Air Permit to Construct - New

version 1.2

(Submission #: HQA-H3J0-J02E6, version 1)

Details

Submission ID HQA-H3J0-J02E6

Form Input

Form Instructions

General Process for all Pre-Construction Permitting

NOTE: At the very minimum, an application should include the following items:

1. A written description of the proposed project and the facility including site diagrams (if a physical change is proposed) and applicable process descriptions and technical specifications.

2. A summary of Hazardous Air Pollutant emissions and compliance with the Air Toxics Policy.

3. A written section addressing Title V and PSD applicability.

4. A summary of state and federal rule applicability including a listing of any New Source Performance Standards (NSPS, see 40 CFR 60) and National Emission Standards for Hazardous Air Pollutants (NESHAP, see 40 CFR 63) subparts that apply.

5. A statement addressing any dispersion modeling requirements for Criteria Pollutants or Air Toxics and the inclusion of any required modeling analysis with a complete method description in accordance with the State Air Quality Analysis Guide or Department guidance.

6. All Applicable Air Quality Permit Application forms.

7. The $325 Permit to Construct filing fee payment per NDAC 33.1-15-23-02.
Additional Pre-Construction Permitting Information

Section A - Applicant Information

Applicant

First Name	Last Name
daniel	Holli

Title
HSE Air Permit Specialist

Phone Type	Number	Extension
Business	7015752311	

Email
daniel.holli@plains.com

Section B - Source Information

Permit Application for Air Contaminant Sources

Follow link to complete form SFN 8516 and upload below. If this form is already included in your application package, please upload complete application in Section D instead of this Section.
Link to SFN 8516 - Permit Application for Air Contaminant Sources

Upload form SFN 8516

Manitou App Form 8516.pdf - 02/20/2025 11:57 AM

Comment

NONE PROVIDED

Section C - Source Location

Facility Name

Manitou Rail TErminal

Facility Location:

48.33401614413214,-102.63147770843588

Section D - File Upload

File Upload

Select and upload applicable SFN permit forms, from the list below, to detail information provided in Section D of SFN 8516.

DO NOT ADD CONFIDENTIAL INFORMATION to this form. If you have Confidential Information see NDAC 33.1-15-14-01-16.
NDAC 33.1-15-14-01-16

Please also remember to upload all additional documents necessary to meet Steps 1-5 of the Form Instructions Section.

Additional Forms

NONE PROVIDED

Attachments

Manitou Picture.pdf - 02/20/2025 09:23 AM
Butane Injection Fugitives.pdf - 02/20/2025 09:32 AM
Manitou VCU Form 59652.pdf - 02/20/2025 11:58 AM
Manitou VCU Calculations.pdf - 02/20/2025 11:58 AM
Cover Letter 02-25.pdf - 02/20/2025 11:59 AM

Comment

NONE PROVIDED

PLAINS
Pipeline, L.P.

February 20, 2025

Mr. David Stroh
North Dakota Department of Environmental Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324

Dear Mr. Stroh:

Plains Pipeline is submitting this permit application to lower the federally enforceable rail loading capability at the Manitou Rail Terminal, permit AOP-27986, from 120,000 to 100,000 bb/day or 36,500,000 bbl/yr. Emission factors remain the same as permitted. Calculations are attached.

Plains Pipeline recently requested authorization and was granted permission under 33.1-15-14-02.13.n "Sources or alterations to a source which are of minor significance" to install a butane injection system consisting of one or two pressurized butane bullet tanks with negligible emissions and associated pumps, valves, and fittings with fugitive VOC emissions calculated at 2.5 ton/yr. Please include this as an insignificant source to the facility air permit.

A 10,000 gallon diesel tank was added to the facility under 33.1-15-14-02.13.n in 2023 with VOC emissions of around 6 lbs per year. Please include this as an insignificant source to the facility air permit.

Emissions from the proposed changes are presented in the tables below.

I can be reached at daniel.holli@plains.com or (701) 575-2311 to answer any questions you might have.

