, at the end of each month, beginning with the first calendar month that permitted operations commence for each of the following operations:

(i) Storage tank loading (from tanker trucks and pipelines):

Total crude oil loaded to each storage tank shall be continuously measured using liquid flow meters.

(ii) Railcar loading from storage tanks (through railcar loading stations):

Total crude oil loaded to the railcars shall be continuously measured using liquid flow meters; and

(iii) Railcar loading from trucks (through portable units or by way of a truck mounted pumping system):

Total crude oil loaded to the railcars shall be measured each time a railcar is filled by manual gauging of the liquid level in the railcar.

(b) Prior to 12 full months of crude oil loading data from each operation, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume for that month to the recorded crude oil loaded and/or transferred for each operation for all previous months since permitted operations commenced and record the total for each. Thereafter, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume of crude oil loaded for each operation for that month to the calculated volume from the preceding 11 months and record a new 12- month total for each.

(c) The Permittee shall conduct semiannual extended laboratory analysis of the crude oil received at the facility to obtain the actual physical and chemical properties of the hydrocarbon liquid and associated vapors to be used in calculating monthly VOC emissions.

(d) The Permittee shall maintain documentation, provided by the supplier, of the properties of the diesel fuel received from the supplier.

4. VOC Emissions Calculation Requirements

(a) Facility-wide VOC emissions shall be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that permitted operations commence.

(b) Prior to 12 full months of facility-wide VOC emissions calculations, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for the preceding 11 months and record a new 12-month total.

(c) VOC emissions from all controlled and uncontrolled emission sources at the facility shall be included in the monthly calculation, including, but not limited to: the crude oil storage tanks, storage tank loading operations, railcar loading operations, and diesel fuel truck loading operations.

(d) VOC emissions from each approved emitting unit shall be calculated as specified in this permit.

5. Recordkeeping Requirements

The Permittee shall maintain the following records:

(a) The actual monthly and rolling 12-month facility-wide VOC emissions, in tpy;

(b) The actual monthly and rolling 12-month volume of crude oil loaded to the storage tanks (from trucks and pipelines), in bbls;

(c) The actual monthly and rolling 12-month volume of crude oil loaded to railcars from the storage tanks, in bbls;

(d) The actual monthly and rolling 12-month volume of crude oil loaded to railcars directly from trucks, in bbls;

(e) The results of each extended laboratory analysis of the hydrocarbon liquids received at the facility; and

(f) All input parameters and methodologies used to calculate the facility-wide monthly VOC emissions from each VOC emitting unit identified in this permit.

**D. Requirements for Minimizing Fugitive Dust**

1. Work Practice and Operational Requirements

(a) The Permittee shall take all reasonable precautions to prevent fugitive dust emissions at the facility and shall construct, maintain, and operate the facility to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

(i) Using, where possible, water or suitable chemicals for control of dust during construction and operations, during grading of roads, or during clearing of land;
(ii) Applying asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and/or other surfaces located at the facility that can create airborne dust;
(iii) Promptly removing from paved streets, located at the facility, of earthen or other material that does or may become airborne; and
(iv) Restricting vehicle speeds at the facility.

(b) The Permittee shall prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.

2. Monitoring Requirements

(a) The Permittee shall survey the facility during construction and operation to determine if there are obvious visible dust plumes. This survey shall be done at a minimum once per week in all active areas and during daylight hours.

(b) The Permittee shall document the results of the survey, including the date and time of the survey, identification of the cause of any visible dust plumes observed, and the reasonable precautions taken to prevent continued fugitive dust emissions.

3. Recordkeeping Requirements

The Permittee shall maintain records for five (5) years that document the fugitive dust prevention plan, the periodic surveys and the reasonable precautions that were taken to prevent fugitive dust emissions.

## E. Requirements for Crude Oil Storage Tanks

1. Installation and Operational Requirements

The Permittee shall install, operate and maintain each crude oil storage tank with a fixed roof in combination with an internal floating roof designed and operated as specified in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

2. Monitoring Requirements

(a) The Permittee shall visually inspect the internal floating roof, the seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of each storage tank with crude oil, at least once every six (6) months, after the initial fill, and each time a storage tank is emptied, degassed, and/or refilled.

(b) The Permittee shall repair any items before filling or refilling a storage tank with crude oil if one or more of the following are observed:

(i) Except in the case of floating roof landings, the internal floating roof is not resting on the surface of the liquid inside the storage tank;
(ii) There is liquid accumulated on the roof;
(iii) The seal is detached, or there are holes, tears, or other openings in the primary or secondary seal or seal fabric;
(iv) The gaskets no longer close off the liquid surfaces from the atmosphere; or
(v) The slotted membrane has more than 10% open area.

3. VOC Emissions Calculation Requirements

(a) VOC emissions from each crude oil storage tank at the facility due to working and breathing losses for each calendar month shall be calculated using the most current version of the EPA TANKS program (found at www.epa.gov/ttn/chief/efpac/efsoftware.html) and the following:

(i) The total measured volume of crude oil transferred to each storage tanks for the month; and
(ii) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility.

(b) VOC emissions from each crude oil storage tank at the facility due to roof landing losses for each calendar month shall be calculated using the techniques in AP-42, Chapter 7.1: Organic Liquid Storage Tanks for standing idle losses and filling losses for floating roof tanks and the actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility. Other techniques for calculating the roof landing losses may be used upon EPA's written approval.

(c) VOC emissions from each crude oil storage tank at the facility due to degassing for each calendar month shall be calculated. The emissions shall be calculated using the most current version of the EPA Tanks program and the actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility. Other techniques for calculating degassing emissions may be used upon EPA's written approval. The degassing emissions using the EPA Tanks program shall determined as follows:

(i) Determine emissions for one tank turnover;
(ii) Determine the emissions from the tank modeled as a fixed roof tank with a tank height equal to the height of the deck legs; and
(iii) Approximate the vapor displaced from the space under the floating roof by summing these two emission rates to determine degassing emissions.

3. Recordkeeping Requirements

(a) The Permittee shall document crude oil storage tank inspections. All crude oil storage tank inspection records shall include, at a minimum, the following information:

(i) The date of the inspection;
(ii) All documentation and/or images produced in the inspection;
(iii) The findings of the inspection;
(iv) Any corrective action taken; and
(v) The inspector's name and signature.

(b) The Permittee shall document and maintain a record of each time a storage tank's floating roof rests on the deck legs or other supports, a storage tank is degassed, and/or a storage tank is cleaned and refilled.

(c) The Permittee shall document and maintain a record of the monthly VOC emissions, in tons, from each crude oil storage tank, the emission calculations, all inspections, and any repairs.

## F. Requirements for Crude Oil Storage Tank Loading

1. Installation and Operations Requirements

(a) The Permittee shall install, operate and maintain a crude oil piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. A submerged fill pipe shall be no more than 12 inches from the bottom of each crude oil storage tank. The Permittee shall not conduct crude oil storage tank loading by either pipeline or truck unless bottom or submerged loading is used.

(b) The Permittee shall monitor all lines, connections, fittings, valves, or any other appurtenance employed to collect, contain, and/or move crude oil at each truck loading station for crude oil leaks during all crude oil loading events using olfactory, visual, and auditory techniques. If a crude oil leak is detected, the Permittee shall discontinue the use of the station and repair the leak prior to resuming use of the truck loading station.

(c) The Permittee shall monitor each pipeline storage tank loading station for crude oil leaks on a weekly basis during crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a crude leak is detected, the Permittee shall discontinue the use of the station and repair the leak prior to resuming the use of the pipeline storage tank loading station.

2. VOC Emissions Control Requirements

(a) The Permittee shall install, maintain, and operate all crude oil storage tank loading stations (truck and pipeline loading stations) with no detectable VOC emissions.

(b) The Permittee shall install, operate and maintain each truck storage tank loading unit using the following design criteria:

(i) All vapor connections and lines on the trucks and storage tanks shall be equipped with closures that seal upon disconnect; and
(ii) The vapor line from the trucks to the storage tanks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors.

(c) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain, collect, and remove gases, vapors, and fumes from the trucks and/or pipeline stations to the storage tanks shall be maintained and operated during any time any crude oil storage tank is being loaded.

(d) If any crude oil storage tank loading station (truck and pipeline) contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from the trucks or pipelines to the atmosphere, the Permittee shall meet one of the following requirements for each bypass device:

(i) At the inlet to the bypass device that could divert the stream into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted into the atmosphere; or

(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. Monitoring Requirements

The Permittee shall monitor each crude oil storage tank loading station (truck and pipeline stations) to ensure that they are operating with no detectable VOC emissions as follows:

(a) The Permittee shall monitor each truck storage tank loading station for gas leaks during all crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a gas leak is detected, the Permittee shall discontinue the use of the truck loading station and repair the gas leak prior to resuming use of the truck loading station.

(b) The Permittee shall monitor each pipeline storage tank loading station for gas leaks weekly during crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a gas leak is detected, the Permittee shall discontinue the use of the pipeline loading station and repair the gas leak prior to resuming use of the pipeline loading station.

(c) On a semiannual basis the Permittee shall conduct a visual inspection of each flow indicator and associated alarm for each bypass device, where applicable, to ensure proper operation and a visual inspection of each car-seal or lock-and-key configuration on each by-pass device, where applicable, to insure that the bypass device is in a non-diverting position.

(d) On a semiannual basis and during a storage tank loading event (truck and pipeline stations), the Permittee shall ensure that the concentration at all potential leak sources on each truck and pipeline loading station is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source. If a leak is detected, the Permittee shall repair the leak prior to using the storage tank loading station again.

4. VOC Emissions Calculation Requirements

VOC emissions from the each pipeline and truck storage tank loading station shall be considered to be undetectable (0 tpy) unless a leak was detected. If a leak was observed, the VOC emissions shall be calculated using the length of time of the leak from each equipment type and the following emission factors from the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017, November 1995, Table 2-3 (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf) as follows:

| Equipment Type | Emission Factor (lb/hr/source)[a] |
|---|---|
| Valves | 0.0000947 |
| Pump Seals | 0.0011904 |
| Fittings (connectors and flanges) | 0.0000176 |
| Other (any equipment type other than fittings, pumps, or valves) | 0.0002866 |

a. These factors are for total organic compound emission rates including non-VOCs such as methane and ethane.

5. Recordkeeping Requirements

(a) The Permittee shall keep records of the day, time, and results of all monitoring performed at each station and the protocol used for the inspection.

(b) The Permittee shall keep records of all instances where a leak of gases, vapors, or fumes was detected at a crude oil storage tank truck and pipeline loading station. The records shall include a description of each leak, including the equipment type, the length of time of the leak, and the corrective measures taken to address the leak.

(c) The Permittee shall keep a monthly record of the estimated VOC emissions where a leak of gases, vapors, or fumes was detected for that month.

## G. Requirements for Stationary Crude Oil Railcar Loading

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe shall be no more than 12 inches from the bottom of each railcar. The Permittee shall not conduct railcar loading operations unless submerged loading is used.

(b) The Permittee shall monitor all lines, connections, fittings, valves, or any other appurtenance employed to collect, contain, and/or move crude oil at each railcar loading station for crude oil leaks during all crude oil loading events using olfactory, visual, and auditory techniques. If a crude oil leak is detected, the Permittee shall discontinue the use of the railcar loading station and repair the leak prior to using the railcar loading station for the next railcar.

2. VOC Emissions Control Requirements

VOC emissions from the stationary railcar loading operations at the facility shall be continuously controlled using a closed-vent system that routes vapors to an enclosed combustion device designed, operated, and maintained to reduce the mass content of VOC emissions in the vapors by at least 98.0 %.

(a) Closed-Vent System Installation and Operation Requirements

(i) The closed-vent system shall be designed and maintained to operate with no detectable emissions. All piping connections, fittings, valves, or any other appurtenance employed to contain and collect vapors and transport them to the enclosed combustion device shall be connected and operational during any time the control equipment is operating.

(ii) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the enclosed combustion device, the Permittee shall meet one of following requirements for each bypass device:

*(A)* At the inlet to each bypass device that could divert the stream away from the enclosed combustion device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the enclosed combustion device and into the atmosphere; or

*(B)* Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

(b) Enclosed Combustion Device Installation and Operation Requirements

(i) The enclosed combustion device shall be designed to minimize visible smoke emissions and have sufficient capacity to achieve at least 98.0 % VOC emissions destruction efficiency for the minimum and maximum hydrocarbon mass flow routed to the device.

(ii) The enclosed combustion device shall be equipped with an automatic ignition system or continuous burning pilot flame, a thermocouple, or similar temperature sensing device, to detect the presence of a flame; and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame.

(iii) The enclosed combustion device shall be maintained in a leak-free condition.

(iv) The Permittee shall follow the manufacturer's written operating instructions, procedures and maintenance schedule for the enclosed combustion device, to ensure good air pollution control practices for minimizing emissions.

(v) A control device other than the enclosed combustion device that is capable of achieving a control efficiency equivalent to that specified in this permit may be used upon EPA approval.

3. Monitoring Requirements

(a) On a semiannual basis and during a railcar loading event, the Permittee shall conduct a visual inspection of each flow indicator and associated alarm for each bypass device, where applicable, to ensure proper operation and a visual inspection of each car-seal or lock-and-key configuration on each by-pass device, where applicable, to insure that the bypass device is in a non-diverting position.

(b) The Permittee shall continuously monitor the blower fan on the closed-vent system to ensure that it is operating at all times a railcar loading event is occurring using vacuum pressure measurement upstream of the blower fan. In the event that the blower fan is not operational, the Permittee shall immediately shut down all railcar loading operations and repair the blower fan. Railcar loading operations shall not resume until the blower fan is repaired and operational.

(i) The Permittee shall demonstrate that the enclosed combustion device achieves the 98.0 % VOC emission destruction efficiency requirement by performing an initial performance test of the device within 180 days of commencing operation of a new, repaired, or replaced unit. Subsequent performance tests of the enclosed combustion device shall be conducted every 3 years thereafter.

(ii) Subsequent performance tests are not required for an enclosed combustion device that is model tested under and meets the criteria of the New Source Performance Standard for Crude Oil and Natural Gas Production, Transmission and Distribution (NSPS OOOO) at §60.5413(d).

(iii) The Permittee shall demonstrate that the enclosed combustion device achieves the 98.0 % VOC emissions destruction efficiency requirement using the following performance test methods and procedures:

*(A)* Method 1 or 1A, as appropriate for the selection of the sampling sites;
*(B)* Method 2, 2A, 2C, or 2D, of 40 CFR part 60, Appendix A to determine gas volumetric flow rate;
*(C)* Method 18 at 40 CFR Part 60, Appendix A, Method 25A at 40 CFR Part 60, Appendix A, ASTM D6420-99 (2004), or any other method or data that have been validated according to the applicable procedures in Method 301 at 40 CFR Part 63, Appendix A, to determine compliance with the 98.0 % VOC emissions destruction efficiency requirement.

(iv) The Permittee shall monitor the enclosed combustion device to confirm proper operation as follows:

*(A)* Continuously monitor the pilot flame using a thermocouple, or other temperature sensing device, and recording device that indicates the continuous ignition of the pilot flame at all times the enclosed combustion device is operating;
*(B)* Check the recording device to insure proper operation once per day;
*(C)* Check the auto-ignition system, where applicable, to insure proper operation once per day;
*(D)* Check the pilot flame to insure proper operation once per day; and
*(E)* Correct a pilot flame failure and auto-ignitions system, where applicable, when notified by the malfunction alarm, as soon as possible, but no longer than five (5) days from the day of the notification.

4. <u>VOC Emissions Calculation Requirements</u>

VOC emissions from railcar loading operations for each calendar month shall be calculated using the following:

(a) The total measured volume of crude oil loaded for the month (bbls);

(b) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;

(c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND;

(d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading;

(e) The most current tested VOC emission destruction efficiency of the enclosed combustor; and

(f) If a leak was observed, the VOC emissions shall be calculated using the length of time of the leak from each equipment type and the following emission factors from the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017, November 1995, Table 2-3 (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf) as follows:

| Equipment Type | Emission Factor (lb/hr/source)[a] |
|---|---|
| Valves | 0.0000947 |
| Pump Seals | 0.0011904 |
| Fittings (connectors and flanges) | 0.0000176 |
| Other (any equipment type other than fittings, pumps, or valves) | 0.0002866 |

a. These factors are for total organic compound emission rates including non-VOCs such as methane and ethane.

5. Recordkeeping Requirements

The Permittee shall keep the following records for the stationary railcar loading operations:

(a) The day and time of all testing, monitoring, and inspections, the results of all testing, monitoring, and inspections performed, and the protocols used for each. All exceedances of the annual hydrocarbon liquid railcar loading limit as specified in this permit.

(b) The site specific design input parameters provided by the manufacturer or vendor, and used to properly size the enclosed combustor to assure the 98.0 % minimum VOC emissions destruction efficiency requirement in this permit and any instances in which any parameter was exceeded.

(c) Any instances in which the enclosed combustion device was bypassed or down in each calendar month during stationary railcar loading operations, the reason for each incident, its duration, and the corrective actions taken or the preventative measures adopted to avoid such bypasses or downtimes.

(d) Any instances in which the pilot flame is not present in the enclosed combustion device while it is operating, the date and times that the flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the flame.

(e) Any instances in which the thermocouple, or other temperature sensing device, installed to detect the presence of a flame in the enclosed combustion device, is not operational while the enclosed combustion device is operating, the time period during which it was not operational, and the corrective measures taken.

(f) All required testing and monitoring. The records shall include the following:

(i) The date, place, and time of observations, sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The companies or entities that performed observations and the analyses;

(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

## H. Requirements for Portable Crude Oil Railcar Loading

1. Installation and Operational Requirements

The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe shall be no more than 12 inches from the bottom of the railcar. The Permittee shall not conduct portable railcar loading unless submerged loading is used.

2. VOC Emission Control Requirements

(a) All VOC emissions from all portable railcar loading at the facility shall be continuously controlled using vapor balance control systems designed and operated to reduce the mass content of VOC emissions by at least 90.0 %. The Permittee shall not conduct portable crude oil railcar loading unless the vapor balance control system is used.

(b) Any planned release of vapor from the trucks following vapor balance during portable crude oil railcar loading prior to leaving the facility shall be controlled using an enclosed combustion device that is installed, operated, monitored, and tested as specified in the section labeled, **Requirements for Stationary Crude Oil Railcar Loading**.

(c) The Permittee shall install, operate and maintain each vapor balance control system using the following design criteria:

(i) All vapor connections and lines on the trucks and railcars shall be equipped with closures that seal upon disconnect;
(ii) The vapor line from the railcars to the trucks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors; and
(iii) The vapor balance control system shall be designed such that the pressure in the tank of the trucks does not exceed the maximum allowable tank pressure (design pressure) of the truck during the portable railcar loading so that tank relief valves on the trucks are not activated.

3. Monitoring Requirements

(a) The Permittee shall monitor each vapor balance control system during each portable railcar loading operation to confirm proper operation as follows:

(i) Measure the pressure in the tank of the trucks to ensure that the each truck's tank design pressure is not being exceeded; and
(ii) Inspect each vapor return line for leaks using olfactory, visual, and auditory techniques. If a leak is detected, the Permittee shall repair the leak prior to portable railcar loading from the next truck using the same vapor return line.

(b) On a semiannual basis and during a portable railcar loading event, the Permittee shall ensure that the concentration at all potential leak sources on each portable loading unit is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source.

4. VOC Emissions Calculation Requirements

VOC emissions from the portable railcar loading for each calendar month shall be calculated using the following:

(a) The total measured volume of crude oil loaded via a portable unit for the month (bbls);

(b) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;

(c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND;

(d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading; and

(e) The 90.0% vapor balance control efficiency, unless a leak in a vapor return line on any one portable railcar loading unit was visibly observed or measured during any one portable railcar loading event; in which case, the vapor balance control efficiency shall be considered 0.0% for the actual measured volume of crude oil loaded during that event.

6. Recordkeeping Requirements

The Permittee shall keep the following records for portable railcar loading operations:

(a) The day and time of all testing, monitoring, and inspections, the results of all testing, monitoring, and inspections performed, and the protocols used for each.

(b) All exceedances of the crude oil truck-to-railcar limit as specified in this permit.

(c) All instances where a leak was visually observed or tested during a portable railcar loading event, the corrective measures taken, and the volume of crude oil loaded with the leaking vapor balance control system.

(d) The required vapor tight testing of each portable railcar loading unit and shall include the following:

(i) The date, place, and time of observations, sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The companies or entities that performed observations and the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

## I. Requirements for Portable Diesel Fuel Truck Loading

1. The Permittee shall install, operate and maintain a piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe shall be no more than 12 inches from the bottom of each truck. The Permittee shall not conduct diesel fuel filling operations unless submerged loading is used.

2. The total diesel fuel loaded to the trucks shall, at a minimum, be measured by manual gauging of the liquid level in the railcar and recorded at the end of each calendar month.

3. VOC emissions from the portable diesel fuel truck loading for each calendar month shall be calculated using the following:

   (a) The total measured volume of diesel fuel loaded for the month (bbl);

   (b) The actual physical and chemical properties of the diesel fuel and its associated vapors from the most recent analysis of the diesel fuel received from the supplier;

   (c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND; and

   (d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading.

4. The Permittee shall document and maintain a record of the monthly VOC emissions from all diesel fuel truck loading and the emission calculations.

## J. Requirements for Records Retention

1. The Permittee shall retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records shall be kept at the facility or the location that has day-to-day operational control over the facility.

## L. Requirements for Reporting

1. <u>Annual Emission Reports</u>

   (a) The Permittee shall submit a written annual report of the actual annual VOC emissions from all emission units at the facility each year no later than April 1st. The annual report shall cover the period for the previous calendar year. All reports shall be certified to truth and accuracy by the responsible official.

   (b) The report shall be submitted to:

   U.S. Environmental Protection Agency, Region 8
   Office of Partnerships and Regulatory Assistance
   Tribal Air Permitting Program, 8P-AR

1595 Wynkoop Street
Denver, Colorado 80202

The report may be submitted via electronic mail to r8AirPermitting@epa.gov.

2. All other documents required to be submitted under this permit, with the exception of the Annual Emission Reports, shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Documents may be submitted electronically to r8airreportenforcement@epa.gov.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to r8airreportenforcement@epa.gov as follows:

(a) Within 30 days from the discovery of a deviation that would cause the Permittee to exceed the emission limits or operational limits if left un-corrected for more than five (5) days after discovering the deviation;

(b) Within 30 days from the discovery of an equipment leak as a result of monitoring; and

(c) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee's ability to meet the emission limits.

4. The Permittee shall submit a written report for any required performance tests to the EPA within 60 days after completing the tests.

5. The Permittee shall submit any record or report required by this permit upon EPA request.

## II. General Provisions

### A. Conditional Approval:

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants this permit to construct. This authorization is expressly conditioned as follows:

1. *Document Retention and Availability:* This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.

2. *Permit Application:* The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified 10 days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.

3. *Permit Deviations:* The issuance of this permit may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. *Compliance with Permit:* The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted facility/source. Noncompliance with any permit term or condition is a violation of this permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. *Fugitive Emissions:* The Permittee shall take all reasonable precautions to prevent and/or minimize fugitive emissions during the construction period.

6. *National Ambient Air Quality Standard and PSD Increment:* The permitted source shall not cause or contribute to a National Ambient Air Quality Standard violation or a PSD increment violation.

7. *Compliance with Federal and Tribal Rules, Regulations, and Orders:* Issuance of this permit does not relieve the Permittee of the responsibility to comply fully with all other applicable federal and tribal rules, regulations, and orders now or hereafter in effect.

8. *Enforcement:* It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. *Facility/Source Modifications:* For proposed modifications, as defined at §49.152(d), that would increase an emissions unit allowable emissions of a PSD, TMNSR, or HAPs above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to the TMNSR regulations approving the increase. For a proposed modification that is not otherwise subject to review under the PSD or TMNSR regulations, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at §49.159(f).

10. *Relaxation of Legally and Practically Enforceable Limits:* At such time that a new or modified source within the permitted facility/source or modification of this permitted facility/source becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of this permitted facility/source to otherwise emit a pollutant, such as a restriction on hours of operation, then the requirements of the PSD regulations shall apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if this permit contains a material mistake or the Permittee fails to assure compliance with the applicable requirements.

12. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

13. *Property Rights:* This permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating this permit or to determine compliance with this permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with 40 CFR Part 2, Subpart B.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect this permitted facility/source during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:

    (a) Enter upon the premises where a permitted facility/source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of this permit;

    (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;

    (c) Inspect, during normal business hours or while the permitted facility/source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

    (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements; and

    (e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the proposed permit, in which case this permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within 30 days of receipt of this permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

    U.S. Environmental Protection Agency, Region 8
    Office of Partnerships and Regulatory Assistance
    Tribal Air Permitting Program, 8P-AR
    1595 Wynkoop Street
    Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of the permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project. The Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up*: The Permittee shall submit a notification of the anticipated date of initial start-up of the permitted source to the EPA within 60 days of such date.

**B. Authorization:**

Authorized by the United States Environmental Protection Agency, Region 8

Derrith R. Watchman-Moore — Date
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

# Public Notice: Request For Comments

## Proposed Air Quality Permit to Construct

**Notice issued**: June 24, 2013

**Written comments due:**
5 p.m., July 24, 2013

**Permit Writer:** Kathleen Paser

**Who is the applicant?**
Dakota Plains Holding, Inc.
New Town Transfer Facility

**Where is the facility located?**
3895 88th Avenue NW
New Town, ND

**What is being proposed?**
The EPA proposes to issue an approval to modify the crude oil transfer methodology at the existing facility from a direct truck-to-railcar loading model to operating more like a crude oil terminal with significant onsite storage. Dakota Plains is requesting permission to add crude oil storage tanks and fixed loading arms to load the crude oil directly from the storage tanks, rather than directly from trucks using portable loading units. The transfer of crude oil from the trucks to the storage tanks will be done using ten (10) stationary loading stations. The transfer of crude oil from the pipelines will be done using five (5) pipeline loading stations.

**Permit number:**
SMNSR-TAT-000285-2013.002

**Plant Site Emissions:**
The applicant has requested emission limitations that will limit the facility-wide emissions of volatile organic compounds (VOCs) to levels below the thresholds that would require the applicant to obtain a permit through the Prevention of Significant Deterioration Program at 40 CFR Part 52 and to become a minor VOC source with respect to the Title V Operating Permit Program at 40 CFR Part 71.

Potential uncontrolled emissions of VOC from the proposed construction are estimated at 1,173 tons per year (tpy). Potential uncontrolled emissions of all other regulated pollutants are estimated at concentrations below the levels that trigger minor source pre-construction permitting requirements. Considering the EPA proposed requirements in the permit, potential controlled emissions of VOC from the proposed construction would be reduced to 97 tons per year.

**What are the special conditions of this permit?**
The permittee is required to use zero emission pipeline and truck transfer stations for loading the crude oil into the storage tanks, a vapor collection system and combustion for control of VOC displaced during all railcar loading operations. Additionally, all crude oil storage tanks must be equipped with an internal floating roof and all loading stations must use submerged or bottom filling.

**What are the effects on air quality?**
The EPA determined that dispersion modeling for the proposed project was not necessary, because emissions would be controlled by at least 98% and there are no identified air quality concerns within the external boundaries of the Fort Berthold Indian Reservation airshed.

**Where can I send comments?**
EPA accepts comments by mail, fax and e-mail.

US EPA
Region 8 Air Program, 8P-AR
1595 Wynkoop Street
Denver, CO 80202
R8AirPermitting@epa.gov
Phone: 303-312-6526
Fax: 303-312-6064

**How can I review documents?**
You can review the proposed permit and administrative record at the:

- Tribal Environmental Programs Office: 204 Frontage Road, New Town, North Dakota 58763
- Tribal Administrative Office: 404 Frontage Road, New Town, North Dakota 58763
- US EPA Region 8 office in Denver, CO.

Electronic copies of the draft permit and Statement of Basis may also be viewed at: http://www2.epa.gov/region8/air-permit-public-comment-opportunities

**What happens next?**
EPA will review and consider all comments received during the comment period. Following this review, the EPA may issue the permit addendum as proposed or modified, or deny the permit addendum.

**What are the EPA's responsibilities?**
The EPA Region 8 Air Program is the regulatory agency that helps protect and preserve the Mandan, Hidatsa, and Arikara Nation's air quality. One way EPA does this is by requiring permits for certain activities. The purpose of this notice is to invite you to submit written comments on this proposed permit.

**Federal Minor New Source Review in Indian Country**

**United States Environmental Protection Agency**

**Region 8**
**Air Program**

**1595 Wynkoop Street**
**Denver, CO 80202**

**Phone 800-227-8917**

**http://www2.epa.gov/about/epa-region-8-mountains-and-plains**

**United States Environmental Protection Agency**
**Region 8, Air Program**
**1595 Wynkoop Street**
**Denver, CO 80202**

**Air Pollution Control**
**Synthetic Minor Source Permit to Construct**

**40 CFR 49.151**

**#SMNSR-TAT-000285-2013.002**

*Synthetic Minor Permit to Construct to establish legally and practically enforceable restrictions on volatile organic compound (VOC) emissions to avoid the permitting requirements of the Prevention of Significant Deterioration Permit Program at 40 CFR Part 52 (PSD) for VOCs, and to become a minor VOC source with respect to the Title V Operating Permit Program at 40 CFR Part 71 (Part 71).*

**Permittee:**

Dakota Plains Holdings, Inc.

**Permitted Facility:**

New Town Transfer Facility
Crude Oil Railcar Loading Operations
Fort Berthold Indian Reservation
Mountrail County, North Dakota

## Table of Contents

## I. Conditional Permit to Construct

### A. General Information

| | |
|---|---|
| Facility: | New Town Transfer Facility |
| Permit number: | SMNSR-TAT-000285-2013.002 |
| SIC Code and SIC Description: | 5171 – Petroleum Bulk Stations and Terminals |

Site Location:
New Town Transfer Facility
NW ¼ NW ¼ Sec 21 T152N R92W &
N ½ NE ¼ Sec 20 T152N R92W
Fort Berthold Indian Reservation
Mountrail County, ND

Corporate Office Location
Dakota Plains, Inc.
294 Grove Lane East
Wayzata, MN 55391

The EPA is proposing to approve the construction of the equipment listed in this permit to Dakota Plains Holdings, Inc. at the following location:

Latitude 47.977678N, Longitude -102.476119W

### B. Construction Proposal

Dakota Plains Holdings, Inc. (Dakota Plains) owns and operates the New Town Transfer Facility, an existing truck-to-railcar crude oil loading operation. The facility is located along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

Currently, crude oil is collected in tanker trucks from the local Bakken production fields. These tanker trucks bring the crude oil to the facility where it is loaded directly onto railcars via portable equipment or using pumps located on each truck. Dakota Plains is proposing to change the crude oil transfer methodology at the facility from a direct truck-to-railcar model to operate more like a terminal with onsite storage. Crude oil would be brought onsite via tanker truck and/or via pipeline and be stored in floating-roof tanks. The proposed facility would have a crude oil storage capacity of approximately 270,000 barrels (bbls) and the crude oil would then be loaded directly onto the railcars from the storage tanks through fixed loading arms at the railcar loading stations.

This permit proposes to approve the construction of a stationary high-speed storage tank-to-railcar loading operation. This operation would be capable of simultaneously loading several railcars using high speed loading arms. Submerged and bottom loading in addition to an enclosed combustor would be used to control VOC emissions from the operations.

The storage tanks would be filled with crude oil using stationary truck-to-tank loading operations or from direct pipeline transfer stations. The storage tank loading operations would be operated with zero VOC emissions. As each truck empties into the tank, atmospheric air will replace the crude oil inside the truck. Similarly, the pipeline transfer stations will be operated with zero VOC emissions. Once the crude oil is in the storage tanks, the only pathway out of the tanks during normal operations would be to load the crude oil onto railcars. As an emergency backup operating scenario, in the event that the stationary crude oil railcar loading equipment is unavailable for an extended period of time, direct truck-to-railcar loading using portable loading equipment controlled with a vapor balance control system would be used.

In addition to loading crude oil onto railcars, the company is proposing to use portable equipment to load diesel fuel onto trucks from the railcars for transport to customers.

## C. Applicability

1. This Federal Permit to Construct is being issued under authority of the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (TMNSR).

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions on VOC emissions to become a minor VOC source with respect to PSD and Part 71.

3. Any conditions established for this facility or any specific units at this facility pursuant to any Conditional Permit to Construct issued under the authority of PSD or the TMNSR must continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

## D. Facility-Wide Requirements

1. Emissions Limit

Facility-wide VOC emissions must not exceed 97.0 tons in any consecutive 12-month period.

2. Construction and Operational Limits

(a) *Crude Oil Storage Tanks:* The Permittee is authorized to install no more than three 90,000 bbls crude oil storage tanks.

(b) *Crude Oil Storage Tank Loading (truck-to-storage tank and pipeline-to-storage tank crude oil transfers):*

(i) The Permittee is authorized to install no more than ten (10) stationary loading stations to load the crude oil to the storage tanks directly from trucks;

*(A)* Each fixed loading arm must be limited to a crude oil loading rate of no more than 400 gallons per minute (gpm); and
*(B)* Each station must be operated with no detectable VOC emissions.

(ii) The Permittee is authorized to install crude oil pipeline transfer stations to load the crude oil directly to the storage tanks. Each station must be operated with no detectable VOC emissions.

(c) *Stationary Crude Oil Railcar Loading (storage tank-to-railcar crude oil transfers):*

(i) The Permittee is authorized to install ten (10) railcar loading stations that use fixed loading arms to load the crude oil directly to the railcars from the storage tanks;
(ii) Each fixed loading arm must be limited to a crude oil loading rate of no more than 700 gpm; and
(iii) The total volume of crude oil transferred to railcars from the storage tanks must not exceed 32,850,000 bbls in any consecutive 12-month period.

(d) *Portable Crude Oil Railcar Loading (truck-to-railcar crude oil transfers):*

The Permittee is authorized to use portable loading units and pumping systems mounted to each truck to load crude oil directly to the railcars from the trucks. This method of railcar loading must be limited as follows:

(i) Temporary Operations: Until the start-up of the stationary crude oil railcar loading stations (storage tank-to-railcar), the total crude oil loaded directly from the trucks to the railcars must not exceed 17,000,000 bbls in any consecutive 12-month period. The Permittee must discontinue the use of the portable crude oil loading units as the primary mode of railcar loading no later than 30 days after the EPA's receipt of a written notice from the Permittee that the stationary crude oil railcar loading station has commenced operation; and

(ii) Back-up Operations: Thirty days after the start-up of the fixed crude oil railcar loading stations (storage tank-to-railcar), the use of the portable crude oil railcar loading units may only be used when the fixed crude oil rail car loading stations (storage tank-to-railcar) are not operational and must be limited to 5,475,000 bbls in any consecutive 12-month period.

(e) *Portable Diesel Fuel Truck Loading (railcar-to-truck diesel fuel transfers):*

The Permittee is authorized to use portable diesel fuel truck loading units and pumping systems mounted to each truck for railcar-to-truck diesel fuel transfers.

3. Monitoring and Testing Requirements

(a) The Permittee must record the total volume of crude oil loaded, in bbls, at the end of each month, beginning with the first calendar month that permitted operations commence for each of the following operations:

(i) Storage tank loading (from tanker trucks and pipelines):

Total crude oil loaded to each storage tank must be continuously measured using liquid flow meters.

(ii) Railcar loading from storage tanks (through railcar loading stations):

Total crude oil loaded to the railcars must be continuously measured using liquid flow meters; and

(iii) Railcar loading from trucks (through portable units or by way of a truck mounted pumping system):

Total crude oil loaded to the railcars must be measured each time a railcar is filled by manual gauging of the liquid level in the railcar.

(b) Prior to 12 full months of crude oil loading data from each operation, the Permittee must, within seven (7) calendar days of the end of each month, add the volume for that month to the recorded crude oil loaded and/or transferred for each operation for all previous months since permitted operations commenced and record the total for each. Thereafter, the

Permittee must, within seven (7) calendar days of the end of each month, add the volume of crude oil loaded for each operation for that month to the calculated volume from the preceding 11 months and record a new 12- month total for each.

(c) The Permittee must conduct quarterly extended laboratory analysis of the crude oil received at the facility to obtain the actual physical and chemical properties of the hydrocarbon liquid and associated vapors to be used in calculating monthly VOC emissions.

(d) The Permittee must maintain documentation, provided by the supplier, of the properties of the diesel fuel received from the supplier.

4. VOC Emissions Calculation Requirements

(a) Facility-wide VOC emissions must be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that permitted operations commence.

(b) Prior to 12 full months of facility-wide VOC emissions calculations, the Permittee must, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee must, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for the preceding 11 months and record a new 12-month total.

(c) VOC emissions from all controlled and uncontrolled emission sources at the facility must be included in the monthly calculation, including, but not limited to: the crude oil storage tanks, storage tank loading operations, railcar loading operations, and diesel fuel truck loading operations.

(d) VOC emissions from each approved emitting unit must be calculated as specified in this permit.

5. Recordkeeping Requirements

The Permittee must maintain the following records:

(a) The actual monthly and rolling 12-month facility-wide VOC emissions, in tpy;

(b) The actual monthly and rolling 12-month volume of crude oil loaded to the storage tanks (from trucks and pipelines), in bbls;

(c) The actual monthly and rolling 12-month volume of crude oil loaded to railcars from the storage tanks, in bbls;

(d) The actual monthly and rolling 12-month volume of crude oil loaded to railcars directly from trucks, in bbls;

(e) The results of each extended laboratory analysis of the hydrocarbon liquids received at the facility; and

(f) All input parameters and methodologies used to calculate the facility-wide monthly VOC emissions from each VOC emitting unit identified in this permit.

## E. Requirements for Minimizing Fugitive Dust

1. Work Practice and Operational Requirements

(a) The Permittee must take all reasonable precautions to prevent fugitive dust emissions at the facility and must construct, maintain, and operate the facility to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

(i) Using, where possible, water or suitable chemicals for control of dust during construction and operations, during grading of roads, or during clearing of land;

(ii) Applying asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and/or other surfaces located at the facility that can create airborne dust;

(iii) Promptly removing from paved streets, located at the facility, of earth or other material that does or may become airborne; and

(iv) Restricting vehicle speeds at the facility.

(b) The Permittee must prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.

2. Monitoring Requirements

(a) The Permittee must survey the facility during construction and operation to determine if there are obvious visible dust plumes. This survey must be done at a minimum once per week in all active areas and during daylight hours.

(b) The Permittee must document the results of the survey, including the date and time of the survey, identification of the cause of any visible dust plumes observed, and the reasonable precautions taken to prevent continued fugitive dust emissions.

3. Recordkeeping Requirements

The Permittee must maintain records for five (5) years that document the fugitive dust prevention plan, the periodic surveys and the reasonable precautions that were taken to prevent fugitive dust emissions.

## F. Requirements for Crude Oil Storage Tanks

1. Installation and Operational Requirements

The Permittee must install, operate and maintain each crude oil storage tank with a fixed roof in combination with an internal floating roof designed and operated as specified in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

2. Monitoring Requirements

(a) The Permittee must visually inspect the internal floating roof, the seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of each storage tank with crude oil, at least once every six (6) months, after the initial fill, and each time a storage tank is emptied, degassed, and/or refilled.

(b) The Permittee must repair any items before filling or refilling a storage tank with crude oil if one or more of the following are observed:

(i) Except in the case of floating roof landings, the internal floating roof is not resting on the surface of the liquid inside the storage tank;
(ii) There is liquid accumulated on the roof;
(iii) The seal is detached, or there are holes, tears, or other openings in the primary or secondary seal or seal fabric;
(iv) The gaskets no longer close off the liquid surfaces from the atmosphere; or
(v) The slotted membrane has more than 10% open area.

3. VOC Emissions Calculation Requirements

(a) VOC emissions from each crude oil storage tank at the facility due to working and breathing losses for each calendar month must be calculated using the most current version of the EPA TANKS program (found at www.epa.gov/ttn/chief/efpac/efsoftware.html) and the following:

(i) The total measured volume of crude oil transferred to each storage tanks for the month; and
(ii) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent quarterly extended laboratory analysis of the crude oil received at the facility.

(b) VOC emissions from each crude oil storage tank at the facility due to roof landing losses for each calendar month must be calculated using the techniques in AP-42, Chapter 7.1: Organic Liquid Storage Tanks for standing idle losses and filling losses for floating roof tanks and the actual physical and chemical properties of the crude oil and its associated vapors from the most recent quarterly extended laboratory analysis of the crude oil received at the facility. Other techniques for calculating the roof landing losses may be used upon EPA's written approval.

(c) VOC emissions from each crude oil storage tank at the facility due to degassing for each calendar month must be calculated. The emissions must be calculated using the most current version of the EPA Tanks program and the actual physical and chemical properties of the crude oil and its associated vapors from the most recent quarterly extended laboratory analysis of the crude oil received at the facility. Other techniques for calculating degassing emissions may be used upon EPA's written approval. The degassing emissions using the EPA Tanks program must determined as follows:

(i) Determine emissions for one tank turnover;
(ii) Determine the emissions from the tank modeled as a fixed roof tank with a tank height equal to the height of the deck legs; and
(iii) Approximate the vapor displaced from the space under the floating roof by summing these two emission rates to determine degassing emissions.

3. Recordkeeping Requirements

(a) The Permittee must document crude oil storage tank inspections. All crude oil storage tank inspection records must include, at a minimum, the following information:

(i) The date of the inspection;
(ii) All documentation and/or images produced in the inspection;
(iii) The findings of the inspection;
(iv) Any corrective action taken; and
(v) The inspector's name and signature.

(b) The Permittee must document and maintain a record of each time a storage tank's floating roof rests on the deck legs or other supports, a storage tank is degassed, and/or a storage tank is cleaned and refilled.

(c) The Permittee must document and maintain a record of the monthly VOC emissions, in tons, from each crude oil storage tank, the emission calculations, all inspections, and any repairs.

**G. Requirements for Crude Oil Storage Tank Loading**

1. Installation and Operations Requirements

(a) The Permittee must install, operate and maintain a crude oil piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. A submerged fill pipe must be no more than 12 inches from the bottom of each crude oil storage tank. The Permittee must not conduct crude oil storage tank loading by either pipeline or truck unless bottom or submerged loading is used.

(b) The Permittee must monitor all lines, connections, fittings, valves, or any other appurtenance employed to collect, contain, and/or move crude oil at each truck loading station for crude oil leaks during all crude oil loading events using olfactory, visual, and auditory techniques. If a crude oil leak is detected, the Permittee must discontinue the use of the station and repair the leak prior to resuming use of the truck loading station.

(c) The Permittee must monitor each pipeline storage tank loading station for crude oil leaks on a weekly basis during crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a crude leak is detected, the Permittee must discontinue the use of the station and repair the leak prior to resuming the use of the pipeline storage tank loading station.

2. VOC Emissions Control Requirements

(a) The Permittee must install, maintain, and operate all crude oil storage tank loading stations (truck and pipeline loading stations) with no detectable VOC emissions.

(b) The Permittee must install, operate and maintain each truck storage tank loading unit using the following design criteria:

(i) All vapor connections and lines on the trucks and storage tanks must be equipped with closures that seal upon disconnect;
(ii) The vapor line from the trucks to the storage tanks must be vapor-tight and liquid fill connections for all systems must be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors.

(c) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain, collect, and remove gases, vapors, and fumes from the trucks and/or pipeline stations to the storage tanks shall be maintained and operated during any time any crude oil storage tank is being loaded.

(d) If any crude oil storage tank loading station (truck and pipeline) contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from the trucks or pipelines to the atmosphere, the Permittee must meet one of the following requirements for each bypass device:

(i) At the inlet to the bypass device that could divert the stream into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted into the atmosphere; or
(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. Monitoring Requirements

(a) The Permittee must monitor each crude oil storage tank loading station (truck and pipeline stations) to ensure that they are operating with no detectable VOC emissions as follows:

(i) The Permittee must monitor each truck storage tank loading station for gas leaks during all crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a gas leak is detected, the Permittee must discontinue the use of the truck loading station and repair the gas leak prior to resuming use of the truck loading station.
(ii) The Permittee must monitor each pipeline storage tank loading station for gas leaks weekly during crude oil storage tank loading events using olfactory, visual, and auditory techniques. If a gas leak is detected, the Permittee must discontinue the use of the pipeline loading station and repair the gas leak prior to resuming use of the pipeline loading station.
(iii) On a quarterly basis the Permittee must conduct a visual inspection of each flow indicator and associated alarm for each bypass device, where applicable, to ensure proper operation and a visual inspection of each car-seal or lock-and-key configuration on each by-pass device, where applicable, to insure that the bypass device is in a non-diverting position.

(iv) On a quarterly basis and during a storage tank loading event (truck and pipeline stations), the Permittee must ensure that the concentration at all potential leak sources on each truck and pipeline loading station is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source. If a leak is detected, the Permittee must repair the leak prior to using the storage tank loading station again.

4. VOC Emissions Calculation Requirements

VOC emissions from the each pipeline and truck storage tank loading station shall be considered to be undetectable (0 tpy) unless a leak was detected. If a leak was observed, the VOC emissions shall be calculated using the length of time of the leak from each equipment type and the following emission factors from the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017, November 1995, Table 2-3 (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf) as follows:

| Equipment Type | Emission Factor (lb/hr/source)[a] |
|---|---|
| Valves | 0.0000947 |
| Pump Seals | 0.0011904 |
| Fittings (connectors and flanges) | 0.0000176 |
| Other (any equipment type other than fittings, pumps, or valves) | 0.0002866 |

a. These factors are for total organic compound emission rates including non-VOCs such as methane and ethane.

5. Recordkeeping Requirements

(a) The Permittee must keep records of the day, time, and results of all monitoring performed at each station and the protocol used for the inspection.

(b) The Permittee must keep records of all instances where a leak of gases, vapors, or fumes was detected at a crude oil storage tank truck and pipeline loading station. The records must include a description of each leak, including the equipment type, the length of time of the leak, and the corrective measures taken to address the leak.

(c) The Permittee must keep a monthly record of the estimated VOC emissions where a leak of gases, vapors, or fumes was detected for that month.

## H. Requirements for Stationary Crude Oil Railcar Loading

1. Installation and Operational Requirements

(a) The Permittee must install, operate and maintain a piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than 12 inches from the bottom of each railcar. The Permittee must not conduct railcar loading operations unless submerged loading is used.

(b) The Permittee must monitor all lines, connections, fittings, valves, or any other appurtenance employed to collect, contain, and/or move crude oil at each railcar loading station for crude oil leaks during all crude oil loading events using olfactory, visual, and auditory techniques. If a crude oil leak is detected, the Permittee must discontinue the use of the railcar loading station and repair the leak prior to using the railcar loading station for the next railcar.

2. VOC Emissions Control Requirements

VOC emissions from the stationary railcar loading operations at the facility must be continuously controlled using a closed-vent system that routes vapors to an enclosed combustion device designed, operated, and maintained to reduce the mass content of VOC emissions in the vapors by at least 98.0 %.

(a) Closed-Vent System Installation and Operation Requirements

(i) The closed-vent system must be designed and maintained to operate with no detectable emissions. All piping connections, fittings, valves, or any other appurtenance employed to contain and collect vapors and transport them to the enclosed combustion device must be connected and operational during any time the control equipment is operating.

(ii) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the enclosed combustion device, the Permittee must meet one of following requirements for each bypass device:

*(A)* At the inlet to each bypass device that could divert the stream away from the enclosed combustion device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the enclosed combustion device and into the atmosphere; or

*(B)* Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

(b) Enclosed Combustion Device Installation and Operation Requirements

(i) The enclosed combustion device must be designed to minimize visible smoke emissions and have sufficient capacity to achieve at least 98.0 % VOC emissions destruction efficiency for the minimum and maximum hydrocarbon mass flow routed to the device.

(ii) The enclosed combustion device must be equipped with an automatic ignition system or continuous burning pilot flame, a thermocouple, or similar temperature sensing device, to detect the presence of a flame; and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame.

(iii) The enclosed combustion device must be maintained in a leak-free condition.

(iv) The Permittee must follow the manufacturer's written operating instructions, procedures and maintenance schedule for the enclosed combustion device, to ensure good air pollution control practices for minimizing emissions.

(v) A control device other than the enclosed combustion device that is capable of achieving a control efficiency equivalent to that specified in this permit may be used upon EPA approval.

3. Monitoring Requirements

(a) On a quarterly basis and during a railcar loading event, the Permittee must conduct a visual inspection of each flow indicator and associated alarm for each bypass device, where applicable, to ensure proper operation and a visual inspection of each car-seal or lock-and-key configuration on each by-pass device, where applicable, to insure that the bypass device is in a non-diverting position.

(b) The Permittee must continuously monitor the blower fan on the closed-vent system to ensure that it is operating at all times a railcar loading event is occurring using vacuum pressure measurement upstream of the blower fan. In the event that the blower fan is not operational, the Permittee must immediately shut down all railcar loading operations and repair the blower fan. Railcar loading operations must not resume until the blower fan is repaired and operational.

(i) The Permittee must demonstrate that the enclosed combustion device achieves the 98.0 % VOC emission destruction efficiency requirement by performing an initial performance test of the device within 180 days of commencing operation of a new, repaired, or replaced unit. Subsequent performance tests of the enclosed combustion device must be conducted every 3 years thereafter.

(ii) Subsequent performance tests are not required for an enclosed combustion device that is model tested under and meets the criteria of the New Source Performance Standard for Crude Oil and Natural Gas Production, Transmission and Distribution (NSPS OOOO) at §60.5413(d).

(iii) The Permittee must demonstrate that the enclosed combustion device achieves the 98.0 % VOC emissions destruction efficiency requirement using the following performance test methods and procedures:

*(A)* Method 1 or 1A, as appropriate for the selection of the sampling sites;
*(B)* Method 2, 2A, 2C, or 2D, of 40 CFR part 60, Appendix A to determine gas volumetric flow rate;
*(C)* Method 18 at 40 CFR Part 60, Appendix A, Method 25A at 40 CFR Part 60, Appendix A, ASTM D6420-99 (2004), or any other method or data that have been validated according to the applicable procedures in Method 301 at 40 CFR Part 63, Appendix A, to determine compliance with the 98.0 % VOC emissions destruction efficiency requirement.

(iv) The Permittee must monitor the enclosed combustion device to confirm proper operation as follows:

*(A)* Continuously monitor the pilot flame using a thermocouple, or other temperature sensing device, and recording device that indicates the continuous ignition of the pilot flame at all times the enclosed combustion device is operating;
*(B)* Check the recording device to insure proper operation once per day;
*(C)* Check the auto-ignition system, where applicable, to insure proper operation once per day;
*(D)* Check the pilot flame to insure proper operation once per day; and
*(E)* Correct a pilot flame failure and auto-ignitions system, where applicable, when notified by the malfunction alarm, as soon as possible, but no longer than five (5) days from the day of the notification.

4. VOC Emissions Calculation Requirements

VOC emissions from railcar loading operations for each calendar month must be calculated using the following:

(i) The total measured volume of crude oil loaded for the month (bbls);
(ii) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;
(iii) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND;
(iv) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading;
(v) The most current tested VOC emission destruction efficiency of the enclosed combustor; and
(vi) If a leak was observed, the VOC emissions shall be calculated using the length of time of the leak from each equipment type and the following emission factors from the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017, November 1995, Table 2-3 (http://www.epa.gov/ttnchie1/efdocs/equiplks.pdf) as follows:

| **Equipment Type** | **Emission Factor (lb/hr/source)[a]** |
|---|---|
| Valves | 0.0000947 |
| Pump Seals | 0.0011904 |
| Fittings (connectors and flanges) | 0.0000176 |
| Other (any equipment type other than fittings, pumps, or valves) | 0.0002866 |

a. These factors are for total organic compound emission rates including non-VOCs such as methane and ethane.

5. Recordkeeping Requirements

The Permittee must keep the following records for the stationary railcar loading operations:

(a) The day and time of all testing, monitoring, and inspections, the results of all testing, monitoring, and inspections performed, and the protocols used for each.All exceedances of the annual hydrocarbon liquid railcar loading limit as specified in this permit.

(b) The site specific design input parameters provided by the manufacturer or vendor, and used to properly size the enclosed combustor to assure the 98.0 % minimum VOC emissions destruction efficiency requirement in this permit and any instances in which any parameter was exceeded.

(c) Any instances in which the enclosed combustion device was bypassed or down in each calendar month during stationary railcar loading operations, the reason for each incident, its duration, and the corrective actions taken or the preventative measures adopted to avoid such bypasses or downtimes.

(d) Any instances in which the pilot flame is not present in the enclosed combustion device while it is operating, the date and times that the flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the flame.

(e) Any instances in which the thermocouple, or other temperature sensing device, installed to detect the presence of a flame in the enclosed combustion device, is not operational while the enclosed combustion device is operating, the time period during which it was not operational, and the corrective measures taken.

(f) All required testing and monitoring. The records must include the following:

(i) The date, place, and time of observations, sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The companies or entities that performed observations and the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

## I. Requirements for Portable Crude Oil Railcar Loading

1. Installation and Operational Requirements

The Permittee must install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than 12 inches from the bottom of the railcar. The Permittee must not conduct portable railcar loading unless submerged loading is used.

2. VOC Emission Control Requirements

(a) All VOC emissions from all portable railcar loading at the facility must be continuously controlled using vapor balance control systems designed and operated to reduce the mass content of VOC emissions by at least 90.0 %. The Permittee must not conduct portable crude oil railcar loading unless the vapor balance control system is used.

(b) Any planned release of vapor from the trucks following vapor balance during portable crude oil railcar loading prior to leaving the facility must be controlled using an enclosed combustion device that is installed, operated, monitored, and tested as specified in the section labeled, **Requirements for Stationary Crude Oil Railcar Loading**.

(c) The Permittee must install, operate and maintain each vapor balance control system using the following design criteria:

(i) All vapor connections and lines on the trucks and railcars must be equipped with closures that seal upon disconnect;
(ii) The vapor line from the railcars to the trucks must be vapor-tight and liquid fill connections for all systems must be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors; and
(iii) The vapor balance control system must be designed such that the pressure in the tank of the trucks does not exceed the maximum allowable tank pressure (design pressure) of the truck during the portable railcar loading so that tank relief valves on the trucks are not activated.

3. Monitoring Requirements

(a) The Permittee must monitor each vapor balance control system during each portable railcar loading operation to confirm proper operation as follows:

(i) Measure the pressure in the tank of the trucks to ensure that the each truck's tank design pressure is not being exceeded; and
(ii) Inspect each vapor return line for leaks using olfactory, visual, and auditory techniques. If a leak is detected, the Permittee must repair the leak prior to portable railcar loading from the next truck using the same vapor return line.

(b) On a quarterly basis and during a portable railcar loading event, the Permittee must ensure that the concentration at all potential leak sources on each portable loading unit is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source.

4. VOC Emissions Calculation Requirements

(a) VOC emissions from the portable railcar loading for each calendar month must be calculated using the following:

(i) The total measured volume of crude oil loaded via a portable unit for the month (bbls);
(ii) The actual physical and chemical properties of the crude oil and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;
(iii) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND;
(iv) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading; and
(v) The 90.0% vapor balance control efficiency, unless a leak in a vapor return line on any one portable railcar loading unit was visibly observed or measured during any one portable railcar loading event; in which case, the vapor balance control efficiency must be considered 0.0% for the actual measured volume of crude oil loaded during that event.

6. Recordkeeping Requirements

The Permittee must keep the following records for portable railcar loading operations:

(a) The day and time of all testing, monitoring, and inspections, the results of all testing, monitoring, and inspections performed, and the protocols used for each.
(b) All exceedances of the crude oil truck-to-railcar limit as specified in this permit.

(c) All instances where a leak was visually observed or tested during a portable railcar loading event, the corrective measures taken, and the volume of crude oil loaded with the leaking vapor balance control system.

(d) The required vapor tight testing of each portable railcar loading unit and must include the following:

(i) The date, place, and time of observations, sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The companies or entities that performed observations and the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

**J. Requirements for Portable Diesel Full Truck Loading**

1. The Permittee must install, operate and maintain a piping system designed for submerged filling by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than 12 inches from the bottom of each truck. The Permittee must not conduct diesel fuel filling operations unless submerged loading is used.

2. The total diesel fuel loaded to the trucks must, at a minimum, be measured by manual gauging of the liquid level in the railcar and recorded at the end of each calendar month.

3. VOC emissions from the portable diesel fuel truck loading for each calendar month must be calculated using the following:

(a) The total measured volume of diesel fuel loaded for the month (bbl);

(b) The actual physical and chemical properties of the diesel fuel and its associated vapors from the most recent analysis of the diesel fuel received from the supplier;

(c) The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismarck, ND; and

(d) The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of loading.

4. The Permittee must document and maintain a record of the monthly VOC emissions from all diesel fuel truck loading and the emission calculations.

## K. Records Retention

1. The Permittee must retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records must be kept at the facility or the location that has day-to-day operational control over the facility.

## L. Reporting

1. Annual Emission Reports

   (a) The Permittee must submit a written annual report of the actual annual emissions from all emission units at the facility each year no later than April 1st. The annual report must cover the period for the previous calendar year. All reports must be certified to truth and accuracy by the responsible official of the facility.

   (b) The report must include VOC emissions in tpy.

   (c) The report must be submitted via electronic mail to R8AirPermitting@epa.gov.

2. All other documents required to be submitted under this permit, with the exception of the **Annual Emission Reports**, must be submitted to:

   U.S. Environmental Protection Agency
   Region 8 Office of Enforcement, Compliance & Environmental Justice
   Air Toxics and Technical Enforcement Program, 8ENF-AT
   1595 Wynkoop Street
   Denver, Colorado 80202
   All documents may also be submitted electronically to r8airreportenforcement@epa.gov.

3. The Permittee must promptly submit to the EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to r8airreportenforcement@epa.gov as follows:

   (a) Within 30 days from the discovery of a deviation that would cause the Permittee to exceed the emission limits or operational limits if left un-corrected for more than five (5) days after discovering the deviation;

   (b) Within 30 days from the discovery of an equipment leak as a result of monitoring; and

   (c) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee's ability to meet the emission limits.

4. The Permittee must submit a written report for any required performance tests to the EPA within 60 days after completing the tests.

5. The Permittee must submit any record or report required by this permit upon EPA request.

## II. General Provisions

### A. Conditional Approval:

Pursuant to the authority of 40 CFR Part 49.151, the EPA hereby conditionally grants this permit to construct. This authorization is expressly conditioned as follows:

1. *Document Retention and Availability:* This permit and any required attachments must be retained and made available for inspection upon request at the location set forth herein.

2. *Permit Application:* The Permittee must abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA must be notified 10 days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.

3. *Permit Deviations:* The issuance of this permit may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. *Compliance with Permit:* The Permittee must comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted facility/source. Noncompliance with any permit term or condition is a violation of this permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. *Fugitive Emissions:* The Permittee must take all reasonable precautions to prevent and/or minimize fugitive dust emissions during the construction period.

6. *National Ambient Air Quality Standard and PSD Increment:* The permitted source must not cause or contribute to a National Ambient Air Quality Standard violation or a PSD increment violation.

7. *Compliance with Federal and Tribal Rules, Regulations, and Orders:* Issuance of this permit does not relieve the Permittee of the responsibility to comply fully with all other applicable Federal and Tribal rules, regulations, and orders now or hereafter in effect.

8. *Enforcement:* It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. *Facility/Source Modifications:* For proposed modifications, as defined in the TMNSR rule at §49.152(d), that would increase an emissions unit allowable emissions of a PSD, TMNSR, or hazardous air pollutants above its existing permitted annual allowable emissions limit, the Permittee must first obtain a permit modification pursuant to the TMNSR regulations approving the increase. For a proposed modification that is not otherwise subject to review under the PSD or TMNSR regulations, such proposed increase in the annual allowable emissions limit must be approved through an administrative permit revision as provided in the TMNSR rule at §49.159(f).

10. *Relaxation of Legally and Practically Enforceable Limits:* At such time that a new or modified source within the permitted facility/source or modification of the permitted facility/source

becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility/source to otherwise emit a pollutant, such as a restriction on hours of operation, then the requirements of the PSD regulations must apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if this permit contains a material mistake or the Permittee fails to assure compliance with the applicable requirements.

12. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions must remain valid and in force.

13. *Property Rights:* This permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee must furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating this permit or to determine compliance with this permit. For any such information claimed to be confidential, you must also submit a claim of confidentiality in accordance with 40 CFR Part 2, Subpart B.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect the permitted facility/source during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee must allow the EPA or its authorized representative to:

    (a) Enter upon the premises where a permitted facility/source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of this permit;

    (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;

    (c) Inspect, during normal business hours or while the permitted facility/source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

    (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements; and

    (e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit must be effective immediately upon issuance unless comments resulted in a change in the draft permit, in which case this permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of

it is rejected. Such notice should be made within 30 days of receipt of this permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers must be made in accordance with the TMNSR rule at§49.159(f). The Air Program Director must be notified in writing at the address shown below if the company is sold or changes its name.

U.S. Environmental Protection Agency, Region 8
C/o Tribal Air Permitting, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of this permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project. Permittee must commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up:* The Permittee must submit a notification of the date of initial start-up of the permitted source to the EPA no later than 60 days of such date.

**B. Authorization:**

Authorized by the United States Environmental Protection Agency, Region 8

_____

Derrith R. Watchman-Moore Date
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

**Air Pollution Control**
**40 CFR 49.151 Federal Minor New Source Review In Indian Country**
**Synthetic Minor Permit to Construct**
**Technical Support Document for**
**Proposed Permit No. SMNSR-TAT-000285-2013.002**

Dakota Plains Holding, Inc.
New Town Transfer Facility
Crude Oil Rail Car Loading Operation
Fort Berthold Indian Reservation
Mountrail County, North Dakota

In accordance with the requirements of the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (TMNSR), the Region 8 office of the U.S. Environmental Protection Agency (EPA) has prepared this technical support document (TSD) describing the conditions of this synthetic minor TMNSR permit for a proposed modification of an existing crude oil railcar loading facility and presents information that is germane to this permit action.

**Table of Contents**

I. Introduction

A. Initial Permit # SMNSR-TAT-000285-2012.001/Issued September 20, 2012

On September 20, 2012, the EPA issued a synthetic minor permit, #SMNSR-TAT-000285-2012.001, to Dakota Plains, Inc. approving the modification of an existing crude oil railcar loading facility. The permit limited the potential volatile organic compound (VOC) emissions from existing and proposed transfer operations so that the Prevention of Significant Deterioration Permit Program at 40 CFR Part 52 (PSD) could be avoided and the facility would be minor source for VOC emissions with respect to the Title V Operating Permit Program at 40 CFR Part 71 (Part 71).

The existing facility transfers crude oil from tanker trucks directly to railcars. Due to increasing oil and natural gas production in the Bakken shale formation, Dakota Plains expected that there would be periods of time when the facility would receive more crude oil by truck than can be immediately transported to the railcars. The September 20, 2012, permit approved the construction of a crude oil storage tank to provide interim storage capacity until the crude oil could be loaded by truck into the railcars. The current permit contains the following approved emission units and operations:

1. One (1) crude oil storage tank with a 90,000 barrel (bbl) capacity, an internal floating roof, and designed and operated as specified in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Kb);

2. Ten (10) stationary transfer stations for truck-to-storage tank crude oil transfers. The stationary transfer stations will also be used for storage tank-to-truck transfers when the railcar capacity is available for transporting the crude oil. The stationary transfer stations are to be controlled using a closed vent system and enclosed combustion device with VOC emission destruction efficiency of at least 98.0%;

3. Thirteen (13) portable crude oil loading units and pumping systems mounted to each truck for truck-to-railcar transfers. The portable units each consist of a loading arm, pumping, and metering systems. Dakota Plains is required to use a vapor balance control system to minimize VOC emissions while using any one of the thirteen (13) portable truck-to-railcar transfers units, in which the tanker truck being unloaded retrieves the vapors displaced while the product is being loaded into railcar and transports the vapors offsite or released to the enclosed combustion device already required for controlling emissions from the stationary railcar loading operations. The vapor balance system must have a 90.0% VOC emission control efficiency.

4. A requirement to use piping systems designed for either bottom loading or loading through a submerged fill piping for all transfer operations;

5. A requirement to limit the transfer of crude oil directly from the trucks to the railcars of 17,000,000 barrels per year; and

6. A requirement to limit the VOC emissions from the entire crude oil transfer operation to 97 tons per year (tpy).

B. Request to Revoke, Revise, and Re-issue Permit # SMNSR-TAT-000285-2012.001: Pursuant to 40 CFR 49.155(7)(iv) and at the request of the Permittee, the EPA is proposing to revoke, revise, and re-issue permit #SMNSR-TAT-000285-2012.001.

On February 26, 2013, the EPA received a request from Dakota Plains Holdings, Inc., a new owner, to revoke, revise and re-issue the September 20, 2012, permit for cause based on changes to the original construction plan. On March 22, 2012, Dakota Plains, Inc. merged with Dakota Plains Holdings, Inc. (Dakota Plains). The merger included the acquisition of approximately 125 acres of land to the south of the existing facility for a much larger expansion of operations than originally planned. With changed ownership and the addition of this new property, the operating plans for the facility have changed and expanded. Therefore, the current permit no longer represents the new construction plans. According to 40 CFR 49.155(7)(iv), the current permit will continue to be in effect until the revised permit has been issued.

C. Proposed Permit # SMNSR-TAT-000285-2013.002

Dakota Plains is now proposing to change the crude oil transfer methodology at the facility from a direct truck-to-railcar loading model to operating more like a crude oil terminal with significant onsite storage. They are proposing to add additional crude oil storage and to load the railcars directly from the storage tanks through fixed loading arms, rather than directly from trucks using portable loading units. As a back-up operating scenario, in the event that the storage tank-to-railcar transfer equipment is unavailable for an extended period of time, the truck-to-railcar transfer operation would continue to be made available. Dakota Plains is also proposing to bring crude oil on site by both truck and pipeline modes. The transfer of crude oil from the trucks to the storage tanks will be done using ten (10) stationary loading stations. The transfer of crude oil from the pipelines will be done using five (5) pipeline loading stations.

Since the current permit, (#SMNSR-TAT-000285-2012.001), will remain in effect until the new permit is effective, Dakota Plains plans to continue construction under the permit with the 17,000,000 barrel per year truck-to-railcar limit and the 97 tpy VOC emissions limit. Dakota Plains is also proposing to continue direct truck-to-railcar transfer of crude oil in accordance with all the provisions of the current permit through construction of the newly proposed transfer methodology, and maintain these operations as back-up.

Dakota Plains is also planning to include railcar-to-truck transfer of other bulk commodities such as sand, salt, aggregate, lumber, pipe, and other palletized products. This will result in the addition of six (6) portable conveyors to unload bulk aggregate materials from railcars, and a bulk aggregate handling and storage system consisting of six (6) silos.

With these proposed revisions, the facility would contain the following conditions:

1. *Emission and Operational limits:*

(a) Temporary Operations: Portable loading units and pumping systems mounted to each truck for truck-to-railcar crude oil transfers. This method of railcar loading will be limited to 17,000,000 barrels per year until the construction approved

under this new permit is complete and the EPA has been notified of the completion. Thereafter, the portable loading units will only be approved for use as a back-up in the event that the fixed railcar loading stations are not operational.

(b) Back-up Operations: This method of railcar loading will be limited to 5,475,000 barrels per year;

(c) Each portable crude oil loading unit will consist of a loading arm, pumping, and metering systems. Dakota Plains will be required to use a vapor balance control system to minimize VOC emissions while using any one of the portable loading units. The vapor balance system must have a 90.0% or greater VOC control efficiency;

(d) Portable loading units and pumping systems mounted to trucks for railcar-to-truck diesel fuel transfers. There will be no limit on the amount of diesel fuel that can be transferred;

(e) Three (3) crude oil storage tanks with 90,000 barrel capacity each. Each tank will have an internal floating roof and be designed and operated as specified in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984;

(f) Stationary truck-to-storage tank loading stations used to fill the storage tanks. Each station will be operated with no detectable VOC emissions. As the truck empties, atmospheric air will replace the oil inside the truck;

(g) Pipeline transfer stations – to fill storage tanks. Each station will be operated with zero VOC emissions;

(h) Stationary storage tank-to-railcar loading stations. These stations are to be controlled using a closed vent system and enclosed combustion device with a VOC emission destruction efficiency of 98.0%

(i) A requirement to use a piping systems designed for either bottom loading or loading through a submerged fill piping;

(j) A requirement to limit the transfer of crude oil to railcars of 32,850,000 barrels per year; and

(k) A requirement to limit the VOC emissions from the entire operation to 97 tpy.

2. *Monitoring Requirements*

(a) Continuously measure the volume of crude oil transferred from the storage tanks to the railcars and the rate of crude oil transfer using flow meters;

(b) Continuously measure the volume of crude oil transferred from the trucks to the railcars and the rate of crude oil transfer using flow meters;

(c) Conduct semiannual extended laboratory analysis of the crude oil received at the facility;

(d) Visually inspect, and repair if necessary, each storage tank's floating roof, seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of the storage tank with crude oil, at least once every twelve (12) months after initial fill, and each time the storage tank is emptied and degassed;

(e) Conduct visual, auditory, and olfactory inspection of all the portable loading units and pumping systems mounted to each truck for truck-to-railcar crude oil transfers during a transfer event. Repair each as necessary.

(f) Conduct visual, auditory, and olfactory inspection of all the portable loading units and pumping systems mounted to each truck for railcar-to-truck diesel fuel transfers, during a transfer event. Repair each as necessary.

(g) Conduct visual, auditory, and olfactory inspection of all pipeline transfer stations at least once every twelve (12) months while crude is being pumped to the tanks. Repair each as necessary.

(h) Periodically test, using EPA approved test methods, all closed-vent systems during all crude oil transfers to ensure they are operating under negative pressure;

(i) Periodically test, using EPA approved test methods, the enclosed combustor during a truck transfer event to ensure a 98.0% VOC destruction efficiency;

(j) Monitor all closed-vent systems during all crude oil transfers to confirm proper operations;

(k) Continuously monitor the enclosed combustor pilot flame using a thermocouple, or similar temperature sensing device, and recording device, inspect the recording device and pilot flame to ensure proper operation daily;

(l) Monitor all vapor balance systems during each transloading event to ensure that the tank design pressure is not being exceeded and that there are no leaks;

(m) Calculate the rolling twelve (12) month totals of VOC emissions, hydrocarbon liquid throughputs, and hydrocarbon liquid loading rates on a monthly basis to ensure that each of these limits are being met.

3. *Recordkeeping and Reporting Requirements*

(a) EPA proposes that the applicant keep extensive records to be made available upon EPA request, in lieu of voluminous reporting requirements. The records to be kept include, but are not limited to, all required measurements, testing, monitoring, and calculations, as well as any manufacturer specifications and guarantees, deviations from permit conditions and corrective actions taken, and any determinations that vapor recovery system and other controls are not meeting the requirements.

(b) EPA proposes that the applicant submit an annual report of rolling 12-month annual emissions each year covering the period for the previous calendar year. The applicant must also promptly report any deviations or exceedances of emission or operational limits and a description of any corrective actions or preventative measures taken. Additionally, a report must be submitted for any required performance tests.

4. *Records Retention*

EPA proposes that all required records be retained for at least 5 years from the date the record was created.

## II. Potential Uncontrolled and Controlled Emissions

Table 1 summarizes the potential uncontrolled emissions in tpy of the predominate PSD-regulated pollutants for the units the EPA is proposing to approve for construction. Table 2 summarizes the potential controlled emissions after applying the permit conditions in the proposed permit.

Table 1 - Uncontrolled Potential-to-Emit Summary in TPY

| Emission Source | PM* | $PM_{10}$* | $PM_{2.5}$* | VOC* | $NO_X$* | CO* | $SO_2$* |
|---|---|---|---|---|---|---|---|
| Stationary Crude Oil Railcar Loading Smokeless Enclosed Combustion Device (storage tank-to-railcar transfer control) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stationary Crude Oil Railcar Loading (storage tank-to-railcar) | 0 | 0 | 0 | 871 | 0 | 0 | 0 |
| Crude Oil Storage Tank Loading Stations (truck-to-storage tank and pipeline-to-storage tank) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Portable Crude Oil Railcar Loading (truck-to-railcar – vapor balance control) | 0 | 0 | 0 | 290 | 0 | 0 | 0 |
| Crude Oil Storage Tanks | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| Diesel Fuel Truck Portable Loading (railcar-to-truck) | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Bulk Product Transfers (railcar-to-truck and/or storage) | 4 | 2 | 0.3 | 0 | 0 | 0 | 0 |
| Bulk Product Storage and Shipping | 13 | 6 | 1 | 0 | 0 | 0 | 0 |
| Total | 17 | 8 | 1.3 | 1,173 | 0 | 0 | 0 |

* PM=particulate matter; $PM_{10}$= particular matter less than 10 micrometers in diameter; $PM_{2.5}$= particular matter less than 2.5 micrometers in diameter; $NO_X$=nitrogen oxides; CO=carbon monoxide; $SO_2$=sulfur dioxide.

Table 2 - Controlled Potential-to-Emit Summary in TPY

| Emission Source | PM | $PM_{10}$ | $PM_{2.5}$ | VOC | $NO_X$ | CO | $SO_2$ |
|---|---|---|---|---|---|---|---|
| Stationary Crude Oil Railcar Loading Smokeless Enclosed Combustion Device (storage tank-to-railcar transfer control) | 0 | 0 | 0 | 17 | 6 | 31 | 24 |
| Stationary Crude Oil Railcar Loading (storage tank-to-railcar) | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| Crude Oil Storage Tank Loading Stations (truck-to-storage tank and pipeline-to-storage tank) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Portable Crude Oil Railcar Loading (truck-to-railcar – vapor balance control) | 0 | 0 | 0 | 29 | 0 | 0 | 0 |
| Crude Oil Storage Tanks | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| Diesel Fuel Truck Portable Loading (railcar-to-truck) | 0 | 0 | 0 | 0.3 | 0 | 0 | 0 |
| Bulk Product Transfers (railcar-to-truck and/or storage) | 4 | 2 | 0.3 | 0 | 0 | 0 | 0 |
| Bulk Product Storage and Shipping | 13 | 6 | 1 | 0 | 0 | 0 | 0 |
| Total | 17 | 8 | 1.3 | 72.3 | 6 | 31 | 24 |

## III. Applicability - Federal Minor New Source Review in Indian Country

### A. Synthetic minor permitting

The TMNSR regulations at 40 CFR 49.151 provide the EPA with the authority to establish enforceable emission and operational limits in minor new source review (NSR) permits to create a synthetic minor source for the PSD permitting program, the Title V permitting program, and requirements for major emitters of hazardous air pollutants (HAPs).

The potential uncontrolled VOC emissions of the facility's new proposed operations are greater than 250 tpy. Therefore, a PSD pre-construction permit would be required before construction begins. The uncontrolled VOC emissions would also require that Dakota Plains apply for and obtain a Part 71 operating permit for major sources. Dakota Plains has requested enforceable

VOC emission limits to create a synthetic minor source to avoid the PSD and Part 71 permitting programs.

B. True minor permitting

While the TMNSR program is effective for companies seeking to avoid major source permitting by obtaining legally and practically enforceable emission limits to become synthetically minor for major source requirements, the requirement to obtain a permit for true minor sources, whose PTE is less than PSD major source thresholds, under the TMNSR permitting program does not become effective until September 2, 2014. As such, there are no preconstruction permitting requirements for criteria pollutants with PTE of less than 250 tpy for this facility.

With the addition of the 125 acres, Dakota Plains is also planning to include railcar-to-truck transfer of other bulk commodities such as sand, salt, aggregate, lumber, pipe, and other palletized products. This will result in the addition of six (6) portable conveyors to unload bulk aggregate materials from railcars, and a bulk aggregate handling and storage system consisting of six (6) silos.

The potential emissions of PM, $PM_{10}$, and $PM_{2.5}$ for these additional operations are all less than the PSD thresholds. In addition, other PSD regulated pollutants such as CO, $NO_X$, and $SO_2$, will be emitted in much smaller amounts. Thus, approval for the construction of these additional operations is not required.

The minor source status for all PSD pollutants other than VOC is based on the potential to emit for each of those pollutants being below the major source threshold of 250 tpy. As long as the PTE remains below this threshold, no synthetic minor permit limit is necessary for any of these pollutants.

In the event that the PTE of any PSD pollutant exceeds the respective PSD major source threshold, the facility will be considered a major source for that pollutant and major source permitting requirements will become applicable. The Permittee always has the option of requesting a synthetic minor permit limit for any pollutant to avoid major source status for that pollutant.

IV. Air Quality Review

A. Regulatory Requirements

The TMNSR Regulations at 40 CFR 49.154(d) require that an Air Quality Impact Assessment (AQIA) modeling analysis be performed if there is reason to be concerned that new construction would cause or contribute to a National Ambient Air Quality Standard (NAAQS) or PSD increment violation. If the AQIA reveals that the proposed construction could cause or contribute to a NAAQS or PSD increment violation, such impacts must be addressed before a pre-construction permit can be issued.

Based on the available data, discussed below, there do not appear to be any significant air quality concerns within the exterior boundaries of the Fort Berthold Indian Reservation (FBIR). Therefore, the EPA has determined that an AQIA modeling analysis is not required for the proposed permit.

The following air quality review of the proposed project is in accordance with the instruction in the EPA's TMNSR permit application, Form NEW, which can be found at: http://epa.gov/region8/air/permitting/tmnsr.html#Applications.

B. Review of Proposed Project

1. *Existing Air Quality and Monitoring Stations*

There are no designated NAAQS non-attainment areas in the regional vicinity of the proposed project.

The Three Affiliated Tribes of the FBIR, North Dakota, have operated air monitoring stations known as "Makoti" in Ward County and "Twin Buttes" in Mercer County since 2009. The Makoti station has since been moved to the town of Williston and is now operated by the state of North Dakota as the Williston station. At the Twin Buttes station, the Tribes run analyzers for sulfur dioxide ($SO_2$) and oxides of nitrogen (NO, $NO_2$, and $NO_X$) and meteorological sensors. In addition, the Tribes operate the Dragswolf monitoring station, which is equipped only with meteorological sensors and a data logger, in Mountrail County, near New Town, North Dakota.

The State of North Dakota operates seven (7) ambient monitoring stations, including four (4) stations in western North Dakota near Dunn, Theodore Roosevelt National Park (TRNP), Lostwood National Wildlife Refuge (LNWR), and Williston that are designed to characterize regional background pollutant levels.[1] Dunn, TRNP, and LNWR stations monitor $O_3$, $PM_{2.5}$, $PM_{10}$, $SO_2$, NO, $NO_2$ and $NO_X$. The Williston station, formerly the Makoti station, monitors $O_3$, $PM_{2.5}$, $PM_{10}$.

2. *Topography*

According to information provided by Dakota Plains in the synthetic minor NSR application for the proposed facility, the proposed project area is in relatively flat to gently rolling open terrain. There is little industrial development within a few miles of the site, with the exception of an occasional oil well production facility.

1 North Dakota Ambient Monitoring Network Plan, Annual Report, July 2010, North Dakota Department of Health, Division of Air Quality Air Quality Monitoring Branch 918 E. Divide Ave., Bismarck, N.D. 58501-1947, available online at: http://www.ndhealth.gov/AQ/ambient/nwrev_09_2.pdf

C. Pollutants of Concern

1. *Ozone*

The NAAQS for ozone is 75 ppb, and compliance with the NAAQS is determined by comparison to a "design value" that is calculated as the three year average of the fourth highest daily eight hour ozone concentration at each site. Based on the most recent monitoring data, the 2011 ozone design values at the Dunn, TRNP and LNWR sites are 55, 59, and 60 ppb, respectively. [2] Thus, current air quality for western North Dakota is lower than the ozone NAAQS.

The primary air pollutant that would be emitted from the proposed facility is VOC which can contribute to ozone formation. Generally a photochemical modeling analysis is needed to determine if VOC contributes to ozone formation. However, in rural areas ozone is typically insensitive to changes in VOC emissions. Additionally, because ozone is generally a regional air pollutant, smaller projects such as the proposed project subject to this permit are not expected to significantly affect NAAQS attainment for ozone. Therefore, VOC emissions are not expected to cause or contribute to exceedances of the ozone NAAQS as a result of the proposed project.

While $NO_X$ emissions can also contribute to ozone formation, emissions of less than a few hundred tpy typically do not have a detectable impact on ambient ozone levels. For example, a photochemical modeling study of a source in Colorado with 400 tpy $NO_X$ and 200 tpy VOC emissions showed increases in ozone of less than 1 ppb on most days.[3] Because ambient monitoring data show that ozone levels in North Dakota are below the ozone NAAQS, and because $NO_X$ emissions from the project are less than 40 tpy, photochemical model simulations would not be expected to indicate exceedances of the ozone NAAQS.

2. *$NO_2$*

$NO_X$ would be emitted in small amounts due to a combustion controls for the truck transfer stations. The increase in $NO_X$ emissions from the combustor is estimated to be 8.8 tpy.

The greatest current air quality concern for projects involving combustion of petroleum-related gases is with respect to the EPA's 1-hour NAAQS for $NO_2$ promulgated in June 2010. Compliance with the NAAQS for this pollutant is determined by calculating a "design value" which is a statistical average of data collected at the monitor over a three year period.

2 The Air Quality System (AQS) – the EPA's Repository of Air Quality Data, available online at: http://www.epa.gov/ttn/airs/airsaqs/.

3 Morris, R.E, Sakulyanontvittaya, T., McNally, D., and Loomis, C., Final Report: EFFECT OF THE HIGH PLAINS ENERGY STATION ON THE FINAL 2010 OZONE ATTAINMENT DEMONSTRATION MODELING FOR THE DENVER 8-HOUR OZONE SIP, March 9, 2009, submitted to High Plains Energy Associates, LLC 400 Chesterfield Center, Suite 110, St. Louis, Missouri 63017

Data reported to AQS for the period of 2009 through 2011 show a pattern of generally low concentrations.[4] The maximum hourly $NO_2$ reading at the Makoti site was 31 ppb, versus the hourly $NO_2$ standard of 100 ppb. The design value for the 1-hour $NO_2$ NAAQS is defined as the eighth highest value in each year, averaged over a three-year period. In the limited data available for this monitor, no values were observed that approached the design value for $NO_2$. AQS data from 2009 through 2011 shows 1-hour $NO_2$ design values for the Dunn, and TRNP monitors at 13 ppb, and 9 ppb, respectively, compared to the standard of 100 ppb.

Given the above discussion of existing monitored concentrations in the general project area, which demonstrates that there is large margin of compliance with the 1-hour $NO_2$ NAAQS, and the proposed allowable $NO_2$ emissions of less than 40 tpy, it is expected that combustion sources at the proposed project site are unlikely to cause or contribute to non-attainment of the 1-hour $NO_2$ NAAQS.

## V. Tribal Consultations and Communications

The EPA offers the Tribal Government Leaders an opportunity to consult on each proposed permit action. The Tribal Government Leaders are asked to respond to the EPA's offer to consult within 30 days. The Chairman of the Three Affiliated Tribes has been offered an opportunity to consult on this permit action via letter dated June 4, 2013. To date, the EPA has not received a response to our offer to consult on this permit action.

All minor source applications (synthetic minor, modification to an existing facility, new true minor or general permit) are submitted to both the EPA and the Tribal Environmental Director per the application instructions (see http://epa.gov/region8/air/permitting/tmnsr.html). The Tribal Environmental Office has 10 business days to respond to the EPA with questions and comments on the application. In the event an AQIA is triggered, a copy of that document is emailed to the tribe within 5 business days of receipt by the EPA.

Additionally, the Tribe's Environmental Director is notified of the public comment period for the proposed permit and provided copies of the notice of public comment opportunity to post in various locations on the Reservation that they deem fit. The Tribe is also notified of the issuance of the final permit.

**Tribal Environmental Contact**

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4 The Air Quality System (AQS) – the EPA's Repository of Air Quality Data, available online at: http://www.epa.gov/ttn/airs/airsaqs/.

## VI. Environmental Justice

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order calls on each federal agency to make environmental justice a part of its mission by "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations."

The EPA defines "Environmental Justice" to include meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The EPA's goal is to address the needs of overburdened populations or communities to participate in the permitting process. *Overburdened* is used to describe the minority, low-income, tribal and indigenous populations or communities in the United States that potentially experience disproportionate environmental harms and risks due to exposures or cumulative impacts or greater vulnerability to environmental hazards.

This discussion describes the EPA's efforts to identify overburdened communities and assess potential effects in connection with issuing the proposed CAA synthetic minor TMNSR permit in New Town, North Dakota within the exterior boundaries of the FBIR.

### A. Environmental Impacts to Potential Environmental Justice Communities

We consulted the Agency's environmental justice screening database, EJView, found at http://www.epa.gov/environmentaljustice/mapping.html and U.S. Bureau of the Census for demographic and socioeconomic data. Results indicate that this discussion describes the EPA's efforts to identify overburdened communities and assess potential effects in connection with issuing the proposed CAA synthetic minor TMNSR permit in Mountrail County, North Dakota, within the exterior boundaries of the FBIR. The EPA consulted the following resources for demographic and socioeconomic data for the four (4) geographic areas of New Town, Mountrail County, North Dakota and United States:

1. EJView (http://www.epa.gov/environmentaljustice/mapping.html); and

2. U.S. Bureau of the Census, specifically:

   (i) American Quick Facts http://quickfacts.census.gov/qfd/states/38/38061.html,
   (ii) 2006 - 2010 American Community Survey (ACS) http://www.census.gov/acs/www/
   (iii) Population Estimates Program (PEP) http://www.census.gov/popest/.

With regard to education level, the city of New Town has similar characteristics as North Dakota and USA. Mountrail County has similar characteristics as North Dakota and USA for education level and percent persons under the age of 18 years. However, there are distinct differences in income level and Native American/minority demographics between the four (4) geographic areas.

Nationally, 13.8% of the population has an income below the poverty level. The national average is 12.2% higher than the North Dakota poverty level of 12.3%. The average poverty level in Mountrail County is 16.5% but in the city of New Town the poverty level is 25.7% or nearly twice the national average (186.2%).

The Native American/minority population also changes with the geographic areas. Nationally, 36.6% of the population is minority and 1.2% of the population is Native American. Across North Dakota, the minority population is 11.4% and the Native American population is 5.5%. However, in Mountrail County the minority population is 34.8% and the Native American population is 29.1%. The minority population is close to the national average but the Native American population is 24 times the national average (2425.0%). In the city of New Town, the minority population at 78% is twice (213.1%) the national average while the Native American population is 68.8%, making it 57 times (5733.3%) the national average of 1.2%.

The percentage of persons under the age of 18 is similar for Mountrail County, North Dakota and USA at 23.6%, 22.1% and 23.7%, respectively. However, in New Town persons under the age of 18 is 28.5% or about 20% higher than North Dakota (128.9) or USA (120.2).

For purposes of the Executive Order on environmental justice, the EPA has recognized that compliance with the NAAQS is "emblematic of achieving a level of public health protection that, based on the level of protection afforded by a primary NAAQS, demonstrates that the EPA's issuance of a PSD permit for a proposed facility or modification will not have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations." *In re Shell Gulf of Mexico, Inc. & Shell Offshore, Inc.*, 15 E.A.D. ___, slip op. at 74 (EAB 2010). This is because the NAAQS are health-based standards, designed to protect public health with an adequate margin of safety, including sensitive populations such as children, the elderly, and asthmatics. Although taken from the context of issuance of a PSD permit, this logic applies with equal force to EPA's issuance of a permit for modification or construction of a synthetic minor stationary source under the TMNSR.

Section 110(a)(2)(C) of the CAA requires that each SIP contain a program for the "regulation of the modification and construction of any stationary source … as necessary to assure that [the NAAQS] are achieved." 42 U.S.C. §7410(a)(2)(C). Under the Tribal NSR rule, two sets of provisions assure the NAAQS are achieved:

1. If the reviewing authority has reason to be concerned that the modification or construction of a minor source would cause or contribute to a NAAQS or PSD increment violation, the reviewing authority may require an air quality impacts analysis (AQIA). 40CFR 49.154(d)(1). The AQIA must use the dispersion models and procedures in 40 C.F.R. part 51, Appendix W. *Id.* §49.154(d)(2). If the AQIA reveals that modification or construction of the minor source would cause or contribute to a NAAQS or PSD increment violation, then the reviewing authority must require the source to reduce or mitigate the impacts. *Id.* §49.154(d)(3).

2. Each permit must contain a provision stating that (among other things) the source must not cause or contribute to a NAAQS violation. *Id.* §49.155(a)(7)(ii). Noncompliance with this permit provision is a violation of the permit and is grounds for enforcement action and for a permit termination or revocation. *Id.* §49.155(a)(7)

This proposed TMNSR permit action authorizes the construction of new air emission sources, and air emission increases from existing units. The air emissions at the existing facility will increase due to the associated TMNSR permit action. However, the proposed permit requires that emissions are controlled to the greatest extent possible and an air quality review demonstrates that the controlled emissions are not expected to cause or contribute to exceedances of the NAAQS as a result of the proposed project. Therefore, this TMNSR permit action will have no adverse air quality impacts.

Furthermore, the TMNSR permit contains a provision stating, "*The permitted source must not cause or contribute to a NAAQS violation or, in an attainment area, must not cause or contribute to a PSD increment violation.*" Noncompliance with this TMNSR permit provision is a violation of the TMNSR permit and is grounds for enforcement action and for permit termination or revocation. As a result, we conclude that issuance of the aforementioned synthetic minor TMNSR permit will not have disproportionately high or adverse human health effects on communities in the vicinity of FBIR.

B. Enhanced Public Participation

Given the presence of potential environmental justice communities in the vicinity of the facility, we are providing an enhanced public participation process for this proposed TMNSR permit, regardless of our findings and effects determination. The standard process is described below.

1. Interested parties can subscribe to an EPA listserve that notifies them of public comment opportunities on the FBIR for proposed air pollution control permits via email at http://www2.epa.gov/region8/air-permit-public-comment-opportunities.

2. All minor source applications (synthetic minor, modification to an existing facility, new true minor or general permit) are submitted to both the EPA and the Tribe per the application instructions (see http://www2.epa.gov/region8/tribal-minor-new-source-review-permitting.

3. The Tribe has 10 business days to respond to us with questions and comments on the application.

4. In the event an AQIA is triggered, a copy of that document is emailed to the Tribe within 5 business days of our receipt of the document.

5. The Tribe is notified of the public comment period for the proposed TMNSR permit and provided copies of the notice of public comment opportunity to post in various locations on the Reservation that they deem fit. The Tribe is also notified of the issuance of the final TMNSR permit.

6. Finally, we offer the Tribal Government Leaders an opportunity to consult on each proposed TMNSR permit action. The Tribal Government Leaders are asked to respond to our offer to consult within 30.

## VII. Public Notice & Comment, Hearing and Appeals

### A. Public Notice

In accordance with §49.157, the EPA Region 8 Air Program (Air Program) must provide public notice and a 30 day public comment period to ensure that the affected community and the general public have reasonable access to the application and draft permit information. The application, the draft permit, this technical support document, and all supporting materials for the draft permit are available at:

Three Affiliated Tribes
Environmental Division Office
204 W. Main Street
New Town, North Dakota 58763-9404

and

US EPA Region 8
Air Program Office
1595 Wynkoop Street (8P-AR)
Denver, Colorado 80202-1129

All documents are available for review, with the exception of confidential business information (CBI) pursuant to §49.157, at the U.S. EPA Region 8 office Monday through Friday from 8:00 a.m. to 4:00 p.m. (excluding Federal holidays). Additionally, the draft permit and technical support document can be reviewed on the Air Program's website at http://www.epa.gov/region8/air/permitting/pubnotice.html.

Any person may submit written comments on the draft permit and may request a public hearing during the public comment period. These comments must raise any reasonably ascertainable issue with supporting arguments by the close of the public comment period (including any public hearing).

### B. Public Hearing

A request for a public hearing must be in writing and must state the nature of the issues proposed to be raised at the hearing. The Air Program will hold a hearing whenever there is, on the basis of requests, a significant degree of public interest in a draft permit. The Air Program may also hold a public hearing at its discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.

### C. Final Permit Action

In accordance with §49.159, a final permit becomes effective 30 days after permit issuance, unless: (1) a later effective date is specified in the permit; (2) appeal of the final permit is made as detailed in the next section; or (3) the Air Program may make the permit effective immediately upon issuance if no comments resulted in a change in the draft permit or a denial of the permit. The Air Program will send notice of the final permit action to any individual who commented on the draft permit during the public comment period. In addition, the source will be

added to a list of final minor NSR permit actions which is posted on the Air Program's website at http://www.epa.gov/region8/air/permitting/. Anyone may request a copy of the final minor NSR permit at any time by contacting the Region 8 Tribal Air Permit Program at (800) 227-8917 or sending an email to r8airpermitting@epa.gov.

D. Appeals to the Environmental Appeals Board (EAB)

In accordance with §49.159, within 30 days after a final permit decision has been issued, any person who filed comments on the draft permit or participated in the public hearing may petition the EAB to review any condition of the permit decision. The 30-day period within which a person may request review under this section begins when the Region has fulfilled the notice requirements for the final permit decision. Motions to reconsider a final order by the EAB must be filed within 10 days after service of the final order. A petition to the EAB is, under section 307(b) of the Act, a prerequisite to seeking judicial review of the final agency action. For purposes of judicial review, final agency action occurs when a final permit is issued or denied by the Air Program and agency review procedures are exhausted.

Pinnacle Engineering

Owning Challenges. Winning Trust.

**Date:** **April 12, 2013**

**To:** **Kathy Paser – EPA Region 8 Air Permit Program**

**From:** **Jeff Melby, P.E.**

**RE:** **Requested Information**
**Dakota Plains/New Town, ND**

---

This letter is intended to provide further more specific information regarding the sand and aggregate transfer and handling systems proposed at the Dakota Plains Holdings New Town Transfer Facility. In your email of April 10th, you requested additional information.

Currently, we do not have a final design. The plan is to unload railcars filled with sand or other aggregate on one of the existing ladder tracks using portable conveyors similar to the one shown at right. The trucks loaded with aggregate from the railcar will either leave the site or transfer the loaded aggregate to an onsite storage facility to be constructed. The aggregate stored onsite would eventually be loaded onto trucks from the facility and would then be transported off-site.

**Transloading of Sand From Railcar to Truck**

As a worst case scenario for emissions from the sand unloading from railcars, Pinnacle estimated that there would be up to six portable conveyor systems each unloading 250 tons per hour of aggregate (i.e., 6 railcars could be unloaded simultaneously to both trucks leaving the site and trucks hauling to a proposed on-site sand storage facility). Each portable conveyor is fitted with an integrated dust collector to provide emissions control. The dust collector is the white box that sticks up above the conveyor near the lower portion of the conveyor. A schematic showing the conveyor and the integrated dust collector is also attached to this document.

Emission estimates for this operation scenario are based on AP-42 emission factors. Emission factors from AP-42, Volume I, Fifth Edition, Chapter 13, Section 13.2.4 are used to estimate uncontrolled emissions from the transloading of trucks with sand from railcars. As shown on the attached table (Appendix A-13 from the application), a capture efficiency of 70% and control efficiency of 99% (combined efficiency of 69.3%) were used to estimate the controlled emissions from this operation.

**Sand Receiving, Handling, and Storage**

The aggregate that is stored onsite, will be stored in a silo system similar to the one shown below. The storage silo system would consist of a truck receiving pit with conveyors, an elevator, and loadout spouts for filling trucks to take the aggregate off-site.

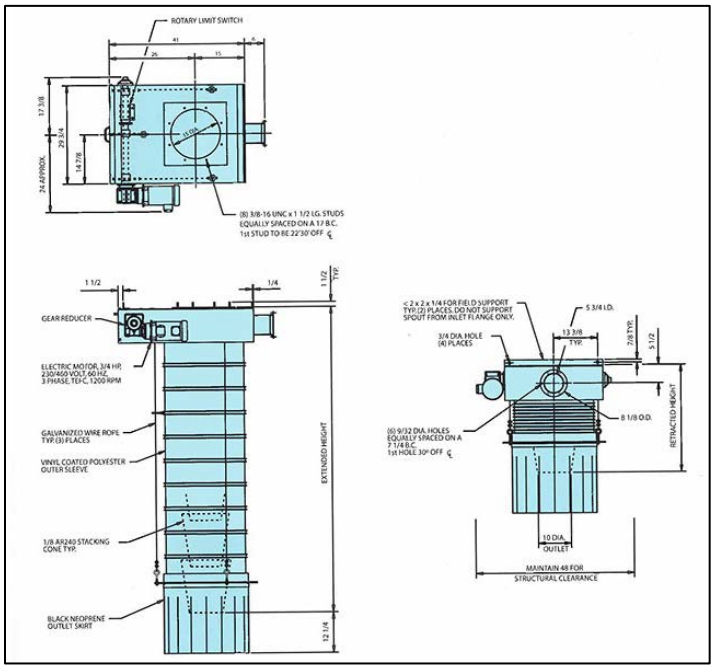
A dust collector will provide emissions control for the receiving and handling operations. The receiving pit and handling conveyors and elevators will be connected to a dust collection system via hoods and ducts. Fans will provide negative pressure to capture dust and force air flow through the dust collection system.

Emission factors from AP-42, Volume I, Fifth Edition, Chapter 11, Section 11.19.1 were used to estimate emissions from the receiving of sand from trucks and the handling/storage of sand. The theoretical rate of 250 tons per hour was used as a worst case estimate. AP-42 Section 11.19.1 states that the listed emission factor was measured downstream of a wet scrubber. A dust collection system consisting of a cyclone and a bagfilter (baghouse) should provide a similar control efficiency when compared to a wet scrubber, making the emission factor representative. A picture of a cyclone/bagfilter system is shown below. The calculations are provided in the attached table (Appendix A-13 from the application).

**Sand Loadout From Storage to Truck**

The empty trucks loaded for off-site distribution would drive under the loadout spout under the silo. The loadout spout will be fitted with a dustless spout filter system for particulate control. The dustless spout filter system consists of a telescoping chute to shorten the fall distance of the sand being loaded onto trucks. The chute is surrounded by a flexible shroud. An internal ventilation fan provides a negative pressure within the annular space between the shroud and the chute to capture particulates that become airborne during loading. The particulate is pulled into a filter where it is captured. A schematic of the dustless spout system is shown below.

Emission estimates for this operating scenario are based on AP-42 emission factors. Emission factors from Section 13.2.4 were used to estimate uncontrolled emissions from the loading of trucks with sand from the storage silos. A theoretical loading rate of 250 tph was used. The loading spout will be fitted with a dustless spout filter system estimated to provide 99% control on particulate emissions. As shown on the attached table (Appendix A-13 from the application), a capture efficiency of 70% and control efficiency of 99% (combined efficiency of 69.3%) were used to estimate the controlled emissions from this operation.



**Fugitive Emissions from Haul Roads**

Dakota Plains Holdings expects a significant number to trucks to travel on their haul roads. These trucks will haul crude oil and sand on and off site. It is planned that the facility will receive crude oil via pipeline, which will decrease the amount of truck traffic. In accordance with the currently issued air construction permit, Dakota Plains Holdings has developed and implemented a Fugitive Dust Control Plan (FDCP). This FDCP outlines criteria and control measures to prevent fugitive dust emissions, and this plan will be updated to include the haul roads used for aggregate transportation onsite. Dakota Plains Holdings will continue to monitor and control dust in accordance with the requirements of the FDCP.

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

April 1, 2013

Federal Minor NSR Permit Coordinator
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202-1129

**RE: Supplemental Information to Request to Reopen, Revise, and Reissue Synthetic Minor NSR Permit to Construct Application**
**Permit Number SMNSR-TAT-000285-2012.001**
**Dakota Plains Holdings, Inc.**
**New Town Transfer Facility**
**3895 88th Avenue NW**
**New Town, North Dakota**

Dear Permit Coordinator,

Attached is a response received today from the US Fish and Wildlife Service (FWS). As indicated in our March 21, 2013 supplement, the staff of the FWS was drafting a response concerning the concerning identified threatened and endangered species and their habitat and Pinnacle would provide that response to the EPA upon receipt.

The FWS stated that the "Project as described will have no significant impact on fish and wildlife resources. No endangered or threatened species are known to occupy the project area and/or are not likely to be affected."

If you have any questions, or need additional information, please contact us at 763-315-4501.

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

Jeff Melby, P.E.
Vice President of Operations

Cc: Gabe Claypool - Dakota Plains Holdings, Inc.
Edmund Baker - TAT Environmental Division

Attachment

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

February 12, 2013



Jeff Towner
Chief of Ecological Services
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

**RE: Threatened and Endangered Species Review**
**Proposed Rail Loop Crude Oil Loadout Facility**
**New Town, Mountrail County, North Dakota**
**Pinnacle Project Number: R012428.000**

Dear Mr. Towner:

Dakota Plains Transport Solutions, LLC, is proposing the construction of a rail loop crude oil loadout near New Town in Mountrail County, North Dakota. The Site is located south of New Town, within the South ½ of the Northeast ¼ of Section 20, Township 152 North, Range 92 West, as reviewed on the New Town, North Dakota USGS quadrangle map (see attached maps). The project involves converting approximately 170 acres from agricultural production to a truck trans-loading station with a rail loop with the purpose of loading and unloading oil from trucks to trains.

Please comment on the likelihood of the proposed truck transfer station affecting listed threatened and endangered species in Mountrail County, North Dakota. If you have any questions or need additional information, please do not hesitate to contact me at (763) 277-8410 or sthelen@pineng.com.

Sincerely,

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

March 21, 2013

Federal Minor NSR Permit Coordinator
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202-1129

**RE: Supplemental Information to Request to Reopen, Revise, and Reissue Synthetic Minor NSR Permit to Construct Application**
**Permit Number SMNSR-TAT-000285-2012.001**
**Dakota Plains Holdings, Inc.**
**New Town Transfer Facility**
**3895 88th Avenue NW**
**New Town, North Dakota**

Dear Permit Coordinator,

This letter is intended to supplement the Synthetic Minor New Source Review Permit to Construct Application as prepared by Pinnacle Engineering, Inc. (Pinnacle) and submitted by Dakota Plains on February 25, 2013. The primary purpose of this letter is to supplement the information provided in Section 3.9: Endangered Species Act and Section 3.10: National Historic Preservation Act of the Application. Additional assessment for these programs was recently undertaken as part of the process of applying for coverage under the EPA's 2012 Construction General Permit (CGP). In a conversation on March 1, 2013, Ms. Claudia Smith of EPA indicated that EPA would be interested in this information for the recently acquired contiguous property in the processing of the air permit application.

**Endangered Species Act**

The Endangered Species Act (ESA) requires the EPA, in consultation with the U.S. Fish and Wildlife Service (FWS) and/or the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, to ensure that actions they authorize are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

The FWS as well as the North Dakota Game and Fish Department (NDGF) were contacted to provide information regarding the presence of rare species, sensitive habitat, threatened or endangered species located within approximately one mile of the project site. A copy of the Letter of Request to each is attached.

A review of the NDGF web site identified known occurrences of rare species or natural communities in the search area, including: Grey wolf (*Canis Lupis*), Whooping Crane (*Grus americana*), Piping Plover (*Charadrius melodus*), Least Tern (*Sterna antillarum*), and Pallid Sturgeon (*Scaphirhynchus albus).*

The NDGF issued a letter dated March 13, 2013 stating that they "do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided any unavoidable destruction or

degradation of the wetland acres is mitigated in kind." The letter is attached. Dakota Plains has applied for a U.S. Army Corps of Engineers' (ACOE's) wetland discharge application for jurisdictional wetland located on the west portion of the property. The application offers wetland mitigation at a 2.75:1 mitigation to discharge ratio. Over 5 acres of wetlands will be created within the project area to compensate for the unavoidable wetland impacts in the construction of the rail loop track.