Respectfully,

Daniel Holli

Daniel Holli
HSE Air Compliance Specialist

Manitou PTE Before Change

Emissions Point	NOx	CO	VOC
150,000 bbl tanks	0	0	11.08
Vapor Combustors	30.75	76.80	76.80
Fugitives	0	0	7.70
Total	30.75	76.80	95.58

Manitou PTE After Change

Emissions Point	NOx	CO	VOC
150,000 bbl tanks	0	0	11.08
Vapor Combustors	25.64	64.02	64.02
Station Fugitives	0	0	7.70
Butane Injection Fugitives	0	0	2.50
Diesel Tank Fugitives	0	0	0.003
Total	25.64	64.02	85.30

PERMIT APPLICATION FOR AIR CONTAMINANT SOURCES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8516 (9-2021)

SECTION A - FACILITY INFORMATION

Name of Firm or Organization Plains Pipeline		
Applicant's Name Daniel Holli		
Title HSE Air Permit Specialist	Telephone Number (701) 575-2311	E-mail Address daniel.holli@plains.com
Contact Person for Air Pollution Matters Daniel Holli		
Title HSE Air Permit Specialist	Telephone Number (701) 575-2311	E-mail Address daniel.holli@plains.com
Mailing Address (Street & No.) P.O.Box 708		
City Belfield	State ND	ZIP Code 58622
Facility Name Manitou Rail Terminal		
Facility Address (Street & No.) 6384 93rd Ave NW		
City Ross	State ND	ZIP Code 58776

County Mountrail	Coordinates NAD 83 in Decimal Degrees (to forth decimal degree) Latitude 48.34060000	 Longitude -102.63280000

Legal Description of Facility Site				
Quarter	Quarter	Section 15,16	Township 156 N	Range 93 W

Land Area at Facility Site _____ Acres (or) _____ Sq. Ft.	MSL Elevation at Facility

SECTION B – GENERAL NATURE OF BUSINESS

Describe Nature of Business	North American Industry Classification System Number	Standard Industrial Classification Number (SIC)
Crude Oil Pipeline Station	4612	486110

SECTION C – GENERAL PERMIT INFORMATION

Type of Permit? ■ Permit to Construct (PTC) ■ Permit to Operate (PTO)	
If application is for a Permit to Construct, please provide the following data:	
Planned Start Construction Date 07/2025	Planned End Construction Date 07/2025

SECTION D – SOURCE IDENTIFICATION AND CATEGORY OF EACH SOURCE INCLUDED ON THIS PERMIT APPLICATION

		Permit to Construct				Minor Source Permit to Operate						
Your Source ID Number	Source or Unit (Equipment, Machines, Devices, Boilers, Processes, Incinerators, Etc.)	New Source	Existing Source Modification	Existing Source Expansion	Existing Source Change of Location	New Source	Existing Source Initial Application	Existing Source After Modification	Existing Source After Expansion	Existing Source After Change of Location	Existing Source After Change of Ownership	Other
1	Rail Loadout	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐
5	VCU	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐
7	VCU	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Add additional pages if necessary

SECTION D2 – APPLICABLE REGULATIONS

Source ID No.	Applicable Regulations (NSPS/MACT/NESHAP/etc.)
Facility-wide	N/A

SECTION E – TOTAL POTENTIAL EMISSIONS

Pollutant	Amount (Tons Per Year)
NO_x	25.64
CO	64.02
PM	

Pollutant	Amount (Tons Per Year)
PM_{10} (filterable and condensable)	0.26
$PM_{2.5}$ (filterable and condensable)	0.26
SO_2	0.22
VOC	64.02
GHG (as CO_2e)	
Largest Single HAP	3.00
Total HAPS	6.57

*If performance test results are available for the unit, submit a copy of test with this application. If manufacturer guarantee is used provide spec sheet.

SECTION F1 – ADDITIONAL FORMS

Indicate which of the following forms are attached and made part of the application

☐ Air Pollution Control Equipment (SFN 8532)	☐ Fuel Burning Equipment Used for Indirect Heating (SFN 8518)
☐ Construct/Operate Incinerators (SFN 8522)	☐ Hazardous Air Pollutant (HAP) Sources (SFN 8329)
☐ Natural Gas Processing Plants (SFN 11408)	☐ Manufacturing or Processing Equipment (SFN 8520)
☐ Glycol Dehydration Units (SFN 58923)	☐ Volatile Organic Compounds Storage Tank (SFN 8535)
■ Flares (SFN 59652)	☐ Internal Combustion Engines and Turbines (SFN 8891)
☐ Grain, Feed, and Fertilizer Operations (SFN 8524)	☐ Oil/Gas Production Facility Registration (SFN 14334)