A review of the Information, Planning, and Conservation (IPaC) system on the FWS web site showed that Lake Sakakawea, located approximately 1.5 miles to the east and west of the site, serves as a critical habitat for the Piping Plover, Least Tern and Pallid Sturgeon. The Pallid Sturgeon utilizes large reservoirs, such as Lake Sakakawea as habitat. The Piping Plover and Least Tern may utilize shorelines and sandbars of large rivers and reservoirs as nesting habitat. However, the IPaC review indicated that the proposed project would likely not present any adverse affects to any known occurrence of rare features.

As indicated in the attached email correspondence, FWS noted that Lake Sakakawea is designated critical habitat for Piping Plovers, Least Tern, and Pallid Sturgeon, and recommended that an assessment be made of any potential effects of the proposed project on these species and critical habitat.

Pinnacle responded that:

> Lake Sakakawea is located approximately 1.5 miles to both the east and west of the site. The proposed project does not pose direct impacts to the aforementioned species. The uplands at the Site do not provide nesting habitat for the Piping Plover and Interior Least Tern. No Pallid Sturgeon habitat is found within the project area. No sparsely vegetated sand or gravel beaches, dredged materials, sand bars or gravel pits are located within or adjacent the project area. The project does not appear likely to result in a "take" of federally listed species or designated critical habitat.
>
> Stormwater runoff from the project site will ultimately discharge to Lake Sakakawea. It should be noted that the construction plan includes the implementation of sedimentation ponds to address impacts associated with both construction and operations, and erosion control measures during construction, to greatly limit any impacts to Lake Sakakawea.
>
> It should also be noted that a Facility Response Plan (FRP) and a Spill Prevention Control and Countermeasures Plan (SPCC) are being prepared for the facility. The plans are required because of the amount of oil that will be in storage at the proposed facility. The plans provide both preventive actions and also response actions in the event of regulated releases of oil. These plans assure that no direct or indirect impacts will occur to Lake Sakakawea due to planned operations at the site.

Pinnacle has had additional telephone conversations with the FWS concerning their review of the information provided. The FWS is drafting a response and will provide a letter concerning identified threatened and endangered species and their habitat. Pinnacle will forward the FWS letter upon receipt.

**National Historic Preservation Act**

The National Historic Preservation Act (NHPA) requires the EPA, in consultation with State and/or Tribal Historic Preservation Officers, to ensure that actions they authorize are not likely to affect cultural

resources. Pinnacle retained Bolton & Menk, Inc. (B&M) to prepare a Class I Literature Review for the site. As a part of the review, B&M consulted with the North Dakota Cultural Resources Survey (NDCRS), the Historic American Building Survey (HABS), the Historic American Engineering Record (HAER), and the National Register of Historic Places (NRHP) in order to identify known cultural resources within the nine (9) sections that surround or contain the project site. The United States Army Corps of Engineers (ACOE) and Three Affiliated Tribes (TAT) were also consulted concerning the level that the project site can be considered "disturbed." The B&M report is attached.

At the conclusion of the Class I Literature Review, B&M determined that it was not anticipated that any known historical sites would be directly impacted by the proposed project. It was noted that the current agricultural land use does not typically preserve archaeological sites, however, significant features may exist below the plow zone. As a result, it was recommended that an archaeological monitor be present during initial ground disturbing activities, and that such activities be conducted in coordination with the TAT Historic Preservation Office. This recommendation will be incorporated into the construction plans and an archeological monitor retained for on-site inspections during the initial ground-disturbing activities across the footprint of the project area.

If you have any questions, or need additional information, please contact us at 763-315-4501.

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

Jeff Melby, P.E.
Vice President of Operations

Cc: Gabe Claypool - Dakota Plains Holdings, Inc.
Edmund Baker - TAT Environmental Division

Attachments

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

January 24, 2013

Jeff Towner
Chief of Ecological Services
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

**RE: Threatened and Endangered Species Review**
**Proposed Transload Facility**
**New Town, Mountrail County, North Dakota**
**Pinnacle Project Number: R012428.000**

Dear Mr. Towner:

Dakota Plains Transport Solutions, LLC, is proposing the construction of a transload facility near New Town in Mountrail County, North Dakota. The Site is located south of New Town, within the South ½ of the Northeast ¼ of Section 20, Township 152 North, Range 92 West, as reviewed on the New Town, North Dakota USGS quadrangle map (see attached maps). The project involves converting approximately 180 acres from agricultural production to a truck trans-loading station with a rail loop with the purpose of loading and unloading oil from trucks to trains.

Please comment on the likelihood of the proposed truck transfer station affecting listed threatened and endangered species in Mountrail County, North Dakota. If you have any questions or need additional information, please do not hesitate to contact me at (763) 277-8410 or sthelen@pineng.com.

Sincerely,

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

January 24, 2013

Steven Dyke,
Conservation Supervisor
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

**RE: Threatened and Endangered Species Review**
**Proposed Transload Facility**
**New Town, Mountrail County, North Dakota**
**Pinnacle Project Number: R012428.000**

Dear Mr. Dyke:

Dakota Plains Transport Solutions, LLC, is proposing the construction of a transload facility near New Town in Mountrail County, North Dakota. The Site is located south of New Town, within the South ½ of the Northeast ¼ of Section 20, Township 152 North, Range 92 West, as reviewed on the New Town, North Dakota USGS quadrangle map (see attached maps). The project involves converting approximately 180 acres from agricultural production to a truck trans-loading station with a rail loop with the purpose of loading and unloading oil from trucks to trains.

Please comment on the likelihood of the proposed truck transfer station affecting listed threatened and endangered species in Mountrail County, North Dakota. If you have any questions or need additional information, please do not hesitate to contact me at (763) 277-8410 or sthelen@pineng.com.

Sincerely,

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

## Legend

Property Boundary

N

0 2,200 4,400

Feet

Property Boundary

New Town Transfer Facility
Dakota Plains Holdings, Inc.
New Town, North Dakota

Proj. No.: N012399.002
Date: 1/24/13
GIS Analyst: JAP
Reviewed By: ES

**Pinnacle Engineering**
11541 95th Avenue North
Minneapolis, Minnesota 55369
Tel: (763) 315-4501 Fax: (763) 315-4507

RECEIVED
MAR 18 2013

"VARIETY IN HUNTING AND FISHING"

**NORTH DAKOTA GAME AND FISH DEPARTMENT**

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

March 13, 2013

Scott Thelen
Senior Scientist
Pinnacle Engineering, Inc.
11541 95th Avenue North
Minneapolis, MN 55369

Dear Mr. Thelen:

RE: Proposed Rail Loop Crude Oil Loadout Facility
New Town, Mountrail County, North Dakota
Pinnacle Project Number: R012428.000

The North Dakota Game and Fish Department has reviewed this project for wildlife concerns. The National Wetland Inventory indicates various wetland areas within and adjacent to the proposed project area. We do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided any unavoidable destruction or degradation of wetland acres is mitigated in kind.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

**From:** Scott Thelen
**To:** Heidi Riddle
**Cc:** Jeff Melby
**Subject:** RE: Proposed Rail Loop Crude Loadout Facility
**Date:** Monday, March 18, 2013 4:37:58 PM
**Attachments:** image001.png

---

Hello Heidi:

In your email of March 18, you recommended that we make an assessment of any potential effects of the proposed Dakota Plains project on the Piping Plover, Interior Least Tern, and Pallid Sturgeon and critical habitat. This assessment should include potential direct and indirect effects.

Lake Sakakawea is designated critical habitat for the Piping Plover, Interior Least Tern, and Pallid Sturgeon. Lake Sakakawea is located approximately 1.5 miles to both the east and west of the site. The proposed project does not pose direct impacts to the aforementioned species. The uplands at the Site do not provide nesting habitat for the Piping Plover and Interior Least Tern. No Pallid Sturgeon habitat is found within the project area. No sparsely vegetated sand or gravel beaches, dredged materials, sand bars or gravel pits are located within or adjacent the project area. The project does not appear likely to result in a "take" of federally listed species or designated critical habitat.

Stormwater runoff from the project site will ultimately discharge to Lake Sakakawea. It should be noted that the construction plan includes the implementation of sedimentation ponds to address impacts associated with both construction and operations, and erosion control measures during construction, to greatly limit any impacts to Lake Sakakawea.

It should also be noted that a Facility Response Plan (FRP) and a Spill Prevention Control and Countermeasures Plan (SPCC) are being prepared for the facility. The plans are required because of the amount of oil that will be in storage at the proposed facility. The plans provide both preventive actions and also response actions in the event of regulated releases of oil. These plans assure that no direct or indirect impacts will occur to Lake Sakakawea due to planned operations at the site.

Pinnacle has received a letter from the North Dakota Game and Fish Department stating the they "*do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided any unavoidable destruction or degradation of the wetland acres is mitigated in kind.*" The project proposer's ACOE wetland discharge application offers wetland mitigation at a 2.75:1 mitigation to discharge ratio. Over 5 acres of wetlands will be created within the project area to compensate for the unavoidable wetland impacts.

Would you be able to send a letter or email similar to the ND G&F concerning the project?

Again, if you have any question, feel free to contact me.

Thanks,

Scott

**Scott Thelen, Senior Scientist**
Pinnacle Engineering, Inc.
11541 95th Avenue North, Minneapolis, MN 55369
763-277-8410 (direct) | 612-432-5590 (mobile) | 763-315-4507 (fax) | SThelen@pineng.com
Emergency Response Hotline: 1-866-658-8883
**Visit** www.pineng.com **-Environmental, Industrial and Renewable Energy**



---

**From:** Heidi Riddle [mailto:heidi_riddle@fws.gov]
**Sent:** Monday, March 18, 2013 9:08 AM
**To:** Scott Thelen
**Subject:** RE: Proposed Rail Loop Crude Loadout Facility

Hello Scott,

Thank you for the maps. I also received your response to my question about a federal nexus. Proponents without a federal nexus should make a determination as to whether the project is likely to result in "take" of a federally listed species or designated critical habitat. Lake Sakakawea is designated critical habitat for piping plovers, which means that the habitat is protected, as well as any individual plovers that may be there, in addition to interior least tern and pallid sturgeon. I recommend that you make an assessment of any potential effects of the proposed project on these species and critical habitat. This should include potential direct and indirect effects.

Feel free to contact me if you have any questions,
Heidi

---

**From:** Scott Thelen [mailto:sthelen@pineng.com]
**Sent:** Friday, March 15, 2013 10:49 AM
**To:** Heidi Riddle
**Subject:** RE: Proposed Rail Loop Crude Loadout Facility

Hello Heidi,

Yes there should have been maps attached. I have included them and the letter in this email. We have the T&E species list for Mountrail County, and used the IPaC to review the Site in relation to critical habitat. Currently, it appears that Lake Sakakawea has potential Piping Plover habitat. The Site itself has been in agricultural production for quite a while.

If you have any questions, feel free to contact me.

Thanks,

Scott

**Scott Thelen, Senior Scientist**
Pinnacle Engineering, Inc.
11541 95th Avenue North, Minneapolis, MN 55369
763-277-8410 (direct) | 612-432-5590 (mobile) | 763-315-4507 (fax) | SThelen@pineng.com
Emergency Response Hotline: 1-866-658-8883
**Visit www.pineng.com -Environmental, Industrial and Renewable Energy**



---

**From:** Heidi Riddle [mailto:heidi_riddle@fws.gov]
**Sent:** Friday, March 15, 2013 10:34 AM
**To:** Scott Thelen
**Subject:** Proposed Rail Loop Crude Loadout Facility

Mr. Thelen,

I am reviewing the subject-mentioned project, and your Feb. 12, 2013 letter refers to an attached map, but there is no map with your letter. Is this something that you can send via email?

Thank you,
Heidi

**Heidi Riddle**
Fish and Wildlife Biologist

U.S. Fish and Wildlife Service
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck ND 58501
Ph: 701.355.8503
Fax: 701.355.8513
Email: heidi_riddle@fws.gov

Bolton and Menk Class I Literature Review

**MANUSCRIPT DATA RECORD FORM**

1. Manuscript Number: [SHPO assigns]

2. SHPO Reference #:

3. Author(s): Austin Jenkins

4. Title: Class I Literature Review: Proposed Crude Oil Transload Facility, New Town, ND

5. Report Date: March, 2013

6. Number of Pages: 10

7. Type – I, T, E, O: O

8. Acres: 130 acres

9. Legal Location(s) (no quarter sections) with Historic Context Study Unit(s):
Consult the township tables in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, (SHSND 2008; available online at http://history.nd.gov/hp/hpforms.html) for Study Unit assignments.
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

| COUNTY | TWP RNG SEC | SU |
|---|---|---|
| Mountrail | 152N, 92W, SEC 20 | GA |

# Class I Literature Review: Proposed Crude Oil Transload Facility, New Town, ND

**Prepared for**

Pinnacle Engineering
Minneapolis, Minnesota

**Principal Investigator**

Dale Maul, MS

**Author**

Austin Jenkins

Prepared by:
Bolton & Menk, Inc.
12224 Nicollet Avenue
Burnsville, MN 55337

March, 2013

# TABLE OF CONTENTS



# LIST OF FIGURES

# INTRODUCTION

On March 7 and 8, 2013, Bolton & Menk, Inc. conducted a Class I Literature Review for Pinnacle Engineering, on behalf of Dakota Plains Holdings, Inc. (Dakota Plains). Dakota Plains proposes to construct a crude oil transload facility in New Town, Mountrail County, North Dakota. Ground disturbance and conspicuous elements related to the project include the following:

- A rail loop of approximately 1.5 miles in length
- Up to three 90,000-barrel oil storage tanks that are 28 feet in height
- Ten rail loadouts
- Truck access and parking
- Other associated infrastructure

The storage tanks, loadouts, truck access and parking are proposed to be located in the southeast quarter of the study area. The rail loop is proposed to run the perimeter of the study area.

The proposed development would take place over approximately 130 acres within the E¼ of the NW¼ and the NE¼ of Section 20, Township 152N, Range 92W. The study area is within the Garrison Study Unit (GSU; Gregg and Bleier 2008). Figure 1 depicts the project location.

The purpose of this report is to summarize past cultural resources investigations and previously identified archaeological, historical or architecture sites within the study area in order to inform future decision making in the review of an Environmental Protection Agency Storm Water Pollution Prevention Plan and a potential United States Army Corps of Engineers Clean Water Act Permit application.

# ENVIRONMENTAL SETTING

## CURRENT LAND USE

The study area is located just over one mile east of the artificially inundated Sanish Bay of Lake Sakakewea or the Garrison Reservoir. The study area (See Figure 2) is currently dominated by agricultural, row-crop land use, although a wetland is present within the southeast quarter of the study area. The study area is bound by a railroad switchyard to the north, a wastewater treatment facility to the west, New Town Municipal Airport to the south and College Drive/additional farmland to the east.

## LANDFORMS AND GEOGRAPHY

As indicated above, the study area is located within the GSU (Gregg and Bleier 2008).The natural geography of the GSU is characterized by dissected, undulating topography. Locally, features include floodplains; terraces; tributary streams; coulees; prairie potholes; and the Missouri River Trench (Gregg and Bleier 2008: 6.1). The raising of the Garrison reservoir inundated most of the Missouri River floodplains and many of the lower terraces within the GSU (Gregg and Bleier 2008: 6.1-6.6). While flooding the Garrison Reservoir had significant, conspicuous affects to the natural and cultural landscape, archaeological sites are found throughout all the landforms present in the GSU (Gregg and Bleier 2008: 6.7).

## FLORA AND FAUNA

Many game species were historically present within the GSU. Grasslands, floodplain forests and the

transitional zones between them provided food and habitat for several large- and medium-sized mammals that could easily be exploited by hunters (Gregg and Bleier 2008:6.7-6.8). The nearby, now flooded town of Sanish was the site of a known river crossing that was once used by migrating bison, indicating that the local area may have provided good hunting opportunity.

## OTHER KNOWN RESOURCES

The glacial till and bedrock within the GSU is known to contain types of stone that are culturally significant. These include several materials that are suitable for flintknapping, basalt, sandstone, limestone and pigments. According to the North Dakota Cultural Resources Survey (NDCRS) database, Knife River Flint is common among archaeological sites within the immediate vicinity.

## RESEARCH GOALS

This document intends to provide Pinnacle Engineering with a reliable estimate of known and potential cultural resources within the project area. Through conducting this literature review, specifically focusing on previous investigations and known resources within one mile surrounding the project area, we seek to provide a recommendation as to whether further cultural resources investigations may be needed.

## METHODOLOGY

During the week of March 8, 2013, background research was completed to identify archaeological, historical and architectural sites documented through 2013. This research included reviewing cultural resource reports, site forms, maps, and other available information within approximately one mile of the project area. The NDCRS database, Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) catalogue and the National Register of Historic Places (NRHP) database were queried for known archaeological, historical, and architectural sites within or near the project location. The *Archeological Component of the North Dakota Comprehensive Plan for Historic Preservation* was reviewed.

## EVALUATION OF RESEARCH

A total of 22 cultural resources review manuscripts are catalogued in the NDCRS as covering areas within the 9 Sections that surround and encompass the project area. As discussed further below, the 22 surveys have identified a total of 40 sites.

Five surveys have taken place adjacent to the project area. Those five were conducted between 2006 and 2011, but none has taken place within the project area itself. Given the high density of sites and the lack of a survey covering the project area, it is not unlikely that the absence of a known, inventoried site within the project area is due to a sampling bias/lack of survey.

## INVENTORY OF RESOURCES

The NDCRS query returned 40 sites within the nine Sections that surround and contain the project area. Table 1 lists their attributes. Figure 3 depicts the general locations of these resources.

**Table 1 – Known Cultural Resources**

| Site # | Location | | | Area of Significance | Context | Description | Update (Year) | NRHP Status |
|---|---|---|---|---|---|---|---|---|
| | T | R | Sect | | | | | |
| 32MN00325 | 152 | 92 | 18 | Architectural | Agriculture | Sheds, Barn, Shanty | 1985 | Ineligible |
| 32MN00326 | 152 | 92 | 18 | Architectural/Historical | Agriculture | Shed | 1985 | Ineligible |
| 32MN00327 | 152 | 92 | 18 | Architectural/Historical | Agriculture | House | 1985 | Ineligible |
| 32MN00328 | 152 | 92 | 18 | Architectural/Historical | Agriculture | Shed | 1985 | Ineligible |
| 32MN00402 | 152 | 92 | 18 | Archaeological | Archaic | CM Scatter | 1979 | Unevaluated |
| 32MN00659 | 152 | 92 | 16 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00660 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00661 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00662 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00663 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00664 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00665 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00666 | 152 | 92 | 18 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00704 | 152 | 92 | 18 | Architectural | Residential | House, Garage | 2005 | Unevaluated |
| 32MN00829 | 152 | 92 | 21 | Archaeological | Unknown | Cairn | 2010 | Unevaluated |
| 32MN00852 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2010 | Unevaluated |
| 32MN00853 | 152 | 92 | 16 | Archaeological | Unknown | Cairn, Stone Circle | 2010 | Unevaluated |
| 32MN00863 | 152 | 92 | 20, 29 | Architectural | Agriculture | Granary | 2010 | Ineligible |
| 32MN00911 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2011 | Unevaluated |
| 32MN00931 | 152 | 92 | 16 | Archaeological/Historical | Ranching | Glass, Metal, Depression, Foundation, Quarry | 2012 | Unevaluated |
| 32MN00932 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MN00949 | 152 | 92 | 16 | Archaeological | Unknown | Cairn | 2012 | Unevaluated |
| 32MN00950 | 152 | 92 | 16 | Archaeological | Unknown | Cairn | 2012 | Unevaluated |
| 32MN00954 | 152 | 92 | 18 | Historical | Bridges | Concrete | 2012 | Unevaluated |
| 32MN00991 | 152 | 92 | 16 | Historical | Agriculture | Glass, Masonry, Metal, Depression, Foundation | 2012 | Ineligible |
| 32MN00992 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MN00993 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MN00994 | 152 | 92 | 16 | Historical | Unknown | Glass, Metal, Rubber, Wood, Depression, Dump, Machinery | 2012 | Unevaluated |
| 32MN00995 | 152 | 92 | 16 | Architectural | Agriculture | Pump House | 2012 | Ineligible |
| 32MNX0103 | 152 | 92 | 17 | Architectural | Urban | House | 1996 | Unevaluated |
| 32MNX0740 | 152 | 92 | 18 | Archaeological | Unknown | Isolate | 1985 | Unevaluated |
| 32MNX0767 | 152 | 92 | 18 | Archaeological | Unknown | Isolate | 1989 | Ineligible |
| 32MNX0781 | 152 | 92 | 16 | Historical | Mining | Quarry | 1990 | Unevaluated |
| 32MNX0782 | 152 | 92 | 16 | Historical | Mining | Quarry | 1990 | Unevaluated |
| 32MNX0806 | 152 | 92 | 17 | Historical | Unknown | Poss. Sidewalk Segment | 1990 | Ineligible |
| 32MNX0807 | 152 | 92 | 17 | Historical | Unknown | Rock Alignment Segment | 1990 | Ineligible |
| 32MNX0826 | 152 | 92 | 17 | Archaeological | Unknown | Isolate | 1997 | Ineligible |
| 32MNX0870 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MNX0872 | 152 | 92 | 18 | Archaeological | Unknown | Isolate | 2012 | Unevaluated |
| 32MNX0884 | 152 | 92 | 16 | Archaeological | Unknown | Isolate | 2012 | Unevaluated |

Generally, the known sites that are present within the surrounding area include farmstead properties, quarries, churches, petroforms, and isolated lithic artifacts. Given the presence of these sites in the area, it is possible that other lithic isolates, lithic scatters, temporary camps, or petroforms may be present within the project area, which exhibits terrain that is consistent with landform choices for these properties. It is further possible that farmstead remains may be identified within the project area.

## STATEMENT OF IMPACTS

### POTENTIAL DIRECT IMPACTS

It is not anticipated that any known sites would be directly impacted by the proposed improvements. The proposed transload facility and associated rail loop does have potential to directly impact any currently unknown archaeological sites within the project area. The current land use does not typically preserve archaeological sites, however, significant, buried features may exist below the plowzone.

### POTENTIAL INDIRECT IMPACTS

Visual and auditory effects may be possible due to this project. Specific known sites that may be visually impacted include those from 32MN0659 through 32MN0666 and 32MNX0103. Sites 32MN0659 through 32MN0666 are religious facilities and 32MNX0103 is a house that was reportedly moved from Van Hook, presumably due to the flooding of the Garrison Reservoir. Religious facilities and objects that have been relocated from their original contexts are not commonly eligible for listing on the NRHP.

These visual and auditory effects are primarily related to the rail loop and its operation. These are anticipated to be similar to those related to the existing railroad. The parking area, loadouts and the storage tanks would have minimal visual impacts to known cultural resources, given the distance and other structures and elements on the landscape that should obfuscate these proposed improvements.

### PROPERTIES UNAFFECTED

Due to other conspicuous and obtrusive structures and terrain, other properties appearing in Table 1 are not anticipated to be affected by this project.

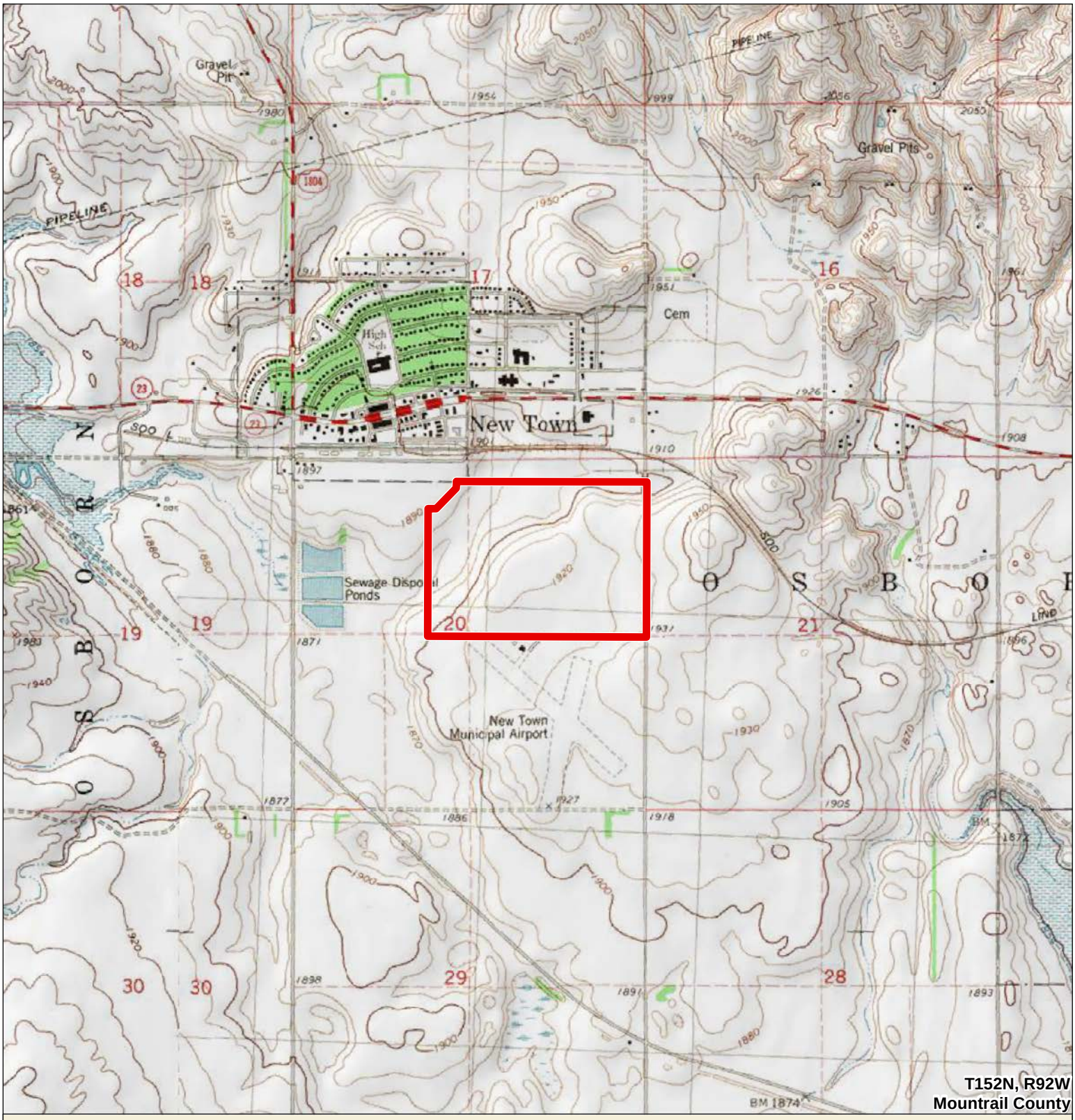
## RECOMMENDATIONS

Bolton & Menk, Inc. recommends that an archaeological monitor be present during initial ground-disturbing activities within the project limits. Such efforts should be conducted in coordination with the Mandan, Hidatsa and Arikara Nation Tribal Historic Preservation Office.

## REFERENCES

Gregg, Michael L. and Amy Bleier
2008 The GSU. In *Archeological Component of the North Dakota Comprehensive Plan for Historic Preservation*, edited by Michael L. Gregg and Fern Swenson, pp. 6.1 – 6.79. State Historical Society of North Dakota.

# APPENDIX – Figures




0 2,000 Feet

**DAKOTA PLAINS HOLDINGS, INC.**

**Crude Oil Transload Facility**
**Class I Cultural Resources Review**

**USGS Location**

**Figure 1**

March, 2013

**Legend**

Proposed Project Location

Source: NDGIS, USGS Topo Quads - Sanish and New Town

Map Document: C:\Users\austinje\Desktop\T42106267\ArcView\Maps\106267 USGS Location 8x11.mxd
Date Saved: 3/8/2013 2:00:37 PM

0 800 Feet

**DAKOTA PLAINS HOLDINGS, INC.**

**Crude Oil Transload Facility**
**Class I Cultural Resources Review**

**2012 Aerial Photograph**

**Figure 2**

March, 2013

**Legend**

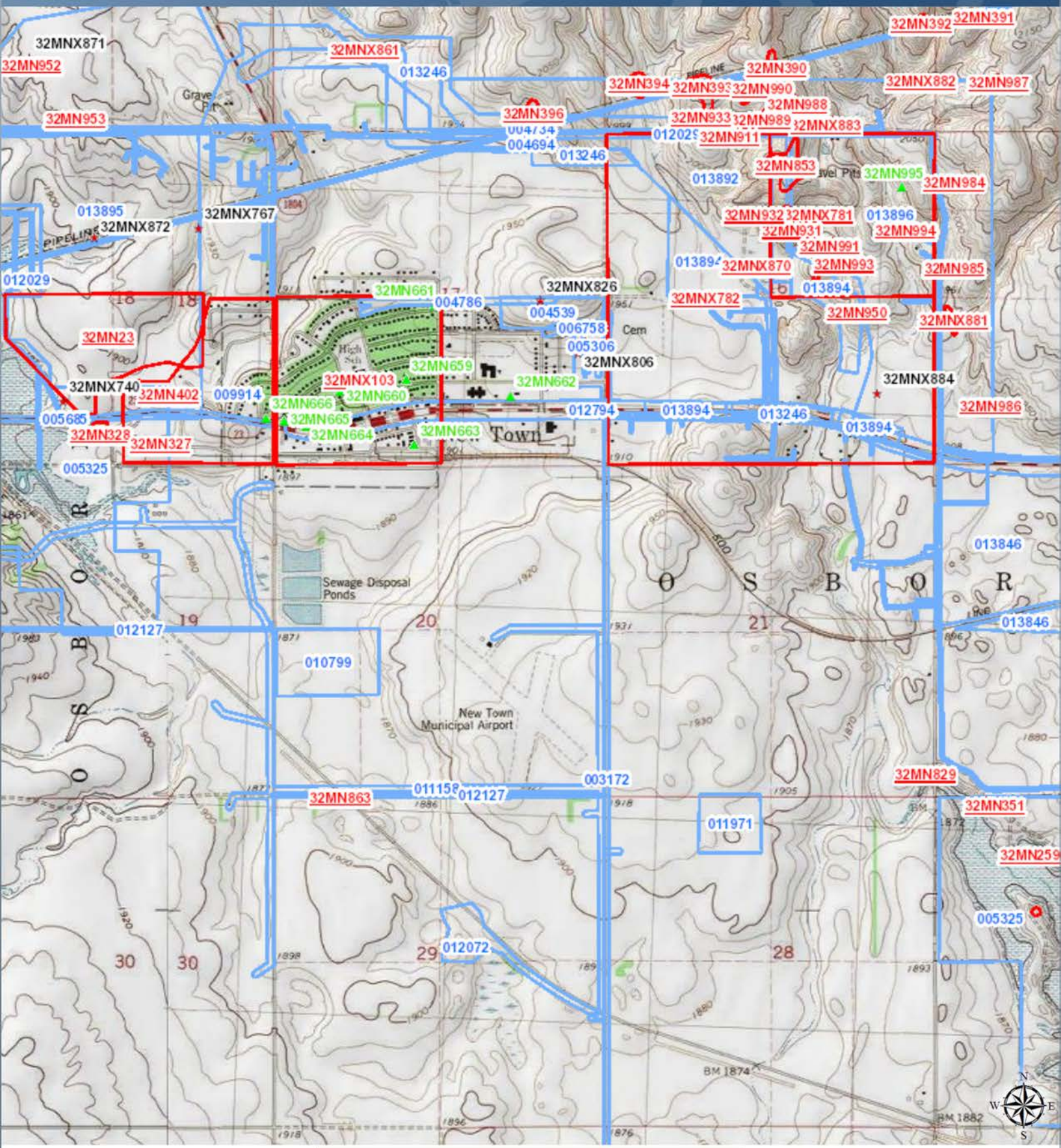
Proposed Project Location

Source: NDGIS, FSA

Map Document: C:\Users\austinje\Desktop\T42106267\ArcView\Maps\106267 Existing Conditions 8x11.mxd
Date Saved: 3/8/2013 2:02:15 PM

STATE HISTORICAL SOCIETY
OF NORTH DAKOTA

# Figure 3 - Known Cultural Resources




## Legend

- NDCRS Architecture
- NDCRS Isolates
- AHP Manuscripts
- NDCRS Sites and Leads

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

March 21, 2013

Federal Minor NSR Permit Coordinator
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202-1129

**RE: Supplemental Information to Request to Reopen, Revise, and Reissue Synthetic Minor NSR Permit to Construct Application**
**Permit Number SMNSR-TAT-000285-2012.001**
**Dakota Plains Holdings, Inc.**
**New Town Transfer Facility**
**3895 88th Avenue NW**
**New Town, North Dakota**

Dear Permit Coordinator,

This letter is intended to supplement the Synthetic Minor New Source Review Permit to Construct Application as prepared by Pinnacle Engineering, Inc. (Pinnacle) and submitted by Dakota Plains on February 25, 2013. The primary purpose of this letter is to supplement the information provided in Section 3.9: Endangered Species Act and Section 3.10: National Historic Preservation Act of the Application. Additional assessment for these programs was recently undertaken as part of the process of applying for coverage under the EPA's 2012 Construction General Permit (CGP). In a conversation on March 1, 2013, Ms. Claudia Smith of EPA indicated that EPA would be interested in this information for the recently acquired contiguous property in the processing of the air permit application.

**Endangered Species Act**

The Endangered Species Act (ESA) requires the EPA, in consultation with the U.S. Fish and Wildlife Service (FWS) and/or the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, to ensure that actions they authorize are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

The FWS as well as the North Dakota Game and Fish Department (NDGF) were contacted to provide information regarding the presence of rare species, sensitive habitat, threatened or endangered species located within approximately one mile of the project site. A copy of the Letter of Request to each is attached.

A review of the NDGF web site identified known occurrences of rare species or natural communities in the search area, including: Grey wolf (*Canis Lupis*), Whooping Crane (*Grus americana*), Piping Plover (*Charadrius melodus*), Least Tern (*Sterna antillarum*), and Pallid Sturgeon (*Scaphirhynchus albus).*

The NDGF issued a letter dated March 13, 2013 stating that they "do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided any unavoidable destruction or

degradation of the wetland acres is mitigated in kind." The letter is attached. Dakota Plains has applied for a U.S. Army Corps of Engineers' (ACOE's) wetland discharge application for jurisdictional wetland located on the west portion of the property. The application offers wetland mitigation at a 2.75:1 mitigation to discharge ratio. Over 5 acres of wetlands will be created within the project area to compensate for the unavoidable wetland impacts in the construction of the rail loop track.

A review of the Information, Planning, and Conservation (IPaC) system on the FWS web site showed that Lake Sakakawea, located approximately 1.5 miles to the east and west of the site, serves as a critical habitat for the Piping Plover, Least Tern and Pallid Sturgeon. The Pallid Sturgeon utilizes large reservoirs, such as Lake Sakakawea as habitat. The Piping Plover and Least Tern may utilize shorelines and sandbars of large rivers and reservoirs as nesting habitat. However, the IPaC review indicated that the proposed project would likely not present any adverse affects to any known occurrence of rare features.

As indicated in the attached email correspondence, FWS noted that Lake Sakakawea is designated critical habitat for Piping Plovers, Least Tern, and Pallid Sturgeon, and recommended that an assessment be made of any potential effects of the proposed project on these species and critical habitat.

Pinnacle responded that:

> Lake Sakakawea is located approximately 1.5 miles to both the east and west of the site. The proposed project does not pose direct impacts to the aforementioned species. The uplands at the Site do not provide nesting habitat for the Piping Plover and Interior Least Tern. No Pallid Sturgeon habitat is found within the project area. No sparsely vegetated sand or gravel beaches, dredged materials, sand bars or gravel pits are located within or adjacent the project area. The project does not appear likely to result in a "take" of federally listed species or designated critical habitat.
>
> Stormwater runoff from the project site will ultimately discharge to Lake Sakakawea. It should be noted that the construction plan includes the implementation of sedimentation ponds to address impacts associated with both construction and operations, and erosion control measures during construction, to greatly limit any impacts to Lake Sakakawea.
>
> It should also be noted that a Facility Response Plan (FRP) and a Spill Prevention Control and Countermeasures Plan (SPCC) are being prepared for the facility. The plans are required because of the amount of oil that will be in storage at the proposed facility. The plans provide both preventive actions and also response actions in the event of regulated releases of oil. These plans assure that no direct or indirect impacts will occur to Lake Sakakawea due to planned operations at the site.

Pinnacle has had additional telephone conversations with the FWS concerning their review of the information provided. The FWS is drafting a response and will provide a letter concerning identified threatened and endangered species and their habitat. Pinnacle will forward the FWS letter upon receipt.

**National Historic Preservation Act**

The National Historic Preservation Act (NHPA) requires the EPA, in consultation with State and/or Tribal Historic Preservation Officers, to ensure that actions they authorize are not likely to affect cultural

resources. Pinnacle retained Bolton & Menk, Inc. (B&M) to prepare a Class I Literature Review for the site. As a part of the review, B&M consulted with the North Dakota Cultural Resources Survey (NDCRS), the Historic American Building Survey (HABS), the Historic American Engineering Record (HAER), and the National Register of Historic Places (NRHP) in order to identify known cultural resources within the nine (9) sections that surround or contain the project site. The United States Army Corps of Engineers (ACOE) and Three Affiliated Tribes (TAT) were also consulted concerning the level that the project site can be considered "disturbed." The B&M report is attached.

At the conclusion of the Class I Literature Review, B&M determined that it was not anticipated that any known historical sites would be directly impacted by the proposed project. It was noted that the current agricultural land use does not typically preserve archaeological sites, however, significant features may exist below the plow zone. As a result, it was recommended that an archaeological monitor be present during initial ground disturbing activities, and that such activities be conducted in coordination with the TAT Historic Preservation Office. This recommendation will be incorporated into the construction plans and an archeological monitor retained for on-site inspections during the initial ground-disturbing activities across the footprint of the project area.

If you have any questions, or need additional information, please contact us at 763-315-4501.

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

Jeff Melby, P.E.
Vice President of Operations

Cc: Gabe Claypool - Dakota Plains Holdings, Inc.
Edmund Baker - TAT Environmental Division

Attachments

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

January 24, 2013

Jeff Towner
Chief of Ecological Services
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

**RE: Threatened and Endangered Species Review**
**Proposed Transload Facility**
**New Town, Mountrail County, North Dakota**
**Pinnacle Project Number: R012428.000**

Dear Mr. Towner:

Dakota Plains Transport Solutions, LLC, is proposing the construction of a transload facility near New Town in Mountrail County, North Dakota. The Site is located south of New Town, within the South ½ of the Northeast ¼ of Section 20, Township 152 North, Range 92 West, as reviewed on the New Town, North Dakota USGS quadrangle map (see attached maps). The project involves converting approximately 180 acres from agricultural production to a truck trans-loading station with a rail loop with the purpose of loading and unloading oil from trucks to trains.

Please comment on the likelihood of the proposed truck transfer station affecting listed threatened and endangered species in Mountrail County, North Dakota. If you have any questions or need additional information, please do not hesitate to contact me at (763) 277-8410 or sthelen@pineng.com.

Sincerely,

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

Pinnacle Engineering
Owning Challenges. Winning Trust.

11541 95th Avenue North
Minneapolis, MN 55369
Tel: 763-315-4501
Fax: 763-315-4507

January 24, 2013

Steven Dyke,
Conservation Supervisor
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

**RE: Threatened and Endangered Species Review**
**Proposed Transload Facility**
**New Town, Mountrail County, North Dakota**
**Pinnacle Project Number: R012428.000**

Dear Mr. Dyke:

Dakota Plains Transport Solutions, LLC, is proposing the construction of a transload facility near New Town in Mountrail County, North Dakota. The Site is located south of New Town, within the South ½ of the Northeast ¼ of Section 20, Township 152 North, Range 92 West, as reviewed on the New Town, North Dakota USGS quadrangle map (see attached maps). The project involves converting approximately 180 acres from agricultural production to a truck trans-loading station with a rail loop with the purpose of loading and unloading oil from trucks to trains.

Please comment on the likelihood of the proposed truck transfer station affecting listed threatened and endangered species in Mountrail County, North Dakota. If you have any questions or need additional information, please do not hesitate to contact me at (763) 277-8410 or sthelen@pineng.com.

Sincerely,

**PINNACLE ENGINEERING, INC.**

Scott Thelen
Senior Scientist

## Legend

Property Boundary

N

0 2,200 4,400

Feet

Property Boundary

New Town Transfer Facility
Dakota Plains Holdings, Inc.
New Town, North Dakota

Proj. No.: N012399.002
Date: 1/24/13
GIS Analyst: JAP
Reviewed By: ES

**Pinnacle Engineering**
11541 95th Avenue North
Minneapolis, Minnesota 55369
Tel: (763) 315-4501 Fax: (763) 315-4507

RECEIVED
MAR 18 2013

"VARIETY IN HUNTING AND FISHING"

**NORTH DAKOTA GAME AND FISH DEPARTMENT**

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

March 13, 2013

Scott Thelen
Senior Scientist
Pinnacle Engineering, Inc.
11541 95th Avenue North
Minneapolis, MN 55369

Dear Mr. Thelen:

RE: Proposed Rail Loop Crude Oil Loadout Facility
New Town, Mountrail County, North Dakota
Pinnacle Project Number: R012428.000

The North Dakota Game and Fish Department has reviewed this project for wildlife concerns. The National Wetland Inventory indicates various wetland areas within and adjacent to the proposed project area. We do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided any unavoidable destruction or degradation of wetland acres is mitigated in kind.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

**From:** Scott Thelen
**To:** Heidi Riddle
**Cc:** Jeff Melby
**Subject:** RE: Proposed Rail Loop Crude Loadout Facility
**Date:** Monday, March 18, 2013 4:37:58 PM
**Attachments:** image001.png

---

Hello Heidi:

In your email of March 18, you recommended that we make an assessment of any potential effects of the proposed Dakota Plains project on the Piping Plover, Interior Least Tern, and Pallid Sturgeon and critical habitat. This assessment should include potential direct and indirect effects.

Lake Sakakawea is designated critical habitat for the Piping Plover, Interior Least Tern, and Pallid Sturgeon. Lake Sakakawea is located approximately 1.5 miles to both the east and west of the site. The proposed project does not pose direct impacts to the aforementioned species. The uplands at the Site do not provide nesting habitat for the Piping Plover and Interior Least Tern. No Pallid Sturgeon habitat is found within the project area. No sparsely vegetated sand or gravel beaches, dredged materials, sand bars or gravel pits are located within or adjacent the project area. The project does not appear likely to result in a "take" of federally listed species or designated critical habitat.

Stormwater runoff from the project site will ultimately discharge to Lake Sakakawea. It should be noted that the construction plan includes the implementation of sedimentation ponds to address impacts associated with both construction and operations, and erosion control measures during construction, to greatly limit any impacts to Lake Sakakawea.

It should also be noted that a Facility Response Plan (FRP) and a Spill Prevention Control and Countermeasures Plan (SPCC) are being prepared for the facility. The plans are required because of the amount of oil that will be in storage at the proposed facility. The plans provide both preventive actions and also response actions in the event of regulated releases of oil. These plans assure that no direct or indirect impacts will occur to Lake Sakakawea due to planned operations at the site.

Pinnacle has received a letter from the North Dakota Game and Fish Department stating the they "*do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided any unavoidable destruction or degradation of the wetland acres is mitigated in kind.*" The project proposer's ACOE wetland discharge application offers wetland mitigation at a 2.75:1 mitigation to discharge ratio. Over 5 acres of wetlands will be created within the project area to compensate for the unavoidable wetland impacts.

Would you be able to send a letter or email similar to the ND G&F concerning the project?

Again, if you have any question, feel free to contact me.

Thanks,

Scott

**Scott Thelen, Senior Scientist**
Pinnacle Engineering, Inc.
11541 95th Avenue North, Minneapolis, MN 55369
763-277-8410 (direct) | 612-432-5590 (mobile) | 763-315-4507 (fax) | SThelen@pineng.com
Emergency Response Hotline: 1-866-658-8883
**Visit** www.pineng.com **-Environmental, Industrial and Renewable Energy**



---

**From:** Heidi Riddle [mailto:heidi_riddle@fws.gov]
**Sent:** Monday, March 18, 2013 9:08 AM
**To:** Scott Thelen
**Subject:** RE: Proposed Rail Loop Crude Loadout Facility

Hello Scott,

Thank you for the maps. I also received your response to my question about a federal nexus. Proponents without a federal nexus should make a determination as to whether the project is likely to result in "take" of a federally listed species or designated critical habitat. Lake Sakakawea is designated critical habitat for piping plovers, which means that the habitat is protected, as well as any individual plovers that may be there, in addition to interior least tern and pallid sturgeon. I recommend that you make an assessment of any potential effects of the proposed project on these species and critical habitat. This should include potential direct and indirect effects.

Feel free to contact me if you have any questions,
Heidi

---

**From:** Scott Thelen [mailto:sthelen@pineng.com]
**Sent:** Friday, March 15, 2013 10:49 AM
**To:** Heidi Riddle
**Subject:** RE: Proposed Rail Loop Crude Loadout Facility

Hello Heidi,

Yes there should have been maps attached. I have included them and the letter in this email. We have the T&E species list for Mountrail County, and used the IPaC to review the Site in relation to critical habitat. Currently, it appears that Lake Sakakawea has potential Piping Plover habitat. The Site itself has been in agricultural production for quite a while.

If you have any questions, feel free to contact me.

Thanks,

Scott

**Scott Thelen, Senior Scientist**
Pinnacle Engineering, Inc.
11541 95th Avenue North, Minneapolis, MN 55369
763-277-8410 (direct) | 612-432-5590 (mobile) | 763-315-4507 (fax) | SThelen@pineng.com
Emergency Response Hotline: 1-866-658-8883
**Visit www.pineng.com -Environmental, Industrial and Renewable Energy**



---

**From:** Heidi Riddle [mailto:heidi_riddle@fws.gov]
**Sent:** Friday, March 15, 2013 10:34 AM
**To:** Scott Thelen
**Subject:** Proposed Rail Loop Crude Loadout Facility

Mr. Thelen,

I am reviewing the subject-mentioned project, and your Feb. 12, 2013 letter refers to an attached map, but there is no map with your letter. Is this something that you can send via email?

Thank you,
Heidi

**Heidi Riddle**
Fish and Wildlife Biologist

U.S. Fish and Wildlife Service
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck ND 58501
Ph: 701.355.8503
Fax: 701.355.8513
Email: heidi_riddle@fws.gov

Bolton and Menk Class I Literature Review

**MANUSCRIPT DATA RECORD FORM**

1. Manuscript Number: [SHPO assigns]

2. SHPO Reference #:

3. Author(s): Austin Jenkins

4. Title: Class I Literature Review: Proposed Crude Oil Transload Facility, New Town, ND

5. Report Date: March, 2013

6. Number of Pages: 10

7. Type – I, T, E, O: O

8. Acres: 130 acres

9. Legal Location(s) (no quarter sections) with Historic Context Study Unit(s):
Consult the township tables in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, (SHSND 2008; available online at http://history.nd.gov/hp/hpforms.html) for Study Unit assignments.
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

| COUNTY | TWP RNG SEC | SU |
|---|---|---|
| Mountrail | 152N, 92W, SEC 20 | GA |

# Class I Literature Review: Proposed Crude Oil Transload Facility, New Town, ND

**Prepared for**

Pinnacle Engineering
Minneapolis, Minnesota

**Principal Investigator**

Dale Maul, MS

**Author**

Austin Jenkins

Prepared by:
Bolton & Menk, Inc.
12224 Nicollet Avenue
Burnsville, MN 55337

March, 2013

# TABLE OF CONTENTS



# LIST OF FIGURES

# INTRODUCTION

On March 7 and 8, 2013, Bolton & Menk, Inc. conducted a Class I Literature Review for Pinnacle Engineering, on behalf of Dakota Plains Holdings, Inc. (Dakota Plains). Dakota Plains proposes to construct a crude oil transload facility in New Town, Mountrail County, North Dakota. Ground disturbance and conspicuous elements related to the project include the following:

- A rail loop of approximately 1.5 miles in length
- Up to three 90,000-barrel oil storage tanks that are 28 feet in height
- Ten rail loadouts
- Truck access and parking
- Other associated infrastructure

The storage tanks, loadouts, truck access and parking are proposed to be located in the southeast quarter of the study area. The rail loop is proposed to run the perimeter of the study area.

The proposed development would take place over approximately 130 acres within the E¼ of the NW¼ and the NE¼ of Section 20, Township 152N, Range 92W. The study area is within the Garrison Study Unit (GSU; Gregg and Bleier 2008). Figure 1 depicts the project location.

The purpose of this report is to summarize past cultural resources investigations and previously identified archaeological, historical or architecture sites within the study area in order to inform future decision making in the review of an Environmental Protection Agency Storm Water Pollution Prevention Plan and a potential United States Army Corps of Engineers Clean Water Act Permit application.

# ENVIRONMENTAL SETTING

## CURRENT LAND USE

The study area is located just over one mile east of the artificially inundated Sanish Bay of Lake Sakakewea or the Garrison Reservoir. The study area (See Figure 2) is currently dominated by agricultural, row-crop land use, although a wetland is present within the southeast quarter of the study area. The study area is bound by a railroad switchyard to the north, a wastewater treatment facility to the west, New Town Municipal Airport to the south and College Drive/additional farmland to the east.

## LANDFORMS AND GEOGRAPHY

As indicated above, the study area is located within the GSU (Gregg and Bleier 2008).The natural geography of the GSU is characterized by dissected, undulating topography. Locally, features include floodplains; terraces; tributary streams; coulees; prairie potholes; and the Missouri River Trench (Gregg and Bleier 2008: 6.1). The raising of the Garrison reservoir inundated most of the Missouri River floodplains and many of the lower terraces within the GSU (Gregg and Bleier 2008: 6.1-6.6). While flooding the Garrison Reservoir had significant, conspicuous affects to the natural and cultural landscape, archaeological sites are found throughout all the landforms present in the GSU (Gregg and Bleier 2008: 6.7).

## FLORA AND FAUNA

Many game species were historically present within the GSU. Grasslands, floodplain forests and the

transitional zones between them provided food and habitat for several large- and medium-sized mammals that could easily be exploited by hunters (Gregg and Bleier 2008:6.7-6.8). The nearby, now flooded town of Sanish was the site of a known river crossing that was once used by migrating bison, indicating that the local area may have provided good hunting opportunity.

## OTHER KNOWN RESOURCES

The glacial till and bedrock within the GSU is known to contain types of stone that are culturally significant. These include several materials that are suitable for flintknapping, basalt, sandstone, limestone and pigments. According to the North Dakota Cultural Resources Survey (NDCRS) database, Knife River Flint is common among archaeological sites within the immediate vicinity.

## RESEARCH GOALS

This document intends to provide Pinnacle Engineering with a reliable estimate of known and potential cultural resources within the project area. Through conducting this literature review, specifically focusing on previous investigations and known resources within one mile surrounding the project area, we seek to provide a recommendation as to whether further cultural resources investigations may be needed.

## METHODOLOGY

During the week of March 8, 2013, background research was completed to identify archaeological, historical and architectural sites documented through 2013. This research included reviewing cultural resource reports, site forms, maps, and other available information within approximately one mile of the project area. The NDCRS database, Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) catalogue and the National Register of Historic Places (NRHP) database were queried for known archaeological, historical, and architectural sites within or near the project location. The *Archeological Component of the North Dakota Comprehensive Plan for Historic Preservation* was reviewed.

## EVALUATION OF RESEARCH

A total of 22 cultural resources review manuscripts are catalogued in the NDCRS as covering areas within the 9 Sections that surround and encompass the project area. As discussed further below, the 22 surveys have identified a total of 40 sites.

Five surveys have taken place adjacent to the project area. Those five were conducted between 2006 and 2011, but none has taken place within the project area itself. Given the high density of sites and the lack of a survey covering the project area, it is not unlikely that the absence of a known, inventoried site within the project area is due to a sampling bias/lack of survey.

## INVENTORY OF RESOURCES

The NDCRS query returned 40 sites within the nine Sections that surround and contain the project area. Table 1 lists their attributes. Figure 3 depicts the general locations of these resources.

**Table 1 – Known Cultural Resources**

| Site # | Location | | | Area of Significance | Context | Description | Update (Year) | NRHP Status |
|---|---|---|---|---|---|---|---|---|
| | T | R | Sect | | | | | |
| 32MN00325 | 152 | 92 | 18 | Architectural | Agriculture | Sheds, Barn, Shanty | 1985 | Ineligible |
| 32MN00326 | 152 | 92 | 18 | Architectural/Historical | Agriculture | Shed | 1985 | Ineligible |
| 32MN00327 | 152 | 92 | 18 | Architectural/Historical | Agriculture | House | 1985 | Ineligible |
| 32MN00328 | 152 | 92 | 18 | Architectural/Historical | Agriculture | Shed | 1985 | Ineligible |
| 32MN00402 | 152 | 92 | 18 | Archaeological | Archaic | CM Scatter | 1979 | Unevaluated |
| 32MN00659 | 152 | 92 | 16 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00660 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00661 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00662 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00663 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00664 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00665 | 152 | 92 | 17 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00666 | 152 | 92 | 18 | Architectural | Religious | Church | 1999 | Unevaluated |
| 32MN00704 | 152 | 92 | 18 | Architectural | Residential | House, Garage | 2005 | Unevaluated |
| 32MN00829 | 152 | 92 | 21 | Archaeological | Unknown | Cairn | 2010 | Unevaluated |
| 32MN00852 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2010 | Unevaluated |
| 32MN00853 | 152 | 92 | 16 | Archaeological | Unknown | Cairn, Stone Circle | 2010 | Unevaluated |
| 32MN00863 | 152 | 92 | 20, 29 | Architectural | Agriculture | Granary | 2010 | Ineligible |
| 32MN00911 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2011 | Unevaluated |
| 32MN00931 | 152 | 92 | 16 | Archaeological/Historical | Ranching | Glass, Metal, Depression, Foundation, Quarry | 2012 | Unevaluated |
| 32MN00932 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MN00949 | 152 | 92 | 16 | Archaeological | Unknown | Cairn | 2012 | Unevaluated |
| 32MN00950 | 152 | 92 | 16 | Archaeological | Unknown | Cairn | 2012 | Unevaluated |
| 32MN00954 | 152 | 92 | 18 | Historical | Bridges | Concrete | 2012 | Unevaluated |
| 32MN00991 | 152 | 92 | 16 | Historical | Agriculture | Glass, Masonry, Metal, Depression, Foundation | 2012 | Ineligible |
| 32MN00992 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MN00993 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MN00994 | 152 | 92 | 16 | Historical | Unknown | Glass, Metal, Rubber, Wood, Depression, Dump, Machinery | 2012 | Unevaluated |
| 32MN00995 | 152 | 92 | 16 | Architectural | Agriculture | Pump House | 2012 | Ineligible |
| 32MNX0103 | 152 | 92 | 17 | Architectural | Urban | House | 1996 | Unevaluated |
| 32MNX0740 | 152 | 92 | 18 | Archaeological | Unknown | Isolate | 1985 | Unevaluated |
| 32MNX0767 | 152 | 92 | 18 | Archaeological | Unknown | Isolate | 1989 | Ineligible |
| 32MNX0781 | 152 | 92 | 16 | Historical | Mining | Quarry | 1990 | Unevaluated |
| 32MNX0782 | 152 | 92 | 16 | Historical | Mining | Quarry | 1990 | Unevaluated |
| 32MNX0806 | 152 | 92 | 17 | Historical | Unknown | Poss. Sidewalk Segment | 1990 | Ineligible |
| 32MNX0807 | 152 | 92 | 17 | Historical | Unknown | Rock Alignment Segment | 1990 | Ineligible |
| 32MNX0826 | 152 | 92 | 17 | Archaeological | Unknown | Isolate | 1997 | Ineligible |
| 32MNX0870 | 152 | 92 | 16 | Archaeological | Unknown | Stone Circle | 2012 | Unevaluated |
| 32MNX0872 | 152 | 92 | 18 | Archaeological | Unknown | Isolate | 2012 | Unevaluated |
| 32MNX0884 | 152 | 92 | 16 | Archaeological | Unknown | Isolate | 2012 | Unevaluated |

Generally, the known sites that are present within the surrounding area include farmstead properties, quarries, churches, petroforms, and isolated lithic artifacts. Given the presence of these sites in the area, it is possible that other lithic isolates, lithic scatters, temporary camps, or petroforms may be present within the project area, which exhibits terrain that is consistent with landform choices for these properties. It is further possible that farmstead remains may be identified within the project area.

## STATEMENT OF IMPACTS

### POTENTIAL DIRECT IMPACTS

It is not anticipated that any known sites would be directly impacted by the proposed improvements. The proposed transload facility and associated rail loop does have potential to directly impact any currently unknown archaeological sites within the project area. The current land use does not typically preserve archaeological sites, however, significant, buried features may exist below the plowzone.

### POTENTIAL INDIRECT IMPACTS

Visual and auditory effects may be possible due to this project. Specific known sites that may be visually impacted include those from 32MN0659 through 32MN0666 and 32MNX0103. Sites 32MN0659 through 32MN0666 are religious facilities and 32MNX0103 is a house that was reportedly moved from Van Hook, presumably due to the flooding of the Garrison Reservoir. Religious facilities and objects that have been relocated from their original contexts are not commonly eligible for listing on the NRHP.

These visual and auditory effects are primarily related to the rail loop and its operation. These are anticipated to be similar to those related to the existing railroad. The parking area, loadouts and the storage tanks would have minimal visual impacts to known cultural resources, given the distance and other structures and elements on the landscape that should obfuscate these proposed improvements.

### PROPERTIES UNAFFECTED

Due to other conspicuous and obtrusive structures and terrain, other properties appearing in Table 1 are not anticipated to be affected by this project.

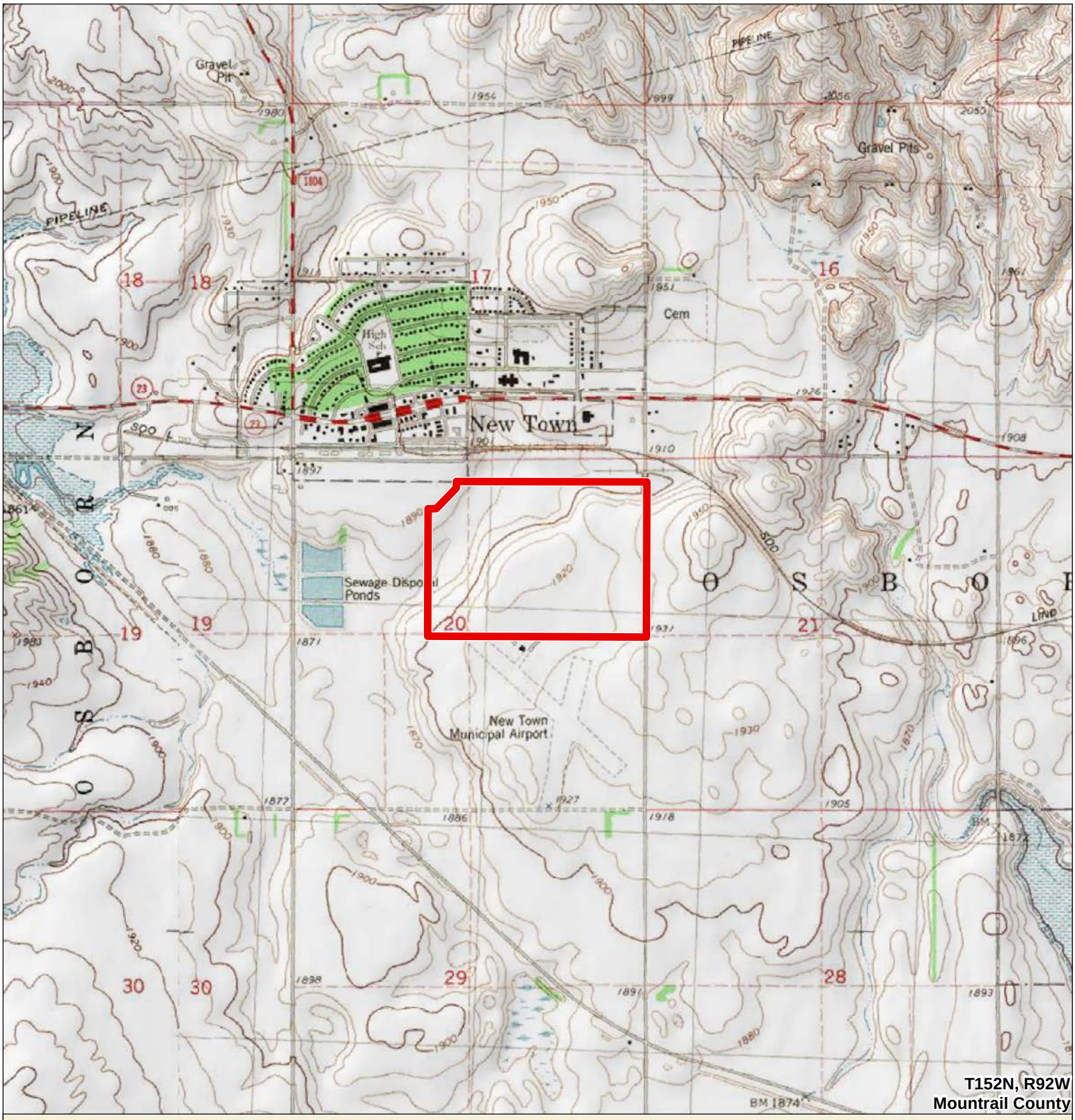
## RECOMMENDATIONS

Bolton & Menk, Inc. recommends that an archaeological monitor be present during initial ground-disturbing activities within the project limits. Such efforts should be conducted in coordination with the Mandan, Hidatsa and Arikara Nation Tribal Historic Preservation Office.

## REFERENCES

Gregg, Michael L. and Amy Bleier
2008 The GSU. In *Archeological Component of the North Dakota Comprehensive Plan for Historic Preservation*, edited by Michael L. Gregg and Fern Swenson, pp. 6.1 – 6.79. State Historical Society of North Dakota.

# APPENDIX – Figures




0 2,000 Feet

**DAKOTA PLAINS HOLDINGS, INC.**

**Crude Oil Transload Facility**
**Class I Cultural Resources Review**

**USGS Location**

**Figure 1**

March, 2013

**Legend**

Proposed Project Location

Source: NDGIS, USGS Topo Quads - Sanish and New Town

Map Document: C:\Users\austinje\Desktop\T42106267\ArcView\Maps\106267 USGS Location 8x11.mxd
Date Saved: 3/8/2013 2:00:37 PM

0 800 Feet

**DAKOTA PLAINS HOLDINGS, INC.**

**Crude Oil Transload Facility**
**Class I Cultural Resources Review**

**2012 Aerial Photograph**

**Figure 2**

March, 2013

**Legend**

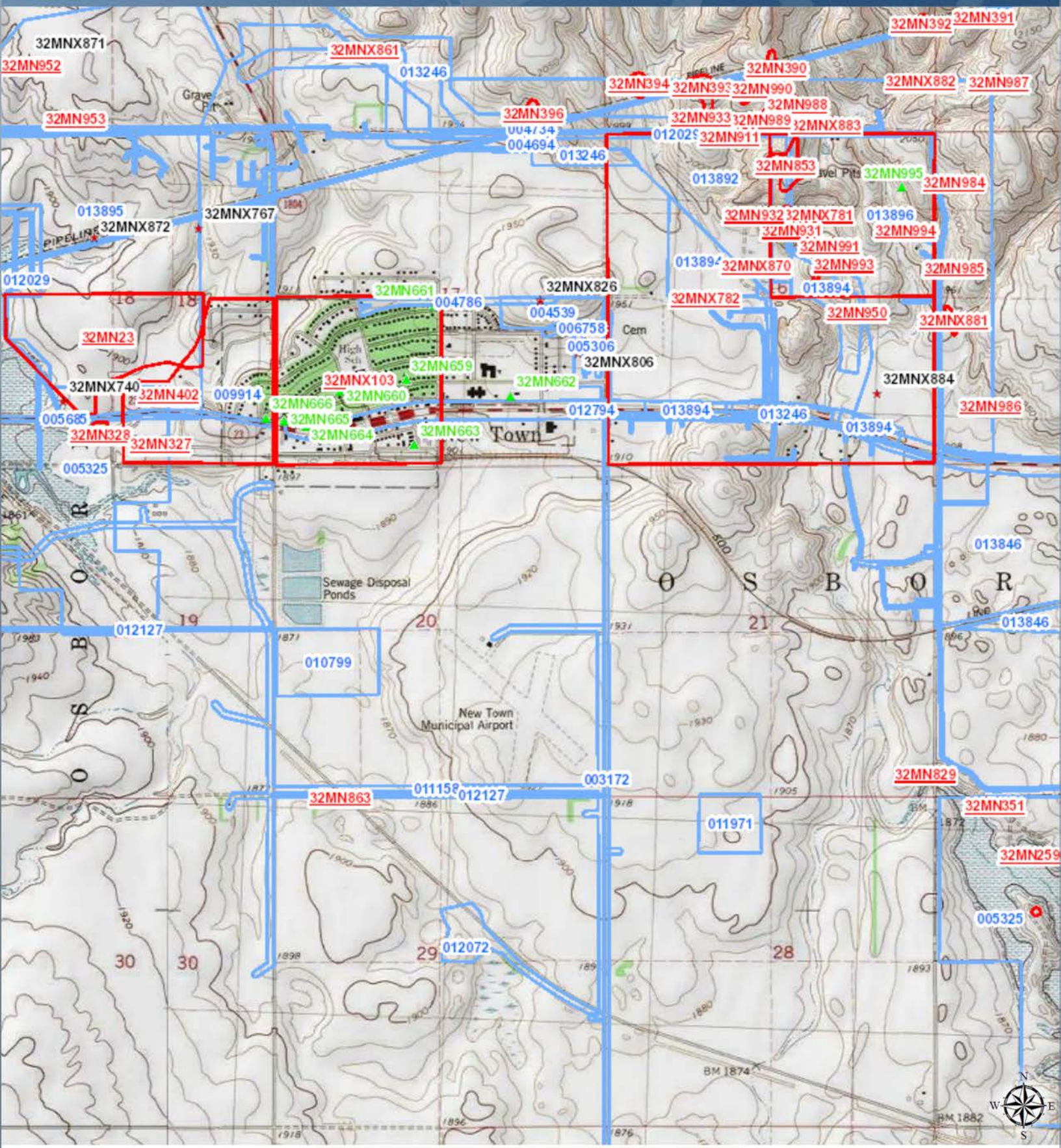
Proposed Project Location

Source: NDGIS, FSA

Map Document: C:\Users\austinje\Desktop\T42106267\ArcView\Maps\106267 Existing Conditions 8x11.mxd
Date Saved: 3/8/2013 2:02:15 PM

STATE HISTORICAL SOCIETY
OF NORTH DAKOTA

# Figure 3 - Known Cultural Resources




## Legend

- NDCRS Architecture
- NDCRS Isolates
- AHP Manuscripts
- NDCRS Sites and Leads

SUBMITTED ELECTRONICALLY VIA EMAIL TO: R8airpermitting@epa.gov

February 25, 2013

Federal Minor NSR Permit Coordinator
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202-1129

RE: Request to Reopen, Revise, and Reissue Synthetic Minor NSR Permit to Construct
Permit Number SMNSR-TAT-000285-2012.001
Dakota Plains, Inc. – New Town Transfer Facility
New Town, North Dakota

Dear Permit Coordinator:

Dakota Plains, Inc. is the named permittee of a Synthetic Minor NSR Permit to Construct (Permit # SMNSR-TAT-000285-2012.001) for the modification of the New Town Transfer Facility located in New Town, North Dakota. This permit was sought to avoid Title V operating permit requirements for the existing facility in New Town, North Dakota. On August 31, 2011 the federal minor source new source review (NSR) program became effective for sources in Indian country for the first time. Dakota Plains applied for and received a synthetic minor source permit to restrict potential emissions in line with historical actual emissions.

On March 22, 2012, Dakota Plains, Inc. merged into Dakota Plains Holdings, Inc. (Dakota Plains Holdings). As a result of the merger, the name of the permittee changed to Dakota Plains Holdings. For ease of reference, we refer here to Dakota Plains Holdings and Dakota Plains Inc. collectively as Dakota Plains Holdings, since the latter entity is now the permittee.

Dakota Plains Transloading, LLC (DPT) is a wholly owned subsidiary of Dakota Plains Holdings that was formed to participate in the ownership and operation of the Facility that is permitted under the Synthetic Minor NSR Permit to Construct. DPT owns 50% of Dakota Petroleum Transport Solutions, LLC (DPTS), a joint venture. The joint venture was formed to engage in the construction and operation of the Facility. The property is owned by Dakota Plains Holdings.

Dakota Plains Holdings, as the current permittee, the owner of the property on which the transloading facility and related emitting equipment exists, and the entity that owns and controls DPT, which participates in the management and operation of the facility through its 50% interest in DPTS, is requesting that U.S. EPA reopen, revise and reissue Permit Number SMNSR-TAT-000285-2012.001 pursuant to II.A.11 of the referenced permit and 40 CFR §49.155(a)(7)(iv) based on changed circumstances and because the proposed modifications will not increase emissions above those levels already permittted. Dakota Plains Holdings desires to remain regulated under the Synthetic Minor NSR program. Attached is the application with supporting documents.

The referenced permit became effective on September 20, 2012. In December of 2012 and January 2013, Dakota Plains Holdings was able to buy two contiguous properties to the south totaling approximately 125 acres. With this additional property, a loop track and crude oil storage and direct railcar loadout facility was possible for the first time. Dakota Plains Holdings desires to expand the

current operations and to move away from the current portable transloading equipment to stationary loading stations. The construction of the loop track and loadout building will make the existing ladder tracks available to handle inbound freight and commodities.

Revising the permit to allow for these changes provides the following improvements:

- The implementation of stationary railcar loading equipment and a flare allows for a significant reduction in volatile organic compound (VOC) emissions - approximately 90% reduction over transloading on a loaded barrel to barrel comparison basis.
- The stationary railcar loading equipment will be housed in a building which provides for a better work environment.
- The proposed facility can be served by pipeline which will significantly reduce truck traffic in the area of the facility.

Dakota Plains proposes to reopen and revise the current permit as follows:

- The addition of two new 90,000 barrel capacity oil storage tanks.
- The addition of ten new stationary railcar loading stations.
- The inclusion of diesel fuel rail-to-truck transloading operations.
- The inclusion of sand and other bulk solid commodities rail-to-truck transloading operations.
- The inclusion of other rail-to-truck transloading of other solid products (such as lumber, pipe, and other palletized products).

With these proposed revisions the permit for the Dakota Plains facility will contain:

- Three 90,000 barrel capacity crude oil storage tanks.
- Ten stationary truck unloading stations—to fill the storage tanks.
- Ten stationary railcar loading stations—empties the storage tanks.
- One flare to control emissions from the railcar loading stations.
- Six portable conveyors to unload bulk aggregate materials from railcars.
- A bulk aggregate handling and storage system consisting of six silos.

Dakota Plains Holdings will operate under the current permit until receipt of the revised permit to construct.

It is Dakota Plains' desire to begin operation of the proposed facility in November 2013. Thus, time is of the essence to complete construction by that time. If you have any questions, or require additional information, please do not hesitate to contact me at (952) 473-9950 or by email at gclaypool@dakotaplains.com. We appreciate your consideration in this important matter.

Best Regards,

Gabe Claypool
President & Chief Operating Officer
Dakota Plains Holdings, Inc.

Cc: Tribal Environmental Contact

Mr. Edmund Fox
Fort Berthold Indian Reservation
TAT Tribal Administration Building
404 Frontage Road
New Town, ND 58763

Enc: Synthetic Minor NSR Permit to Construct Application

# Synthetic Minor New Source Review Permit to Construct Application

**Prepared For:**

Dakota Plains Holdings, Inc.
New Town Transfer Facility
3895 88th Avenue NW
New Town, ND

**Date:**

February 25, 2013

**Pinnacle Engineering, Inc.**
**11541 95th Avenue North**
**Minneapolis, Minnesota 55369**

Rochester, MN | Minot, ND | Omaha, NE

Pinnacle Engineering
Owning Challenges. Winning Trust.

# Synthetic Minor New Source Review
# Permit to Construct Application

Dakota Plains Holdings, Inc.
New Town Transfer Facility
3895 88th Avenue NW
New Town, North Dakota

Prepared for:

Dakota Plains Holdings, Inc.
294 Grove Lane East
Wayazata, Minnesota 55391

Prepared by:

Pinnacle Engineering, Inc.
11541 95th Avenue North
Minneapolis, MN 55369

**February 25, 2013**

## TABLE OF CONTENTS



## LIST OF APPENDICES

## 1.0 Introduction

Dakota Plains, Inc. is the named permittee of a Synthetic Minor NSR Permit to Construct (Permit # SMNSR-TAT-000285-2012.001) for the modification of the New Town Transfer Facility located in New Town, North Dakota. This permit was sought to avoid Title V operating permit requirements for the existing facility in New Town, North Dakota. On August 31, 2011 the federal minor source new source review (NSR) program became effective for sources in Indian country for the first time. Dakota Plains applied for and received a synthetic minor source permit to restrict potential emissions in line with historical actual emissions.

The New Town Transfer Facility ("Facility") is a truck-to-rail crude oil transloading operation, currently located along the Canadian Pacific railway, 3895 88th Avenue Northwest, New Town, Mountrail County, North Dakota on Fee Simple land within the exterior boundaries of the Fort Berthold Indian reservation. The reservation is home to the Mandan, Hidatsa, and Arikara Nation (MHA Nation), also known as the Three Affiliated Tribes (TAT).

On March 22, 2012, Dakota Plains, Inc. merged into Dakota Plains Holdings, Inc. (Dakota Plains Holdings). As a result of the merger, the name of the permittee changed to Dakota Plains Holdings. For ease of reference, we refer here to Dakota Plains Holdings and Dakota Plains Inc. collectively as Dakota Plains Holdings, since the latter entity is now the permittee.

Dakota Plains Transloading, LLC (DPT) is a wholly owned subsidiary of Dakota Plains Holdings that was formed to participate in the ownership and operation of the Facility that is permitted under the Synthetic Minor NSR Permit to Construct. DPT owns 50% of Dakota Petroleum Transport Solutions, LLC (DPTS), a joint venture. The joint venture was formed to engage in the construction and operation of the Facility. The property is owned by Dakota Plains Holdings.

Dakota Plains Holdings, as the current permittee ("Permittee"), the owner of the property on which the transloading facility and related emitting equipment exists, and the entity that owns and controls DPT, which participates in the management and operation of the facility through its 50% interest in DPTS, requests that EPA reopen and revise the permit for reissuance based on changed circumstances and because the proposed modifications will not increase emissions above those levels already permitted.

The Facility receives crude oil from production wells in the nearby Bakken Shale formation. At the well site, crude oil is transferred into tank trucks for transportation to the Facility where it is then submerged loaded into railcars. The Facility currently consists of approximately 2,450 feet of rail with four rail spurs capable of accommodating a total of 160 rail tank cars. The Facility is currently only engaged in the transloading and distribution of crude oil.

With prior permit applications, Permittee has been responding to changing regulations with respect to sources in Indian country. Previous applications were focused on maintaining compliance with environmental regulations with current transloading operations that occur on four ladder tracks each approximately 2,400 feet in length. All the loading activities discussed in previous application would occur on these ladder tracks. After the permit was issued approximately 125 acres to the south of the original facility became available for purchase and were acquired. With the addition of these new properties, Permittee is proposing to construct an approximately 9,000 foot double loop track that can accommodate longer trains with stationary oil loading equipment and onsite bulk oil storage.

The implementation of the storage tanks, stationary loading equipment, and a flare allows for a significant reduction in volatile organic compound (VOC) emissions (approximately 90% reduction per barrel of oil

loaded as compared to transloading), the stationary loading equipment will be housed in a building which provides for a better work environment, and the storage tanks can be served by pipeline which will significantly reduce truck traffic in the area of the facility.

## 1.1 Application Procedure

The stationary equipment permitted in the issued permit has not been constructed. For this reason, the proposed changes do not fit the definition of a "modification" under §49.152. Consequently, the Permittee is requesting to reopen and revise the permit for reissuance in accordance with Permit Condition II.A.11 and 40 CFR 49.155(a)(7)(iv).

## 1.2 Application Content

The Permittee is submitting this application to reopen and revise its synthetic minor source permit to construct under the minor NSR Federal Implantation Plan (FIP) for sources in Indian country (§49.151-49.161). This document and its appendices constitute an application to revise a new synthetic minor source under 40 CFR 49.155(a)(7)(iv). However, the application contains all the information required for a complete new application in accordance with §49.154.

In order to avoid the requirements of Title V and PSD, the Permittee is proposing to remain a synthetic minor source and limit potential VOC emissions below the major source thresholds by utilizing submerged loading, flaring emissions, vapor balance controls, and operating limitation.

Components of an administratively complete application include, but are not limited to:

- A description of the processes;
- A description of all emissions of regulated air pollutants;
- A description of proposed limitations and the effect of the limitations on potential-to-emit;
- A description of existing and new equipment;
- A discussion of applicable requirements, or exemptions from otherwise applicable requirements; and
- Completed permit application forms and supplementary material.

This application is organized into five sections with four appendices:

- Section 1 provides relevant applicant information and the application purpose;
- Section 2 describes the proposed changes and current processes, along with emission caps and operating limits to avoid Title V requirements;
- Section 3 discusses the Facility source category, classification with respect to Title V operating permit program, NSR and hazardous air pollutants;
- Section 4 provides a summary of potential and actual emissions from the facility including enforceable operating limitations;
- Section 5 includes completed applicable forms (Form NEW and SYMIN)

The appendices include:

- Appendix A contains detailed potential and actual emission calculations and a description of how they are calculated;
- Appendix B contains a process flow diagram that shows how the materials will be unloaded, loaded, and transferred between vessels;
- Appendix C contains a site location map and a proposed facility layout depicting the location of existing and proposed equipment;
- Appendix D contains a copy of the current permit.

# 2.0 Project Description

The Permittee was issued a synthetic minor New Source Review (NSR) permit to construct for the Facility on September 20, 2012. This permit (#SMNSR-TAT-000285-21012.001) includes approval to construct a 90,000 barrel (bbl) crude oil storage tank along with various loading and transloading stations. The current permit limits volatile organic compounds (VOC) emissions to 97.0 tons per year through the use of vapor balancing techniques and emission control equipment. The transloading oil throughput is limited to 17,000,000 bbls and the oil throughput to the 90,000 bbl tank is limited to 5,000,000 bbls in any 12-month period. Additionally, the current permit requires the oil transferred to the storage tank via truck be transferred out of the tank to a truck prior to transloading the oil to railcars. There is no mechanism, in the current permit, to load railcars directly from the storage tank.

After receipt of the original synthetic minor permit, approximately 125 acres of contiguous land just south of the existing facility became available and were acquired. A site layout depicting the existing facility and the proposed facility is contained in Appendix C. With this additional property a larger facility was possible for the first time. The Permittee proposes to expand the Facility operations and move away from the currently used portable transloading equipment to stationary loading stations.

The Permittee proposes to reopen and revise the current permit for the Facility as follows:

- The addition of two new 90,000 barrel capacity oil storage tanks;
- The addition of ten new stationary railcar loading stations;
- The inclusion of diesel fuel rail-to-truck transloading operations;
- The inclusion of sand and other bulk solid commodities rail-to-truck transloading operations;
- The inclusion of other rail-to-truck transloading of other solid products (such as lumber, pipe, and other palletized products); and

With these proposed revisions the permit for the Facility will contain:

- Three 90,000 barrel capacity crude oil storage tanks;
- Ten stationary truck unloading stations—to fill the storage tanks;
- Ten stationary railcar loading stations—empties the storage tanks;
- One flare to control emissions from the railcar loading stations;
- Six portable conveyors to unload bulk aggregate materials from railcars;
- A bulk aggregate handling and storage system consisting of six silos;

The Permittee will continue to comply with the provisions of the current permit through construction of the proposed facility. The proposed facility represents a reduction of VOC emissions on a per barrel loaded basis. The proposed stationary equipment and buildings represent an improvement in employee safety and environmental controls.

## 2.1 Process Description

The Permittee is proposing to diversify the Facility to include additional products in addition to crude oil. This process description section is divided into several sections to cover the current oil loading operations and each additional material or operation.

### 2.1.1 Current Operations

Currently crude oil is collected in tanker trucks from the local Bakken production fields. These tanker trucks bring the crude oil to the Facility where it is loaded directly onto railcars via portable pumping

equipment or using pumps located on each truck. The transloading operations occur on four approximately 2,450 foot ladder tracks. The tanker truck pull alongside stationary railcars to conduct loading activities along the 2,450 foot siding. The current issued permit also includes a 90,000 barrel tank to serve as temporary storage for crude oil, ten truck stations that would serve to fill and empty the tank, a closed vent system for capturing VOCs during the loading of oil from the tank to trucks, and an enclosed combustion device (flare) for treating VOCs. The storage tank, the truck transfer stations, and the flare have not been constructed.

### 2.1.2 Proposed Crude Oil Loading

The Permittee proposes to change the transfer methodology at the Facility from a direct truck to rail model to operate more like a terminal with significant onsite storage. The Facility proposes to add additional crude oil storage and load railcars with crude oil directly from the storage tanks through fixed loading arms. A process flow diagram is contained in Appendix B. Once constructed, this change will confine loading and unloading operations to fixed areas as depicted in the proposed site layout contained in Appendix C.

After construction of the proposed equipment, crude oil will be brought onsite via tanker truck and/or via pipeline. This crude oil will be stored in one of three 90,000 barrel capacity internal floating roof tanks. The oil will be then be transferred into railcars for shipment offsite.

The Permittee proposes to construct ten stationary high-speed rail loading stations. These ten loading stations will be capable of simultaneously loading ten railcars with a loading rate of 700 gallons per minute each from one of three oil storage tanks. Submerged loading will be utilized and the currently permitted flare will be used to control VOC emissions from the loadout operations. Additionally, in order to avoid Title V operating permit requirements, the Permittee is proposing to limit crude oil railcar loading to 32,850,000 barrels per 12-month consecutive period (approximately 90,000 barrels per day).

The three storage tanks will be filled from ten truck unloading stations or from five pipeline transfer stations. The truck transfer stations will be operated so that no VOC emissions will occur from the trucks. As the tanker truck empties, atmospheric air will replace the oil inside the tanker truck. Similarly, the pipeline transfer stations will be operated without VOC emissions. No equipment to transfer oil from the storage tanks to tanker trucks will be constructed. Once the oil is in the storage tanks, the only pathway out of the tank is to load the oil onto railcars. As a backup operation scenario, in the event that the storage tank-to-railcar transfer equipment is unavailable for an extended period of time, the Permittee is proposing an enforceable permit limit for direct tanker truck to railcar transloading of 5,475,000 barrels per 12-month consecutive period. This operational scenario is only intended as an emergency backup. However, in order to be conservative, emissions are calculated including both limits in the same 12-month period. The above process is illustrated in a block process flow diagram contained in Appendix B.

Since it will take significant time to construct the proposed stationary equipment after issuance of the revised permit, the Permittee proposes to continue transloading operations in accordance with all the provisions of the permit (#SMNSR-TAT-000285-2012.001) as currently issued through construction. The Permittee proposes to comply with the 17,000,000 barrel per year transload limit and 97 ton per year VOC emissions limit. The Permittee currently calculates emissions on a monthly basis in order to demonstrate compliance with the facility emission limit. The Permittee proposes to continue this practice through construction activities. Upon completion of the new equipment, the Permittee will provide appropriate notifications in accordance with Permit Condition II.A.19 prior to the start of operations. The Facility will track and calculate actual emissions to ensure compliance with emission limitations through the startup of the new stationary equipment.

Facility will track and calculate actual emissions to ensure compliance with emission limitations through the startup of the new stationary equipment.

### 2.1.3 Diesel fuel

With the construction of the loop track, the existing four ladder tracks become available for the inbound transportation of other commodities. The Permittee proposes to use two portable transload stations to transfer diesel fuel from railcars to trucks for distribution to local markets. These inbound transportation operations will occur on the four existing ladder tracks once the oil operations have been moved to the new loop system. Using the physical properties of diesel fuel and equations from AP-42, the expected emissions from the diesel fuel transfer are very low. If both transfer stations were in operation 24 hours per day 365 days per year the potential VOC emissions are approximately 0.31 tons of VOC per year. For this reason, the Permittee is not requesting an enforceable throughput limit for diesel transloading. However, with current market conditions, the Facility expects to transload less than 5,000 barrels per day of diesel fuel.

### 2.1.4 Sand, Salt, Proppant, Bulk Aggregate Products

The Permittee proposes to use up to six portable belt conveyors, driven by an electric motor, to transfer bulk aggregate commodities such as sand and other aggregates from railcars to trucks on the four ladder siding tracks. As much as possible these bulk commodities will be transferred from railcars directly to trucks for immediate local distribution. However, the Permittee is proposing to construct six 10,000 cubic foot silos. These six silos will be capable of storing approximately 500 tons of sand each with a total sand storage of approximately 3,000 tons. Sand and other bulk aggregate commodities will be unloaded from the railcars to trucks using portable conveyors. The trucks will the move the product to the onsite storage silos for final loading onto trucks for local distribution. A block process flow diagram included in Appendix B.

These aggregate commodities will be delivered to local markets. The transfer conveyors are enclosed and include a 99% efficient dust collector. Each storage silo will include dust control equipment. The included potential to emit calculations assume that all the bulk aggregate materials will be handled three times—railcar to truck; truck to storage; storage to truck. Each of the six portable conveyors that will unload the railcars is capable of moving 250 tons per hour. The theoretical maximum material throughput from all six conveyors is 13,140,000 tons per year. Using this theoretical throughput, maximum potential particulate emissions amount to approximately 17 tons per year. Because the maximum potential to emit from the bulk aggregate transfer equipment is below Title V thresholds, the Permittee is not proposing any enforceable throughput limits for these activities.

### 2.1.5 Solid Commodities

The Permittee is exploring the possibility of using the rail infrastructure to bring in solid and palletized commodities needed in the growing New Town community. These commodities might include lumber, pipe, and other products confined to pallets or totes. The emissions from these activities would be limited to fugitive dust emissions from truck traffic on unpaved road surfaces.

### 2.1.6 Proposed Limits

In order to avoid Title V applicability and PSD, the Permittee is proposing throughput and emissions limits as summarized in Table 2-1 below.

Table 2-1 Proposed Enforceable Permit Limits

| Process or Activity | Proposed Limit |
|---|---|
| Crude Oil Loadout (from tank to railcar) | 32,850,000 barrels per year |
| Crude Oil Transload (from truck to railcar) | 5,475,000 barrels per year |
| Total Facility | 97 Tons VOC emissions per year |

## 2.2 Source Description

Pollutant emitting activities at the facility include evaporative losses of organic vapors from loading crude oil onto railcars, crude oil truck-to-rail transloading operations. Particulate matter emission sources include bulk aggregate rail-to-truck transloading operations and fugitive dust from truck traffic on unpaved road surfaces. Transloading and related operations take place on property owned by the Permittee, and all pollutant emitting activities are under common control. The majority of pollutant emitting activities at the Facility are associated with the distribution of crude oil, which can be categorized under Major Group 51 of the Standard Industrial Classification (SIC) Code, Wholesale Trade non-Durable Goods. Specifically, the Facility's operations are classified under SIC 5171, Petroleum and Petroleum Products Wholesalers. The equivalent North American Industry Classification System (NAICS) Code is 424710, Petroleum and Petroleum Products Merchant Wholesalers.

## 3.0 Regulatory Applicability

The Facility is located in Mountrail County on Fee Simple land within the exterior boundaries of the Fort Berthold Indian reservation. Because of this location within the Indian reservation, the State of North Dakota does not have authority to implement New Source Review (NSR). A review of federal air quality regulations is described in the following sections. The applicable rules remain unchanged from the previous application. The previously applicable rules still apply with the proposed revisions.

Table 3-1 Regulatory Applicability Summary

| Program Description | Regulatory Citation | Applicable |
|---|---|---|
| National Ambient Air Quality Standards (NAAQS) | 40 CFR Part 50 | NO |
| New Source Review (NSR) | 40 CFR Part 52 | NO |
| New Source Performance Standards (NSPS)<br>Subpart A<br>Subpart Kb | 40 CFR Part 60 | YES |
| Acid Rain Requirements | 40 CFR Part 72 | NO |
| Stratospheric Ozone Protection Requirements | 40 CFR Part 82 | NO |
| Risk Management Programs For Chemical Accidental Release Prevention | 40 CFR Part 68 | NO |
| Title V Operating Permit | 40 CFR Part 71 | NO |
| National Emission Standards for Hazardous | 40 CFR Part 61 | NO |
| Air Pollutants (NESHAPs) | 40 CFR Part 63 | NO |
| Endangered Species Act | - | YES |
| National Historic Preservation Act | - | YES |

### 3.1 National Ambient Air Quality Standards (NAAQS)

The Facility is located in a rural area of Mountrail County, North Dakota. The county is in attainment or unclassified for all national ambient air quality standards.

The National Ambient Air Quality Standards (NAAQS) are identified in 40 CFR Part 50. Primary NAAQS define levels of air quality, which the United States Environmental Protection Agency (USEPA) deems necessary to protect the public health. Secondary NAAQS define levels of air quality, which the USEPA judges necessary to protect the welfare from any known, or anticipated adverse effects of a pollutant. Examples of protective public welfare include wildlife, buildings, national monuments, vegetation, visibility, and property value degradation caused by air pollution.

For non-PSD permit applicants, an air quality impacts analysis (i.e., ambient air dispersion modeling) may be required at the discretion of the EPA when there is reason to be concerned that new or modified minor sources, or minor modifications at major sources, would cause or contribute to a violation of the NAAQS or PSD increments. In the current permit, EPA determined that dispersion modeling was not required. No risk of significant deterioration of the ambient air quality from this revise/reopen action is anticipated and a formal air quality impacts analysis is not needed at this time.

### 3.2 New Source Review (NSR) Requirements

The Facility is in an attainment or unclassified area for all criteria pollutants. Emissions from a new source in an attainment area must be reviewed for applicability under 40 CFR § 52.21 "Prevention of Significant Deterioration of Air Quality" (PSD rule). NSR requirements apply to: (1) a new major source

that has the potential to emit 100 tpy or more for any criteria pollutant for a facility that is one of the 28 industrial source categories listed in 40 CFR § 52.21(b)(1)(i)(a); or (2) a new major source that has the potential to emit 250 tpy if the facility is not on the list of industrial source categories; or (3) a modified existing major source that exceeds a PSD significant emission rate as specified in 40 CFR § 52.21 (b)(23)(i) or (4) a modification to an existing minor source that is major in itself.

Section 4.0 contains a summary of the proposed facility's potential-to-emit. Since the proposed total oil storage capacity will be less than 300,000 barrel, the proposed Facility is not one of the listed industrial categories and fugitive emissions are not required to be included in the determination of major source applicability. Therefore, the NSR major source potential to emit threshold is 250 tpy for each criteria pollutant. The proposed Facility's potential emissions are below major source thresholds. As a result the proposed Facility remains a minor source with respect to NSR.

## 3.3 New Source Performance Standards (NSPS)

New Source Performance Standards (NSPS), 40 CFR Part 60, are applicable to any new, modified, or reconstructed stationary sources that meet or exceed specified applicability thresholds. The Permittee is proposing to construct a total of three above ground storage tanks with internal floating roofs subject to 40 CFR Part 60.110b (Subpart Kb). The permitted closed vent and flare system is subject to 40 CFR 60.18 (Subpart A).

## 3.4 Acid Rain

The acid rain requirements in the Clean Air Act (CAA) are not applicable to the Facility. The requirements are applicable to utilities and other facilities that combust fossil fuel (mainly coal) and generate electricity for wholesale or retail sale. The Facility will not combust fossil fuels for the purpose of generating electricity for wholesale or retail sale. Also, the Facility is not listed as a regulated fossil fuel burning unit and the Facility is not required to obtain an acid rain permit in accordance with 40 CFR Part 72.

## 3.5 Stratospheric Ozone Protection

Protection of the stratospheric ozone layer was promulgated as part of the CAA Amendment. Sections 601-618 limit activities that deplete stratospheric ozone. The stratospheric ozone protection requirements do not apply to this facility.

## 3.6 Risk Management Programs for Chemical Accidental Release Prevention

The Risk Management Program (RMP) applies to facilities that produce, process, store, or use any regulated toxic substance in excess of the thresholds listed in 40 CFR § 68.130. The Facility is not subject to the Chemical Accidental Release Prevention Program, since crude oil is specifically exempted. The prevention program requires certain facilities to develop and implement RMPs. The Facility will not produce, process, store, or use any regulated toxic substances in excess of the applicable thresholds.

## 3.7 Title V Operating Permit

40 CFR Part 71 created federal operating permit requirements. These requirements determine that a source is classified as major if the potential to emit of any single criteria pollutant is greater than 100 tpy. Major sources are required to obtain a federal Title V operating permit. Because the Facility is located on

the Fort Berthold Indian reservation, the Facility is outside the delegated authority of the North Dakota Department of Health and Environment and not subject to 40 CFR Part 70.

The proposed Facility has a potential to emit less than 100 tpy for all criteria pollutants based on the enforceable proposed throughput limits. Title V Operating Permit (40 CFR Part 71) requirements do not apply to this proposed Facility.

## 3.8 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

40 CFR 61 and 40 CFR 63 define source categories that emit hazardous air pollutants (HAPs) above and below NSR/PSD major source thresholds. The major source threshold is 10 tpy for any one single HAP or 25 tpy for all combined HAP emissions. Sources that are below the major source thresholds are defined as area sources. Currently there are no source categories in Part 61 or Part 63 applicable to this type of source.

## 3.9 Endangered Species Act

The Endangered Species Act (ESA) requires the EPA and other federal agencies, in consultation with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, to ensure that actions authorized by the agency are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. The law also prohibits any action that causes a "taking" of any listed species of endangered fish or wildlife. A search of the FWS threatened and endangered species database revealed that Mountrail County has occurrences of the Gray Wolf (Canis lupus), Interior Least Tern (Sternula antillarum), Pallid Sturgeon (Scaphirhynchus albus), Whooping Crane (Grus americana) as endangered species. The Piping Plover (Charadrius melodus) is listed as threatened in Mountrail County. Additionally, the Dakota Skipper (Hesperia dactoae) and Sprague's Pipit (Anthus spragueii) are listed in the database as proposed candidate species for threatened or endangered status.

Only the Piping Plover, a small shorebird, has critical habitat designated within the county. Piping Plovers nest during the spring and summer months on the shores of rivers and lakes in the Northern Great Plains prior to migrating to the Gulf Coast. In Mountrail Country, this critical habit is primarily lakeshore and wetland areas north of Stanley and along the border with Ward County to the east. The nearest listed Piping Plover critical habitat to the Facility is approximately 35 miles to the east in adjacent Ward County (Ward 8, Orlein WPA). Additional Piping Plover listed critical habitat is approximately 40 miles north of the Facility in Mountrail County (Mountrail 8, Palermo SW).

The Facility is located within New Town, North Dakota City limits, adjacent to the New Town Municipal Airport. Because of the location and nature of the facility's operations, the Facility does not have the potential to jeopardize the continued existence or adversely affect critical habitat for any of the listed species.

## 3.10 National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires EPA and other federal agencies to afford the Advisory Council on Historic Preservation an opportunity to comment on the effect that proposed actions might have on properties that are on or eligible for the National Register of Historic Places. The National Register of Historic Places is made up of districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. To be eligible the entry must be 50 years old, retain its integrity, and be associated with historical events, associated with the lives of historical figures, be representative of distinctive characteristics of a type, period, or method

of construction, or have high artistic value, have yielded or likely to yield important prehistoric information, or are places of traditional cultural importance.

The National Register of Historic Places maintained by the National Park Service lists three historical places in Mountrail County, North Dakota. The three places are the Mountrail County Courthouse, The Great North Railway Underpass, and Evans Site.

### 3.10.1 Mountrail County Courthouse

The Mountrail County Courthouse is located on North Main Street in Stanley, North Dakota. This project will have no effect on this listed site.

### 3.10.2 The Great North Railway Underpass

The Great North Railway Underpass is a railway bridge that crosses over North Dakota Highway 8 at the north end of Stanley, North Dakota. This project will have no effect on this listed site.

### 3.10.3 Evans Site

Evans Site is a camping site with prehistoric, archeological significance. The address is restricted in the national registry. Even though the site is listed in the vicinity of New Town, North Dakota, the Dakota Plains facility is proposed to be located in a vacant area adjacent to the New Town Municipal Airport without any historical significance. This project will have no effect on this listed site.

## 4.0 Emissions Summary

Potential emissions were calculated using applicable AP-42 emission factors and EPA Tanks 4.0 program.

The Permittee is tracking production throughputs and calculating actual emissions, in accordance with the issued synthetic minor new source review permit to construct (#SMNSR-TAT-000285-2012.001). Each month the previous month's actual emissions are calculated and added to the previous eleven months emission totals to demonstrate compliance with a twelve month facility emissions cap. The actual emissions through December 2012 are depicted in Table 4-1 below.

Table 4-1 Actual Emission

| Process | Material Throughput | Actual Emissions |
|---|---|---|
| Crude Oil Transloaded | 2,751,089 barrels | 12.91 Tons VOC |
| Crude Oil Storage Tank Throughput | 0 barrels | 0.00 Tons VOC |
| Crude Oil loaded onto Trucks from Tank | 0 barrels | 0.00 Tons VOC |

Emissions are calculated monthly using current meteorological data and material throughputs.

The Permittee is proposing to revise the enforceable permit throughput limit of crude oil loaded onto railcars. The proposed revised throughput limits are summarized in Table 4-2 below.

Table 4-2 Proposed Enforceable Throughput Limits

| Product | Current Annual Limit | Proposed Annual Limit |
|---|---|---|
| Crude Oil<br>Loaded onto Railcars (from storage tanks)<br>Flare Emissions Control | 0 barrels | 32,850,000 barrels |
| Crude Oil<br>Loaded onto Railcars (from tanker trucks)<br>Vapor Balance Emissions Control | 17,000,000 barrels | 5,475,000 barrels |
| Facility Total Emissions Cap | 97.0 Tons VOC | 97.0 Tons VOC |

### 4.1 Construction Transition Period

The VOC potential to emit with the 17,000,000 barrel per year crude oil transload throughput limit is approximately 90 tons of VOC emissions per year. As proposed, the high speed oil loading system has a one month VOC potential to emit of approximately 2.90 tons. Even with the proposed oil throughput increase, the monthly potential to emit drops from 7.51 tons VOC with the transloading operation to 2.90 tons VOC per month with the high speed loading equipment. Once construction is complete for the high speed loading equipment, the crude oil truck to railcar transloading operations on the four ladder tracks will cease. Oil will not be loaded from the storage tanks on the loop track and transloaded on the ladder tracks at the same time. However, the Permittee wishes to retain the option to transload oil as a backup operating scenario. Because the transloading and high speed loading will not occur simultaneously, and the transloading operations have a higher potential to emit, the potential to emit during the transition period was calculated assuming eleven months of transloading operations and one month of high speed loading operations. The maximum potential to emit during the construction transition period was determined to be approximately 86 tons per year. Table 4-3 below shows the summary of these calculations.

Table 4-3 Maximum Potential to Emit during the Construction Transition

| Emission Source | Throughput | Potential to Emit |
|---|---|---|
| Crude Oil Transload<br>eleven months | 15,583,333 barrels<br>654,500,000 gallons | 82.62 Tons |
| Crude Oil High Speed Loading<br>one month | 2,737,500 barrels<br>114,975,000 gallons | 2.90 Tons |
| Storage Tank Losses[1]<br>one month | 2,737,500 barrels<br>114,975,000 gallons | 0.69 Tons |
| Total Maximum Potential to Emit during Construction Transition | | 86.22 Tons |

[1] Storage tank potential to emit was estimated by dividing the annual emissions by 12 even months.

Even if the Facility somehow reaches the full 17,000,000 barrel per year oil transload limit in the eleven months prior to the startup of the new high speed loading equipment, the potential to emit (approximately 93.57 tons) will still be below the 100 ton Title V threshold and the current permit limit of 97 tons.

Even though the Permittee is not proposing enforceable throughput limits on the transfer diesel fuel, the transfer of bulk aggregate (such as sand) or the transfer of other solid palletized commodities, a summary of the expected maximum material throughputs is presented in table 4-4.

Table 4-4 Expected Maximum Material Throughputs

| Product | Expected Maximum Annual Throughputs |
|---|---|
| Diesel Fuel<br>Loaded onto Trucks (from railcars)<br>Vapor Balance Emissions Control | 1,825,000 barrels |
| Bulk Aggregate Products<br>Loaded onto Trucks (from railcars)<br>Integrated Baghouse Emissions Control | 547,500 tons |
| Other Palletized Materials<br>Loaded onto Trucks (from railcars)<br>Fugitive Dust Emissions Prevention Plan | 14,600 trucks |

A significant amount of truck traffic is expected to traverse the proposed facility's unpaved roadways. Permittee will maintain the unpaved road surfaces and control dust from unpaved roads in accordance with the written Fugitive Dust Emission Prevention Plan that has been implemented for the Facility under the issued permit. This plan will maintain compliance with ambient air quality standards and will prevent fugitive dust emissions. The written plan includes roadway inspections and treating the roadways with water or other chemicals as appropriate.

These expected maximum and proposed enforceable material throughputs were used to estimate the Facilitiy's potential–to-emit. A summary of the potential emissions per unit and total facility with the proposed and assumed maximum throughput limits is presented in Table 4-5.

Table 4-5 Facility Potential-to-Emit Summary

| Emissions Source | PM (tpy) | $PM_{10}$ (tpy) | $PM_{2.5}$ (tpy) | VOC (tpy) | $NO_x$ (tpy) | CO (tpy) | $SO_x$ (tpy) | Ind. HAP (tpy) | Comb. HAP (tpy) |
|---|---|---|---|---|---|---|---|---|---|
| EP01 – Oil Transfer Flare | | | | 17.42 | 5.64 | 30.71 | 23.59 | 0.12 | 0.15 |
| EP02-EP11 – Oil Transload | | | | 29.03 | | | | 0.10 | 0.13 |
| EP12-EP17 – Bulk Products Unload | 4.20 | 0.33 | 0.05 | | | | | | |
| EP18-EP24 – Bulk Products Storage and Shipping | 12.75 | 6.03 | 0.91 | | | | | | |
| EP25-EP27 – Crude Oil Storage Tanks | | | | 8.32 | | | | | |
| EP28-EP29 – Diesel Transfer Stations | | | | 0.31 | | | | | |
| **Facility Total** | **16.95** | **8.02** | **1.21** | **54.78** | **5.64** | **30.71** | **23.59** | **0.23** | **0.28** |

Detailed emission calculations are included in Appendix A. The detailed emission calculations include greenhouse gas (GHG) emissions. GHGs are defined as a mixture of six chemical compounds including carbon dioxide ($CO_2$), methane ($CH_4$), and nitrous oxide ($N_2O$), and fluorinated gases. GHG emissions at the Facility are limited to combustion emissions from the flare controlling VOC emissions. These emissions are presented in Table 4-6 below and are included in the enclosed emission calculations.