SECTION F2 – OTHER ATTACHMENTS INCLUDED AS PART OF THIS APPLICATION

1.	Emission Calculations	4.	
2.	Site Map	5.	
3.	Cover Letter	6.	

I, the undersigned applicant, am fully aware that statements made in this application and the attached exhibits and statements constitute the application for Permit(s) to Construct and/or Operate Air Contaminant sources from the North Dakota Department of Environmental Quality and certify that the information in this application is true, correct and complete to the best of my knowledge and belief. Further, I agree to comply with the provisions of Chapter 23.1-06 of the North Dakota Century Code and all rules and regulations of the Department, or revisions thereof. I also understand the permit is nontransferable and, if granted a permit, I will promptly notify the Department upon sale or legal transfer of this permitted establishment.

Signature	Date
Daniel Holly	2/20/25

Flare Combustion Calculations
Plains Pipeline Ross Rail Loading

Discussion: The flare is used as a control device to combust the vapor recovery system offgas from the loading rack.
The pilot light on the flare will use propane as the fuel.
The total emissions from the flare include both the emissions from the crude oil vapors and emissions from the pilot.

Emissions From Crude Oil Vapors		Emissions From Propane Assist Gas	
Loading Rack Throughput (bbl/yr) (1):	**36,500,000.00**	Propane Assist Gas (gal/yr)	**10,000.00**
Conversion Factor (bbl/L):	0.006290495	Liquid to Vapor Conversion (CF/gal)	36.375
Loading Rack Throughput (liters/yr):	5802405000	Assist Gas Annual Vapor (CF/yr)	363750
Conversion Factor (CF/bbl)):	5.615	Assist Gas Volume Conversion(liter/CF)	28.32
Annual Loading Rack Throughput (CF):	204947500	Propane Assist Gas Throughput (liters/yr)	10301400
Crude Oil Vapor Heat Content (BTU/CF) (2):	3640	Propane Gas Heat Content (BTU/CF)	2516
Oil Vapor Heat Value (MMBTU/yr):	746008.9	Assist Gas Heat Value (MMBTU/yr)	915.195
Combined Throughput (liters/yr)	5812706400	**Combined Heat Value (MMBTU/yr)**	746924.095

AP-42 Emission Factors **(3) (4) (5)**

Pollutant	Emission Factor[3,4,5] (lb/MMBTU)	Emission Factor[3,4] (µg/L)	Emissions (µg/yr)	Emissions (lb/yr)	Emissions (TPY)
SO_2	0.0006			448.154457	0.224077229
PM		40	2.32508E+11	512.1327225	0.256066361
PM-10		40	2.32508E+11	512.1327225	0.256066361

John Zink Guaranteed Emission Factors **(6)**

Pollutant	Emission Factor[3,4,5] (lb/MMBTU)	Emission Factor[3,4] (µg/L)	Emissions (µg/yr)	Emissions (lb/yr)	Emissions (TPY)
NOx		4000	2.32508E+13	51213.27225	25.60663612
CO		10000	5.81271E+13	128033.1806	64.01659031
VOC		10000	5.81271E+13	128033.1806	64.01659031

Notes:
1) Assumes throughput displaces equivalent amount of vapors in truck (i.e. 1 gallon of crude oil displaces 1 gallon of vapors in a truck).
2) Assumed to be worst case scenario (equivalent to 100% hydrocarbon vapor as calculated from Profile 1210).
3) Emission Factors from AP-42, Table 13.5-1, Industrial Flare Operations.
4) The SO_2 emission factors are based on natural gas combustion since there are no emission factors for SO_2 in the Industrial Flare Section.
5) Although the flares are considered to be smokeless, the PM emission factors are based on the soot concentration for a lightly smoking flare.
6) John Zink guaranteed Emission Factors are used in this application for Nox, CO, and VOC.