Table 4-6 Facility GHG Potential-to-Emit Summary

| Emissions Source | $CO_2$ (tpy) | $CH_4$ (tpy) | $N_2O$ (tpy) | | $CO_2e$[1] (tpy) |
|---|---|---|---|---|---|
| EP01 – Oil Transfer Flare | 5,515 | 53 | 11 | | 9,952 |
| **Facility Total** | **5,515** | **53** | **11** | | **9,952** |

[1] Carbon dioxide equivalent ($CO_2e$) emission are determined by multiplying the mass emissions by the global warming potential (GWP) for each GHG. Carbon dioxide GWP = 1; methane GWP = 21; nitrous oxide GWP = 310.

# 5.0 EPA Region 8 New Source Review Permit to Construct Application Forms

OMB Control No. Pending
Approval expires Pending

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY**
**40 CFR 49.151**

# Application for New Construction

(Form NEW)

**Please check all that apply to show how you are using this form:**

- ☐ **Proposed Construction of a New Source**
- ☒ **Proposed Construction of New Equipment at an Existing Source**
- ☐ **Proposed Modification of an Existing Source**
- ☒ **Other – Please Explain** Reopen and Revise Permit to Construct

**Use of this information request form is voluntary and not yet approved by the Office of Management and Budget.** The following is a check list of the type of information that Region 8 will use to process information on your proposed project. While submittal of this form is not required, it does offer details on the information we will use to complete your requested approval and providing the information requested may help expedite the process. Use of application forms for this program is currently under Office of Management and Budget review and these information request forms will be replaced/updated after that review is completed.

**Please submit information to following two entities:**

Federal Minor NSR Permit Coordinator
U.S. EPA, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202-1129
R8airpermitting@epa.gov

For more information, visit:
http://www.epa.gov/region08/air/permitting/tmnsr.html

The Tribal Environmental Contact for the specific reservation:

If you need assistance in identifying the appropriate Tribal Environmental Contact and address, please contact:

R8airpermitting@epa.gov

## A. GENERAL SOURCE INFORMATION

| | |
|---|---|
| 1. (a) **Company Name**<br>Dakota Plains Holdings, Inc.<br>(b) **Operator Name**<br>Dakota Petroleum Transport Solutions, LLC | 2. **Source Name**<br>New Town Transfer Facility |
| 3. Type of Operation<br>Crude oil storage and loading facility | 4. Portable Source? ☐ Yes ☒ No<br>5. Temporary Source? ☐ Yes ☒ No |
| 6. NAICS Code<br>424710 | 7. SIC Code<br>5171 |
| 8. Physical Address (home base for portable sources)<br>3895 88th Avenue NW, New Town, North Dakota | |

| 9. Reservation* | 10. County* | 11a. Latitude* | 11b. Longitude* |
|---|---|---|---|
| Fort Berthold | Mountrail | 47.977678 N | -102.476119 W |
| **12a. Quarter Quarter Section*** | **12b. Section*** | **12c. Township*** | **12d. Range*** |
| NW ¼ NW ¼ NE¼, N½ SE¼, & E½ NW¼ | 21<br>20 | 152 N<br>152 N | 92 W<br>92 W |

*Provide all proposed locations of operation for portable sources

**B. PREVIOUS PERMIT ACTIONS** (Provide information in this format for each permit that has been issued to this source. Provide as an attachment if additional space is necessary)

| |
|---|
| Source Name on the Permit<br>Dakota Plains, Inc. / New Town Transfer Facility |
| Permit Number (xx-xxx-xxxxx-xxxx.xx)<br>SMNSR-TAT-000285-2012.001 |
| Date of the Permit Action<br>September 19, 2012 |

| |
|---|
| Source Name on the Permit |
| Permit Number (xx-xxx-xxxxx-xxxx.xx) |
| Date of the Permit Action |

| |
|---|
| Source Name on the Permit |
| Permit Number (xx-xxx-xxxxx-xxxx.xx) |
| Date of the Permit Action |

| |
|---|
| Source Name on the Permit |
| Permit Number (xx-xxx-xxxxx-xxxx.xx) |
| Date of the Permit Action |

| |
|---|
| Source Name on the Permit |
| Permit Number (xx-xxx-xxxxx-xxxx.xx) |
| Date of the Permit Action |

## C. CONTACT INFORMATION

| **Company Contact** | Title |
|---|---|
| Gabe Claypool / Dakota Plains Holdings, Inc. | COO |
| Mailing Address | |
| 294 Grove Lane East, Wayazata, Minnesota 55391 | |
| Email Address | |
| gclaypool@dakotaplains.com | |
| Telephone Number | Facsimile Number |
| (952) 473-9950 | |

| **Operator Contact** (if different from company contact) | Title |
|---|---|
| Same as Company Contact | |
| Mailing Address | |
| | |
| Email Address | |
| | |
| Telephone Number | Facsimile Number |
| | |

| **Source Contact** | Title |
|---|---|
| Same as Company Contact | |
| Mailing Address | |
| | |
| Email Address | |
| | |
| Telephone Number | Facsimile Number |
| | |

| **Compliance Contact** | Title |
|---|---|
| Same as Company Contact | |
| Mailing Address | |
| | |
| Email Address | |
| | |
| Telephone Number | Facsimile Number |
| | |

## D. ATTACHMENTS

**Include all of the following information** (see the attached instructions)

☒ **FORM SYNMIN -** New Source Review Synthetic Minor Limit Request Form, if synthetic minor limits are being requested.

☒ Narrative description of the proposed production processes. This description should follow the flow of the process flow diagram to be submitted with this application.

☒ Process flow chart identifying all proposed processing, combustion, handling, storage, and emission control equipment.

☒ A list and descriptions of all proposed emission units and air pollution-generating activities.

☒ Type and quantity of fuels, including sulfur content of fuels, proposed to be used on a daily, annual and maximum hourly basis.

☒ Type and quantity of raw materials used or final product produced proposed to be used on a daily, annual and maximum hourly basis.

☒ Proposed operating schedule, including number of hours per day, number of days per week and number of weeks per year.

☒ A list and description of all proposed emission controls, control efficiencies, emission limits, and monitoring for each emission unit and air pollution generating activity.

☒ **Criteria Pollutant Emissions -** Estimates of Current Actual Emissions, Current Allowable Emissions, Post-Change Uncontrolled Emissions, and Post-Change Allowable Emissions for the following air pollutants: particulate matter, $PM_{10}$, $PM_{2.5}$, sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist ($H_2SO_4$), hydrogen sulfide ($H_2S$), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

These estimates are to be made for each emission unit, emission generating activity, and the project/source in total.

☒ **Air Quality Review**

☒ **ESA (Endangered Species Act)**

☒ **NHPA (National Historic Preservation Act)**

## E. TABLE OF ESTIMATED EMISSIONS

The following tables provide the total emissions in tons/year for all pollutants from the calculations required in Section D of this form, as appropriate for the use specified at the top of the form.

**E(i) – Proposed New Source**

| Pollutant | Potential Emissions (tpy) | Proposed Allowable Emissions (tpy) | |
|---|---|---|---|
| **PM** | 16.95 | | PM - Particulate Matter<br>$PM_{10}$ - Particulate Matter less than 10 microns in size<br>$PM_{2.5}$ - Particulate Matter less than 2.5 microns in size<br>SO2 - Sulfur Oxides<br>NOx - Nitrogen Oxides<br>CO - Carbon Monoxide<br>VOC - Volatile Organic Compound<br>Pb - Lead and lead compounds<br>Fluorides - Gaseous and particulates<br>$H_2SO_4$ - Sulfuric Acid Mist<br>$H_2S$ - Hydrogen Sulfide<br>TRS - Total Reduced Sulfur<br>RSC - Reduced Sulfur Compounds |
| **$PM_{10}$** | 8.02 | | |
| **$PM_{2.5}$** | 1.21 | | |
| **$SO_2$** | 23.59 | | |
| **$NO_x$** | 5.64 | | |
| **CO** | 30.71 | | |
| **VOC** | 54.78 | 97.0 | |
| **Pb** | | | |
| **Fluorides** | | | |
| **$H_2SO_4$** | | | |
| **$H_2S$** | | | |
| **TRS** | | | |
| **RSC** | | | |

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

(a) Coal cleaning plants (with thermal dryers);
(b) Kraft pulp mills;
(c) Portland cement plants;
(d) Primary zinc smelters;
(e) Iron and steel mills;
(f) Primary aluminum ore reduction plants;
(g) Primary copper smelters;
(h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
(i) Hydrofluoric, sulfuric, or nitric acid plants;
(j) Petroleum refineries;
(k) Lime plants;
(l) Phosphate rock processing plants;
(m) Coke oven batteries;
(n) Sulfur recovery plants;
(o) Carbon black plants (furnace process);
(p) Primary lead smelters;
(q) Fuel conversion plants;
(r) Sintering plants;
(s) Secondary metal production plants;
(t) Chemical process plants
(u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
(v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
(w) Taconite ore processing plants;
(x) Glass fiber processing plants;
(y) Charcoal production plants;
(z) Fossil fuel-fired steam electric plants of more that 250 million British thermal units per hour heat input, and
(aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

**E(ii) – Proposed New Construction at an Existing Source or Modification of an Existing Source**

| Pollutant | Current Actual Emissions (tpy) | Current Allowable Emissions (tpy) | Post-Change Potential Emissions (tpy) | Post-Change Allowable Emissions (tpy) |
|---|---|---|---|---|
| **PM** | | | | |
| **$PM_{10}$** | | | | |
| **$PM_{2.5}$** | | | | |
| **$SO_2$** | | | | |
| **$NO_x$** | | | | |
| **CO** | | | | |
| **VOC** | | | | |
| **Pb** | | | | |
| **Fluorides** | | | | |
| **$H_2SO_4$** | | | | |
| **$H_2S$** | | | | |
| **TRS** | | | | |
| **RSC** | | | | |

PM - Particulate Matter
$PM_{10}$ - Particulate Matter less than 10 microns in size
$PM_{2.5}$ - Particulate Matter less than 2.5 microns in size
$SO_2$ - Sulfur Oxides
NOx - Nitrogen Oxides
CO - Carbon Monoxide
VOC - Volatile Organic Compound
Pb - Lead and lead compounds
Fluorides - Gaseous and particulates
$H_2SO_4$ - Sulfuric Acid Mist
$H_2S$ - Hydrogen Sulfide
TRS - Total Reduced Sulfur
RSC - Reduced Sulfur Compounds

The public reporting and recordkeeping burden for this collection of information is estimated to average 20 hours per response, unless a modeling analysis is required. If a modeling analysis is required, the public reporting and recordkeeping burden for this collection of information is estimated to average 60 hours per response .Send comments on the Agency"s need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

# Instructions

**Use of This Form**

- Proposed new construction or modifications should first be evaluated to determine if the change is major under the major NSR program using the procedures at 40 CFR 52.21 (i.e., baseline actual to projected actual applicability test). If the proposed construction does not qualify as a major under that test, then it may be subject to the requirements of the minor NSR rule at 40 CFR 49.151.

**Helpful Definitions from the Federal Minor NSR Rule (40 CFR 49) –** This is not a comprehensive list.

- *40 CFR 49.152(d) - Modification* means any physical or operational change at a source that would cause an increase in the allowable emissions of the affected emissions units for any regulated NSR pollutant or that would cause the emission of any regulated NSR pollutant not previously emitted.

  The following exemptions apply:

  (1) A physical or operational change does not include routine maintenance, repair, or replacement.

  (2) An increase in the hours of operation or in the production rate is not considered an operational change unless such increase is prohibited under any federally-enforceable permit condition or other permit condition that is enforceable as a practical matter.

  (3) A change in ownership at a source is not considered a modification.

- *40 CFR 49.152(d) - Allowable emissions* means „„allowable emissions"" as defined in §52.21(b)(16), except that the allowable emissions for any emissions unit are calculated considering any emission limitations that are enforceable as a practical matter on the emissions unit"s potential to emit.

- *52.21(b)(16) - Allowable emissions* means the emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both) and the most stringent of the following:

  (i) The applicable standards as set forth in 40 CFR parts 60 and 61;

  (ii) The applicable State Implementation Plan emissions limitation, including those with a future compliance date; or

  (iii) The emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.

## A. General Source Information

1. Company Name & Operator Name (if different): Provide the complete company and operator names. For corporations, include divisions or subsidiary name, if any.

2. Source Name: Provide the source name. Please note that a source is a site, place, location, etc… that may contain one or more air pollution emitting units.

3. Type of Operation: Indicate the generally accepted name for the operation (i.e., asphalt plant, gas station, dry cleaner, sand & gravel mining, oil and gas wellsite, tank battery, etc.).

4. Portable Source: Does the source operate in more than one location? Some examples of portable sources include asphalt batch plants and concrete batch plants.

5. Temporary Source: A temporary source, in general, would have emissions that are expected last less than 12 months. Do you expect to cease operations within the next 12 months?

6. NAICS Code: North American Industry Classification System. The NAICS Code for your source can be found at the following link → North American Industry Classification System (http://www.census.gov/epcd/naics/nsic2ndx.htm#S1).

7. SIC Code: Standard Industrial Classification Code. Although the new North American Industry Classification System (NAICS) has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your source can be found at the following link → Standard Industrial Classification Code (http://www.osha.gov/pls/imis/sic_manual.html).

8. Physical Address: Provide the actual address of where the source is operating, not the mailing address. Include the State and the ZIP Code.

9. Reservation: Provide the name of the Indian reservation within which the source is operating.

10. County: Provide the County within which the source is operating.

11a & 11b. Latitude & Longitude: These are GPS (global positioning system) coordinates. This information can be provided in decimal format or degree-minute-second format.

12a – 12d. Section-Township-Range: Please provide these coordinates in 1/4 Section/Section/Township/Range. (e.g., SW ¼, NE ¼ /S36/T10N/R21E).

## B. Current Permit Information

Provide a list of all permits that have been issued to your source. This should include any Federal Minor New Source Review (MNSR), Prevention of Significant Deterioration (PSD) or Non-Attainment New Source Review (NA NSR) permits, in addition to the most recent Part 71 permit. The permit number must be included with each permit identified.

## C. Contact Information

Please provide the information requested in full.

1. Company Contact: List the full name (last, middle initial, first) of the owners of the source or the company contact.

2. Operator Contact: Provide the name of the operator of the source if it is different from the company contact.

3. Source Contact: The source contact must be the local contact authorized to receive requests for data and information.

4. Compliance Contact: The compliance contact must be the local contact responsible for the source"s compliance with this rule. If this is the same as the Source Contact please note this on the form.

## D. Attachments

This section lists the information needed to complete the requested approval. This information should be accompanied by the supporting information listed on the form and described below. The information should be presented in enough detail to document how the source is currently operating and/or how it is proposed to operate.

☒ **FORM SYNMIN**

If synthetic minor limits are being requested, a synthetic Minor Limit Application should be included with this application.

☒ Narrative description of the proposed production processes.

1. The narrative description should follow the flow of the process flow diagram to be submitted with this application. This needs to be as comprehensive as possible to help in understanding the proposed source and how it will be operated. For example:

What are the raw materials?
What are the properties of the raw materials?
Does the production process include heating, drying, the application of chemicals, etc?
How will the raw materials be affected by this process?
What are the out puts from each step of the process (i.e., crushed ore, dry gas, water, etc…)?
Etc….

2. The proposed operating schedule presented in terms of hours per day, days per week, and weeks per year.
3. A list of the type and quantity of fuels and/or raw materials used. Each fuel and raw material should be described in enough detail to indicate its basic chemical components.

☒ A process flow chart identifying all proposed processing, combustion, handling, storage, and emission control equipment (include the unit identification # or code). This flow chart should illustrate the detailed narrative description requested above.

☒ List and describe all proposed units, emission units and air pollution-generating activities. At a minimum, provide the following:

1. The hourly, daily and annual maximum operating rates for each operating unit, production process, and activity.
2. The hourly, daily and annual maximum firing rates for each fuel and combustion equipment.
3. The capacity for storage units and the hourly, daily and annual maximum throughput of material in the storage units.
4. Material and product handling equipment and the hourly, daily and annual maximum throughput of material and product.
5. Tank designs, tank storage capacities, hourly, daily and annual maximum throughput of material and product.

☒ Type and quantity of fuels, including sulfur content of fuels, proposed to be used on a daily, annual and maximum hourly basis.

☒ Type and quantity of raw materials used or final product produced proposed to be used on a daily, annual and maximum hourly basis.

☒ Proposed operating schedule, including number of hours per day, number of days per week and number of weeks per year.

☒ A list and description of all proposed emission controls, control efficiencies, emission limits, and monitoring for each emission unit and air pollution generating activity.

1. Include manufacturer specifications and guarantees for each control device.

## Criteria Pollutant Emissions Estimates

☒ Estimates of Current Actual Emissions, Current Allowable Emissions, Post-Change Uncontrolled Emissions, and Post-Change Allowable Emissions for the following air pollutants: particulate matter, $PM_{10}$, $PM_{2.5}$, sulfur oxides ($SO_2$), nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, ammonia ($NH_3$), fluorides (gaseous and particulate), sulfuric acid mist ($H_2SO_4$), hydrogen sulfide ($H_2S$), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.

1. These estimates are to be made for each emission unit, emission generating activity, in addition to total emissions.

2. The information should include all of the supporting calculations, assumptions and references. Emission estimates must address all emission units and pollutants proposed and/or affected by the limitation and be presented in short term (e.g. pounds per hour) as well as annual (tons per year) units.

3. Any emission estimates submitted to the Regional Administrator must be verifiable using currently accepted engineering criteria. The following procedures are generally acceptable for estimating emissions from air pollution sources:

   - Source-specific emission tests;
   - Mass balance calculations;
   - Published, verifiable emission factors that are applicable to the source. (i.e. manufacturer specifications)
   - Other engineering calculations; or

- Other procedures to estimate emissions specifically approved by the Regional Administrator.

4. Guidance for estimating emissions can be found at http://www.epa.gov/ttn/chief/efpac/index.html.

Current Actual Emissions: Current actual emissions for a pollutant is expressed in tpy and generally is calculated by multiplying the actual hourly emissions rate in pounds per hour (lbs/hr) times actual hours operated (which is the number of hours in a year) and dividing by 2,000 (which is the number of pounds in a ton).

1. For an **existing air pollution source (permitted and unpermitted)** that operated prior to the application submittal, the current actual emissions are the actual rate of emissions for the preceding calendar year and must be calculated using the actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. The emission estimates must be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Regional Administrator.

Current Allowable Emissions: Current allowable emissions for a pollutant is expressed in tpy and generally is calculated by multiplying the allowed hourly emissions rate in pounds per hour (lbs/hr) times allowed hours (which is the number of hours in a year) and dividing by 2,000 (which is the number of pounds in a ton).

1. "Allowed" means the source is restricted by permit conditions that limit its emissions and are enforceable as a practical matter (i.e., allowable emissions). The allowable emissions for any emissions unit are calculated considering any emissions limitations that are enforceable as a practical matter on the unit"s PTE.

2. For an **existing permitted air pollution source** that operated prior to the application submittal, the current allowable emissions are the allowable rate of emissions for the preceding calendar year and must be calculated using the permitted operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year.

3. For an **existing air pollution source** that does not have an established allowable emissions level prior to the modification must report the pre-change uncontrolled emissions.

Post-Change Potential Emissions (Potential uncontrolled emissions from proposed project): This is the maximum capacity of a source to emit a pollutant under its physical and operational design. This is expressed in tpy and generally is calculated by multiplying the maximum hourly emissions rate in pounds per hour (lbs/hr) times 8,760 hours (which is the number of hours in a year) and dividing by 2,000 (which is the number of pounds in a ton).

Post-Change Allowable Emissions: A source"s allowable emissions for a pollutant is expressed in tpy and generally is calculated by multiplying the allowed hourly emissions rate in pounds per hour (lbs/hr) times allowed hours (which is the number of hours in a year) and dividing by 2,000 (which is the number of pounds in a ton).

1. Unless the source is restricted by permit conditions or other requirements that are enforceable as a practical matter, the post-change allowable emissions would be equivalent to post-change

uncontrolled emissions. For the post-change allowable emissions a lower level of allowable emissions may be proposed.

2. For physical or operational changes at minor sources and for minor physical or operational changes at major sources, the total increase in allowable emissions resulting from your proposed change would be the sum of following:

   - For each new emissions unit that is to be added, the emissions increase would be the potential to emit of each unit.
   - For each emissions unit with an allowable emissions limit that is to be changed or replaced, the emissions increase would be the allowable emissions of the emissions unit after the change or replacement minus the allowable emissions prior to the change or replacement. However, this may not be a negative value. If the allowable emissions of an emissions unit would be reduced as a result of the change or replacement, use zero in the calculation.
   - For each unpermitted emissions unit (i.e., a unit without any emissions limitations before the change) that is to be changed or replaced, the emissions increase would be the allowable emissions of the unit after the change or replacement minus the potential to emit prior to the change or replacement. However, this may not be a negative value. If the allowable emissions of an emissions unit would be reduced as a result of the change or replacement, use zero in the calculation.

## ☒ Air Quality Review

Provide a narrative description of the current air quality conditions and the expected impact the permitted source would have on that air quality. Factors to include in the qualitative discussion are meteorology, terrain, elevation, distance to ambient air, expected emissions, stack heights, etc…

Your reviewing authority may require you to provide additional information used to determine impacts that may result from your new source or modification. You may be required to conduct and submit an Air Quality Impact Analysis (AQIA) using dispersion modeling in accordance with 40 CFR part 51, Appendix W. If required, and the AQIA demonstrates that construction of your source or modification would cause or contribute to a NAAQS or PSD increment violation, you will also required to further reduce its impact before you could obtain a permit.

## ☒ ESA

The Endangered Species Act requires us, in consultation with the U.S. Fish and Wildlife Service and/or the NOAA Fisheries Service, to ensure that actions we authorize are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

To expedite the approval of your proposed construction, we encourage you to identify any listed species that you may be readily aware of that could be affected by your proposal. The following website has been provided to assist you:

http://www.fws.gov/endangered/

Simply enter the State and County in which you propose to construct to obtain a general listing.

## ☒ NHPA

The National Historic Preservation Act requires us, in consultation with State and/or Tribal Historic Preservation Officers to ensure that actions we authorize are not likely to affect cultural resources.

To expedite the approval of your proposed construction, we encourage you to identify any cultural resources that you may be readily aware of that could be affected by your proposal. The following website has been provided to assist you:

http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome

Simply enter the State and County in which you propose to construct to obtain a general listing.

OMB Control No. Pending
Approval expires Pending

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY**
**40 CFR 49.151**

# Application For Synthetic Minor Limit

(Form SYNMIN)

**Use of this information request form is voluntary and not yet approved by the Office of Management and Budget.** The following is a check list of the type of information that Region 8 will use to process information on your proposed project. While submittal of this form is not required, it does offer details on the information we will use to complete your requested approval and providing the information requested may help expedite the process. Use of application forms for this program is currently under Office of Management and Budget review and these information request forms will be replaced/updated after that review is completed.

**Please submit information to following two entities:**

Federal Minor NSR Permit Coordinator
U.S. EPA, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202-1129
R8airpermitting@epa.gov

For more information, visit:
http://www.epa.gov/region08/air/permitting/tmnsr.html

The Tribal Environmental Contact for the specific reservation:

If you need assistance in identifying the appropriate Tribal Environmental Contact and address, please contact:

R8airpermitting@epa.gov

## A. GENERAL INFORMATION

| **Company Name** | **Source Name** |
|---|---|
| Dakota Plains Holdings, Inc. | New Town Transfer Facility |
| **Company Contact or Owner Name** | Title |
| Gabe Claypool | COO |
| Mailing Address: 294 Grove Lane East, Wayazata, Minnesota 55391 | |
| Email Address: gclaypool@dakotaplains.com | |
| Telephone Number: (952) 473-9950 | Facsimile Number |

## B. ATTACHMENTS

**For each criteria air pollutant, hazardous air pollutant and for all emission units and air pollutant-generating activities to be covered by a limitation, include the following:**

☒ **Item 1 -** The proposed limitation and a description of its effect on current actual, allowable and the potential to emit.
☒ **Item 2 -** The proposed testing, monitoring, recordkeeping, and reporting requirements to be used to demonstrate and assure compliance with the proposed limitation.
☒ **Item 3 -** A description of estimated efficiency of air pollution control equipment under present or anticipated operating conditions, including documentation of the manufacturer specifications and guarantees.
☒ **Item 4 -** Estimates of the Post-Change Allowable Emissions that would result from compliance with the proposed limitation, including all calculations for the estimates.
☒ **Item 5 –** Estimates of the potential emissions of Greenhouse Gas (GHG) pollutants.
☐ **Item 6 –** Estimates of the potential emissions of Hazardous Air Pollutants (HAPs) if seeking a synthetic minor limit for HAPs.

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

# Instructions

**Use this form to provide general and summary information about the synthetic minor NSR source (source or plant) on Tribal lands and to indicate the emissions limitations requested. Submit this form once, in addition to FORM NEW, for each synthetic minor NSR source on Tribal lands.**

### 1. Who Can Request Federally-Enforceable Limitations Under the Tribal NSR Authority?

The Tribal NSR Rule applies only to sources located within the exterior boundaries of an Indian reservation in the United States of America or other lands as specified in 40 CFR part 49, collectively referred to as "Indian country". So, to use the authority in the Tribal NSR Rule to create federally-enforceable limitations, a source must be located within Indian country. Land ownership status (for example, whether the land is owned by a Tribal member or whether the land is owned in fee or in trust) does not affect how the rule applies.

### 2. Who Might Want to Request Federally-Enforceable Limitations?

The primary reason for requesting federally-enforceable limitations is to avoid an otherwise applicable federal Clean Air Act program, rule or requirement. Many federal Clean Air Act programs use a source's "potential to emit" (PTE) air pollution to determine which rules or requirements apply. A source's PTE is based on the maximum annual operational (production, throughput, etc) rate of the source taking into consideration the capacity and configuration of the equipment and operations. Emission or operational limits can also be taken into consideration as maximums if they are federally enforceable. So, using a synthetic minor NSR permit to establish federally enforceable limitations can lower a source's PTE and possibly allow the source to avoid certain federal Clean Air Act requirements.

Three examples of federal Clean Air Act programs that use PTE to determine whether they apply are (1) the Prevention of Significant Deterioration (PSD) construction permitting program, (2) the Title V operating permit program, and (3) the Maximum Achievable Control Technology (MACT) program. For example, existing sources that are considered "major" for Title V (meaning they have the potential to emit air pollution at levels defined in that rule as "major") must apply for a Title V operating permit. If a source accepts a federally-enforceable limitation through a synthetic minor NSR permit that reduces their PTE to below the "major" threshold, and the source does not meet any of the other requirements that would trigger applicability to the part 71 program, then the source no longer needs a Title V operating permit. When planning for the construction of a new source or expansion of an existing source, a source can also accept limitations on PTE (using a synthetic minor NSR permit) that allow the source to avoid PSD. Limitations on PTE can similarly help a source to avoid new MACT standards that would otherwise apply to the source.

## 3. Section B. ATTACHMENTS

This section lists the information that must be attached to the application form for each requested limitation. The requested limitation(s) must be described for each affected emissions unit (or pollutant-generating activity) and pollutant and must be accompanied by the supporting information listed on the form and described below. Note that applicability of many federal Clean Air Act requirements (such as Title V, PSD and MACT) is often based on source-wide emission levels of specific pollutants. In that case, all emissions units at a source and all pollutants regulated by that given rule or regulation must be addressed by this section of the application form.

**Item 1 –** The requested limitation and its effect on actual emissions or potential to emit must be presented in enough detail to document how the limitation will limit the source's actual or potential emissions as a legal and practical matter and, if applicable, will allow the source to avoid an otherwise applicable requirement. The information presented must clearly explain how the limitation affects each emission unit and each air pollutant from that emission unit. Use the information provided in response to Item 4 below to explain how the limitation affects emissions before and after the limitation is in effect.

**Item 2 –** For each requested limitation, the application must include proposed testing, monitoring, recordkeeping and reporting that will be used to demonstrate and assure compliance with the limitation. Testing approaches should incorporate and reference appropriate EPA reference methods where applicable. Monitoring should describe the emission, control or process parameters that will be relied on and should address frequency, methods, and quality assurance.

**Item 3 –** The application must include a description and estimated efficiency of air pollution control equipment under present or anticipated operating conditions. For control equipment that is not proposed to be modified to meet the requested limit, simply note that fact; however, for equipment that is proposed to be modified (e.g. improved efficiency) or newly installed to meet the proposed limit, address both current and future descriptions and efficiencies. Include manufacturer specifications and guarantees for each control device.

**Items 4 –** Any emission estimates submitted to the Reviewing Authority must be verifiable using currently accepted engineering criteria. The following procedures are generally acceptable for estimating emissions from air pollution sources:

(i) Source-specific emission tests;
(ii) Mass balance calculations;
(iii) Published, verifiable emission factors that are applicable to the source. (i.e., manufacturer specifications).
(iv) Other engineering calculations; or
(v) Other procedures to estimate emissions specifically approved by the Reviewing Authority.

Post-Change Allowable Emissions: A source's allowable emissions for a pollutant is expressed in tpy and generally is calculated by multiplying the allowed hourly emissions rate in pounds per hour (lbs/hr) times allowed hours (which is the number of hours in a year) and dividing by 2,000 (which is the number of pounds in a ton).

**Item 5** - New construction projects that have the potential to emit GHG emissions of at least 100,000 tpy $CO_2e$ and 100 or 250 tpy on a mass basis, modifications at existing PSD facilities that increase GHG emissions by at least 75,000 tpy $CO_2e$ and minor sources that increase GHG emissions by at least 100,000 tpy $CO_2e$ and 100 or 250 tpy on a mass basis are subject to PSD permitting requirements, even

if they do not significantly increase emissions of any other pollutant. As such, any requested limits to avoid PSD must take into account greenhouse gases.

Therefore, please include in your permit application estimates of the potential emissions of the following pollutants. More information about GHG permitting and how to calculate $CO_2$ equivalents ($CO_2e$), the mass emissions of each individual GHG adjusted for its Global Warming Potential (GWP) can be found at: http://epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf

1. Carbon dioxide ($CO_2$)
2. Methane ($CH_4$) and its $CO_2e$
3. Nitrous oxide ($N_2O$) and its $CO_2e$
4. Hydrofluorocarbons (HFCs) and its $CO_2e$
5. Perfluorocarbons (PFCs) and its $CO_2e$
6. Sulfur hexafluoride ($SF_6$) and its $CO_2e$

**Appendix A**
Detailed Emission Calculations

## Emission Calculations

### Potential to Emit Calculation Basis

Maximum potential emissions from the Facility were calculated based on the proposed annual enforceable throughput limits and expected maximum material throughputs listed in Table A-1 below.

Table A-1 Proposed Enforceable and Expected Maximum Annual Throughputs

| Product Description | Proposed Enforceable Annual Limits | |
|---|---|---|
| Crude Oil – High speed Transfer | 32,850,000 Barrels | 1,379,700,000 Gallons |
| Crude Oil – Truck-to-Rail Transload | 5,475,000 Barrels | 229,950,000 Gallons |

Maximum potential emissions for the other transload processes were calculated based the maximum short-term throughput of the proposed equipment. Table A-2 presents a summary of the expected short-term maximum transfer rates of the proposed equipment. These short-term rates were extrapolated to 8,760 hours per year to calculate emissions.

Table A-2 Maximum Short-Term Throughputs

| Product Description | Maximum Throughputs |
|---|---|
| Sand | 250 Tons per hour (each) - 6 Stations |
| Diesel Fuel | 400 gallons per minute (each) - 2 Stations |

The Permittee is proposing to handle and transport sand and other bulk aggregate commodities. The emissions from these activities were estimated using the short-term throughputs of the equipment and the assumption that every ton will be handled three times (Rail to Truck; Truck to Silo; Silo to Truck) in order to provide conservative emission estimates. The Permittee is proposing not to include any throughput permit limits on the transload of bulk commodities such as sand and salt because of the low potential emissions.

The Permittee is proposing to transload diesel fuel from railcars to truck for distribution to local markets. The proposed equipment is theoretically capable of loading approximately 30,000 barrels per day. This theoretical maximum throughput yields an estimated 0.6 tons per year of VOC emissions. However, the facility expects to transload approximately 5,000 barrels per day based upon local market needs.

### Process Description

The Permittee proposes to add additional crude oil storage to the Facility and load railcars with crude oil directly from the storage tanks through fixed loading arms. After construction of the proposed equipment, crude oil will be brought onsite via tanker truck and/or via pipeline and stored in one of three 90,000 barrel capacity internal floating roof tanks. The oil will be then be transferred into railcars for shipment offsite. All of the new crude oil transfer equipment will be located on or adjacent to a new double loop track. This new infrastructure will allow the existing four ladder tracks to be utilized for other ancillary product streams.

The Permittee proposes to construct ten stationary high-speed rail loading stations. These ten loading stations will be capable of simultaneously loading ten railcars with a loading rate of 700 gallons per minute each from one of three oil storage tanks. Submerged loading and a flare will be utilized to control

VOC emissions from the loadout operations. Additionally, in order to avoid Title V operating permit requirements and PSD, the Permittee is proposing a crude oil loading limit of 32,850,000 barrels per 12-month consecutive period .

The three storage tanks will be filled from ten truck unloading stations or from five pipeline transfer stations. The truck transfer stations will be operated so that no VOC emissions will occur from the trucks. As the tanker truck empties, atmospheric air will replace the oil inside the tanker truck. Similarly, the pipeline transfer stations will be operated without VOC emissions. No equipment to transfer oil from the storage tanks to tanker trucks will be constructed. Once the oil is in the storage tanks, the only pathway out of the tank is to load the oil onto railcars. As a backup operation scenario, in the event that the storage tank-to-railcar transfer equipment is unavailable for an extended period of time at the Facility, the Permittee is proposing an enforceable permit limit for direct tanker truck to railcar transloading of 5,475,000 barrels per 12-month consecutive period. This operational scenario is only intended as an emergency backup. However, in order to be conservative, emissions are calculated including both limits in the same 12-month period.

With the construction of the loop track, the existing four ladder tracks become available for the transportation of other commodities. The Permittee proposes to use two portable transload stations to transfer diesel fuel from railcars to trucks for distribution to local markets. These transloading operations will occur on the four existing tracks once the oil operations have been moved to the new loop system. Using the physical properties of diesel fuel and equations from AP-42, the expected emissions from the diesel fuel transfer are very low. If both transfer stations were in operation 24 hours per day 365 days per year the potential VOC emissions are approximately 0.31 tons of VOC per year. For this reason, the Permittee is not requesting an enforceable throughput limit for diesel transloading. However, with current market conditions, the Facility expects to transload less than 5,000 barrels per day of diesel fuel.

The Permittee proposes to use up to six portable belt conveyors, driven by an electric motor, to transfer bulk aggregate commodities such as sand and other aggregates from railcars to trucks on the four ladder siding tracks. As much as possible these bulk commodities will be transferred from railcars directly to trucks for immediate local distribution. However, the Permittee is proposing to construct six 10,000 cubic foot silos. These six silos will capable to store approximately 500 tons of sand each with a total sand storage of approximately 3,000 tons. Sand and other bulk aggregate commodities will be unloaded from the railcars to trucks using portable conveyors. The trucks will the move the product to the onsite storage silos for final loading onto trucks for local distribution.

These aggregate commodities will be delivered to local markets. The transfer conveyors are enclosed and include a 99% efficient dust collector. Each storage silo will include dust control equipment. Because the potential to emit from the bulk aggregate transfer equipment is so minimal, the Permittee is not proposing any enforceable throughput limits for these activities.

The Permittee is exploring the possibility of using the rail infrastructure to bring in solid and palletized commodities needed in the growing New Town community. These commodities might include lumber, pipe, and other products confined to pallets or totes. The emissions from these activities would be limited to fugitive dust emissions from truck traffic on unpaved road surfaces at the Facility.

## Emission Calculations

The emission calculations were performed using the best available emission factor data.

The annual average emission calculations follow the basic format of Equation 1 below. The maximum annual process throughputs were used to calculate the maximum annual emissions where a permit limit was proposed.

$$\boldsymbol{E = T \times EF\ (1 - R\%) / 2000}$$

Equation 1

Where:

E = Emission Rate (tons)
T = Throughput or Process variable (appropriate units for process; usually mass or heat input per year)
EF = Emission Factor (appropriate unit for throughput)
R% = Removal efficiency of control device (dimensionless percent)
2000 pounds per US short ton (unit conversion)

Short term maximum emission rates were calculated for processes without a proposed permit limit. The short term emission calculations follow the basic format of Equation 2 below. The maximum short term process throughputs were used to calculate maximum short term emissions that were extrapolated to 8,760 hours per year.

$$\boldsymbol{E = T \times EF\ (1 - R\%)}$$

Equation 2

Where:

E = Emission Rate (lb/hr)
T = Throughput or Process variable (appropriate units for process; usually mass or heat input per hour)
EF = Emission Factor (appropriate unit for throughput)
R% = Removal efficiency of control device (dimensionless percent)

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Expected Annual Throughputs and Proposed Permit Limits

**Crude Oil Loading to Railcars from Tanks**

| | | | |
|---|---|---|---|
| 90,000 | barrels per day | 504 | trucks per day |
| 3,780,000 | gallons per day | 183,960 | trucks per year |

**Proposed Permit Limit Crude Oil Loading to Railcars**

**1,379,700,000 gallons per year**
**32,850,000 barrels per year**

**Crude Oil Transloading to Railcars from Trucks**

| | | | |
|---|---|---|---|
| 15,000 | barrels per day | 90 | trucks per day |
| 630,000 | gallons per day | 32,850 | trucks per year |

**Proposed Permit Limit Crude Oil Loading to Railcars**

**229,950,000 gallons per year**
**5,475,000 barrels per year**

**Diesel Fuel Transloaded from Railcars**

| | | | |
|---|---|---|---|
| 5,000 | barrels per day | | |
| 210,000 | gallons per day | 30 | Trucks per day |
| Expected Diesel Fuel Transfer from Railcars | | 10,950 | Trucks per year |
| 76,650,000 | gallons per year | | |
| 1,825,000 | barrels per year | | |

**Frac Sand, Salt, and other Aggregate Products (Loaded on trucks from railcars)**

| | | | |
|---|---|---|---|
| 1,500 | tons Sand per day | 60 | trucks per day |
| 547,500 | tons sand per year | 21,900 | trucks per year |

**Other Solid Commodities**

| | | | |
|---|---|---|---|
| | | 40 | trucks per day |
| | | 14,600 | trucks per year |

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Potential Maximum Emissions

| Emission Unit (EU) ID | Emissions Control (CE) Device | Emission Point (EP) | Description | Pollutants PM | $PM_{10}$ | $PM_{2.5}$ | VOC | NOx | CO | SOx | Individual HAP | Total HAPs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Tons | Tons | Tons | Tons | Tons | Tons | Tons | Tons | Tons |
| EU01 | C01 | EP01 | Crude Oil Load Station 1 | | | | 1.74 | | | | | |
| EU02 | C01 | EP01 | Crude Oil Load Station 2 | | | | 1.74 | | | | | |
| EU03 | C01 | EP01 | Crude Oil Load Station 3 | | | | 1.74 | | | | | |
| EU04 | C01 | EP01 | Crude Oil Load Station 4 | | | | 1.74 | | | | | |
| EU05 | C01 | EP01 | Crude Oil Load Station 5 | | | | 1.74 | | | | | |
| EU06 | C01 | EP01 | Crude Oil Load Station 6 | | | | 1.74 | | | | | |
| EU07 | C01 | EP01 | Crude Oil Load Station 7 | | | | 1.74 | | | | | |
| EU08 | C01 | EP01 | Crude Oil Load Station 8 | | | | 1.74 | | | | | |
| EU09 | C01 | EP01 | Crude Oil Load Station 9 | | | | 1.74 | | | | | |
| EU10 | C01 | EP01 | Crude Oil Load Station 10 | | | | 1.74 | | | | | |
| **CE01** | **C01** | **EP01** | **Crude Oil Transfer Flare** | | | | **17.42** | **5.64** | **30.71** | **23.59** | **0.12** | **0.15** |
| EU11 | NA | EP02 | Crude Oil Transload Station 1 | | | | 2.90 | | | | | |
| EU12 | NA | EP03 | Crude Oil Transload Station 2 | | | | 2.90 | | | | | |
| EU13 | NA | EP04 | Crude Oil Transload Station 3 | | | | 2.90 | | | | | |
| EU14 | NA | EP05 | Crude Oil Transload Station 4 | | | | 2.90 | | | | | |
| EU15 | NA | EP06 | Crude Oil Transload Station 5 | | | | 2.90 | | | | | |
| EU16 | NA | EP07 | Crude Oil Transload Station 6 | | | | 2.90 | | | | | |
| EU17 | NA | EP08 | Crude Oil Transload Station 7 | | | | 2.90 | | | | | |
| EU18 | NA | EP09 | Crude Oil Transload Station 8 | | | | 2.90 | | | | | |
| EU19 | NA | EP10 | Crude Oil Transload Station 9 | | | | 2.90 | | | | | |
| EU20 | NA | EP11 | Crude Oil Transload Station 10 | | | | 2.90 | | | | | |
| | | | **Crude Oil Transload Total** | | | | **29.03** | | | | **0.10** | **0.13** |
| EU21 | NA | NA | Crude Oil Truck Unload Station 1 | | | | | | | | | |
| EU22 | NA | NA | Crude Oil Truck Unload Station 2 | | | | | | | | | |
| EU23 | NA | NA | Crude Oil Truck Unload Station 3 | | | | | | | | | |
| EU24 | NA | NA | Crude Oil Truck Unload Station 4 | | | | | | | | | |
| EU25 | NA | NA | Crude Oil Truck Unload Station 5 | | | | | | | | | |
| EU26 | NA | NA | Crude Oil Truck Unload Station 6 | | | | | | | | | |
| EU27 | NA | NA | Crude Oil Truck Unload Station 7 | | | | | | | | | |
| EU28 | NA | NA | Crude Oil Truck Unload Station 8 | | | | | | | | | |
| EU29 | NA | NA | Crude Oil Truck Unload Station 9 | | | | | | | | | |
| EU30 | NA | NA | Crude Oil Truck Unload Station 10 | | | | | | | | | |
| EU31 | NA | EP12 | Bulk Products Transfer Station 1 | 0.70 | 0.33 | 0.05 | | | | | | |
| EU32 | NA | EP13 | Bulk Products Transfer Station 2 | 0.70 | 0.33 | 0.05 | | | | | | |
| EU33 | NA | EP14 | Bulk Products Transfer Station 3 | 0.70 | 0.33 | 0.05 | | | | | | |
| EU34 | NA | EP15 | Bulk Products Transfer Station 4 | 0.70 | 0.33 | 0.05 | | | | | | |
| EU35 | NA | EP16 | Bulk Products Transfer Station 5 | 0.70 | 0.33 | 0.05 | | | | | | |
| EU36 | NA | EP17 | Bulk Products Transfer Station 6 | 0.70 | 0.33 | 0.05 | | | | | | |
| | | | **Bulk Products Transfer Total** | **4.20** | **1.99** | **0.30** | | | | | | |
| EU37 | C02 | EP18 | Bulk Products Storage Silo 1 | 1.42 | 0.67 | 0.10 | | | | | | |
| EU38 | C03 | EP19 | Bulk Products Storage Silo 2 | 1.42 | 0.67 | 0.10 | | | | | | |
| EU39 | C04 | EP20 | Bulk Products Storage Silo 3 | 1.42 | 0.67 | 0.10 | | | | | | |
| EU40 | C05 | EP21 | Bulk Products Storage Silo 4 | 1.42 | 0.67 | 0.10 | | | | | | |
| EU41 | C06 | EP22 | Bulk Products Storage Silo 5 | 1.42 | 0.67 | 0.10 | | | | | | |
| EU42 | C07 | EP23 | Bulk Products Storage Silo 6 | 1.42 | 0.67 | 0.10 | | | | | | |
| EU43 | NA | EP24 | Bulk Products Shipping | 4.20 | 1.99 | 0.30 | | | | | | |
| | | | **Bulk Products Storage/Shipping Total** | **12.75** | **6.03** | **0.91** | | | | | | |
| TK01 | NA | EP25 | Crude Oil Storage Tank 1 | | | | 2.68 | | | | | |
| TK02 | NA | EP26 | Crude Oil Storage Tank 2 | | | | 2.68 | | | | | |
| TK03 | NA | EP27 | Crude Oil Storage Tank 3 | | | | 2.68 | | | | | |
| | | | **Oil Storage Tank Total** | | | | **8.03** | | | | | |
| EU44 | NA | EP28 | Diesel Fuel Transfer Station 1 | | | | 0.15 | | | | | |
| EU45 | NA | EP29 | Diesel Fuel Transfer Station 2 | | | | 0.15 | | | | | |
| | | | **Diesel Fuel Transfer Total** | | | | **0.31** | | | | | |
| | | | **Facility Total** | **16.95** | **8.02** | **1.21** | **54.78** | **5.64** | **30.71** | **23.59** | **0.23** | **0.28** |

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Crude Oil Railcar Loading

$$E_L = 12.46 \times \frac{S\ M\ P}{T} \times \left(1 - \frac{eff}{100}\right)$$ AP-42 Section 5.2 (June/2008) Equation 1

Where:

$E_L$ = Loading Loss VOC Emission Factor, (lb/1000 gal of liquid loaded)
S = Saturation factor
M = molecular weight of vapors, (lb/lb-mole)
P = True vapor pressure of liquid loaded, (psia)
T = Temperature of bulk liquid loaded, (°R -- °F+460)
eff = Control Efficiency

| | | |
|---|---|---|
| S = | 0.5 | AP-42 Section 5.2 Table 5.2-1 |
| M = | 61.5 | AP-42 Section 7.1 Table 7.1-2 (Crude Oil RVP 5) |
| P = | 1.7 | psi at 41.45°F--RVP 5/EPA Tanks 4.09d annual average for Williston |
| T = | 501.9 | °R (41.45 °F) EPA Tanks 4.09d annual average for Williston, ND |

| | | |
|---|---|---|
| Uncontrolled VOC $E_L$ = | 1.26 | lbs VOC / 1000 gallons loaded |
| Uncontrolled NOx $E_L$ = | 0.068 | lbs NOx/MMBtu [AP-42 Section 13.5 (Sept 1991)] |
| Uncontrolled NOx $E_L$ = | 0.008 | lbs NOx/1000 gallons loaded |
| Uncontrolled CO $E_L$ = | 0.37 | lbs CO/MMBtu [AP-42 Section 13.5 (Sept 1991)] |
| Uncontrolled CO $E_L$ = | 0.04452 | lbs CO/1000 gallons loaded |
| Uncontrolled $CO_2$ $E_L$ = | 163.9 | lbs $CO_2$/MMBtu [Table C-1 40CFR98 Adjusted to Btu content] |
| Uncontrolled $CO_2$ $E_L$ = | 8.0 | lbs $CO_2$/1000 gallons loaded |
| Uncontrolled $CH_4$ $E_L$ = | 0.00032 | lbs $CH_4$/MMBtu [Table C-2 40CFR98 Adjusted to Btu Content] |
| Uncontrolled $CH_4$ $E_L$ = | 0.00004 | lbs $CH_4$/1000 gallons loaded |
| Uncontrolled $N_2O$ $E_L$ = | 0.00006 | lbs $CH_4$/MMBtu [Table C-2 40CFR98 Adjusted to Btu Content] |
| Uncontrolled $N_2O$ $E_L$ = | 0.00001 | lbs $N_2O$/1000 gallons loaded |

Assuming Flare provides 98% VOC control

| | | | |
|---|---|---|---|
| eff = | 98 | 10 | loading stations each with 700gpm max flow |
| 7,000 | gpm | 10,000 | barrels per hour |
| 420,000 | gallons per hour | 56,146 | $ft^3$ per hour |
| 50.5 | MMBtu/hr | 900 | btu per $ft^3$ |

The max heat input to the flare is calculated from the maximum flow from the loading stations assuming a maximum heat content (with enrichment) of 900 Btus per standard cubic foot gas.

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40 CFR Part 98 Tables C-1 and C-2 provide GHG emission factors for the combustion of liquid Crude Oil. These factors adjusted to 900 Btu per cubic foot were used to estimate emissions. Emission factors from Tables C-1 and C-2 were multiplied by the ratio of btu content 18,448/900 (Btu/cf). 18,448 is the average btu content of crude oil provided as 0.138 MMBtu/gallon in Table C-1.