Emissions from Pilot Light - For Propane

Maximum Heat Input: 0.0528 MMBTU/hr (rating of pilot light burner)
Propane Heat Content: 90.8 MMBTU/1000 gal AP 42 1.5.3.1

Pollutant	Emission Factor[1,2] (lb/1000 gal)	Emission Factor (lb/MMBTU)	Emissions[3] (lb/yr)	Emissions (TPY)	**Combined Total Emissions** TPY
SO_2	0.105	0.001156388	0.534861674	0.000267431	0.224344659
NOx	14	0.154185022	71.31488987	0.035657445	25.64229357
CO	1.9	0.02092511	9.678449339	0.004839225	64.02142953
PM	0.4	0.004405286	2.037568282	0.001018784	0.257085145
PM-10	0.4	0.004405286	2.037568282	0.001018784	0.257085145
VOC	0.6	0.00660793	3.056352423	0.001528176	64.01811848

Reference:
1) AP-42, Liquified Petroleum Gas Combustion, Tables 1.5-1; Commercial Boiler (between 0.3 and 10 MMBTU/hr).
2) The SO_2 factor assumes a sulfur content of 0.2 gr/100 cu.ft. of gas vapor.
3) The emissions are calculated assuming continuous operation, 8760 hr/yr.

Example Calculations:
Emission Factor (lb/MMBTU) = Emission Factor (lb/1000 gal) ÷ Propane Heat Content (MMBTU/1000 gal)
Emissions (lb/yr) = Emission Factor (lb/MMBTU) x Maximum Heat Input (MMBTU/hr) x 8760 hr/yr

HAZARDOUS AIR POLLUTANTS

Manitou Rail Loading Station fugitives

Based on US EPA Speciate Program Profile No. 1210 - Pipeline Terminal Tanks

Flare VOC

NAME	**Emissions Factor *** % HAP in vapor phase	**TPY vapor emissions **** VOC Ton/year	**HAP Emissions** TPY
Benzene	0.54	64.02	0.345708
Toluene	0.9	64.02	0.57618
Ethylbenzene	0.22	64.02	0.140844
Xylene	0.89	64.02	0.569778
Hexane	4.69	64.02	3.002538
2,2,4,-Trimethylpentane	3.03	64.02	1.939806
Total Haps			6.574854

PERMIT APPLICATION FOR FLARES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 59652 (9-2021)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must include SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Name of Firm or Organization	Facility Name
Plains Pipeline	Manitou Rail Terminal

SECTION B - FLARE INFORMATION

Use: ☐ Emergency ☐ Process ■ Both	Subject to NSPS (40 CFR 60.18) ○ Yes ◉ No	
Emission Point ID 5, 7	Height Above Ground Level (ft.) 50	Diameter at Top (ft.) 10
Flame Monitor: ■ Thermocouple ☐ Infrared ☐ Ultraviolet ☐ Acoustic ☐ Other:		
Ignition: ■ Automatic ☐ Continuous Burning Pilot ☐ Other:		
Average Btu/1000 scf 3,640,000	Percent H_2S trace	Maximum Hourly Flow Rate to Flare 10,000 bbl/hr
List source ID numbers controlled by this unit, if any: 001		

SECTION C – AIR CONTAMINANTS EMITTED

Pollutant	Amount (Tons Per Year)	Basis of Estimate*
NO_x	25.64	AP-42 Table 13.5-1
CO	64.02	MFG Guarantee
PM	0.26	AP-42 Table 13.5-1
PM_{10} (filterable and condensable)	0.26	AP-42 Table 13.5-1
$PM_{2.5}$ (filterable and condensable)	0.26	AP-42 Table 13.5-1
SO_2	0.22	Nat Gas Combustion
VOC	64.02	MFG Guarantee
GHG (as CO_2e)		N/A
Largest Single HAP	3.00	Speciate 1210
Total HAPS	6.57	Speciate 1210

*If performance test results are available for the unit, submit a copy of test with this application. If manufacturer guarantee are used provide spec sheet.

Will flaring of gas comply with applicable Ambient Air Quality Standards? ■ Yes ☐ No

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION CONTROL RULES AND REGULATIONS?

■ YES ☐ NO

If "NO" a Compliance Schedule (SFN 61008) must be completed and attached.

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701)328-5188

Manitou Butane Fugitive Emission Calculations (November, 1995)

SOURCE DESCRIP.	SOURCE COUNT	SERVICE	Emission Factor[c] (kg/hr/component)		Emission Factor (lb/day/component)	(VOC) %	lbs/hr	tons/yr
Connector	0	gas	2.00E-04	=	0.01058208	100.00%	0.0000	0.00
Flange	0	gas	3.90E-04	=	0.020635056	100.00%	0.0000	0.00
Open-ended line	0	gas	2.00E-03	=	0.1058208	100.00%	0.0000	0.00
Other[a]	0	gas	8.80E-03	=	0.46561152	100.00%	0.0000	0.00
Pump	0	gas	2.40E-03	=	0.12698496	100.00%	0.0000	0.00
Valve	0	gas	4.50E-03	=	0.2380968	100.00%	0.0000	0.00
Connector	0	heavy oil (<20 API Gravity)	7.50E-06	=	0.000396828	100.00%	0.0000	0.00
Flange	0	heavy oil (<20 API Gravity)	3.90E-07	=	2.06351E-05	100.00%	0.0000	0.00
Open-ended line	0	heavy oil (<20 API Gravity)	1.40E-04	=	0.007407456	100.00%	0.0000	0.00
Other[a]	0	heavy oil (<20 API Gravity)	3.20E-05	=	0.001693133	100.00%	0.0000	0.00
Pump[d]	0	heavy oil (<20 API Gravity)	7.63E-05	=	0.004037064	100.00%	0.0000	0.00
Valve	0	heavy oil (<20 API Gravity)	8.40E-06	=	0.000444447	100.00%	0.0000	0.00
Connector	20	light oil (>=20 API Gravity)	2.10E-04	=	0.011111184	100.00%	0.0093	0.04
Flange	15	light oil (>=20 API Gravity)	1.10E-04	=	0.005820144	100.00%	0.0036	0.02
Open-ended line	2	light oil (>=20 API Gravity)	1.40E-03	=	0.07407456	100.00%	0.0062	0.03
Other[a]	10	light oil (>=20 API Gravity)	7.50E-03	=	0.396828	100.00%	0.1653	0.72
Pump	2	light oil (>=20 API Gravity)	1.30E-02	=	0.6878352	100.00%	0.0573	0.25
Valve	60	light oil (>=20 API Gravity)	2.50E-03	=	0.132276	100.00%	0.3307	1.44
Connector	0	water/oil[b]	1.10E-04	=	0.005820144	100.00%	0.0000	0.00
Flange	0	water/oil[b]	2.90E-06	=	0.00015344	100.00%	0.0000	0.00
Open-ended line	0	water/oil[b]	2.50E-04	=	0.0132276	100.00%	0.0000	0.00
Other[a]	0	water/oil[b]	1.40E-02	=	0.7407456	100.00%	0.0000	0.00
Pump	0	water/oil[b]	2.40E-05	=	0.00126985	100.00%	0.0000	0.00
Valve	0	water/oil[b]	9.80E-05	=	0.005185219	100.00%	0.0000	0.00
						Totals:	0.5724	**2.50**

[a]The "other" equipment type was derived from compressors, diaphragms, drains, dump arms, hatches, instruments, meters, pressure relief valves, polished rods, relief valves, and vents.
This "other" equipment type should be applied for any equipment type other than connectors, flanges, open-ended lines, pumps, or valves.

[b]Water/Oil emission factors apply to water streams in oil service with a water content greater than 50%, from the point of origin to the point where the water content reaches 99%. For water streams with a water content greater than 99%, the emission rate is considered negligible.

[c]These factors are for total organic compound emission rates (including non-VOC's such as methane and ethane) and apply to light crude, heavy crude, gas plant, gas production and off shore facilities.

[d]Not enough data was available to develop the indicated emission factor.
The factor was derived using the average ratio of light to heavy crude oil factors for all other components.

Basis: All Pipeline valves , flanges , compressor seals, and pumps.
Emission Factors were taken from "Average Emission Factors for Oil and Gas Production Operations"
The operation time used for the facility is: 24 hrs/day x 7 days/wk x 52 wks/yr OR 8760 hrs/yr

NOTE: These calculations are taken from a copy of EPA "Protocol for Equipment Leak Emission Estimates" released in November 1995 for Oil & Gas Production.
These calculations serve as an estimate of the actual emissions and not emission limits (potential to emit).

Example Calculation:

VOC Emissions (lbs/hr) = (source count) x (VOC content, %) / (100) x (emission factor lbs/day/source) / (24 hrs/day)

Plains Pipeline

Manitou Station