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Crude Oil Railcar Loading

Sweet crude oil is defined as having less than 0.5% sulfur. The oil from the Bakken formation is sweet with a low sulfur content. Sulfur oxide emissions are directly proportional to the amount of sulfur present in the vapors.

| | | |
|---|---|---|
| Estimated API Gravity = | 41 | degrees |
| Specific Gravity = | 0.82 | |
| Density = | 6.84 | lbs/gallon |
| Sulfur Content = | 0.5% | wt. In the crude oil |
| Uncontrolled SOx $E_L$ = | 0.034 | lbs SOx / 1000 gallons loaded [Material Balance] |
| Controlled VOC $E_L$ = | 0.025 | lbs VOC / 1000 gallons loaded |

Assuming a Proposed Limit throughput

| | | |
|---|---|---|
| Crude Oil = | 1,379,700 | 1,000 gallons per year |
| Crude Oil = | 32,850,000 | Barrels of Oil per year |
| Crude Oil = | 90,000 | Barrels per day |

**Controlled Maximum**

| | | |
|---|---|---|
| VOC Emissions = | 17.42 | Tons per year |
| NOx Emissions = | 5.64 | |
| CO Emissions = | 30.71 | |
| SOx Emissions = | 23.59 | |
| $CO_2e$ Emissions = | 9,952 | |

**Uncontrolled**

| | | |
|---|---|---|
| VOC Emissions = | 870.8 | Tons per year |
| NOx Emissions = | 0.00 | |
| CO Emissions = | 0.00 | |
| SOx Emissions = | 0.00 | |

| | Tons per year | GWP | TPY $CO_2e$ |
|---|---|---|---|
| CO2 Emissions = | 5,515 | 1 | 5,515 |
| CH4 Emissions = | 53 | 21 | 1,122 |
| N2O Emissions = | 11 | 310 | 3,314 |

GWP: from Table A-1 40CFR98

$CO_2e$ Emissions = Sum of GHGs x GWP

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Crude Oil Railcar Loading HAP PTE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Temperatrue = | 41.9 | °F EPA Tanks 4.09d annual average for Williston, ND | | | | | |
| Temperatrue = | 501.9 | °R | | | | | |
| Temperatrue = | 5.50 | °C | 10 | Stations | VOC Emission Rate = | 1.26 | lbs / 1000 gals loaded |
| Liquid Molecular Weight Crude Oil = | 207.14 | lb/lb-mole | 700 | gpm Each | VOC Emission Rate [(1)] = | 8.00 | ft3 / 1000 gals loaded |
| Vapor Molecular Weight Crude Oil = | 61.50 | lb/lb-mole | 420000 | gallons per hour | Patm = | 13.82 | psia; Tanks 4.09 for Williston, ND |
| Vapor Pressure of Crude Oil = | 1.70 | psia | | | | | |
| Annual Crude Throughput = | 1,379,700 | 1,000 gallons | | | | | |

| Hazardous Air Pollutant | Molecular Weight | Vapor Pressure Constants | | | (A) Vapor Pressure | (B) Liquid Weight Fraction | (C) Liquid Mole Fraction | (D) HAP Vapor Concentration | (E) Uncontrolled Potential Emissions | | (F) Controlled Potential Emissions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lb/lb-Mole) | A | B (°C) | C (°C) | (psia) | (%) | (%) | ($lb/ft^3$) | (lb/hr) | (TPY) | (lb/hr) | (TPY) |
| 2,2,4-Trimethylpentane (isooctane) | 114.23 | 6.81 | 1257.8 | 220.74 | 0.3441 | 0.2634 | 0.4776 | 3.49E-05 | 0.12 | 0.19 | 0.00 | 0.00 |
| Benzene | 78.11 | 6.91 | 1211 | 220.79 | 0.6993 | 0.4464 | 1.1838 | 1.20E-04 | 0.40 | 0.66 | 0.01 | 0.01 |
| Biphenyl | 154.21 | 7.25 | 1998.7 | 202.73 | 0.0001 | 0.0613 | 0.0823 | 2.04E-09 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cresols | 108.14 | 7.48 | 1833.1 | 196.74 | 0.0005 | 0.2185 | 0.4185 | 4.23E-08 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cumene (isopropylbenzene) | 120.19 | 6.93 | 1455.8 | 207.2 | 0.0235 | 0.1260 | 0.2172 | 1.14E-06 | 0.00 | 0.01 | 0.00 | 0.00 |
| Ethylbenzene | 106.17 | 6.95 | 1419.3 | 212.61 | 0.0536 | 0.3459 | 0.6749 | 7.13E-06 | 0.02 | 0.04 | 0.00 | 0.00 |
| Hexane (largest single HAP) | 86.18 | 6.88 | 1171.5 | 224.37 | 1.1745 | 2.4630 | 5.9200 | 1.11E-03 | 3.74 | 6.14 | 0.07 | 0.12 |
| Naphthalene | 128.17 | 7.15 | 1831.6 | 211.82 | 0.0010 | 0.2187 | 0.3534 | 8.57E-08 | 0.00 | 0.00 | 0.00 | 0.00 |
| Phenol | 94.11 | 7.12 | 1506.7 | 174.2 | 0.0011 | 0.3231 | 0.7112 | 1.31E-07 | 0.00 | 0.00 | 0.00 | 0.00 |
| Toluene | 92.14 | 7.02 | 1377.6 | 222.64 | 0.1853 | 0.8784 | 1.9747 | 6.26E-05 | 0.21 | 0.35 | 0.00 | 0.01 |
| Xylene | 106.17 | 7.01 | 1462.3 | 215.11 | 0.0465 | 1.4199 | 2.7703 | 2.54E-05 | 0.09 | 0.14 | 0.00 | 0.00 |
| Total Combined HAPs | | | | | | | | | 4.58 | 7.53 | 0.09 | 0.15 |

(1) The VOC mass emission rate and the ideal gas law was used to calculate the VOC volume emission rate = mass rate * R /(MW * Temp * P [atm])

(A) Log(Vapor Pressure [mmHg]) = A - B/(C+T) ; Where T is °C and 760 mmHg = 1 ATM = 14.69 psia

(B) Liquid Weight Fraction is determined from Petroleum Refinery MACT ICR (memorandum from Patrick B. Murphy, Radian/RTP, to James F. Durban, EPA/CPB, Petroleum Refinery Liquid HAP and Properties Data, August 10, 1993)

(C) Liquid Mole Fraction = Liquid weight fraction/100 * MW liquid crude / MW HAP

(D) HAP Vapor Concentration is determined from Rault's Law and the Ideal Gas law; HAP partial pressure = liqid mole fraction * HAP vapor prssure; Concentration = partial pressure * MW / (R * T)

Where R = Ideal gas constant = 10.731 psia $ft^3$ / lb-mole °R

(E) Uncontrolled emissions [lb/hr] = HAP Vapor Concentration [lb/ft3] * VOC emission rate [ft3/mgal loaded] * loading rate [mgal/ hour]

(F) Uncontrolled emissions [tpy] = HAP Vapor Concentration [lb/ft3] * VOC emission rate [ft3/mgal loaded] * loading rate [mgal/ year] / 2000 [lbs/ton]

Controlled emission apply a 98% control effeciency (vapor balance) to the uncontrolled emission rate

| HAP Emissions Summary | lb/hr | tpy |
|---|---|---|
| Single largest HAP (hexane) | 0.07 | 0.12 |
| Combined Total HAPs | 0.09 | 0.15 |

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Crude Oil Railcar Transloading

$$E_L = 12.46 \times \frac{S\,M\,P}{T} \times \left(1 - \frac{eff}{100}\right)$$ AP-42 Section 5.2 (June/2008) Equation 1

Where:

$E_L$ = Loading Loss VOC Emission Factor, (lb/1000 gal of liquid loaded)
S = Saturation factor
M = molecular weight of vapors, (lb/lb-mole)
P = True vapor pressure of liquid loaded, (psia)
T = Temperature of bulk liquid loaded, (°R -- °F+460)
eff = Control Efficiency

| | | |
|---|---|---|
| S = | 1 | AP-42 Section 5.2 Table 5.2-1 |
| M = | 61.5 | AP-42 Section 7.1 Table 7.1-2 (Crude Oil RVP 5) |
| P = | 1.7 | psi at 41.45°F--RVP 5/EPA Tanks 4.09d annual average for Williston |
| T = | 501.9 | °R (41.45 °F) EPA Tanks 4.09d annual average for Williston, ND |

Uncontrolled VOC $E_L$ = 2.52 lbs VOC / 1000 gallons loaded

Assuming Vapor Balance provides 90% VOC control

eff = 90 10 loading stations each with 400gpm max flow

4,000 gpm 5,714 barrels per hour

| | | |
|---|---|---|
| Estimated API Gravity = | 41 | degrees |
| Specific Gravity = | 0.82 | |
| Density = | 6.84 | lbs/gallon |
| Sulfur Content = | 0.5% | wt. In the crude oil |

Controlled VOC $E_L$ = 0.252 lbs VOC / 1000 gallons loaded

Assuming a Proposed Limit throughput

| | | |
|---|---|---|
| Crude Oil = | 229,950 | 1,000 gallons per year |
| Crude Oil = | 5,475,000 | Barrels of Oil per year |
| Crude Oil = | 15,000 | Barrels per day |

**Controlled Maximum**
VOC Emissions = 29.03 Tons per year

**Uncontrolled**
VOC Emissions = 290.3 Tons per year

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Crude Oil Railcar Transloading HAP PTE

| | | | | | |
|---|---|---|---|---|---|
| Temperatrue = | 41.9 °F | EPA Tanks 4.09d annual average for Williston, ND | | | |
| Temperatrue = | 501.9 °R | | | | |
| Temperatrue = | 5.50 °C | 10 Stations | VOC Emission Rate = | 1.26 | lbs / 1000 gals loaded |
| Liquid Molecular Weight Crude Oil = | 207.14 lb/lb-mole | 700 gpm Each | VOC Emission Rate [(1)] = | 8.00 | ft3 / 1000 gals loaded |
| Vapor Molecular Weight Crude Oil = | 61.50 lb/lb-mole | 420000 gallons per hour | Patm = | 13.82 | psia; Tanks 4.09 for Williston, ND |
| Vapor Pressure of Crude Oil = | 1.70 psia | | | | |
| Annual Crude Transload = | 229,950 1,000 gallons | | | | |

| Hazardous Air Pollutant | Molecular Weight | Vapor Pressure Constants | | | (A) Vapor Pressure | (B) Liquid Weight Fraction | (C) Liquid Mole Fraction | (D) HAP Vapor Concentration | (E) Uncontrolled Potential Emissions | | (F) Controlled Potential Emissions | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (lb/lb-Mole) | A | B (°C) | C (°C) | (psia) | (%) | (%) | ($lb/ft^3$) | (lb/hr) | (TPY) | (lb/hr) | (TPY) |
| 2,2,4-Trimethylpentane (isooctane) | 114.23 | 6.81 | 1257.8 | 220.74 | 0.3441 | 0.2634 | 0.4776 | 3.49E-05 | 0.12 | 0.03 | 0.01 | 0.00 |
| Benzene | 78.11 | 6.91 | 1211 | 220.79 | 0.6993 | 0.4464 | 1.1838 | 1.20E-04 | 0.40 | 0.11 | 0.04 | 0.01 |
| Biphenyl | 154.21 | 7.25 | 1998.7 | 202.73 | 0.0001 | 0.0613 | 0.0823 | 2.04E-09 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cresols | 108.14 | 7.48 | 1833.1 | 196.74 | 0.0005 | 0.2185 | 0.4185 | 4.23E-08 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cumene (isopropylbenzene) | 120.19 | 6.93 | 1455.8 | 207.2 | 0.0235 | 0.1260 | 0.2172 | 1.14E-06 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ethylbenzene | 106.17 | 6.95 | 1419.3 | 212.61 | 0.0536 | 0.3459 | 0.6749 | 7.13E-06 | 0.02 | 0.01 | 0.00 | 0.00 |
| Hexane (largest single HAP) | 86.18 | 6.88 | 1171.5 | 224.37 | 1.1745 | 2.4630 | 5.9200 | 1.11E-03 | 3.74 | 1.02 | 0.37 | 0.10 |
| Naphthalene | 128.17 | 7.15 | 1831.6 | 211.82 | 0.0010 | 0.2187 | 0.3534 | 8.57E-08 | 0.00 | 0.00 | 0.00 | 0.00 |
| Phenol | 94.11 | 7.12 | 1506.7 | 174.2 | 0.0011 | 0.3231 | 0.7112 | 1.31E-07 | 0.00 | 0.00 | 0.00 | 0.00 |
| Toluene | 92.14 | 7.02 | 1377.6 | 222.64 | 0.1853 | 0.8784 | 1.9747 | 6.26E-05 | 0.21 | 0.06 | 0.02 | 0.01 |
| Xylene | 106.17 | 7.01 | 1462.3 | 215.11 | 0.0465 | 1.4199 | 2.7703 | 2.54E-05 | 0.09 | 0.02 | 0.01 | 0.00 |
| Total Combined HAPs | | | | | | | | | 4.58 | 1.25 | 0.46 | 0.13 |

(1) The VOC mass emission rate and the ideal gas law was used to calculate the VOC volume emission rate = mass rate * R /(MW * Temp * P [atm])

(A) Log(Vapor Pressure [mmHg]) = A - B/(C+T) ; Where T is °C and 760 mmHg = 1 ATM = 14.69 psia

(B) Liquid Weight Fraction is determined from Petroleum Refinery MACT ICR (memorandum from Patrick B. Murphy, Radian/RTP, to James F. Durban, EPA/CPB, Petroleum Refinery Liquid HAP and Properties Data, August 10, 1993)

(C) Liquid Mole Fraction = Liquid weight fraction/100 * MW liquid crude / MW HAP

(D) HAP Vapor Concentration is determined from Rault's Law and the Ideal Gas law; HAP partial pressure = liqid mole fraction * HAP vapor prssure;
Concentration = partial pressure * MW / (R * T)

Where R = Ideal gas constant = 10.731 psia $ft^3$ / lb-mole °R

(E) Uncontrolled emissions [lb/hr] = HAP Vapor Concentration [lb/ft3] * VOC emission rate [ft3/mgal loaded] * loading rate [mgal/ hour]

(F) Uncontrolled emissions [tpy] = HAP Vapor Concentration [lb/ft3] * VOC emission rate [ft3/mgal loaded] * loading rate [mgal/ year] / 2000 [lbs/ton]

Controlled emission apply a 90% control effeciency (vapor balance) to the uncontrolled emission rate

| HAP Emissions Summary | lb/hr | tpy |
|---|---|---|
| Single largest HAP (hexane) | 0.37 | 0.10 |
| Combined Total HAPs | 0.46 | 0.13 |

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Transisiton Through Construction of New Equipment

$$E_L = 12.46 \times \frac{S\,M\,P}{T} \times \left(1 - \frac{eff}{100}\right)$$ AP-42 Section 5.2 (June/2008) Equation 1

Where:

$E_L$ = Loading Loss VOC Emission Factor, (lb/1000 gal of liquid loaded)
S = Saturation factor
M = molecular weight of vapors, (lb/lb-mole)
P = True vapor pressure of liquid loaded, (psia)
T = Temperature of bulk liquid loaded, (°R -- °F+460)
eff = Control Efficiency

| | | |
|---|---|---|
| S = | 1 | AP-42 Section 5.2 Table 5.2-1 |
| M = | 61.5 | AP-42 Section 7.1 Table 7.1-2 (Crude Oil RVP 5) |
| P = | 1.7 | psi at 41.45°F--RVP 5/EPA Tanks 4.09d annual average for Williston |
| T = | 501.9 | °R (41.45 °F) EPA Tanks 4.09d annual average for Williston, ND |

Uncontrolled VOC $E_L$ = 2.52 lbs VOC / 1000 gallons loaded

Assuming Vapor Balance provides 90% VOC control
eff = 90
Assuming Flare provides 98% VOC control
eff = 98

Transloading EF = 0.252 lbs VOC / 1000 gallons transloaded
High Speed Load EF = 0.050 lbs VOC / 1000 gallons loaded

| Limits | |
|---|---|
| Transloading | 17,000,000 |
| High Speed Loading | 32,850,000 |

| Number of Months | 1,000 Gallons loaded | VOC PTE | | Average Monthly PTE |
|---|---|---|---|---|
| 11 | 654,500 | 82.62 | Tons | 7.51 |
| 1 | 114,975 | 2.90 | Tons | 2.90 |
| | Total Emissions | 85.52 | Tons | |

Tank Emissions = 2.68 Tons Each
Tanks = 3

Total Annual Tank Emissions = 8.03 Tons = 0.67 per month

Total Transition PTE = 86.19 Tons

Dakota Plains Holdings, Inc.
New Town Transfer Facility

Oil Storage Tanks

EPA Tanks v4.09d was used to estimate tank emissions

| **Limited Maximum Emissions** | | | Throughput | |
|---|---|---|---|---|
| Assuming: | 90,000 | Barrels per day | 32,850,000 | Barrels per year |
| | 3,780,000 | Gallons per day | 1,379,700,000 | Gallons per year |

**Three 90,000 barrel Tanks with equal throughputs**

| | | | |
|---|---|---|---|
| Tank Volume = | 3,780,000 | Gallons | each |
| Throughput = | 30,000 | Barrels/day | each |
| Throughput = | 459,900,000 | Gallons/yr | each |
| Turnovers = | 121.7 | | each |
| VOC Emissions = | 5,350.24 | lbs | each |
| | 2.68 | tons | each |

Dakota Plains Holdings, Inc.
New Town Transfer Facility
Sand Receiving, handling, and Storage

Bulk Products Transfer

The facility is proposing use portable conveyors to unload railcars into trucks. The trucks will then deliver the sand off-site or store the sand in onsite silos prior to loading trucks for final delivery. A partially enclosed building will be used for sand unloading and fixed conveyors and silos for sand storage. The sand will be conveyed out of the silo and loaded onto truck through fixed conveyors and elevators.

Therotical Maximum Throughput

| | | | |
|---|---|---|---|
| 2,190,000 | Tons per year per station | 250 | tons per hour per station |
| 13,140,000 | Tons per year | 6 | Stations |

Sand Transloading (Rail to Trucks)

250 TPH @ 100# per cf
5000 cubic feet per hour

| Pollutant | emission factor (lb/ton)[1] | Tons per year | Throughput Tons per hour | Uncontrolled Emissions Tons/year | Capture Efficiency | Control Efficiency | Combined Efficiency | Controlled Emissions lb/hr | Controlled Emissions Tons/year |
|---|---|---|---|---|---|---|---|---|---|
| PM | 0.0021 | 13,140,000 | 250 | 13.69 | 70% | 99% | 69.3% | 0.160 | 4.20 |
| $PM_{10}$ | 0.0010 | 13,140,000 | 250 | 6.48 | 70% | 99% | 69.3% | 0.076 | 1.99 |
| $PM_{2.5}$ | 0.0001 | 13,140,000 | 250 | 0.98 | 70% | 99% | 69.3% | 0.011 | 0.30 |

[1] Emission factor from AP-42 Section 13.2.4 equation (1).

Sand Receiving, handling, and Storage

250 TPH @ 100# per cf
5000 cubic feet per hour

| Pollutant | Particle Size distribution factor (% of PM factor) | emission factor (lb/ton)[1] | Throughput Tons per year | Throughput Tons per hour | Controlled Emissions lbs/hour | Controlled Emissions lbs/year | Controlled Emissions Tons per Year |
|---|---|---|---|---|---|---|---|
| PM | 100% | 0.0013 | 13,140,000 | 250 | 0.33 | 17,082 | 8.54 |
| $PM_{10}$ | 47.30% | 0.0006 | 13,140,000 | 250 | 0.15 | 8,079 | 4.04 |
| $PM_{2.5}$ | 7.16% | 0.0001 | 13,140,000 | 250 | 0.02 | 1,223 | 0.61 |

[1] Emissions factor from AP-42 Section 11.19.1 Table 11.19.1-1. Emission factor in AP-42 is controlled by a wet scrubber. A

Sand Shipping (loading Trucks)

100 TPH @ 100# per cf
2000 cubic feet per hour

| Pollutant | emission factor (lb/ton)[1] | Tons per year | Throughput Tons per hour | Uncontrolled Emissions Tons/year | Capture Efficiency | Control Efficiency | Combined Efficiency | Controlled Emissions lb/hr | Controlled Emissions Tons/year |
|---|---|---|---|---|---|---|---|---|---|
| PM | 0.0021 | 13,140,000 | 100 | 13.69 | 70% | 99% | 69.3% | 0.064 | 4.20 |
| $PM_{10}$ | 0.0010 | 13,140,000 | 100 | 6.48 | 70% | 99% | 69.3% | 0.030 | 1.99 |
| $PM_{2.5}$ | 0.0001 | 13,140,000 | 100 | 0.98 | 70% | 99% | 69.3% | 0.005 | 0.30 |

[1] Emission factor from AP-42 Section 13.2.4 equation (1).

Dakota Plains Holdings, Inc.
New Town Transfer Facility
Sand Receiving, handling, and Storage

Equation 1 from AP-42 Section 13.2.4 (11/06)

$$E = (0.0032) \times K \times \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

E = Emission factor (lb/Ton transferred)
K = Particle Size multiplier (dimensionless)
U = Mean Wind speed (miles per hour)
M = Material moisture content (%)

| Values of K | | | | |
|---|---|---|---|---|
| PM | 0.74 | U = | 10 | mph |
| PM10 | 0.35 | M = | 1.77 | Aggregate |
| PM2.5 | 0.053 | M = | 4.17 | Sand |

Total Emissions from Sand Transload, Handling and Storage

| | |
|---|---|
| PM | 16.95 |
| $PM_{10}$ | 8.02 |
| $PM_{2.5}$ | 1.21 |

Diesel Fuel Transload

$$E_L = 12.46 \times \frac{S\,M\,P}{T} \times \left(1 - \frac{eff}{100}\right)$$

AP-42 Section 5.2 (June/2008) Equation 1

Where:

| | | |
|---|---|---|
| $E_L$ = | Loading Loss Emission Factor, (lb/1000 gal of liquid loaded) | |
| S = | Saturation factor, 1.0 for vapor balance | |
| M = | molecular weight of vapors, (lb/lb-mole) | |
| P = | True vapor pressure of liquid loaded, (psia) | |
| T = | Temperature of bulk liquid loaded, (°R -- °F+460) | |
| eff = | Control Efficiency | |
| S = | 1 | AP-42 Section 5.2 Table 5.2-1 |
| M = | 130 | AP-42 Section 7.1 Table 7.1-2 (Jet naphtha JP-4) |
| P = | 0.0045 | psi at 50 °F / AP-42 Section 7.1 Table 7.1-2 |
| T = | 501.45 | °R (41.45 °F) EPA Tanks 4.09d Annual average for Williston, ND |
| Uncontrolled $E_L$ = | 0.01 | lbs VOC / 1000 gallons loaded |

Assuming Vapor Balance provided 90% control

| | | |
|---|---|---|
| eff = | 90 | |
| Controlled $E_L$ = | 0.001 | lbs VOC / 1000 gallons loaded |

**Maximum Theoretical Throughput:**

| | | | |
|---|---|---|---|
| 5,005,714 | Barrels per year per station | 400 | gallons per minute per station |
| 10,011,429 | Barrels per year | 2 | stations |
| 420,480 | 1000 gallons per year | | |

**Theoretical Maximum Controlled Emissions:**

VOC Emissions = 0.31 Tons per year

**Theoretical Maximum Uncontrolled Emissions:**

VOC Emissions = 3.06 Tons per year

**Esitmated Emissions with Expected Throughputs:**

Assuming a daily throughput of:

Diesel Throughput = 5,000 Barrels per day

Diesel Throughput = 76,650 1000 gallons per year

**Limited Controlled**

VOC Emissions = 0.06 Tons per year

**Limited Uncontrolled**

VOC Emissions = 0.56 Tons per year

Dakota Plains Holdings, Inc.

New Town Transfer Facility

**Internal Plant Roads - Unpaved**

Basis: AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2 (With Speed Controls)

$$E = \left[k\left(\frac{s}{12}\right)^{a} \times \left(\frac{W}{3}\right)^{b}\right]\left(1 - \frac{P}{N}\right)\left(\frac{Sp}{30}\right)^{d}$$

| | | | |
|---|---|---|---|
| particle size multiplier | $k_{PM\text{-}2.5}$ | 0.15 | dimensionless |
| particle size multiplier | $k_{PM\text{-}10}$ | 1.5 | dimensionless |
| particle size multiplier | $k_{PM}$ | 4.9 | dimensionless |
| Material Silt Content | S | **4.5** | % |
| Days with Precipitation | P | (See table right) | days |
| Days in Month | N | (See table right) | days |
| Vehicle Weight | W | (See table below) | Tons |
| Constant PM2.5 | a | 0.9 | dimensionless |
| Constant PM10 | a | 0.9 | dimensionless |
| Constant PM | a | 0.7 | dimensionless |
| Constant | b | 0.45 | dimensionless |
| Speed Limit | Sp | 15 | mph |
| Constant PM2.5 | d | 0.5 | dimensionless |
| Constant PM10 | d | 0.5 | dimensionless |
| Constant PM | d | 0.3 | dimensionless |

Average number of Days with 0.01 inch or more Precipitation

| | | |
|---|---|---|
| January | 8 | 31 |
| February | 7 | 28 |
| March | 8 | 31 |
| April | 8 | 30 |
| May | 10 | 31 |
| June | 12 | 30 |
| July | 9 | 31 |
| August | 8 | 31 |
| September | 7 | 30 |
| October | 6 | 31 |
| November | 6 | 30 |
| December | 7 | 31 |
| Annual | 96 | 365 |

Precipitation data from NOAA:
http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/prcpdays.html
Bismarck, ND

Empty truck is estimated to weigh 15 tons
Full Truck is estimated to weigh 40 tons

| Truck Travel on Plant Roads | | | Percentage of Distance | | Weighted Average | |
|---|---|---|---|---|---|---|
| Crude Oil Trucks | 1830 | feet per trip EMPTY | 55.0% | Empty | 26.3 | tons |
| | 1500 | feet per trip FULL | 45.0% | Full | | |
| | 0.6307 | Miles per trip | | | | |
| Diesel Fuel Trucks | 3600 | feet per trip EMPTY | 54.5% | Empty | 26.4 | tons |
| | 3000 | feet per trip FULL | 45.5% | Full | | |
| | 1.2500 | Miles per trip | | | | |
| Sand and Other Bulk Comodities Trucks | 3600 | feet per trip EMPTY | 54.5% | Empty | 26.4 | tons |
| | 3000 | feet per trip FULL | 45.5% | Full | | |
| | 1.2500 | Miles per trip | | | | |
| Lumber, Pipe, and Other Solid Goods | 3600 | feet per trip EMPTY | 54.5% | Empty | 26.4 | tons |
| | 3000 | feet per trip FULL | 45.5% | Full | | |
| | 1.2500 | Miles per trip | | | | |

Savage Services Corporation
Trenton Rail Port
**Internal Plant Roads - Unpaved**

Uncontrolled Emissions

| | Distance Traveled miles | Number of Trucks Trucks per year | Truck Weight tons | Silt Load Content % | PM-2.5 Emission Factor lbs/VMT | PM-10 Emission Factor lbs/VMT | PM Emission Factor lbs/VMT | PM-2.5 Emissions Tons | PM-10 Emissions Tons | PM Emissions Tons | PM-2.5 Emissions Tons | PM-10 Emissions Tons | PM Emissions Tons |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crude Oil Trucks | 0.6 | 183,960 | 26.26 | 4.50 | 0.09 | 0.86 | 3.92 | 4.98 | 49.79 | 227.33 | 7.53 | 75.29 | 343.75 |
| Diesel Fuel Trucks | 1.3 | 10,950 | 26.36 | | 0.09 | 0.86 | 3.93 | 0.59 | 5.88 | 26.87 | | | |
| Sand and Other Bulk Comodities Trucks | 1.3 | 21,900 | 26.36 | | 0.09 | 0.86 | 3.93 | 1.18 | 11.77 | 53.73 | | | |
| Lumber, Pipe, and Other Solid Goods | 1.3 | 14,600 | 26.36 | | 0.09 | 0.86 | 3.93 | 0.78 | 7.85 | 35.82 | | | |

Controlled Emissions

| | Watering Control Efficiency % | PM-2.5 Emissions Tons | PM-10 Emissions Tons | PM Emissions Tons | PM-2.5 Emissions Tons | PM-10 Emissions Tons | PM Emis Tons |
|---|---|---|---|---|---|---|---|
| Crude Oil Trucks | 80 | 1.00 | 9.96 | 45.47 | 1.51 | 15.06 | 68.75 |
| Diesel Fuel Trucks | | 0.12 | 1.18 | 5.37 | | | |
| Sand and Other Bulk Comodities Trucks | | 0.24 | 2.35 | 10.75 | | | |
| Lumber, Pipe, and Other Solid Goods | | 0.16 | 1.57 | 7.16 | | | |

# EPA Tanks 4.09d Summaries

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Tank Indentification and Physical Characteristics

**Identification**

| | |
|---|---|
| User Identification: | Dakota Plains Tanks 1-3 |
| City: | Williston |
| State: | North Dakota |
| Company: | Dakota Plains |
| Type of Tank: | Internal Floating Roof Tank |
| Description: | 90,000 Barrel Capacity Oil Storage Tank |

**Tank Dimensions**

| | |
|---|---|
| Diameter (ft): | 170.00 |
| Volume (gallons): | 3,780,000.00 |
| Turnovers: | 121.70 |
| Self Supp. Roof? (y/n): | N |
| No. of Columns: | 16.00 |
| Eff. Col. Diam. (ft): | 1.00 |

**Paint Characteristics**

| | |
|---|---|
| Internal Shell Condition: | Light Rust |
| Shell Color/Shade: | White/White |
| Shell Condition | Good |
| Roof Color/Shade: | White/White |
| Roof Condition: | Good |

**Rim-Seal System**

| | |
|---|---|
| Primary Seal: | Vapor-mounted |
| Secondary Seal | None |

**Deck Characteristics**

| | |
|---|---|
| Deck Fitting Category: | Detail |
| Deck Type: | Bolted |
| Construction: | Sheet |
| Deck Seam: | Sheet: 5 Ft Wide |
| Deck Seam Len. (ft): | 4,539.60 |

| Deck Fitting/Status | Quantity |
|---|---|
| Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed | 1 |
| Automatic Gauge Float Well/Unbolted Cover, Gasketed | 1 |
| Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask. | 16 |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed | 1 |
| Roof Leg or Hanger Well/Adjustable | 41 |
| Sample Pipe or Well (24-in. Diam.)/Slotted Pipe-Sliding Cover, Gask. | 1 |
| Stub Drain (1-in. Diameter)/Slotted Pipe-Sliding Cover, Gask. | 116 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. | 1 |

Meterological Data used in Emissions Calculations: Williston, North Dakota (Avg Atmospheric Pressure = 13.82 psia)

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Liquid Contents of Storage Tank

**Dakota Plains Tanks 1-3 - Internal Floating Roof Tank**
**Williston, North Dakota**

| Mixture/Component | Month | Daily Liquid Surf. Temperature (deg F) Avg. | Min. | Max. | Liquid Bulk Temp (deg F) | Vapor Pressure (psia) Avg. | Min. | Max. | Vapor Mol. Weight. | Liquid Mass Fract. | Vapor Mass Fract. | Mol. Weight | Basis for Vapor Pressure Calculations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crude oil (RVP 5) | Jan | 27.65 | 23.33 | 31.96 | 41.45 | 1.4615 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Feb | 31.17 | 26.51 | 35.84 | 41.45 | 1.5803 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Mar | 37.19 | 31.92 | 42.46 | 41.45 | 1.8012 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Apr | 44.20 | 37.87 | 50.52 | 41.45 | 2.0894 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | May | 49.98 | 43.10 | 56.85 | 41.45 | 2.3543 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Jun | 54.43 | 47.20 | 61.65 | 41.45 | 2.5765 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Jul | 57.24 | 49.54 | 64.95 | 41.45 | 2.7253 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Aug | 55.94 | 48.47 | 63.41 | 41.45 | 2.6556 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Sep | 49.76 | 43.18 | 56.34 | 41.45 | 2.3441 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Oct | 44.08 | 38.23 | 49.93 | 41.45 | 2.0844 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Nov | 35.80 | 31.32 | 40.28 | 41.45 | 1.7481 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |
| Crude oil (RVP 5) | Dec | 29.47 | 25.33 | 33.61 | 41.45 | 1.5219 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Detail Calculations (AP-42)

## Dakota Plains Tanks 1-3 - Internal Floating Roof Tank
## Williston, North Dakota

| Month: | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rim Seal Losses (lb): | 53.0375 | 57.6205 | 66.2551 | 77.7588 | 88.5796 | 97.8423 | 104.1500 | 101.1847 | 88.1555 | 77.5535 | 64.1644 | 55.3604 |
| Seal Factor A (lb-mole/ft-yr): | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 | 6.7000 |
| Seal Factor B (lb-mole/ft-yr (mph)^n): | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 |
| Value of Vapor Pressure Function: | 0.0279 | 0.0304 | 0.0349 | 0.0410 | 0.0467 | 0.0515 | 0.0549 | 0.0533 | 0.0464 | 0.0409 | 0.0338 | 0.0292 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 1.4615 | 1.5803 | 1.8012 | 2.0894 | 2.3543 | 2.5765 | 2.7253 | 2.6556 | 2.3441 | 2.0844 | 1.7481 | 1.5219 |
| Tank Diameter (ft): | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 |
| Product Factor: | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Withdrawal Losses (lb): | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 | 235.9224 |
| Number of Columns: | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 |
| Effective Column Diameter (ft): | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Net Throughput (gal/mo.): | 38,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.000038,325,000.0000 | | | | | | | | | | | |
| Shell Clingage Factor (bbl/1000 sqft): | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 | 0.0060 |
| Average Organic Liquid Density (lb/gal): | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 |
| Tank Diameter (ft): | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 |
| Deck Fitting Losses (lb): | 52.6929 | 57.2461 | 65.8247 | 77.2537 | 88.0042 | 97.2066 | 103.4734 | 100.5274 | 87.5828 | 77.0497 | 63.7476 | 55.0007 |
| Value of Vapor Pressure Function: | 0.0279 | 0.0304 | 0.0349 | 0.0410 | 0.0467 | 0.0515 | 0.0549 | 0.0533 | 0.0464 | 0.0409 | 0.0338 | 0.0292 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 |
| Product Factor: | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Tot. Roof Fitting Loss Fact.(lb-mole/yr): | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 | 1,131.6000 |
| Deck Seam Losses (lb): | 37.6804 | 40.9363 | 47.0708 | 55.2436 | 62.9312 | 69.5119 | 73.9932 | 71.8865 | 62.6299 | 55.0977 | 45.5855 | 39.3307 |
| Deck Seam Length (ft): | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 | 4,539.5976 |
| Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr): | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 |
| Deck Seam Length Factor(ft/sqft): | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 | 0.2000 |
| Tank Diameter (ft): | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 | 170.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 | 50.0000 |
| Product Factor: | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Total Losses (lb): | 379.3333 | 391.7253 | 415.0730 | 446.1785 | 475.4375 | 500.4833 | 517.5390 | 509.5210 | 474.2906 | 445.6234 | 409.4199 | 385.6142 |

| Roof Fitting/Status | Quantity | Roof Fitting Loss Factors KFa(lb-mole/yr) | KFb(lb-mole/(yr mph^n)) | m | Losses(lb) |
|---|---|---|---|---|---|
| Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed | 1 | 31.00 | 5.20 | 1.30 | 25.3951 |
| Automatic Gauge Float Well/Unbolted Cover, Gasketed | 1 | 4.30 | 17.00 | 0.38 | 3.5225 |
| Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask. | 16 | 33.00 | 0.00 | 0.00 | 432.5363 |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed | 1 | 56.00 | 0.00 | 0.00 | 45.8751 |
| Roof Leg or Hanger Well/Adjustable | 41 | 7.90 | 0.00 | 0.00 | 265.3381 |
| Sample Pipe or Well (24-in. Diam.)/Slotted Pipe-Sliding Cover, Gask. | 1 | 43.00 | 0.00 | 0.00 | 35.2255 |
| Stub Drain (1-in. Diameter)/ | 116 | 1.20 | 0.00 | 0.00 | 114.0323 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. | 1 | 6.20 | 1.20 | 0.94 | 5.0790 |

# TANKS 4.0.9d
## Emissions Report - Detail Format
## Individual Tank Emission Totals

### Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

**Dakota Plains Tanks 1-3 - Internal Floating Roof Tank**
**Williston, North Dakota**

| | Losses(lbs) | | | | |
|---|---|---|---|---|---|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions |
| Crude oil (RVP 5) | 931.66 | 2,831.07 | 925.61 | 661.90 | 5,350.24 |

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Tank Indentification and Physical Characteristics

**Identification**

| | |
|---|---|
| User Identification: | Dakota Plains Tanks 1-3 |
| City: | Williston |
| State: | North Dakota |
| Company: | Dakota Plains |
| Type of Tank: | Internal Floating Roof Tank |
| Description: | 90,000 Barrel Capacity Oil Storage Tank |

**Tank Dimensions**

| | |
|---|---|
| Diameter (ft): | 170.00 |
| Volume (gallons): | 3,780,000.00 |
| Turnovers: | 121.70 |
| Self Supp. Roof? (y/n): | N |
| No. of Columns: | 16.00 |
| Eff. Col. Diam. (ft): | 1.00 |

**Paint Characteristics**

| | |
|---|---|
| Internal Shell Condition: | Light Rust |
| Shell Color/Shade: | White/White |
| Shell Condition | Good |
| Roof Color/Shade: | White/White |
| Roof Condition: | Good |

**Rim-Seal System**

| | |
|---|---|
| Primary Seal: | Vapor-mounted |
| Secondary Seal | None |

**Deck Characteristics**

| | |
|---|---|
| Deck Fitting Category: | Detail |
| Deck Type: | Bolted |
| Construction: | Sheet |
| Deck Seam: | Sheet: 5 Ft Wide |
| Deck Seam Len. (ft): | 4,539.60 |

| Deck Fitting/Status | Quantity |
|---|---|
| Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed | 1 |
| Automatic Gauge Float Well/Unbolted Cover, Gasketed | 1 |
| Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask. | 16 |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed | 1 |
| Roof Leg or Hanger Well/Adjustable | 41 |
| Sample Pipe or Well (24-in. Diam.)/Slotted Pipe-Sliding Cover, Gask. | 1 |
| Stub Drain (1-in. Diameter)/Slotted Pipe-Sliding Cover, Gask. | 116 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. | 1 |

Meterological Data used in Emissions Calculations: Williston, North Dakota (Avg Atmospheric Pressure = 13.82 psia)

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Liquid Contents of Storage Tank

**Dakota Plains Tanks 1-3 - Internal Floating Roof Tank**
**Williston, North Dakota**

| Mixture/Component | Month | Daily Liquid Surf. Temperature (deg F) Avg. | Min. | Max. | Liquid Bulk Temp (deg F) | Vapor Pressure (psia) Avg. | Min. | Max. | Vapor Mol. Weight. | Liquid Mass Fract. | Vapor Mass Fract. | Mol. Weight | Basis for Vapor Pressure Calculations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crude oil (RVP 5) | All | 43.08 | 37.17 | 48.98 | 41.45 | 2.0410 | N/A | N/A | 50.0000 | | | 207.00 | Option 4: RVP=5 |

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Detail Calculations (AP-42)

## Dakota Plains Tanks 1-3 - Internal Floating Roof Tank
## Williston, North Dakota

| Annual Emission Calcaulations | |
|---|---|
| Rim Seal Losses (lb): | 909.6696 |
| Seal Factor A (lb-mole/ft-yr): | 6.7000 |
| Seal Factor B (lb-mole/ft-yr (mph)^n): | 0.2000 |
| Value of Vapor Pressure Function: | 0.0399 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 2.0410 |
| Tank Diameter (ft): | 170.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 |
| Product Factor: | 0.4000 |
| Withdrawal Losses (lb): | 2,831.0694 |
| Number of Columns: | 16.0000 |
| Effective Column Diameter (ft): | 1.0000 |
| Annual Net Throughput (gal/yr.): | 459,900,000.0000 |
| Shell Clingage Factor (bbl/1000 sqft): | 0.0060 |
| Average Organic Liquid Density (lb/gal): | 7.1000 |
| Tank Diameter (ft): | 170.0000 |
| Deck Fitting Losses (lb): | 903.7595 |
| Value of Vapor Pressure Function: | 0.0399 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 |
| Product Factor: | 0.4000 |
| Tot. Roof Fitting Loss Fact.(lb-mole/yr): | 1,131.6000 |
| Deck Seam Losses (lb): | 646.2727 |
| Deck Seam Length (ft): | 4,539.5976 |
| Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr): | 0.1400 |
| Deck Seam Length Factor(ft/sqft): | 0.2000 |
| Tank Diameter (ft): | 170.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 |
| Product Factor: | 0.4000 |
| Total Losses (lb): | 5,290.7712 |

| Roof Fitting/Status | Quantity | Roof Fitting Loss Factors KFa(lb-mole/yr) | KFb(lb-mole/(yr mph^n)) | m | Losses(lb) |
|---|---|---|---|---|---|
| Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed | 1 | 31.00 | 5.20 | 1.30 | 24.7583 |
| Automatic Gauge Float Well/Unbolted Cover, Gasketed | 1 | 4.30 | 17.00 | 0.38 | 3.4342 |
| Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask. | 16 | 33.00 | 0.00 | 0.00 | 421.6905 |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed | 1 | 56.00 | 0.00 | 0.00 | 44.7248 |
| Roof Leg or Hanger Well/Adjustable | 41 | 7.90 | 0.00 | 0.00 | 258.6848 |
| Sample Pipe or Well (24-in. Diam.)/Slotted Pipe-Sliding Cover, Gask. | 1 | 43.00 | 0.00 | 0.00 | 34.3422 |
| Stub Drain (1-in. Diameter)/ | 116 | 1.20 | 0.00 | 0.00 | 111.1730 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. | 1 | 6.20 | 1.20 | 0.94 | 4.9517 |

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Individual Tank Emission Totals

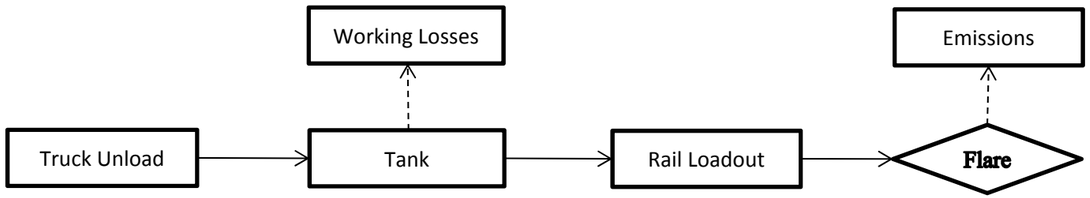
## Emissions Report for: Annual

**Dakota Plains Tanks 1-3 - Internal Floating Roof Tank**
**Williston, North Dakota**

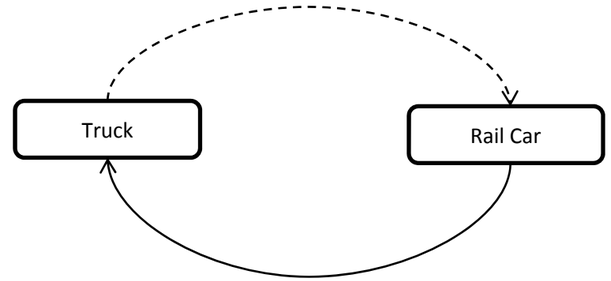
| | Losses(lbs) | | | | |
|---|---|---|---|---|---|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions |
| Crude oil (RVP 5) | 909.67 | 2,831.07 | 903.76 | 646.27 | 5,290.77 |

**Appendix B**
Process Flow Diagram

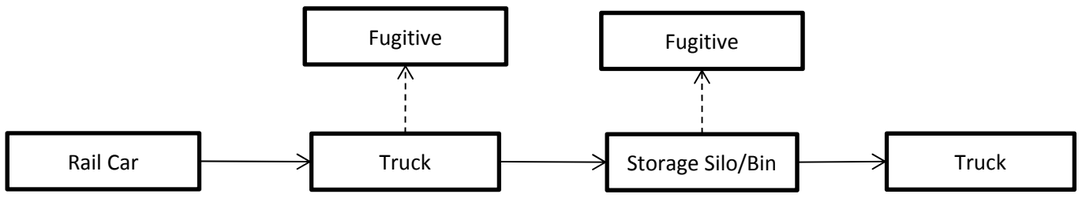
## Oil Rail Loadout



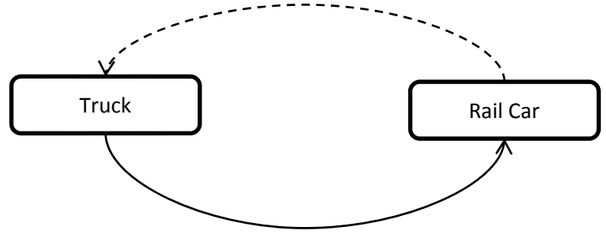

## Diesel Fuel Transload




## Bulk Sand, Aggregate, and Other Solid Commodities Transload




## Crude Oil Transload




Material/Process Flow

Emissions/Vapor Flow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24 Hr. Emergency Response: 1-866-658-8883

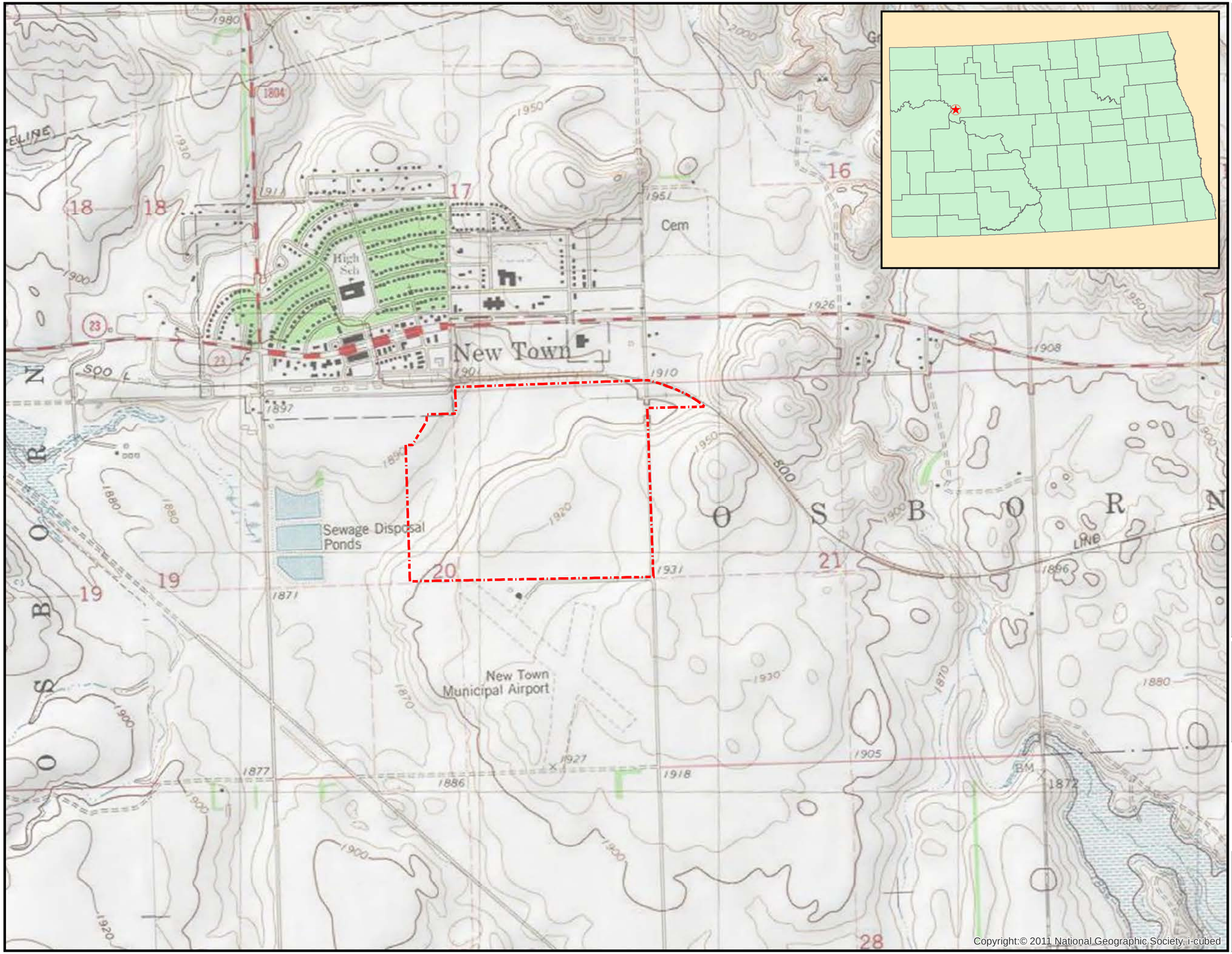

**Project:**
Crude Oil Transfer Facility
New Town, North Dakota

**Client:**
Dakota Plains Holdings, Inc.
New Town, North Dakota

**Drawing Title:**
Process Flow Diagram
Truck/Rail Crude Oil Loadout Systems

**Appendix C**

Proposed Facility Site Location and Proposed Site Layout Diagram






**Legend**

Approximate Site Boundary

N

0 1,500 3,000

Feet

Site Layout

Transfer Facility
Dakota Plains
New Town, North Dakota

Proj. No.: N013052.001
Date: 2/18/2013
GIS Analyst: CMK
Reviewed By: MH

Pinnacle Engineering
11541 95th Avenue North
Minneapolis, Minnesota 55369
Tel: (763) 315-4501 Fax: (763) 315-4507


| | | | |
|---|---|---|---|
| DRAWING TITLE: OVERALL SITE PLAN | PROJECT: CRUDE OIL TRANSLOAD FACILITY NEW TOWN, ND | DATE: 2-12-13 | Pinnacle Engineering |
| DRAWING NO.: E100 | PROJECT NO. N012467.000 | DRAWN: MJB | 11541 95th Ave N. Minneapolis, MN 55369 (763) 315-4501 www.pineng.com |
| | SCALE: AS NOTED | DESIGNED: GEB | |
| | CLIENT: DAKOTA PLAINS NEW TOWN, ND | CHECKED: GEB | |
| | | APPROVED: GEB | |

| NO. | DATE | ISSUE/REVISION | DRWN | CHKD |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |

**Appendix D**
Current Issued Permit to Construct

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 8**
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

SEP 1 9 2012

Ref: 8P-AR

Mr. Gabe Claypool
Chief Executive Officer
Dakota Plains, Inc.
294 Grove Lane East
Wayazata, MN 55391

Re: Dakota Plains, Inc. (Dakota Plains)
New Town Transfer Facility
Permit # SMNSR-TAT-000285-2012.001
Final Synthetic Minor NSR Permit

Dear Mr. Claypool:

The Environmental Protection Agency, Region 8 (EPA) has completed its review of Dakota Plains' request to obtain a synthetic minor New Source Review (NSR) permit pursuant to 40 CFR Part 49 for the modification of the New Town Transfer Facility. Based on the information submitted in Dakota Plains' application the EPA hereby issues the enclosed permit to construct. No comments were received during the 30-day public comment period. Therefore, the final permit will become effective on September 20, 2012.

Enclosed you will find the final Part 49 pre-construction permit for the modification of the New Town Transfer Facility. Please review each condition carefully and note any restrictions placed on this source.

If you have any questions concerning the enclosed permit, please contact Kathleen Paser of my staff at (303) 312-6526.

Sincerely,

Howard M. Cantor, for
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosure

cc:
Joe Gillies, Environmental Director, Three Affiliated Tribes
Fred Fox, Energy Director, Three Affiliated Tribes

**United States Environmental Protection Agency**
**Region 8, Air Program**
**1595 Wynkoop Street**
**Denver, CO 80202**

# Air Pollution Control
# Synthetic Minor Source Permit to Construct

**40 CFR 49.151**

**#SMNSR-TAT-000285-2012.001**

*Synthetic Minor Permit to Construct to establish volatile organic compound (VOC) emission limits to avoid Prevention of Significant Deterioration (PSD)and Title V (Part 71) permitting requirements with respect to VOC emissions.*

**Permittee:**

Dakota Plains, Inc.

**Permitted Facility:**

New Town Transfer Facility
Crude Oil Transloading Operation on the
Fort Berthold Indian Reservation
Mountrail County, North Dakota

## Summary

On March 28, 2012, the EPA received an application from Dakota Plains, Inc. (Dakota Plains) requesting approval to modify an existing crude oil "transloading" operation. A revised application was received on April 25, 2012. Dakota Plains requested approval to modify the facility by constructing a 90,000 barrel (bbl) hydrocarbon liquid storage tank, ten (10) truck loading stations at the storage tank, and thirteen (13) portable transloading units (for tanker truck to railcar transfers). EPA has approved this request.

**Permit number:**
SMNSR-TAT-000285-2012.001

Based on the potential uncontrolled emission estimates of the proposed modification, this facility would be subject to Prevention of Significant Deterioration (PSD) permitting. The applicant requested emission limitations that would limit the facility-wide emissions of volatile organic compounds (VOC) to levels below the thresholds that would have required them to obtain a Prevention of Significant Deterioration (PSD) pre-construction permit. Based on the requested VOC emission limit, Dakota Plains could also avoid Title V permit requirements under 40 CFR Part 71, provided that all other pollutants regulated under the Part 71 program are below the emissions thresholds and all other applicability criteria at §71.3(a) and (b) do not apply.

Potential uncontrolled emissions of VOC from the construction were estimated to be 1,034 tons per year (tpy). This final permit requires that a vapor balance control system be used with VOC emission control of 90.0% during transloading operations and an enclosed combustor be used during truck transfer and storage tank loading. In addition, the EPA is requiring the use of a closed vent system and enclosed combustor on the truck transfer stations with VOC emission destruction efficiency of at least 98.0% and a limit on the amount of crude oil that can flow through the facility in any given year to minimize VOC emissions at the facility. Potential uncontrolled emissions of all other regulated pollutants were estimated to be at concentrations below the levels that trigger PSD permitting requirements. Therefore, only limits for VOC emissions needed to be addressed in this permit. This approved final permit has an allowable VOC emission level of 97.0 tpy.

The EPA has determined that dispersion modeling for the proposed project was not necessary, because there do not appear to be any significant air quality concerns within the exterior boundaries of the Fort Berthold Indian Reservation. Additionally, operating emissions from the proposed facility will be well controlled at all times.

## Table of Contents

# I. Conditional Permit to Construct

## A. General Information

| | |
|---|---|
| Facility: | New Town Transfer Facility |
| Permit number: | SMNSR-TAT-000285-2012.001 |
| SIC Code and SIC Description: | 5171 – Petroleum Bulk Stations and Terminals |

Site Location:
New Town Transfer Facility
NW ¼ NW ¼ Sec 21 T152N R92W &
N ½ NE ¼ Sec 20 T152N R92W
Fort Berthold Indian Reservation
Mountrail County, ND

Corporate Office Location
Dakota Plains, Inc.
294 Grove Lane East
Wayzata, MN 55391

The equipment listed in this permit shall be operated by Dakota Plains, Inc. at the following location:

Latitude 47.977678N, Longitude -102.476119W

## B. Construction Approved

Dakota Plains, Inc. (Dakota Plains) currently owns and operates the New Town Transfer Facility, an existing transloading operation. The facility is located along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

Dakota Plains has been given approval through this permit to modify the facility by constructing a 90,000 barrel (bbl) hydrocarbon liquid storage tank to provide interim storage capacity until the hydrocarbon liquid can be transloaded onto rail cars. VOC emissions from the new storage tank will be minimized using an internal floating roof system. In addition, Dakota Plains has been given approval to add ten (10) truck loading stations at the storage tank and thirteen (13) portable transloading units (for tanker truck to railcar transfers), in addition to the existing pumping systems mounted to the tanker trucks. The portable transloading units each consist of a loading arm, pumping, and metering systems. VOC emissions from the truck loading operation will be controlled using an enclosed combustor with a 98.0% minimum VOC destruction efficiency. VOC emissions from the transloading operations will be minimized using vapor balance controls with a minimum 90.0% VOC control efficiency.

## C. Applicability

1. This Federal Permit to Construct is being issued under authority of 40 CFR 49.151, Federal Minor New Source Review Program in Indian Country (Minor NSR).

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions on VOC emission limits to avoid Prevention of Significant Deterioration (PSD) and Title V major source permitting requirements found at 40 CFR Parts 52 and 71, respectively.

3. Any conditions established for this facility or any specific units at this facility pursuant to any Conditional Permit to Construct issued under the authority of 40 CFR Part 52 (PSD) or 40 CFR Part 49 (Federal Minor NSR) shall continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

**D. Facility-Wide Emission Requirements**

1. Facility-wide Emission Limit

Facility-wide VOC emissions shall not exceed 97.0 tons during any consecutive twelve (12) months.

2. Construction and Operational Limits

(a) The Permittee shall install no more than one 90,000 barrel (bbl) hydrocarbon liquid storage tank.

(b) The Permittee shall install no more than ten (10) truck transfer stations, each with a maximum capacity of 400 gallons per minute (gpm).

(c) The Permittee shall install no more than thirteen (13) portable transloading units, each with a maximum capacity of 400 gpm.

(d) Total hydrocarbon liquids transferred in transloading operations (tanker truck to railcar) shall not exceed 17,000,000 bbls in any consecutive 12-month period.

(e) Total hydrocarbon liquids transferred in storage tank loading (tanker truck-to-storage tank or to the storage tank from a gathering system or pipeline) shall not exceed 5,000,000 bbls in any give consecutive 12-month period.

(f) Total hydrocarbon liquids transferred in truck transfer operations (storage tank to tanker truck) shall not exceed 5,000,000 bbls in any consecutive 12-month period.

(g) All liquid and gas collection, storage, and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of hydrocarbons to the atmosphere.

3. Monitoring and Testing Requirements

(a) Total hydrocarbon liquid loaded to the storage tank, transferred to trucks, and transloaded to rail cars from the portable transloading units shall each be measured using liquid flow meters. When the pumping system mounted on a tanker truck is used in transloading operations, the total hydrocarbon liquid loaded to rail cars shall be measured by manual gauging of the liquid level in the railcar.

(b) The Permittee shall record the total volume of hydrocarbon liquids loaded, transferred, and transloaded at the end of each month, beginning with the first calendar month that permitted operations commence for each of the following operations:

i. Storage tank loading (from tanker trucks and pipelines);
ii. Truck transfers; and
iii. Transloading onto rail cars.

(c) Prior to twelve (12) full months of hydrocarbon liquid loading, transfer and transloading data, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume for that month to the recorded hydrocarbon liquid loaded, transferred and transloaded for all previous months since permitted operations commenced and record the total for each. Thereafter, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume of hydrocarbon liquid loaded, transferred and transloaded that month to the calculated volume from the preceding eleven (11) months and record a new twelve (12) month total for each.

(d) The Permittee shall conduct semiannual extended laboratory analysis of the crude oil received at the facility to obtain the actual physical and chemical properties of the hydrocarbon liquid and associated vapors to be used in calculating monthly VOC emissions.

4. VOC Emissions Calculations

(a) Facility-wide actual VOC emissions shall be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that permitted operations commence.

(b) Prior to twelve (12) full months of facility-wide VOC emissions calculations, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for the preceding eleven (11) months and record a new twelve (12) month total.

(c) VOC emissions from all controlled and uncontrolled emission sources at the facility shall be included in the monthly calculation, including, but not limited to: the hydrocarbon liquid storage tank, truck transfer stations, and transloading units.

(d) VOC emissions from each approved emitting unit shall be calculated as specified in this permit.

5. Recordkeeping Requirements

The Permittee shall maintain the following records:

(a) The actual monthly and rolling twelve (12) month facility-wide VOC total emissions, in tpy;

(b) The actual monthly and rolling twelve (12) month volume of crude oil transferred to the storage tank (from tanker trucks and pipelines);

(c) The actual monthly and rolling twelve (12) month volume of crude oil transferred to the tanker trucks;

(d) The actual monthly and rolling twelve (12) month volume of crude oil transfered to the rail cars;

(e) The results of each extended laboratory analysis of the hydrocarbon liquids received at the facility; and

(f) All input parameters and methodologies used to calculate the facility-wide monthly VOC emissions from each VOC emitting unit identified in this permit.

**E. Requirements for Minimizing Fugitive Dust**

1. Work Practice and Operational Requirements

(a) The Permittee shall take all reasonable precautions to prevent fugitive dust emissions at the facility and shall construct, maintain, and operate the facility to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

i. Use, where possible, water or chemicals for control of dust during construction and operations, during grading of roads, or during clearing of land;

ii. Application of asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and/or other surfaces located at the facility that can create airborne dust;

iii. The prompt removal from paved streets, located at the facility, of earth or other material that does or may become airborne; and

iv. Restricting vehicle speeds at the facility.

(b) The Permittee shall prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.

2. Monitoring Requirements

(a) The Permittee shall periodically survey the facility during construction and operation to determine if there are obvious visible dust plumes. This survey must be done at a minimum once per week in all active areas and during daylight hours.

(b) The Permittee shall document the results of the survey, including the date and time of the survey, identification of the cause of any visible dust plumes observed, and the reasonable precautions taken to prevent continued fugitive dust emissions.

3. Recordkeeping Requirements

The Permittee shall maintain records for five years that document the fugitive dust prevention plan, the periodic surveys and the reasonable precautions that were taken to prevent fugitive dust emissions.

## F. Requirements for the Hydrocarbon Liquid Storage Tank

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a hydrocarbon liquid storage tank with an internal floating roof and designed and operated as specified in 40CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

(b) The permittee shall install a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the tank. The Permittee shall not conduct hydrocarbon liquid transfer to the storage tank unless submerged loading is used.

2. Monitoring and Testing Requirements

(a) The permittee shall visually inspect the internal floating roof, the seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of the storage tank with hydrocarbon liquid, at least once every 12 months after initial fill, and each time the storage tank is emptied and degassed.

(b) The Permittee shall repair the items before filling or refilling the storage tank with crude hydrocarbon liquids if one or more of the following are observed:

i. The internal floating roof is not resting on the surface of the hydrocarbon liquid inside the storage tank;
ii. There is liquid accumulated on the roof;
iii. The seal is detached, or there are holes, tears, or other openings in the primary or secondary seal or seal fabric;
iv. The gaskets no longer close off the liquid surfaces from the atmosphere; or
v. The slotted membrane has more than 10% open area.

(c) VOC emissions from crude the hydrocarbon liquid tank at the facility due to standing, working and breathing losses for each calendar month shall be calculated using the most current version of the EPA TANKS program and the following:

i. The total measured volume of hydrocarbon liquid transferred to the tank for the month; and
ii. The actual physical and chemical properties of the liquid and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility.

3. Recordkeeping Requirements

(a) All exceedances of the hydrocarbon liquid storage tank loading (tanker truck-to-storage tank or to the storage tank from a gathering system or pipeline) limit specified in this permit.

(b) The Permittee shall document and maintain a record of the storage tank emission calculations, all inspections, and any repairs.

(c) All storage tank inspection records shall include, at a minimum, the following information:

i. The date of the inspection;
ii. All documentation and/or images produced in the inspection;
iii. The findings of the inspection;
iv. Any corrective action taken; and
v. The inspector's name and signature.

## G. Requirements for Truck Transfer Operations

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the tank and trucks. The Permittee shall not conduct truck transfer operations unless submerged loading is used.

(b) All VOC emissions from the each truck transfer stations at the facility shall be continuously controlled using closed-vent systems that routes vapors to an enclosed combustion device designed and operated to reduce the mass content of VOC emissions in the vapors by at least 98.0 %.

(c) All piping connections, fittings, valves, or any other appurtenance employed to contain and collect vapors and transport them to the enclosed combustion device shall be maintained in a leak-free condition and connected and operating at all times a truck transfer event is occurring.

2. Closed-Vent Systems

The Permittee shall meet the following requirements for the closed-vent systems:

(a) Each closed-vent system shall route all VOC emissions from the truck transfer stations to the enclosed combustor required by this permit.

(b) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain and collect gases, vapors, and fumes and transport them to enclosed combustor shall be maintained and operated during any time the control equipment is operating.

(c) Each closed-vent system shall be designed to operate with no detectable emissions.

(d) If any closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control devices, the permittee shall meet the one of following requirements for each bypass device:

i. At the inlet to the bypass device that could divert the stream away from the control device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device and into the atmosphere; or

ii. Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. Enclosed Combustion Device

The enclosed combustion device shall be:

(a) Designed to have sufficient capacity to achieve at least a 98.0 % destruction efficiency for the minimum and maximum hydrocarbon mass flow routed to the device;

(b) Equipped with an automatic ignition system or continuous burning pilot;

(c) Equipped with a thermocouple, or similar temperature sensing device, to detect the presence of a pilot flame;

(d) Equipped with a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame;

(e) Maintained in a leak-free condition; and

(f) Designed to minimize visible smoke emissions.

4. The Permittee shall follow the manufacturer's written operating instructions, procedures and maintenance schedule for the enclosed combustion device and closed-vent system, to ensure good air pollution control practices for minimizing emissions.

5. Control devices other than that listed above that are capable of achieving a control efficiency at least equivalent to that specified in this permit may be used upon EPA approval.

6. Testing and Monitoring Requirements

(a) Within 180 days after initial startup, and every five (5) years thereafter, during a truck transfer event, the Permittee shall conduct a performance test of the closed-vent system to demonstrate that it is operating in a leak free condition, and a performance test of the enclosed combustor to which emissions from the truck transfer stations are routed, to demonstrate at least 98.0% destruction efficiency. Testing of the closed vent system shall be conducted in accordance with EPA Reference Method 21, listed in 40 CFR Part 60, Appendix A. Testing of the enclosed combustor VOC destruction efficiency shall be conducted in accordance with EPA Reference Method 25A, listed in 40 CFR Part 60, Appendix A. The Permittee may submit a written request to the EPA for an alternate

testing method, but shall only use that test method upon receipt of written approval by the EPA.

(b) During each performance test, the Permittee shall establish an emission factor, in terms of milligrams VOC per liter hydrocarbon liquid loaded (mg VOC/l), to be used for monitoring and recordkeeping requirements associated with demonstrating compliance with the facility-wide VOC emission limit.

(c) The Permittee shall monitor the closed-vent system during all truck transfer events, to confirm proper operation as follows:

i. Continuously ensure that the blower fan is operating at all times a truck transfer event is occurring using vacuum pressure measurement upstream of the blower fan; and
ii. In the event that the blower fan is not operational, immediately shut down all truck transfer operations and repair the blower fan. Truck transfer operations shall not resume until the blower fan is repaired and operational.

(d) The Permittee shall monitor the enclosed combustor to confirm proper operation as follows:

i. Continuously monitor the pilot flame using a thermocouple, or other temperature sensing device, and recording device that indicates the continuous ignition of the pilot flame at all times the enclosed combustion device is operating;
ii. Check the recording device to insure proper operation once per day;
iii. Check the pilot flame to insure proper operation once per day; and
iv. Correct a pilot flame failure when notified by the malfunction alarm, as soon as possible, but no longer than five (5) days from the day of the notification.

(e) VOC emissions from truck transfer operations for each calendar month shall be calculated using the following:

i. The VOC emission factor established during the most recent performance tests; and
ii. The total measured volume of hydrocarbon liquid transferred for the month (bbl).

7. Recordkeeping Requirements

The Permittee shall keep the following records for truck transfer operations:

(a) All exceedances of the hydrocarbon liquid truck transfer limit as specified in this permit.

(b) The site specific design input parameters provided by the manufacturer or vendor, and used to properly size the enclosed combustor to assure the 98.0 % minimum VOC reduction requirement in this permit and any instances in which any parameter was exceeded.

(c) Any instances in which the enclosed combustion device was bypassed or down in each calendar month during truck transfer operations, the reason for each incident, its duration, and the corrective actions taken or the preventative measures adopted to avoid such bypasses or downtimes.

(d) Any instances in which the pilot flame is not present in the enclosed combustor while it is operating, the date and times that the pilot was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame.

(e) Any instances in which the thermocouple, or other temperature sensing device, installed to detect the presence of a flame in the enclosed combustor is not operational while the enclosed combustor is operating, the time period during which it was not operational, and the corrective measures taken.

(f) All required testing and monitoring. The records shall include the following:

i. The date, place, and time of observations, sampling or measurements;
ii. The date(s) analyses were performed;
iii. The companies or entities that performed observations and the analyses;
iv. The analytical techniques or methods used;
v. The results of such analyses or measurements; and
vi. The operating conditions as existing at the time of sampling or measurement.

## H. Requirements for Transloading Operations

1. Installation and Operations Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the rail car. The Permittee shall not conduct transloading operations unless submerged loading is used.

(b) All VOC emissions from the transloading operations at the facility shall be continuously controlled using vapor balance control systems designed and operated to reduce the mass content of VOC emissions by at least 90.0 %. The Permittee shall not conduct transloading operations unless the vapor balance control system is used.

(c) Any planned release of vapor from the trucks following vapor balance during transloading operations prior to leaving the facility shall be controlled using an enclosed combustion device that is installed, operated, monitored, and tested as specified in the section labeled, **Requirements for Truck Transfer Operations**.

(d) The Permittee shall install, operate and maintain each vapor balance control system using the following design criteria:

i. All vapor connections and lines on the trucks and rail cars shall be equipped with closures that seal upon disconnect;
ii. The vapor line from the rail cars to the trucks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors; and
iii. The vapor balance control system shall be designed such that the pressure in the tank of the trucks does not exceed the maximum allowable tank pressure (design

pressure) of the truck during crude oil transfer to the rail car such that tank relief valves are not activated.

2. Monitoring Requirements

(a) The Permittee shall monitor each vapor balance control system to confirm proper operation as follows:

i. During each transloading event, the pressure in the tank of the trucks shall be measured to ensure that the tank design pressure is not being exceeded;
ii. During each transloading event, the vapor return lines shall be visually inspected for leaks. If a leak is detected, the permittee shall repair the leak prior to unloading the next truck using the same vapor return line; and
iii. On a quarterly basis and during a transloading event, the permittee shall ensure that the concentration at all potential leak sources on each transloading unit is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source.

(b) VOC emissions from the transloading operations for each calendar month shall be calculated using the following:

i. The total measured volume of hydrocarbon liquid transloaded for the month (bbl);
ii. The actual physical and chemical properties of the liquid and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;
iii. The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismark, ND;
iv. The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of transloading; and
v. The 90.0% vapor balance control efficiency, unless a leak in a vapor return line on any one transloading unit was visibly observed or measured during any one rail car transloading event; in which case, the vapor balance control efficiency shall be considered 0.0% for the actual measured volume of hydrocarbon liquid transloaded during that event.

3. Record keeping Requirements

The Permittee shall keep the following records for transloading operations:

(a) All exceedances of the hydrocarbon liquid transloading limit as specified in this permit.

(b) All instances where a leak was visually observed or tested during a transloading event, the corrective measures taken, and the volume of hydrocarbon liquid transloaded with the leaking vapor balance control system.

(c) The required vapor tight testing of each transloading unit and shall include the following:

i. The date, place, and time of observations, sampling or measurements;
ii. The date(s) analyses were performed;
iii. The companies or entities that performed observations and the analyses;
iv. The analytical techniques or methods used;
v. The results of such analyses or measurements; and
vi. The operating conditions as existing at the time of sampling or measurement.

## I. Records Retention

1. The Permittee must retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records must be kept at the facility or the location that has day-to-day operational control over the facility.

## J. Reporting

1. Any documents required to be submitted under this permit shall be submitted to:

U.S. Environmental Protection Agency
Region 8 Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

2. The Permittee shall submit an annual report of rolling 12 month annual emissions each year no later than April 1st. The annual report shall cover the period for the previous calendar year. For the first calendar year the permittee shall submit the cumulative facility wide emissions.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to R8AirPermitting@epa.gov within:

(a) Thirty (30) days from the discovery of a deviation that would cause the permittee to exceed the facility-wide emission limits or operational limits if left un-corrected for more than five (5) days after discovering the deviation; and

(b) Twelve (12) months from the discovery of a deviation of recordkeeping or other permit conditions that do not affect the permittee's ability to meet the facility-wide emission limits.

4. The Permittee shall submit a report for any required performance test to the EPA Regional Office within 60 days after completing the tests.

5. The Permittee shall submit any record or report required by this permit upon EPA request.

## II. General Provisions

### A. Conditional Approval

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants a Minor NSR permit. This authorization is expressly conditioned as follows:

1. This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.

2. The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified ten (10) days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.

3. The issuance of this Permit to Construct may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted source. Noncompliance with any permit term or condition is a violation of the permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. The Permittee shall take all reasonable precautions to prevent and or minimize fugitive emissions during the construction period.

6. The permitted source shall not cause or contribute to a NAAQS violation or, in an attainment area, shall not cause or contribute to a PSD increment violation.

7. Issuance of this permit does not relieve the Permittee, the owner, and/or operator of the responsibility to comply fully with all other applicable Federal and Tribal rules, regulations, and orders now or hereafter in effect.

8. It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. For proposed modifications, as defined at §49.152(d), that would increase an emissions unit's allowable emissions of a regulated NSR pollutant above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to 40 CFR Part 49 approving the increase. For a proposed modification that is not otherwise subject to review under

major NSR or under this program, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at §49.159(f).

10. At such time that a new or modified source at the permitted facility or modification of the permitted facility becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of 40 CFR 52.21 shall apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if the permit contains a material mistake or the facility fails to assure compliance with the applicable requirements.

12. *Severability clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

13. *Property Rights:* The permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with Part 2, Subpart B of Title 40 of the Code of Federal Regulations.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect the permitted facility during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:

    (a) Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
    (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
    (c) Inspect, during normal business hours or while the source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

(e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the draft permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within thirty (30) days of receipt of the permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

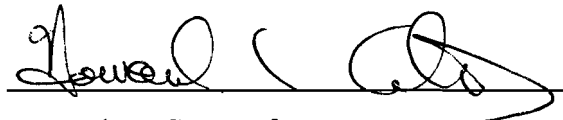
U.S. Environmental Protection Agency
Region 8 Air Permitting, Modeling, and Monitoring Unit
c/o Tribal Air Permitting, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of the permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project; the Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up:* The Permittee shall submit a notification of the anticipated date of initial start-up of the Source to the EPA within 60 days of such date.

## B. Authorization

Authorized by the United States Environmental Protection Agency, Region 8



9/19/12

Howard M. Cantor, for — Date
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

# Public Notice: Request For Comments

## Proposed Air Quality Permit Approval
## Construction of Synthetic Minor Source

**Notice issued**: August 3, 2012

**Written comments due:**
5 p.m., September 3, 2012

**Permit Writer:** Kathleen Paser

**Who is the applicant?**
Dakota Plains, Inc.

**Where is the facility located?**
Intersection of College Drive & Highway 23 - New Town, ND
Latitude 47.977678N
Longitude -102.476119W

**What is being proposed?**
The EPA proposes to issue an approval to construct a synthetic minor source of air pollutants to Dakota Plains, Inc. (Dakota Plains). Dakota Plains is requesting permission to a crude oil truck-to-rail trans-loading facility with 1crude oil storage tanks (90,000 barrels total capacity), 5 truck-to-tank loading stations, and 13 tank-to-rail car loading stations.

**Permit number:**
SMNSR-TAT-000285-2012.001

**Plant Site Emissions:**
The applicant has requested emission limitations that will limit the facility-wide emissions of volatile organic compounds (VOC) to levels below the thresholds that would require the applicant to obtain a Prevention of Significant Deterioration (PSD) pre-construction permit and a Title V Operating Permit.

Potential uncontrolled emissions of VOC from the proposed construction are estimated at 1,034 tons per year (tpy). Potential uncontrolled emissions of all other regulated pollutants are estimated at concentrations below the levels that trigger minor source permitting requirements. Considering the EPA proposed requirements in the draft permit, potential controlled emissions of VOC from the proposed construction would be reduced to 97 tons per year.

**What are the special conditions of this permit?**
The permittee is required to use a vapor balance system, vapor collection system and combustion for control of VOC displaced during all loading/unloading operations. Additionally, the storage tank must be equipped with internal floating roof and all loading stations must use submerged filling.

**What are the effects on air quality?**
The EPA determined that dispersion modeling for the proposed project was not necessary, because emissions would be controlled by at least 98% and there are no identified air quality concerns within the external boundaries of the Fort Berthold Indian Reservation airshed.

**Where can I send comments?**
EPA accepts comments by mail, fax and e-mail.

US EPA
Region 8 Air Program, 8P-AR
Tribal Air Permit Program
1595 Wynkoop Street
Denver, CO 80202
R8AirPermitting@epa.gov
Phone: 303-312-6526
Fax: 303-312-6064

**How can I review documents?**
You can review the draft permit and administrative record at the:

Three Affiliated Tribe's Environmental Programs Office: 404 Frontage Road, New Town, North Dakota 58763

and

US EPA Region 8 office in Denver, CO.

Electronic copies of the draft permit and Statement of Basis may also be viewed at: http://www.epa.gov/region8/pubnotice.html.

**What happens next?**
EPA will review and consider all comments received during the comment period. Following this review, the EPA may issue the permit addendum as proposed or modified, or deny the permit addendum.

**What are the EPA's responsibilities?**
The EPA Region 8 Air Program is the regulatory agency that helps protect and preserve the Mandan, Hidatsa, and Arikara Nation's air quality. One way EPA does this is by requiring permits for certain activities. The purpose of this notice is to invite you to submit written comments on this proposed permit.

**Federal Minor New Source Review in Indian Country**

**United States Environmental Protection Agency**

**Region 8**
**Air Program**

**1595 Wynkoop Street**
**Denver, CO 80202**

**Phone 800-227-8917**

**www.epa.gov/region8**

**United States Environmental Protection Agency**
**Region 8, Air Program**
**1595 Wynkoop Street**
**Denver, CO 80202**

**Draft**

# Air Pollution Control
# Synthetic Minor Source Permit to Construct

**40 CFR 49.151**

**#SMNSR-TAT-000285-2012.001**

*Synthetic Minor Permit to Construct to establish volatile organic compound (VOC) emission limits to avoid Prevention of Significant Deterioration (PSD)and Title V (Part 71) permitting requirements with respect to VOC emissions.*

**Permittee:**

Dakota Plains, Inc.

**Permitted Facility:**

New Town Transfer Facility
Crude Oil Transloading Operation on the
Fort Berthold Indian Reservation
Mountrail County, North Dakota

## Table of Contents

# I. Conditional Permit to Construct

## A. General Information

| | |
|---|---|
| Facility: | New Town Transfer Facility |
| Permit number: | SMNSR-TAT-000285-2012.001 |
| SIC Code and SIC Description: | 5171 – Petroleum Bulk Stations and Terminals |

| Site Location: | Corporate Office Location |
|---|---|
| New Town Transfer Facility | Dakota Plains, Inc. |
| NW ¼ NW ¼ Sec 21 T152N R92W & | 294 Grove Lane East |
| N ½ NE ¼ Sec 20 T152N R92W | Wayzata, MN 55391 |
| Fort Berthold Indian Reservation | |
| Mountrail County, ND | |

The equipment listed in this permit shall be operated by Dakota Plains, Inc. at the following location:

Latitude 47.977678N, Longitude -102.476119W

## B. Construction Proposal

Dakota Plains, Inc. (Dakota Plains) currently owns and operates the New Town Transfer Facility, an existing transloading operation. The facility is located along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

The current facility is only engaged in the transloading of hydrocarbon liquids (tanker truck to railcar); there are no bulk hydrocarbon liquid storage facilities, nor truck transfer stations (tanker truck to storage tank or storage tank to tanker truck). Dakota Plains receives the hydrocarbon liquid from the companies producing oil and natural gas in the Bakken shale formation. At the well site, the hydrocarbon liquid is loaded into tanker trucks for transport to the New Town Transfer Facility where it is then transloaded into railcars. The liquid is currently transloaded into the railcars by bottom loading via pumping systems mounted on the tanker trucks or transloading trailers.

Dakota Plains is proposing to modify the facility by constructing a 90,000 barrel (bbl) hydrocarbon liquid storage tank to provide interim storage capacity until the hydrocarbon liquid can be transloaded onto rail cars. Due to increasing oil and gas production in the Bakken shale formation, Dakota Plains expects that there may be periods of time when the facility will receive more hydrocarbon liquids than can be transported by rail cars. VOC emissions from the new storage tank will be minimized using an internal floating roof system. In addition, Dakota Plains is proposing to add ten (10) truck loading stations at the storage tank and thirteen (13) portable transloading units (for tanker truck to railcar transfers), in addition to the existing pumping systems mounted to the tanker trucks. The portable transloading units each consist of a loading arm, pumping, and metering systems. VOC emissions from the truck loading operation will be controlled using an enclosed flare with a 98.0% VOC destruction efficiency. VOC emissions from the transloading operations would be minimized using vapor balance controls with a 90.0% VOC control efficiency.

## C. Applicability

1. This Federal Permit to Construct is being issued under authority of 40 CFR 49.151, Federal Minor New Source Review Program in Indian Country (Minor NSR).

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions on VOC emission limits to avoid Prevention of Significant Deterioration (PSD) and Title V major source permitting requirements found at 40 CFR Parts 52 and 71, respectively.

3. Any conditions established for this facility or any specific units at this facility pursuant to any Conditional Permit to Construct issued under the authority of 40 CFR Part 52 (PSD) or 40 CFR Part 49 (Federal Minor NSR) shall continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

## D. Facility-Wide Emission Requirements

1. Facility-wide Emission Limit

   Facility-wide VOC emissions shall not exceed 97.0 tons during any consecutive 12 months.

2. Construction and Operational Limits

   (a) The Permittee shall install no more than one 90,000 barrel (bbl) hydrocarbon liquid storage tank.

   (b) The Permittee shall install no more than ten (10) truck transfer stations, each with a maximum capacity of 400 gallons per minute (gpm).

   (c) The Permittee shall install no more than thirteen (13) portable transloading units, each with a maximum capacity of 400 gpm.

   (d) Total hydrocarbon liquids transferred in transloading operations (tanker truck to railcar) shall not exceed 17,000,000 bbls in any consecutive 12-month period.

   (e) Total hydrocarbon liquids transferred in storage tank loading (tanker truck-to-storage tank or to the storage tank from a gathering system or pipeline) shall not exceed 5,000,000 bbls in any give consecutive 12-month period.

   (f) Total hydrocarbon liquids transferred in truck transfer operations (storage tank to tanker truck) shall not exceed 5,000,000 bbls in any consecutive 12-month period.

   (g) All liquid and gas collection, storage, and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of hydrocarbons to the atmosphere.

3. Monitoring and Testing Requirements

(a) Total hydrocarbon liquid loaded to the storage tank, transferred to trucks, and transloaded to rail cars from the portable transloading units shall each be measured using liquid flow meters. When the pumping system mounted on a tanker truck is used in transloading operations, the total hydrocarbon liquid loaded to rail cars shall be measured by manual gauging of the liquid level in the railcar.

(b) The Permittee shall record the total volume of hydrocarbon liquids loaded, transferred, and transloaded at the end of each month, beginning with the first calendar month that permitted operations commence for each of the following operations:

i. Storage tank loading (from tanker trucks and pipelines);
ii. Truck transfers; and
iii. Transloading onto rail cars.

(c) Prior to twelve (12) full months of hydrocarbon liquid loading, transfer and transloading data, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume for that month to the recorded hydrocarbon liquid loaded, transferred and transloaded for all previous months since permitted operations commenced and record the total for each. Thereafter, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume of hydrocarbon liquid loaded, transferred and transloaded that month to the calculated volume from the preceding eleven (11) months and record a new twelve (12) month total for each.

(d) The Permittee shall conduct semiannual extended laboratory analysis of the crude oil received at the facility to obtain the actual physical and chemical properties of the hydrocarbon liquid and associated vapors to be used in calculating monthly VOC emissions.

4. VOC Emissions Calculations

(a) Facility-wide actual VOC emissions shall be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that permitted operations commence.

(b) Prior to twelve (12) full months of facility-wide VOC emissions calculations, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for the preceding eleven (11) months and record a new twelve (12) month total.

(c) VOC emissions from all controlled and uncontrolled emission sources at the facility shall be included in the monthly calculation, including, but not limited to: the hydrocarbon liquid storage tank, truck transfer stations, and transloading units.

(d) VOC emissions from each approved emitting unit shall be calculated as specified in this permit.

5. Recordkeeping Requirements

The Permittee shall maintain the following records:

(a) The actual monthly and rolling twelve (12) month facility-wide VOC total emissions, in tpy;

(b) The actual monthly and rolling twelve (12) month volume of crude oil transferred to the storage tank (from tanker trucks and pipelines);

(c) The actual monthly and rolling twelve (12) month volume of crude oil transferred to the tanker trucks;

(d) The actual monthly and rolling twelve (12) month volume of crude oil transfered to the rail cars;

(e) The results of each extended laboratory analysis of the hydrocarbon liquids received at the facility; and

(f) All input parameters and methodologies used to calculate the facility-wide monthly VOC emissions from each VOC emitting unit identified in this permit.

**E. Requirements for Minimizing Fugitive Dust**

1. Work Practice and Operational Requirements

(a) The Permittee shall take all reasonable precautions to prevent fugitive dust emissions at the facility and shall construct, maintain, and operate the facility to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

i. Use, where possible, water or chemicals for control of dust during construction and operations, grading of roads, or clearing of land;

ii. Application of asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces, located at the facility, that can create airborne dust;

iii. The prompt removal from paved streets, located at the facility, of earth or other material that does or may become airborne; or

iv. Restricting vehicle speeds at the facility.

(b) The Permittee shall prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.

2. Monitoring Requirements

(a) The Permittee shall periodically survey the facility during construction and operation to determine if there are obvious visible dust plumes. This survey must be done at a minimum once per week in all active areas and during daylight hours.

(b) The Permittee shall document the results of the survey, including the date and time of the survey, identification of the cause of any visible dust plumes observed, and the reasonable precautions taken to prevent continued fugitive dust emissions.

3. Recordkeeping Requirements

The Permittee shall maintain records for five years that document the fugitive dust prevention plan, the periodic surveys and the reasonable precautions that were taken to prevent fugitive dust emissions.

## F. Requirements for the Hydrocarbon Liquid Storage Tank

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a hydrocarbon liquid storage tank with an internal floating roof and designed and operated as specified in 40CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

(b) The permittee shall install a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the tank. The Permittee shall not conduct hydrocarbon liquid transfer to the storage tank unless submerged loading is used.

2. Monitoring and Testing Requirements

(a) The permittee shall visually inspect the internal floating roof, the seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of the storage tank with hydrocarbon liquid, at least once every 12 months after initial fill, and each time the storage tank is emptied and degassed.

(b) The Permittee shall repair the items before filling or refilling the storage tank with crude hydrocarbon liquids if one or more of the following are observed:

i. The internal floating roof is not resting on the surface of the hydrocarbon liquid inside the storage tank;
ii. There is liquid accumulated on the roof;
iii. The seal is detached, or there are holes, tears, or other openings in the primary or secondary seal or seal fabric;
iv. The gaskets no longer close off the liquid surfaces from the atmosphere; or
v. The slotted membrane has more than 10% open area.

(c) VOC emissions from crude the hydrocarbon liquid tank at the facility due to standing, working and breathing losses for each calendar month shall be calculated using the most current version of the EPA TANKS program and the following:

i. The total measured volume of hydrocarbon liquid transferred to the tank for the month; and
ii. The actual physical and chemical properties of the liquid and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility.

3. Recordkeeping Requirements

(a) All exceedances of the hydrocarbon liquid storage tank loading (tanker truck-to-storage tank or to the storage tank from a gathering system or pipeline) limit specified in this permit.

(b) The Permittee shall document and maintain a record of the storage tank emission calculations, all inspections, and any repairs.

(c) All storage tank inspection records shall include, at a minimum, the following information:

i. The date of the inspection;
ii. All documentation and/or images produced in the inspection;
iii. The findings of the inspection;
iv. Any corrective action taken; and
v. The inspector's name and signature.

## G. Requirements for Truck Transfer Operations

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the tank and trucks. The Permittee shall not conduct truck transfer operations unless submerged loading is used.

(b) All VOC emissions from the each truck transfer stations at the facility shall be continuously controlled using closed-vent systems that routes vapors to an enclosed combustion device designed and operated to reduce the mass content of VOC emissions in the vapors by at least 98.0 %.

(c) All piping connections, fittings, valves, or any other appurtenance employed to contain and collect vapors and transport them to the enclosed combustion device shall be maintained in a leak-free condition and connected and operating at all times a truck transfer event is occurring.

2. Closed-Vent Systems

The Permittee shall meet the following requirements for the closed-vent systems:

(a) Each closed-vent system shall route all VOC emissions from the truck transfer stations to the enclosed combustor required by this permit.

(b) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain and collect gases, vapors, and fumes and transport them to enclosed combustor shall be maintained and operated during any time the control equipment is operating.

(c) Each closed-vent system shall be designed to operate with no detectable emissions.

(d) If any closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control devices, the permittee shall meet the one of following requirements for each bypass device:

i. At the inlet to the bypass device that could divert the stream away from the control device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device and into the atmosphere; or

ii. Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. Enclosed Combustion Device

The enclosed combustion device shall be:

(a) Designed to have sufficient capacity to achieve at least a 98.0 % destruction efficiency for the minimum and maximum hydrocarbon mass flow routed to the device;

(b) Equipped with an automatic ignition system or continuous burning pilot;

(c) Equipped with a thermocouple, or similar temperature sensing device, to detect the presence of a pilot flame;

(d) Equipped with a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame;

(e) Maintained in a leak-free condition; and

(f) Designed to minimize visible smoke emissions.

4. The Permittee shall follow the manufacturer's written operating instructions, procedures and maintenance schedule for the enclosed combustion device and closed-vent system, to ensure good air pollution control practices for minimizing emissions.

5. Control devices other than that listed above that are capable of achieving a control efficiency at least equivalent to that specified in this permit may be used upon EPA approval.

6. Testing and Monitoring Requirements

(a) Within 180 days after initial startup, and every five (5) years thereafter, during a truck transfer event, the Permittee shall conduct a performance test of the closed-vent system to demonstrate that it is operating in a leak free condition, and a performance test of the enclosed combustor to which emissions from the truck transfer stations are routed, to demonstrate 98.0% destruction efficiency. Testing of the closed vent system shall be conducted in accordance with EPA Reference Method 21, listed in 40 CFR Part 60, Appendix A. Testing of the enclosed combustor VOC destruction efficiency shall be conducted in accordance with EPA Reference Method 25A, listed in 40 CFR Part 60, Appendix A. The Permittee may submit a written request to the EPA for an alternate testing method, but shall only use that test method upon receipt of written approval by the EPA.

(b) During each performance test, the Permittee shall establish an emission factor, in terms of milligrams VOC per liter hydrocarbon liquid loaded (mg VOC/l), to be used for monitoring and recordkeeping requirements associated with demonstrating compliance with the facility-wide VOC emission limit.

(c) The Permittee shall monitor the closed-vent system during all truck transfer events, to confirm proper operation as follows:

i. Continuously ensure that the blower fan is operating at all times a truck transfer event is occurring using vacuum pressure measurement upstream of the blower fan; and
ii. In the event that the blower fan is not operational, immediately shut down all truck transfer operations and repair the blower fan. Truck transfer operations shall not resume until the blower fan is repaired and operational.

(d) The Permittee shall monitor the enclosed combustor to confirm proper operation as follows:

i. Continuously monitor the pilot flame using a thermocouple, or other temperature sensing device, and recording device that indicates the continuous ignition of the pilot flame at all times the enclosed combustion device is operating;
ii. Check the recording device to insure proper operation once per day;
iii. Check the pilot flame to insure proper operation once per day; and
iv. Correct a pilot flame failure when notified by the malfunction alarm, as soon as possible, but no longer than five (5) days from the day of the notification.

(e) VOC emissions from truck transfer operations for each calendar month shall be calculated using the following:

i. The VOC emission factor established during the most recent performance tests; and
ii. The total measured volume of hydrocarbon liquid transferred for the month (bbl).

7. Recordkeeping Requirements

The Permittee shall keep the following records for truck transfer operations:

(a) All exceedances of the hydrocarbon liquid truck transfer limit as specified in this permit.

(b) The site specific design input parameters provided by the manufacturer or vendor, and used to properly size the enclosed combustor to assure the 98.0 % VOC reduction requirement in this permit and any instances in which any parameter was exceeded.

(c) Any instances in which the enclosed combustion device was bypassed or down in each calendar month during truck transfer operations, the reason for each incident, its duration, and the corrective actions taken or the preventative measures adopted to avoid such bypasses or downtimes.

(d) Any instances in which the pilot flame is not present in the enclosed combustor while it is operating, the date and times that the pilot was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame.

(e) Any instances in which the thermocouple, or other temperature sensing device, installed to detect the presence of a flame in the enclosed combustor is not operational while the enclosed combustor is operating, the time period during which it was not operational, and the corrective measures taken.

(f) All required testing and monitoring. The records shall include the following:

i. The date, place, and time of observations, sampling or measurements;
ii. The date(s) analyses were performed;
iii. The companies or entities that performed observations and the analyses;
iv. The analytical techniques or methods used;
v. The results of such analyses or measurements; and
vi. The operating conditions as existing at the time of sampling or measurement.

## H. Requirements for Transloading Operations

1. Installation and Operations Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the rail car. The Permittee shall not conduct transloading operations unless submerged loading is used.

(b) All VOC emissions from the transloading operations at the facility shall be continuously controlled using vapor balance control systems designed and operated to reduce the mass content of VOC emissions by at least 90.0 %. The Permittee shall not conduct transloading operations unless the vapor balance control system is used.

(c) Any planned release of vapor from the trucks following vapor balance during transloading operations prior to leaving the facility shall be controlled using an enclosed combustion

device that is installed, operated, monitored, and tested as specified in the section labeled, **Requirements for Truck Transfer Operations**.

(d) The Permittee shall install, operate and maintain each vapor balance control system using the following design criteria:

i. All vapor connections and lines on the trucks and rail cars shall be equipped with closures that seal upon disconnect;
ii. The vapor line from the rail cars to the trucks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors; and
iii. The vapor balance control system shall be designed such that the pressure in the tank of the trucks does not exceed the maximum allowable tank pressure (design pressure) of the truck during crude oil transfer to the rail car such that tank relief valves are not activated.

2. Monitoring Requirements

(a) The Permittee shall monitor each vapor balance control system to confirm proper operation as follows:

i. During each transloading event, the pressure in the tank of the trucks shall be measured to ensure that the tank design pressure is not being exceeded;
ii. During each transloading event, the vapor return lines shall be visually inspected for leaks. If a leak is detected, the permittee shall repair the leak prior to unloading the next truck using the same vapor return line.
iii. On a quarterly basis and during a transloading event, the permittee shall ensure that the concentration at all potential leak sources on each transloading unit is not equal to or greater than 100 % of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source.

(b) VOC emissions from the transloading operations for each calendar month shall be calculated using the following:

i. The total measured volume of hydrocarbon liquid transloaded for the month (bbl);
ii. The actual physical and chemical properties of the liquid and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;
iii. The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismark, ND;
iv. The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of transloading; and
v. The 90.0% vapor balance control efficiency, unless a leak in a vapor return line on any one transloading unit was visibly observed or measured during any one rail car transloading event; in which case, the vapor balance control efficiency shall be considered 0.0% for the actual measured volume of hydrocarbon liquid transloaded during that event.

3. Record keeping Requirements

The Permittee shall keep the following records for transloading operations:

(a) All exceedances of the hydrocarbon liquid transloading limit as specified in this permit.

(b) All instances where a leak was visually observed or tested during a transloading event, the corrective measures taken, and the volume of hydrocarbon liquid transloaded with the leaking vapor balance control system.

(c) The required vapor tight testing of each transloading unit and shall include the following:

i. The date, place, and time of observations, sampling or measurements;
ii. The date(s) analyses were performed;
iii. The companies or entities that performed observations and the analyses;
iv. The analytical techniques or methods used;
v. The results of such analyses or measurements; and
vi. The operating conditions as existing at the time of sampling or measurement.

## I. Records Retention

1. The Permittee must retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records must be kept at the facility or the location that has day-to-day operational control over the facility.

## J. Reporting

1. Any documents required to be submitted under this permit shall be submitted to:

U.S. Environmental Protection Agency
Region 8 Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

2. The Permittee shall submit an annual report of rolling 12 month annual emissions each year no later than April 1st. The annual report shall cover the period for the previous calendar year. For the first calendar year the permittee shall submit the cumulative facility wide emissions.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to R8AirPermitting@epa.gov within:

(a) Thirty (30) days from the discovery of a deviation that would cause the permittee to exceed the facility-wide emission limits or operational limits if left un-corrected for more than five (5) days after discovering the deviation; and

(b) Twelve (12) months from the discovery of a deviation of recordkeeping or other permit conditions that do not affect the permittee's ability to meet the facility-wide emission limits.

4. The Permittee shall submit a report for any required performance test to the EPA Regional Office within 60 days after completing the tests.

5. The Permittee shall submit any record or report required by this permit upon EPA request.

## II. General Provisions

### A. Conditional Approval:

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants a Minor NSR permit. This authorization is expressly conditioned as follows:

1. This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.

2. The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified ten (10) days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.

3. The issuance of this Permit to Construct may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted source. Noncompliance with any permit term or condition is a violation of the permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. The Permittee shall take all reasonable precautions to prevent and or minimize fugitive emissions during the construction period.

6. The permitted source shall not cause or contribute to a NAAQS violation or, in an attainment area, shall not cause or contribute to a PSD increment violation.

7. Issuance of this permit does not relieve the Permittee, the owner, and/or operator of the responsibility to comply fully with all other applicable Federal and Tribal rules, regulations, and orders now or hereafter in effect.

8. It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. For proposed modifications, as defined at §49.152(d), that would increase an emissions unit's allowable emissions of a regulated NSR pollutant above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to 40 CFR Part 49 approving the increase. For a proposed modification that is not otherwise subject to review under major NSR or under this program, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at §49.159(f).

10. At such time that a new or modified source at the permitted facility or modification of the permitted facility becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of 40 CFR 52.21 shall apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if the permit contains a material mistake or the facility fails to assure compliance with the applicable requirements.

12. *Severability clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

13. *Property Rights:* The permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with Part 2, Subpart B of Title 40 of the Code of Federal Regulations.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect the permitted facility during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:

(a) Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
(b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
(c) Inspect, during normal business hours or while the source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
(e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the draft permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within thirty (30) days of receipt of the permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

U.S. Environmental Protection Agency
Region 8 Air Permitting, Modeling, and Monitoring Unit
c/o Tribal Air Permitting, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of the permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project; the Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up:* The Permittee shall submit a notification of the anticipated date of initial start-up of the Source to the EPA within 60 days of such date.

B. **Authorization:**

Authorized by the United States Environmental Protection Agency, Region 8

_____

Callie A. Videtich Date
Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 8**
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

SEP 1 9 2012

Ref: 8P-AR

Mr. Gabe Claypool
Chief Executive Officer
Dakota Plains, Inc.
294 Grove Lane East
Wayazata, MN 55391

Re: Dakota Plains, Inc. (Dakota Plains)
New Town Transfer Facility
Permit # SMNSR-TAT-000285-2012.001
Final Synthetic Minor NSR Permit

Dear Mr. Claypool:

The Environmental Protection Agency, Region 8 (EPA) has completed its review of Dakota Plains' request to obtain a synthetic minor New Source Review (NSR) permit pursuant to 40 CFR Part 49 for the modification of the New Town Transfer Facility. Based on the information submitted in Dakota Plains' application the EPA hereby issues the enclosed permit to construct. No comments were received during the 30-day public comment period. Therefore, the final permit will become effective on September 20, 2012.

Enclosed you will find the final Part 49 pre-construction permit for the modification of the New Town Transfer Facility. Please review each condition carefully and note any restrictions placed on this source.

If you have any questions concerning the enclosed permit, please contact Kathleen Paser of my staff at (303) 312-6526.

Sincerely,

Howard M. Cantor, for
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosure

cc:
Joe Gillies, Environmental Director, Three Affiliated Tribes
Fred Fox, Energy Director, Three Affiliated Tribes

**United States Environmental Protection Agency**
**Region 8, Air Program**
**1595 Wynkoop Street**
**Denver, CO 80202**

# Air Pollution Control
# Synthetic Minor Source Permit to Construct

**40 CFR 49.151**

**#SMNSR-TAT-000285-2012.001**

*Synthetic Minor Permit to Construct to establish volatile organic compound (VOC) emission limits to avoid Prevention of Significant Deterioration (PSD)and Title V (Part 71) permitting requirements with respect to VOC emissions.*

**Permittee:**

Dakota Plains, Inc.

**Permitted Facility:**

New Town Transfer Facility
Crude Oil Transloading Operation on the
Fort Berthold Indian Reservation
Mountrail County, North Dakota

## Summary

On March 28, 2012, the EPA received an application from Dakota Plains, Inc. (Dakota Plains) requesting approval to modify an existing crude oil "transloading" operation. A revised application was received on April 25, 2012. Dakota Plains requested approval to modify the facility by constructing a 90,000 barrel (bbl) hydrocarbon liquid storage tank, ten (10) truck loading stations at the storage tank, and thirteen (13) portable transloading units (for tanker truck to railcar transfers). EPA has approved this request.

**Permit number:**
SMNSR-TAT-000285-2012.001

Based on the potential uncontrolled emission estimates of the proposed modification, this facility would be subject to Prevention of Significant Deterioration (PSD) permitting. The applicant requested emission limitations that would limit the facility-wide emissions of volatile organic compounds (VOC) to levels below the thresholds that would have required them to obtain a Prevention of Significant Deterioration (PSD) pre-construction permit. Based on the requested VOC emission limit, Dakota Plains could also avoid Title V permit requirements under 40 CFR Part 71, provided that all other pollutants regulated under the Part 71 program are below the emissions thresholds and all other applicability criteria at §71.3(a) and (b) do not apply.

Potential uncontrolled emissions of VOC from the construction were estimated to be 1,034 tons per year (tpy). This final permit requires that a vapor balance control system be used with VOC emission control of 90.0% during transloading operations and an enclosed combustor be used during truck transfer and storage tank loading. In addition, the EPA is requiring the use of a closed vent system and enclosed combustor on the truck transfer stations with VOC emission destruction efficiency of at least 98.0% and a limit on the amount of crude oil that can flow through the facility in any given year to minimize VOC emissions at the facility. Potential uncontrolled emissions of all other regulated pollutants were estimated to be at concentrations below the levels that trigger PSD permitting requirements. Therefore, only limits for VOC emissions needed to be addressed in this permit. This approved final permit has an allowable VOC emission level of 97.0 tpy.

The EPA has determined that dispersion modeling for the proposed project was not necessary, because there do not appear to be any significant air quality concerns within the exterior boundaries of the Fort Berthold Indian Reservation. Additionally, operating emissions from the proposed facility will be well controlled at all times.

## Table of Contents

# I. Conditional Permit to Construct

## A. General Information

| | |
|---|---|
| Facility: | New Town Transfer Facility |
| Permit number: | SMNSR-TAT-000285-2012.001 |
| SIC Code and SIC Description: | 5171 – Petroleum Bulk Stations and Terminals |

Site Location:
New Town Transfer Facility
NW ¼ NW ¼ Sec 21 T152N R92W &
N ½ NE ¼ Sec 20 T152N R92W
Fort Berthold Indian Reservation
Mountrail County, ND

Corporate Office Location
Dakota Plains, Inc.
294 Grove Lane East
Wayzata, MN 55391

The equipment listed in this permit shall be operated by Dakota Plains, Inc. at the following location:

Latitude 47.977678N, Longitude -102.476119W

## B. Construction Approved

Dakota Plains, Inc. (Dakota Plains) currently owns and operates the New Town Transfer Facility, an existing transloading operation. The facility is located along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

Dakota Plains has been given approval through this permit to modify the facility by constructing a 90,000 barrel (bbl) hydrocarbon liquid storage tank to provide interim storage capacity until the hydrocarbon liquid can be transloaded onto rail cars. VOC emissions from the new storage tank will be minimized using an internal floating roof system. In addition, Dakota Plains has been given approval to add ten (10) truck loading stations at the storage tank and thirteen (13) portable transloading units (for tanker truck to railcar transfers), in addition to the existing pumping systems mounted to the tanker trucks. The portable transloading units each consist of a loading arm, pumping, and metering systems. VOC emissions from the truck loading operation will be controlled using an enclosed combustor with a 98.0% minimum VOC destruction efficiency. VOC emissions from the transloading operations will be minimized using vapor balance controls with a minimum 90.0% VOC control efficiency.

## C. Applicability

1. This Federal Permit to Construct is being issued under authority of 40 CFR 49.151, Federal Minor New Source Review Program in Indian Country (Minor NSR).

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions on VOC emission limits to avoid Prevention of Significant Deterioration (PSD) and Title V major source permitting requirements found at 40 CFR Parts 52 and 71, respectively.

3. Any conditions established for this facility or any specific units at this facility pursuant to any Conditional Permit to Construct issued under the authority of 40 CFR Part 52 (PSD) or 40 CFR Part 49 (Federal Minor NSR) shall continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

**D. Facility-Wide Emission Requirements**

1. Facility-wide Emission Limit

Facility-wide VOC emissions shall not exceed 97.0 tons during any consecutive twelve (12) months.

2. Construction and Operational Limits

(a) The Permittee shall install no more than one 90,000 barrel (bbl) hydrocarbon liquid storage tank.

(b) The Permittee shall install no more than ten (10) truck transfer stations, each with a maximum capacity of 400 gallons per minute (gpm).

(c) The Permittee shall install no more than thirteen (13) portable transloading units, each with a maximum capacity of 400 gpm.

(d) Total hydrocarbon liquids transferred in transloading operations (tanker truck to railcar) shall not exceed 17,000,000 bbls in any consecutive 12-month period.

(e) Total hydrocarbon liquids transferred in storage tank loading (tanker truck-to-storage tank or to the storage tank from a gathering system or pipeline) shall not exceed 5,000,000 bbls in any give consecutive 12-month period.

(f) Total hydrocarbon liquids transferred in truck transfer operations (storage tank to tanker truck) shall not exceed 5,000,000 bbls in any consecutive 12-month period.

(g) All liquid and gas collection, storage, and handling operations, regardless of size, shall be designed, operated and maintained so as to minimize leakage of hydrocarbons to the atmosphere.

3. Monitoring and Testing Requirements

(a) Total hydrocarbon liquid loaded to the storage tank, transferred to trucks, and transloaded to rail cars from the portable transloading units shall each be measured using liquid flow meters. When the pumping system mounted on a tanker truck is used in transloading operations, the total hydrocarbon liquid loaded to rail cars shall be measured by manual gauging of the liquid level in the railcar.

(b) The Permittee shall record the total volume of hydrocarbon liquids loaded, transferred, and transloaded at the end of each month, beginning with the first calendar month that permitted operations commence for each of the following operations:

i. Storage tank loading (from tanker trucks and pipelines);
ii. Truck transfers; and
iii. Transloading onto rail cars.

(c) Prior to twelve (12) full months of hydrocarbon liquid loading, transfer and transloading data, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume for that month to the recorded hydrocarbon liquid loaded, transferred and transloaded for all previous months since permitted operations commenced and record the total for each. Thereafter, the Permittee shall, within seven (7) calendar days of the end of each month, add the volume of hydrocarbon liquid loaded, transferred and transloaded that month to the calculated volume from the preceding eleven (11) months and record a new twelve (12) month total for each.

(d) The Permittee shall conduct semiannual extended laboratory analysis of the crude oil received at the facility to obtain the actual physical and chemical properties of the hydrocarbon liquid and associated vapors to be used in calculating monthly VOC emissions.

4. VOC Emissions Calculations

(a) Facility-wide actual VOC emissions shall be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that permitted operations commence.

(b) Prior to twelve (12) full months of facility-wide VOC emissions calculations, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee shall, within seven (7) calendars days of the end of each month, add the emissions for that month to the calculated emissions for the preceding eleven (11) months and record a new twelve (12) month total.

(c) VOC emissions from all controlled and uncontrolled emission sources at the facility shall be included in the monthly calculation, including, but not limited to: the hydrocarbon liquid storage tank, truck transfer stations, and transloading units.

(d) VOC emissions from each approved emitting unit shall be calculated as specified in this permit.

5. Recordkeeping Requirements

The Permittee shall maintain the following records:

(a) The actual monthly and rolling twelve (12) month facility-wide VOC total emissions, in tpy;

(b) The actual monthly and rolling twelve (12) month volume of crude oil transferred to the storage tank (from tanker trucks and pipelines);

(c) The actual monthly and rolling twelve (12) month volume of crude oil transferred to the tanker trucks;

(d) The actual monthly and rolling twelve (12) month volume of crude oil transfered to the rail cars;

(e) The results of each extended laboratory analysis of the hydrocarbon liquids received at the facility; and

(f) All input parameters and methodologies used to calculate the facility-wide monthly VOC emissions from each VOC emitting unit identified in this permit.

**E. Requirements for Minimizing Fugitive Dust**

1. Work Practice and Operational Requirements

(a) The Permittee shall take all reasonable precautions to prevent fugitive dust emissions at the facility and shall construct, maintain, and operate the facility to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

i. Use, where possible, water or chemicals for control of dust during construction and operations, during grading of roads, or during clearing of land;

ii. Application of asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and/or other surfaces located at the facility that can create airborne dust;

iii. The prompt removal from paved streets, located at the facility, of earth or other material that does or may become airborne; and

iv. Restricting vehicle speeds at the facility.

(b) The Permittee shall prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.

2. Monitoring Requirements

(a) The Permittee shall periodically survey the facility during construction and operation to determine if there are obvious visible dust plumes. This survey must be done at a minimum once per week in all active areas and during daylight hours.

(b) The Permittee shall document the results of the survey, including the date and time of the survey, identification of the cause of any visible dust plumes observed, and the reasonable precautions taken to prevent continued fugitive dust emissions.

3. Recordkeeping Requirements

The Permittee shall maintain records for five years that document the fugitive dust prevention plan, the periodic surveys and the reasonable precautions that were taken to prevent fugitive dust emissions.

## F. Requirements for the Hydrocarbon Liquid Storage Tank

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a hydrocarbon liquid storage tank with an internal floating roof and designed and operated as specified in 40CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

(b) The permittee shall install a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the tank. The Permittee shall not conduct hydrocarbon liquid transfer to the storage tank unless submerged loading is used.

2. Monitoring and Testing Requirements

(a) The permittee shall visually inspect the internal floating roof, the seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of the storage tank with hydrocarbon liquid, at least once every 12 months after initial fill, and each time the storage tank is emptied and degassed.

(b) The Permittee shall repair the items before filling or refilling the storage tank with crude hydrocarbon liquids if one or more of the following are observed:

i. The internal floating roof is not resting on the surface of the hydrocarbon liquid inside the storage tank;
ii. There is liquid accumulated on the roof;
iii. The seal is detached, or there are holes, tears, or other openings in the primary or secondary seal or seal fabric;
iv. The gaskets no longer close off the liquid surfaces from the atmosphere; or
v. The slotted membrane has more than 10% open area.

(c) VOC emissions from crude the hydrocarbon liquid tank at the facility due to standing, working and breathing losses for each calendar month shall be calculated using the most current version of the EPA TANKS program and the following:

i. The total measured volume of hydrocarbon liquid transferred to the tank for the month; and
ii. The actual physical and chemical properties of the liquid and its associated vapors from the most recent semiannual extended laboratory analysis of the crude oil received at the facility.

3. Recordkeeping Requirements

(a) All exceedances of the hydrocarbon liquid storage tank loading (tanker truck-to-storage tank or to the storage tank from a gathering system or pipeline) limit specified in this permit.

(b) The Permittee shall document and maintain a record of the storage tank emission calculations, all inspections, and any repairs.

(c) All storage tank inspection records shall include, at a minimum, the following information:

i. The date of the inspection;
ii. All documentation and/or images produced in the inspection;
iii. The findings of the inspection;
iv. Any corrective action taken; and
v. The inspector's name and signature.

## G. Requirements for Truck Transfer Operations

1. Installation and Operational Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the tank and trucks. The Permittee shall not conduct truck transfer operations unless submerged loading is used.

(b) All VOC emissions from the each truck transfer stations at the facility shall be continuously controlled using closed-vent systems that routes vapors to an enclosed combustion device designed and operated to reduce the mass content of VOC emissions in the vapors by at least 98.0 %.

(c) All piping connections, fittings, valves, or any other appurtenance employed to contain and collect vapors and transport them to the enclosed combustion device shall be maintained in a leak-free condition and connected and operating at all times a truck transfer event is occurring.

2. Closed-Vent Systems

The Permittee shall meet the following requirements for the closed-vent systems:

(a) Each closed-vent system shall route all VOC emissions from the truck transfer stations to the enclosed combustor required by this permit.

(b) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain and collect gases, vapors, and fumes and transport them to enclosed combustor shall be maintained and operated during any time the control equipment is operating.

(c) Each closed-vent system shall be designed to operate with no detectable emissions.

(d) If any closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control devices, the permittee shall meet the one of following requirements for each bypass device:

i. At the inlet to the bypass device that could divert the stream away from the control device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device and into the atmosphere; or

ii. Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. Enclosed Combustion Device

The enclosed combustion device shall be:

(a) Designed to have sufficient capacity to achieve at least a 98.0 % destruction efficiency for the minimum and maximum hydrocarbon mass flow routed to the device;

(b) Equipped with an automatic ignition system or continuous burning pilot;

(c) Equipped with a thermocouple, or similar temperature sensing device, to detect the presence of a pilot flame;

(d) Equipped with a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame;

(e) Maintained in a leak-free condition; and

(f) Designed to minimize visible smoke emissions.

4. The Permittee shall follow the manufacturer's written operating instructions, procedures and maintenance schedule for the enclosed combustion device and closed-vent system, to ensure good air pollution control practices for minimizing emissions.

5. Control devices other than that listed above that are capable of achieving a control efficiency at least equivalent to that specified in this permit may be used upon EPA approval.

6. Testing and Monitoring Requirements

(a) Within 180 days after initial startup, and every five (5) years thereafter, during a truck transfer event, the Permittee shall conduct a performance test of the closed-vent system to demonstrate that it is operating in a leak free condition, and a performance test of the enclosed combustor to which emissions from the truck transfer stations are routed, to demonstrate at least 98.0% destruction efficiency. Testing of the closed vent system shall be conducted in accordance with EPA Reference Method 21, listed in 40 CFR Part 60, Appendix A. Testing of the enclosed combustor VOC destruction efficiency shall be conducted in accordance with EPA Reference Method 25A, listed in 40 CFR Part 60, Appendix A. The Permittee may submit a written request to the EPA for an alternate

testing method, but shall only use that test method upon receipt of written approval by the EPA.

(b) During each performance test, the Permittee shall establish an emission factor, in terms of milligrams VOC per liter hydrocarbon liquid loaded (mg VOC/l), to be used for monitoring and recordkeeping requirements associated with demonstrating compliance with the facility-wide VOC emission limit.

(c) The Permittee shall monitor the closed-vent system during all truck transfer events, to confirm proper operation as follows:

i. Continuously ensure that the blower fan is operating at all times a truck transfer event is occurring using vacuum pressure measurement upstream of the blower fan; and
ii. In the event that the blower fan is not operational, immediately shut down all truck transfer operations and repair the blower fan. Truck transfer operations shall not resume until the blower fan is repaired and operational.

(d) The Permittee shall monitor the enclosed combustor to confirm proper operation as follows:

i. Continuously monitor the pilot flame using a thermocouple, or other temperature sensing device, and recording device that indicates the continuous ignition of the pilot flame at all times the enclosed combustion device is operating;
ii. Check the recording device to insure proper operation once per day;
iii. Check the pilot flame to insure proper operation once per day; and
iv. Correct a pilot flame failure when notified by the malfunction alarm, as soon as possible, but no longer than five (5) days from the day of the notification.

(e) VOC emissions from truck transfer operations for each calendar month shall be calculated using the following:

i. The VOC emission factor established during the most recent performance tests; and
ii. The total measured volume of hydrocarbon liquid transferred for the month (bbl).

7. Recordkeeping Requirements

The Permittee shall keep the following records for truck transfer operations:

(a) All exceedances of the hydrocarbon liquid truck transfer limit as specified in this permit.

(b) The site specific design input parameters provided by the manufacturer or vendor, and used to properly size the enclosed combustor to assure the 98.0 % minimum VOC reduction requirement in this permit and any instances in which any parameter was exceeded.

(c) Any instances in which the enclosed combustion device was bypassed or down in each calendar month during truck transfer operations, the reason for each incident, its duration, and the corrective actions taken or the preventative measures adopted to avoid such bypasses or downtimes.

(d) Any instances in which the pilot flame is not present in the enclosed combustor while it is operating, the date and times that the pilot was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame.

(e) Any instances in which the thermocouple, or other temperature sensing device, installed to detect the presence of a flame in the enclosed combustor is not operational while the enclosed combustor is operating, the time period during which it was not operational, and the corrective measures taken.

(f) All required testing and monitoring. The records shall include the following:

i. The date, place, and time of observations, sampling or measurements;
ii. The date(s) analyses were performed;
iii. The companies or entities that performed observations and the analyses;
iv. The analytical techniques or methods used;
v. The results of such analyses or measurements; and
vi. The operating conditions as existing at the time of sampling or measurement.

## H. Requirements for Transloading Operations

1. Installation and Operations Requirements

(a) The Permittee shall install, operate and maintain a piping system designed for submerged loading by either bottom loading or loading through a submerged fill pipe. The submerged fill pipe must be no more than twelve (12) inches from the bottom of the rail car. The Permittee shall not conduct transloading operations unless submerged loading is used.

(b) All VOC emissions from the transloading operations at the facility shall be continuously controlled using vapor balance control systems designed and operated to reduce the mass content of VOC emissions by at least 90.0 %. The Permittee shall not conduct transloading operations unless the vapor balance control system is used.

(c) Any planned release of vapor from the trucks following vapor balance during transloading operations prior to leaving the facility shall be controlled using an enclosed combustion device that is installed, operated, monitored, and tested as specified in the section labeled, **Requirements for Truck Transfer Operations**.

(d) The Permittee shall install, operate and maintain each vapor balance control system using the following design criteria:

i. All vapor connections and lines on the trucks and rail cars shall be equipped with closures that seal upon disconnect;
ii. The vapor line from the rail cars to the trucks shall be vapor-tight and liquid fill connections for all systems shall be equipped with vapor-tight caps. Vapor-tight means equipment that allows no loss of vapors; and
iii. The vapor balance control system shall be designed such that the pressure in the tank of the trucks does not exceed the maximum allowable tank pressure (design

pressure) of the truck during crude oil transfer to the rail car such that tank relief valves are not activated.

2. Monitoring Requirements

(a) The Permittee shall monitor each vapor balance control system to confirm proper operation as follows:

i. During each transloading event, the pressure in the tank of the trucks shall be measured to ensure that the tank design pressure is not being exceeded;
ii. During each transloading event, the vapor return lines shall be visually inspected for leaks. If a leak is detected, the permittee shall repair the leak prior to unloading the next truck using the same vapor return line; and
iii. On a quarterly basis and during a transloading event, the permittee shall ensure that the concentration at all potential leak sources on each transloading unit is not equal to or greater than 100% of the Lower Explosive Limit of the Bakken hydrocarbon liquids (LEL = 0.8% by volume) when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from each possible source.

(b) VOC emissions from the transloading operations for each calendar month shall be calculated using the following:

i. The total measured volume of hydrocarbon liquid transloaded for the month (bbl);
ii. The actual physical and chemical properties of the liquid and its associated vapors from the most recent semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;
iii. The monthly average temperature as determined from information available from the National Weather Service (NWS) Forecast Office in Bismark, ND;
iv. The procedure outlined in AP-42 Chapter 5.2, Transportation and Marketing of Petroleum Liquids for the actual method of transloading; and
v. The 90.0% vapor balance control efficiency, unless a leak in a vapor return line on any one transloading unit was visibly observed or measured during any one rail car transloading event; in which case, the vapor balance control efficiency shall be considered 0.0% for the actual measured volume of hydrocarbon liquid transloaded during that event.

3. Record keeping Requirements

The Permittee shall keep the following records for transloading operations:

(a) All exceedances of the hydrocarbon liquid transloading limit as specified in this permit.

(b) All instances where a leak was visually observed or tested during a transloading event, the corrective measures taken, and the volume of hydrocarbon liquid transloaded with the leaking vapor balance control system.

(c) The required vapor tight testing of each transloading unit and shall include the following:

i. The date, place, and time of observations, sampling or measurements;
ii. The date(s) analyses were performed;
iii. The companies or entities that performed observations and the analyses;
iv. The analytical techniques or methods used;
v. The results of such analyses or measurements; and
vi. The operating conditions as existing at the time of sampling or measurement.

## I. Records Retention

1. The Permittee must retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records must be kept at the facility or the location that has day-to-day operational control over the facility.

## J. Reporting

1. Any documents required to be submitted under this permit shall be submitted to:

U.S. Environmental Protection Agency
Region 8 Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

2. The Permittee shall submit an annual report of rolling 12 month annual emissions each year no later than April 1st. The annual report shall cover the period for the previous calendar year. For the first calendar year the permittee shall submit the cumulative facility wide emissions.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to R8AirPermitting@epa.gov within:

(a) Thirty (30) days from the discovery of a deviation that would cause the permittee to exceed the facility-wide emission limits or operational limits if left un-corrected for more than five (5) days after discovering the deviation; and

(b) Twelve (12) months from the discovery of a deviation of recordkeeping or other permit conditions that do not affect the permittee's ability to meet the facility-wide emission limits.

4. The Permittee shall submit a report for any required performance test to the EPA Regional Office within 60 days after completing the tests.

5. The Permittee shall submit any record or report required by this permit upon EPA request.

## II. General Provisions

### A. Conditional Approval

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants a Minor NSR permit. This authorization is expressly conditioned as follows:

1. This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.

2. The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified ten (10) days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.

3. The issuance of this Permit to Construct may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted source. Noncompliance with any permit term or condition is a violation of the permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. The Permittee shall take all reasonable precautions to prevent and or minimize fugitive emissions during the construction period.

6. The permitted source shall not cause or contribute to a NAAQS violation or, in an attainment area, shall not cause or contribute to a PSD increment violation.

7. Issuance of this permit does not relieve the Permittee, the owner, and/or operator of the responsibility to comply fully with all other applicable Federal and Tribal rules, regulations, and orders now or hereafter in effect.

8. It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. For proposed modifications, as defined at §49.152(d), that would increase an emissions unit's allowable emissions of a regulated NSR pollutant above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to 40 CFR Part 49 approving the increase. For a proposed modification that is not otherwise subject to review under

major NSR or under this program, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at §49.159(f).

10. At such time that a new or modified source at the permitted facility or modification of the permitted facility becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of 40 CFR 52.21 shall apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if the permit contains a material mistake or the facility fails to assure compliance with the applicable requirements.

12. *Severability clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

13. *Property Rights:* The permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with Part 2, Subpart B of Title 40 of the Code of Federal Regulations.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect the permitted facility during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:

    (a) Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
    (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
    (c) Inspect, during normal business hours or while the source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

(e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the draft permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within thirty (30) days of receipt of the permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

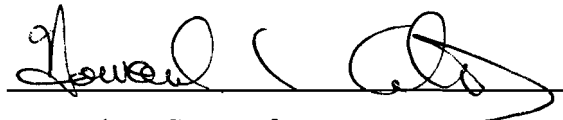
U.S. Environmental Protection Agency
Region 8 Air Permitting, Modeling, and Monitoring Unit
c/o Tribal Air Permitting, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of the permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project; the Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up:* The Permittee shall submit a notification of the anticipated date of initial start-up of the Source to the EPA within 60 days of such date.

## B. Authorization

Authorized by the United States Environmental Protection Agency, Region 8



9/19/12

Howard M. Cantor, for — Date
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

**Air Pollution Control**
**40 CFR 49.151 Federal Minor New Source Review In Indian Country**
**Synthetic Minor Permit to Construct**
**Technical Support Document**
**Proposed Permit No. SMNSR-TAT-000285-2012.001**

New Town Transfer Facility
Crude Oil Transloading Operation on the
Fort Berthold Indian Reservation
Mountrail County, North Dakota

In accordance with the requirements at 40 CFR Part 49, the Region 8 office of the U.S. Environmental Protection Agency (EPA) has prepared this technical support document (TSD) describing the conditions of this synthetic minor New Source Review permit for a proposed crude oil transloading facility and presents information that is germane to this permit action.

## Table of Contents

## I. Project Description

On March 28, 2012, the EPA received an application from Dakota Plains, Inc. (Dakota Plains) requesting approval to modify an existing crude oil "transloading" operation. A revised application was received on April 25, 2012.

This existing operation transfers hydrocarbon liquids[1] from tanker trucks to railcars at a transloading terminal. The facility is located in New Town, North Dakota (ND), along the Canadian Pacific Railway, 800 feet south of the intersection of College Drive and Highway 23.

The current facility is only engaged in the transloading of hydrocarbon liquids (tanker truck to railcar); there are no bulk hydrocarbon liquid storage facilities, nor truck transfer stations (tanker truck to storage tank or storage tank to tanker truck). Dakota Plains receives the hydrocarbon liquid from the companies producing oil and natural gas in the Bakken shale formation. At the well site, the hydrocarbon liquid is loaded into tanker trucks for transport to the New Town Transfer Facility where it is then transloaded into railcars. The liquid is currently transloaded into the railcars by bottom loading via pumping systems mounted on the tanker trucks and transloading trailers.

Dakota Plains is proposing to modify the facility by constructing a 90,000 barrel (bbl) storage tank to provide interim storage capacity until the hydrocarbon liquid can be transloaded into the railcars. Due to increasing oil and natural gas production in the Bakken shale formation, Dakota Plains expects that there may be periods of time when the facility will receive more hydrocarbon liquid than can be immediately transported by the railcars.

Dakota Plains plans to construct and operate the following equipment:

(1) One (1) hydrocarbon liquid storage tank with a 90,000 barrel capacity.
(2) Ten (10) truck transfer stations for loading and unloading the hydrocarbon liquid storage tank utilizing tanker trucks.
(3) Thirteen (13) portable transloading units (for tanker truck to railcar transfers), in addition to the existing pumping systems mounted to the tanker trucks. The portable transloading units each consist of a loading arm, pumping, and metering systems.

## II. Type and Sources of Emissions

The following discussion is a summary of information provided in the Fifth Edition of AP-42, published in January of 1995, Volume I, Stationary Point and Area Sources. The discussion on emissions from storage tanks comes from Chapter 7: Liquid Storage Tanks. The discussion on emissions from transport operations comes from Chapter 5: Transportation and Marketing of Petroleum Liquids.

The storage and transfer of hydrocarbon liquids involve many distinct operations, each of which represents a potential source of VOC emissions due to evaporation losses. Evaporative emissions occur from loading and/or unloading rail tank cars, tanker trucks, and storage tanks involving breathing, working, and standing losses.

[1] For the purposes of this action, hydrocarbon liquids mean crude oil.

*Storage:* VOC emissions from the storage of hydrocarbon liquids occur because of evaporative loss during its storage and as a result of changes in the liquid level.

*Loading:* Loading and unloading hydrocarbon liquids are typically the primary source of VOC emissions. The emissions occur as vapors in "empty" tanks (tanker trucks, railcar tanks, and on-site storage tanks) are displaced to the atmosphere by the liquid being loaded into the tanks.

## III. Control Technologies

*Loading emissions:* One measure to reduce loading emissions includes the selection of alternative loading methods. There are two principal methods of loading: splash loading and submerged loading. In the splash loading method, the fill pipe dispensing the liquid is lowered only part way into the tank. Significant turbulence and vapor/liquid contact occur during the splash loading operations, resulting in high levels of vapor generation and VOC emissions. If the turbulence is great enough, liquid droplets will be entrained in the vented vapors. There are two types of submerged loading: submerged fill pipe method, and the bottom loading method. In the submerged fill pipe method, the fill pipe extends almost to the bottom of the tank. In the bottom loading method, a permanent fill pipe is attached to the tank bottom. During most of submerged loading by both methods, the fill pipe opening is below the liquid surface level. Liquid turbulence is controlled significantly during submerged loading, resulting in lower vapor generation than encountered during splash loading. However, both splash loading and submerged loading techniques produce VOC emissions and depending on the magnitude of the operations, even submerged loading emissions can be significant.

One control measure for vapors displaced during both splash and submerged loading is called "vapor balance service," in which the tanker truck being unloaded retrieves the vapors displaced while the product is being loaded into railcar tanks or into the on-site storage tank and transports the vapors away from the loading terminals. Therefore, using a vapor balance service will reduce the VOC emitted at the receiving terminal, but the tanker truck in vapor balance service is saturated with organic vapors after it has been unloaded. Thus, the presence of these vapors during reloading of the tanker truck will result in greater emissions than encountered during non-vapor balance, or "normal" service. If the tanker truck in vapor balance service receives a new load from a location at the facility, for example, the tanker truck unloads at the railcar terminal and then reloads at the on-site storage tank terminal; the saturated vapors in the tanker truck at the start of its loading will result in emissions that still need to be controlled.

These emissions can be controlled using vapor recovery equipment. The vapor recovery equipment captures the vapors displaced during loading operations which can then be recovered as product by the use of refrigeration, absorption, adsorption, and/or compression. The vapors can also be controlled through combustion in a thermal oxidation unit such as a utility flare or an enclosed combustor, with no product recovery.

*Storage Emissions*: Six basic tank designs are used for hydrocarbon liquid storage vessels: fixed roof (vertical and horizontal), external floating roof, domed external (or covered) floating roof, internal floating roof, variable vapor space, and pressure (low and high). The VOC emissions from storage will vary with tank design. Emissions from fixed roof tanks are a result of evaporative losses during storage (known as breathing losses or standing storage losses) and evaporative losses during filling and emptying operations (known as working losses). External and internal floating roof tanks are emission

sources because of evaporative losses that occur during standing storage and withdrawal of liquid from the tank. Standing storage losses are a result of evaporative losses through rim seals, deck fittings, and/or deck seams. Variable vapor space tanks are also emission sources because of evaporative losses that result during filling operations.

These emissions can also be controlled using vapor recovery equipment, be recovered as product by the use of refrigeration, absorption, adsorption, and/or compression, and/or controlled through combustion with no product recovery.

## IV. Dakota Plain's Proposed VOC Emission Reduction Techniques

To minimize VOC emissions during storage of hydrocarbon liquids, Dakota Plains has proposed to construct a hydrocarbon liquid storage tank with an internal floating roof and designed and operated as specified in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

Dakota Plains has proposed to use a vapor balance control system at the transloading terminal to minimize VOC emissions during railcar loading while using any one of the thirteen portable transloading units. According to Dakota Plains, the vapor balance system would have a 90.0% VOC control efficiency.

While the vapor balance control system will reduce the VOC emitted at the transloading terminal, the tanker trucks in vapor balance service will be saturated with organic vapors from the transloading operation. Thus, the presence of these vapors during reloading of the tanker trucks at the storage tank will result in significant VOC emissions from the ten (10) truck transfer stations. Dakota Plains is proposing to control these VOC emissions using an enclosed combustor with a 98.0% VOC destruction efficiency.

Dakota Plains has also proposed to install a piping system designed for either bottom loading or loading through a submerged fill piping for all hydrocarbon liquid transfers to and from the hydrocarbon liquid storage tank and to the railcar tanks.

## V. Potential Uncontrolled and Proposed Allowable VOC Emissions

Pursuant to 40 CFR 52.21, "potential to emit" is defined as the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design <u>if</u> the limitation, or the effect it would have on emissions, is legally and practicably enforceable.

Therefore, to calculate potential uncontrolled emissions in this proposal, the worst possible case for emissions should be considered since there are currently no existing legally and practicably enforceable restrictions on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed.

This is generally calculated by assuming that the facility will be producing at its maximum capacity upon start-up and that all the production equipment are functioning at their maximum operating rates at 8,760 hours in a year.

The following table summarizes the total facility-wide potential uncontrolled VOC emissions in comparison to the proposed controlled, or allowable VOC emissions (includes VOC destruction efficiencies and operational limits). The facility-wide PTE of other regulated pollutants, for which Dakota Plains is not requesting emission limitations, are estimated at: 8.8 tpy $NO_x$; <0.1 tpy $SO_2$; 3.5 tpy CO; 1587.0 tpy $CO_2^e$; and 9.2 tpy total HAP.

Summary of Potential Uncontrolled and Proposed Allowable VOC Emissions

| Emission Unit Description | Potential Uncontrolled Emissions (tpy) | Proposed Allowable Emissions (tpy) |
|---|---|---|
| Hydrocarbon Liquids Storage Tank | 5.0 | 6.7 |
| Truck Loadout Stations | 796.6 | |
| Transloading Units | 232.3 | 90.18 |
| **Total** | **1033.9** | **96.9** |

## VI. Applicability - Federal Minor New Source Review in Indian Country

The potential uncontrolled VOC emissions the facility's new proposed operations are greater than 250 tons per year (tpy). Therefore, a Prevention of Significant Deterioration (PSD) pre-construction permit would be required before construction begins. The uncontrolled VOC emission would also require that Dakota Plains apply for and obtain a Title V operating permit for major sources. Dakota Plains has requested enforceable VOC emission limits to create a synthetic minor source to avoid both the PSD and Title V permitting requirements.

The regulations at 40 CFR 49.151 - Federal Minor New Source Review in Indian Country provides the EPA with the authority to establish enforceable emission and operational limits in minor new source review (NSR) permits to create a synthetic minor source for both the PSD and Title V permitting programs.

Other NSR regulated pollutants such as CO, $NO_x$, $SO_2$, $CO_2e$, and PM will be emitted in much smaller amounts, and those emission increases are considered minor increases that are not subject to PSD permitting requirements.

## VII. Synthetic Minor Permitting

For Federal Minor New Source Review Permits in Indian Country, "potential to emit" (PTE) is defined as the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable as a practical matter. Secondary emissions, as defined at §52.21(b)(18), do not count in determining the PTE of a source.

"Enforceable as a practical matter" means that an emission limitation or other standard is both legally and practicably enforceable as follows:

(1) An emission limitation or other standard is legally enforceable if the reviewing authority has the right to enforce it.

(2) Practical enforceability for an emission limitation or for other standards (design standards, equipment standards, work practices, operational standards, and pollution prevention techniques) in a permit for a source is achieved if the permit's provisions specify:

(i) A limitation or standard and the emissions units or activities at the source subject to the limitation or standard;
(ii) The time period for the limitation or standard (e.g., hourly, daily, monthly, and/or annual limits such as rolling annual limits); and
(iii) The method to determine compliance, including appropriate monitoring, recordkeeping, reporting, and testing.

*National EPA Guidance on PTE*

National EPA guidance on PTE states that air pollution control equipment can be credited as restricting PTE only if enforceable requirements are in place requiring the use of such air pollution control equipment. EPA approved guidance for establishing PTE limits is in a memo titled, "Guidance on Limiting Potential to Emit in New Source Permitting," (NSR) dated June 13, 1989, to EPA Regional Offices, from Terrell F. Hunt, Associate Enforcement Counsel, Air Enforcement Division, Office of Enforcement and Compliance Monitoring (OECA), and from John Seitz, Director, Stationary Source Compliance Division, Office of Air Quality Planning & Standards (OAQPS) (available online at: http://www.epa.gov/ttn/atw/pte/june13_89.pdf). The 1989 guidance identifies the following as essential components of a restriction on PTE:

(1) An emission limitation, in terms of mass of emissions allowed per unit of time, and

(2) A production or operational limitation (which can include requirements for the use of in-place air pollution control equipment).

The 1989 guidance explains that restrictions on PTE must be enforceable as a practical matter. This means there must also be adequate monitoring, reporting, and recordkeeping requirements. The 1989 memo also explains that an emission limitation alone, expressed as a long-term rolling average (e.g., a rolling 12-month total) should not be relied upon as the basis for a PTE limit, with the exception of sources that are VOC surface coating operations, and where no add-on emission control equipment is employed at those sources, and where operating and production parameters are not readily limited due to the wide variety of coatings and products and due to the unpredictable nature of the operation.

A subsequent memo to the EPA Regional Offices, dated January 25, 1995, from Kathie Stein, Director, Air Enforcement Division, OECA, titled "Guidance on Enforceability Requirements for Limiting Potential to Emit through SIP and Section 112 Rules and General Permits," (available online at: http://www.epa.gov/region07/air/title5/t5memos/potoem) explains that the averaging time for the

emission limitation must readily allow for determination of compliance: "EPA policy expresses a preference toward short term limits, generally daily but not to exceed one month."

Independently enforceable applicable requirements, such as New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAP) are considered enforceable to the extent that the source is in compliance with the standard. In addition, reductions in non-targeted pollutants resulting from compliance with an independently enforceable applicable requirement may be counted as restrictions on PTE, provided the emission reduction of the non-targeted pollutant is enforceable as a practical matter.

The restrictions in the proposed permit will ensure that the facility will meet the relevant regulations and be consistent with applicable guidance.

Specifically, in response to Dakota Plains' request, the EPA is proposing conditions for the following VOC emission sources at the facility:

(1) The Hydrocarbon Liquid Storage Tank;
(2) The Truck Transfer Stations;
(3) The Transloading Units; and
(4) The Vapor Recovery System and Enclosed Combustion Device.

## VIII. Proposed Permit Conditions

A. Construction Requirements

The EPA is proposing the requirement that Dakota Plains install an internal floating roof hydrocarbon liquid storage and tank truck transfer and transloading devices that are limited to 400 GPM. In addition, the EPA is proposing the requirement to use submerged filling techniques for all hydrocarbon loading to the tank, tanker trucks, and rail cars. The EPA is proposing the requirement that a vapor balance control system be used with VOC emission control of 90.0% during transloading operations and an enclosed combustor be used during truck transfer and storage tank loading. In addition, the EPA is proposing the use of a closed vent system and enclosed combustor on the truck transfer stations with VOC emission destruction efficiency at least as high as 98.0%.

B. Emission and Operational Limits

The EPA is proposing a facility-wide rolling 12-month total VOC emission limit of 97.0 tpy. The EPA is also proposing a rolling 12-month limit on the total volume of hydrocarbon liquids that can be transferred and transloaded at the facility.

Finally, due to citizen concerns of the increase in fugitive dust generated from the oil and gas activities in the area, the EPA has proposed requirements for reducing particulate matter emissions from operations at the facility. The proposal includes the control of dust during construction and operations, the grading of roads, or the clearing of land.

In order to make these requirements legally and practicably enforceable, the EPA has proposed monitoring, record keeping, and reporting requirements.

C. Monitoring Requirements

EPA proposes that Dakota Plains:

(1) Continuously measure the volume of hydrocarbon liquids transferred at the facility and the rate of hydrocarbon liquid transfer using flow meters;
(2) Conduct semiannual extended laboratory analysis of the hydrocarbon liquid received at the facility;
(3) Visually inspect, and repair if necessary, the storage tank's floating roof, seal system, and any other gaskets, slotted membranes, and sleeve seals, prior to initial filling of the storage tank with hydrocarbon liquids, at least once every twelve (12) months after initial fill, and each time the storage tank is emptied and degassed;
(4) Periodically test, using EPA approved test methods, the closed-vent system during a truck transfer event to ensure that it is operating under negative pressure;
(5) Periodically test, using EPA approved test methods, the enclosed combustor during a truck transfer event to ensure a 98.0% VOC destruction efficiency;
(6) Monitor the closed-vent system during all truck transfers to confirm proper operations;
(7) Continuously monitor the enclosed combustor pilot flame using a thermocouple, or similar temperature sensing device, and recording device, inspect the recording device and pilot flame to ensure proper operation daily;
(8) Monitor all vapor balance systems during each transloading event to ensure that the tank design pressure is not being exceeded and that there are no leaks;
(9) On a quarterly basis and during a transloading event, measure all potential leak sources;
(10) Calculate the rolling twelve (12) month totals of VOC emissions, hydrocarbon liquid throughputs, and hydrocarbon liquid loading rates on a monthly basis to ensure that each of these limits are being met.

D. Recordkeeping and Reporting Requirements

EPA proposes that the applicant keep extensive records to be made available upon EPA request, in lieu of voluminous reporting requirements. The records to be kept include, but are not limited to, all required measurements, testing, monitoring, and calculations, as well as any manufacturer specifications and guarantees, deviations from permit conditions and corrective actions taken, and any determinations that vapor recovery system and other controls are not meeting the requirements.

EPA proposes that the applicant submit an annual report of rolling 12-month annual emissions each year covering the period for the previous calendar year. The applicant must also promptly report any deviations or exceedances of emission or operational limits and a description of any corrective actions or preventative measures taken. Additionally, a report must be submitted for any required performance tests.

E. Records Retention

EPA proposes that all required records be retained for at least 5 years from the date the record was created.

## IX. Air Quality Review

A. Regulatory Requirements

The Federal Minor New Source Review Regulations at 40 CFR 49.154(d) require that an Air Quality Impact Assessment (AQIA) modeling analysis be performed if there is reason to be concerned that new construction would cause or contribute to a National Ambient Air Quality Standard (NAAQS) or Prevention of Significant Deterioration (PSD) increment violation. If the AQIA reveals that the proposed construction could cause or contribute to a NAAQS or PSD increment violation, such impacts must be addressed before a pre-construction permit can be issued.

Based on the available data, discussed below, there do not appear to be any significant air quality concerns within the exterior boundaries of the Fort Berthold Indian Reservation. Additionally, operating emissions from the proposed facility will be well controlled at all times. Therefore, the EPA has determined that an AQIA modeling analysis is not required for the proposed permit.

The following air quality review of the proposed project is in accordance with the instruction in the EPA's Form NEW which can be found at:
http://epa.gov/region8/air/permitting/tmnsr.html#Applications.

B. Review of Proposed Project

Existing Air Quality and Monitoring Stations

There are no designated NAAQS non-attainment areas in the regional vicinity of the proposed project.

The Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota, have operated air monitoring stations known as "Makoti" in Ward County and "Twin Buttes" in Mercer County since 2009. At both of these stations, the Tribes run analyzers for sulfur dioxide ($SO_2$) and oxides of nitrogen (NO, $NO_2$, and $NO_x$) and meteorological sensors. In addition, the Tribes operate the Dragswolf monitoring station, which is equipped only with meteorological sensors and a data logger, in Mountrail County, near New Town.

The State of North Dakota operates seven (7) ambient monitoring stations, including three (3) stations in western North Dakota near Dunn, Theodore Roosevelt National Park (TRNP), and Lostwood National Wildlife Refuge (LNWR) that are designed to characterize regional background pollutant levels.[2]

Topography

According to information provided by Dakota Plains in the synthetic minor NSR application for the proposed facility, the proposed project area is in relatively flat to gently rolling open terrain. There is little industrial development within a few miles of the site, with the exception of an occasional oil well production facility.

2 North Dakota Ambient Monitoring Network Plan, Annual Report, July 2010, North Dakota Department of Health, Division of Air Quality Air Quality Monitoring Branch 918 E. Divide Ave., Bismarck, N.D. 58501-1947, available online at: http://www.ndhealth.gov/AQ/ambient/nwrev_09_2.pdf

Pollutants of Concern

Ozone:

The NAAQS for ozone is 75 ppb, and compliance with the NAAQS is determined by comparison to a "design value" that is calculated as the three year average of the fourth highest daily eight hour ozone concentration at each site. Based on the most recent monitoring data, the 2011 ozone design values at the Dunn, TRNP and LNWR sites are 55, 59, and 60 ppb, respectively. [3] Thus, current air quality for western ND is lower than the ozone NAAQS.

The primary air pollutant that would be emitted from the proposed facility is VOC which can contribute to ozone formation. Generally a photochemical modeling analysis is needed to determine if VOC contributes to ozone formation. However, in rural areas ozone is typically insensitive to changes in VOC emissions. Additionally, because ozone is generally a regional air pollutant, smaller projects such as the proposed project subject to this permit are not expected to significantly affect NAAQS attainment for ozone. Therefore, VOC emissions are not expected to cause or contribute to exceedances of the ozone NAAQS as a result of the proposed project.

While $NO_x$ emissions can also contribute to ozone formation, emissions of less than a few hundred tons per year typically do not have a detectable impact on ambient ozone levels. For example, a photochemical modeling study of a source in Colorado with 400 tpy $NO_x$ and 200 tpy VOC emissions showed increases in ozone of less than 1 ppb on most days.[3] Because ambient monitoring data show that ozone levels in North Dakota are below the ozone NAAQS, and because $NO_x$ emissions from the project are less than 40 tpy, photochemical model simulations would not be expected to indicate exceedances of the ozone NAAQS.

$NO_2$ :

$NO_x$ would be emitted in small amounts due to a combustion controls for the truck transfer stations. The increase in $NO_x$ emissions from the combustor is estimated to be 8.8 tpy.

The greatest current air quality concern for projects involving combustion of petroleum-related gases is with respect to the EPA's 1-hour NAAQS for $NO_2$ promulgated in June 2010. Compliance with the NAAQS for this pollutant is determined by calculating a "design value" which is a statistical average of data collected at the monitor over a three year period.

Data reported to AQS for the period of 2009 through 2011 show a pattern of generally low concentrations.[4] The maximum hourly $NO_2$ reading at the Makoti site was 31 ppb, versus the hourly $NO_2$ standard of 100 ppb. The design value for the 1-hour $NO_2$ NAAQS is defined as the eighth highest value in each year, averaged over a three-year period. In the limited data available for this

3 The Air Quality System (AQS) – the EPA's Repository of Air Quality Data, available online at: http://www.epa.gov/ttn/airs/airsaqs/.
3 Morris, R.E, Sakulyanontvittaya, T., McNally, D., and Loomis, C., Final Report: EFFECT OF THE HIGH PLAINS ENERGY STATION ON THE FINAL 2010 OZONE ATTAINMENT DEMONSTRATION MODELING FOR THE DENVER 8-HOUR OZONE SIP, March 9, 2009, submitted to High Plains Energy Associates, LLC 400 Chesterfield Center, Suite 110, St. Louis, Missouri 63017
4 The Air Quality System (AQS) – the EPA's Repository of Air Quality Data, available online at: http://www.epa.gov/ttn/airs/airsaqs/.

monitor, no values were observed that approached the design value for $NO_2$. AQS data from 2009 through 2011 shows 1-hour $NO_2$ design values for the Dunn, and Theodore Roosevelt National Park monitors at 13 ppb, and 9 ppb, respectively, compared to the standard of 100 ppb.

Given the above discussion of existing monitored concentrations in the general project area, which demonstrates that there is large margin of compliance with the 1-hour $NO_2$ NAAQS, and the proposed allowable $NO_2$ emissions of less than 40 tpy, it is expected that combustion sources at the proposed project site are unlikely to cause or contribute to non-attainment of the 1-hour $NO_2$ NAAQS.

## X. Tribal Consultations and Communications

The EPA offers the Tribal Government Leaders an opportunity to consult on each proposed permit action. The Tribal Government Leaders are asked to respond to the EPA's offer to consult within 30 days and if no response is received within that time, the EPA notifies the Tribal Government Leaders that the consultation period has closed. The Chairman of the Three Affiliated Tribes was offered an opportunity to consult on this permit action via letter dated July 5, 2012. To date, the EPA has not received a response to our offer to consult on this permit action and the Chairman will be notified when the consultation period has closed.

All minor source applications (synthetic minor, modification to an existing facility, new true minor or general permit) are submitted to both the EPA and the Tribal Environmental Director per the application instructions (see http://epa.gov/region8/air/permitting/tmnsr.html). The Tribal Environmental Office has 10 business days to respond to the EPA with questions and comments on the application. In the event an Air Quality Impact Assessment (AQIA) is triggered, a copy of that document is emailed to the tribe within 5 business days of receipt by the EPA.

Additionally, the Tribe's Environmental Director is notified of the public comment period for the proposed permit and provided copies of the notice of public comment opportunity to post in various locations on the Reservation that they deem fit. The Tribe is also notified of the issuance of the final permit.

### Tribal Environmental Contact

Joe Gillies, Environmental Director
Three Affiliated Tribes
204 Main Street
New Town, North Dakota 58763-9404
joegillies@mhanation.com
(701) 627-4569
(701) 627-2917

## XI. Environmental Justice

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order calls on each federal agency to make environmental justice a part of its mission by "identifying

and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations."

The EPA defines "Environmental Justice" to include meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices.

The EPA consulted the following resources for demographic and socioeconomic data for the four (4) geographic areas of New Town, Mountrail County, North Dakota and United States.

1. EJView[4] (http://www.epa.gov/environmentaljustice/mapping.html),
2. U.S. Bureau of the Census,

    a. American Quick Facts http://quickfacts.census.gov/qfd/states/38/38061.html,
    b. 2006 - 2010 American Community Survey (ACS) http://www.census.gov/acs/www/
    c. Population Estimates Program (PEP) http://www.census.gov/popest/.

With regard to education level, the city of New Town has similar characteristics as North Dakota and USA. Mountrail County has similar characteristics as North Dakota and USA for education level and percent persons under the age of 18 years. However, there are distinct differences in income level and Native American/minority demographics between the four (4) geographic areas.

Nationally, 13.8% of the population has an income below the poverty level. The national average is 12.2% higher than the North Dakota poverty level of 12.3%. The average poverty level in Mountrail County is 16.5% but in the city of New Town the poverty level is 25.7% or nearly twice the national average (186.2%).

The Native American/minority population also changes with the geographic areas. Nationally, 36.6% of the population minority and 1.2% of the population is Native American. Across North Dakota, the minority population is 11.4% and the Native American population is 5.5%. However, in Mountrail County the minority population is 34.8% and the Native American population is 29.1%. The minority population is close to the national average but the Native American population is 24 times the national average (2425.0%). In the city of New Town, the minority population at 78% is twice (213.1%) the national average while the Native American population is 68.8%, making it 57 times (5733.3%) the national average of 1.2%.

The percentage of persons under the age of 18 is similar for Mountrail County, North Dakota and USA at 23.6%, 22.1% and 23.7%, respectively. However, in New Town persons under the age of 18 is 28.5% or about 20% higher than North Dakota (128.9) or USA (120.2).

As explained previously, the transfer of hydrocarbon liquids will be significantly controlled, particularly when considering the proposed VOC destruction efficiency of at least 98% for tank and truck transfers and the proposed VOC capture efficiency of at least 90.0% for transloading operations.

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4 EJView is the EPA's environmental justice screening database mapping application designed for the public to identify potential environmental justice areas or disadvantaged communities that are being unduly exposed to environmental harms.

There will be increased truck traffic in the area to transport crude oil to truck unloading/loading stations. Currently the transfer facility is unloading an average of 85 trucks per day into railcars. As the oil production from the Bakken shale increase there is an expected parallel increase in truck traffic and rail traffic at the transfer facility. The transfer facility operates 24 hours per day, seven days per week with the majority (70%) of the activity occurring during routine business hours.

According to information provided by Dakota Plains, the road surface in the surrounding areas is an aggregate known as scoria. It is a common source for building oil pads and new roads to wells. Information provided by the Bureau of Land Management[5] states:

> Scoria does not make a good surfacing material for roads. It causes a greater number of flat tires, which can result in accidents, either directly from the flat tire or when a flat is being changed and the vehicle is struck by another vehicle travelling on the road. Scoria quickly breaks down, which increases maintenance costs (e.g. more frequent replacement of the surfacing material) and dust abatement costs. If more money is not put into dust abatement on scoria roads, then the dustier conditions that result significantly decrease vehicle safety as compared to a hard durable aggregate surfacing material. The operator or the operator's road engineer should always carefully weigh the costs and benefits whenever the use of scoria is planned.

The EPA has received public comment concerning road dust associated with oil and gas production. The permit contains requirements for minimizing fugitive dust through work practices and operational requirements. The permit requires that Dakota Plains take all reasonable precautions to prevent fugitive dust emissions at the facility and construct, maintain, and operate the facility in a manner to minimize fugitive dust emissions. Reasonable precautions include, but are not limited to the following:

1. Use, where possible, of water or chemicals for control of dust during construction and operations, grading of roads, or clearing of land;
2. Application of asphalt, water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces, located at the facility, that can create airborne dust;
3. The prompt removal from paved streets, located at the facility, of earth or other material that does or may become airborne; or
4. Restricting vehicle speeds at the facility.

In addition, Dakota Plains shall prepare and implement a written fugitive dust emission prevention plan that specifies the reasonable precautions to be taken and the procedures to be followed to prevent fugitive dust emissions.



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5 United States. Bureau of Land Management. *Buffalo Field Office Oil and Gas Road Guidelines for Applications for Permit to Drill;* Bureau of Land Management, 2008. Retrieved from http://www.blm.gov/pgdata/etc/medialib/blm/wy/field-offices/buffalo/ogdocs.Par.50798.File.dat/roadguidelines.pdf June 15, 2012

For purposes of the Executive Order on environmental justice, the EPA has recognized that compliance with the NAAQS is "emblematic of achieving a level of public health protection that, based on the level of protection afforded by a primary NAAQS, demonstrates that the EPA's issuance of a PSD permit for a proposed facility or modification will not have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations." *In re Shell Gulf of Mexico, Inc. & Shell Offshore, Inc.*, 15 E.A.D. ___, slip op. at 74 (EAB 2010). This is because the NAAQS are health-based standards, designed to protect public health with an adequate margin of safety, including sensitive populations such as children, the elderly, and asthmatics. Although taken from the context of issuance of a PSD permit, this logic applies with equal force to EPA's issuance of a permit for modification or construction of a synthetic minor stationary source under the Tribal NSR rule.

Section 110(a)(2)(C) of the CAA requires that each SIP contain a program for the "regulation of the modification and construction of any stationary source … as necessary to assure that [the NAAQS] are achieved." 42 U.S.C. §7410(a)(2)(C). Under the Tribal NSR rule, two sets of provisions assure the NAAQS are achieved:

(1) If the reviewing authority has reason to be concerned that the modification or construction of a minor source would cause or contribute to a NAAQS or PSD increment violation, the reviewing authority may require an air quality impacts analysis (AQIA). 40CFR 49.154(d)(1). The AQIA must use the dispersion models and procedures in 40 C.F.R. part 51, Appendix W. *Id.* §49.154(d)(2). If the AQIA reveals that modification or construction of the minor source would cause or contribute to a NAAQS or PSD increment violation, then the reviewing authority must require the source to reduce or mitigate the impacts. *Id.* §49.154(d)(3).

(2) Each permit must contain a provision stating that (among other things) the source must not cause or contribute to a NAAQS violation. *Id.* §49.155(a)(7)(ii). Noncompliance with this permit provision is a violation of the permit and is grounds for enforcement action and for a permit termination or revocation. *Id*. §49.155(a)(7)

Based on the available data there do not appear to be any significant air quality concerns within the exterior boundaries of the FBIR and there are no designated NAAQS non-attainment areas in the regional vicinity of the proposed project. Additionally, operating emissions from the proposed facility will be well controlled at all times. Therefore, EPA has determined that an AQIA modeling analysis is not required for the proposed permit.

In this case, the EPA determined that there is no reason to be concerned that the construction of the modification at the existing hydrocarbon liquids truck-to-rail transloading facility will cause or contribute to a NAAQS or PSD increment violation. The reasons were discussed previously in the section of this Technical Support Document titled Air Quality Review. Furthermore, the proposed permit contains a provision stating, "*The permitted source shall not cause or contribute to a NAAQS violation or, in an attainment area, shall not cause or contribute to a PSD increment violation.*" Noncompliance with this permit provision would be a violation of the permit and grounds for enforcement action and for permit termination or revocation. As a result, the EPA concludes that issuance of this synthetic minor NSR permit will not have disproportionately high and adverse human health effects on overburdened communities in the vicinity of the Fort Berthold Indian Reservation.

The EPA welcomes input, though, from potentially affected communities during the public comment

period for the draft permit.

## XII. Public Notice & Comment, Hearing and Appeals

### A. Public Notice

In accordance with §49.157, the EPA Region 8 Air Program (Air Program) must provide public notice and a 30 day public comment period to ensure that the affected community and the general public have reasonable access to the application and draft permit information. The application, the draft permit, this technical support document, and all supporting materials for the draft permit are available at:

Three Affiliated Tribes
Environmental Division Office
204 W. Main Street
New Town, North Dakota 58763-9404

and

US EPA Region 8
Air Program Office
1595 Wynkoop Street (8P-AR)
Denver, Colorado 80202-1129

All documents are available for review at the U.S. EPA Region 8 office Monday through Friday from 8:00 a.m. to 4:00 p.m. (excluding Federal holidays). Additionally, the draft permit and technical support document can be reviewed on the Air Program's website at http://www.epa.gov/region8/air/permitting/pubnotice.html.

Any person may submit written comments on the draft permit and may request a public hearing during the public comment period. These comments must raise any reasonably ascertainable issue with supporting arguments by the close of the public comment period (including any public hearing).

### B. Public Hearing

A request for a public hearing must be in writing and must state the nature of the issues proposed to be raised at the hearing. The Air Program will hold a hearing whenever there is, on the basis of requests, a significant degree of public interest in a draft permit. The Air Program may also hold a public hearing at its discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.

### C. Final Permit Action

In accordance with §49.159, a final permit becomes effective 30 days after permit issuance, unless: (1) a later effective date is specified in the permit; (2) appeal of the final permit is made as detailed in the next section; or (3) the Air Program may make the permit effective immediately upon issuance if no comments resulted in a change in the draft permit or a denial of the permit. The Air Program will send notice of the final permit action to any individual who commented on the draft permit during the public comment period. In addition, the source will be added to a list of final minor NSR permit actions

which is posted on the Air Program's website at http://www.epa.gov/region8/air/permitting/. Anyone may request a copy of the final minor NSR permit at any time by contacting the Region 8 Tribal Air Permit Program at (800) 227-8917 or sending an email to r8airpermitting@epa.gov.

D. Appeals to the Environmental Appeals Board (EAB)

In accordance with §49.159, within 30 days after a final permit decision has been issued, any person who filed comments on the draft permit or participated in the public hearing may petition the EAB to review any condition of the permit decision. The 30-day period within which a person may request review under this section begins when the Region has fulfilled the notice requirements for the final permit decision. Motions to reconsider a final order by the EAB must be filed within 10 days after service of the final order. A petition to the EAB is, under section 307(b) of the Act, a prerequisite to seeking judicial review of the final agency action. For purposes of judicial review, final agency action occurs when a final permit is issued or denied by the Air Program and agency review procedures are exhausted.