DEQ
Montana Department
of Environmental Quality

September 7, 2016

Rich Ayala
Hiland Crude, LLC
Vaira Station
370 Van Gordon Street
Lakewood, CO 80228

Dear Mr. Ayala:

Montana Air Quality Permit #4598-03 is deemed final as of 9/7/2016, by the Department of Environmental Quality (Department). This permit is for a crude oil unloading facility. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie A. Merkel
Air Permitting Supervisor
Air Quality Bureau
(406) 444-3626

Loni Patterson
Environmental Engineer
Air Quality Bureau
(406) 444-1452

JM:LP
Enclosure

Montana Department of Environmental Quality
Air, Energy, and Mining Division

# Montana Air Quality Permit #4598-03

Hiland Crude, LLC
Vaira Station
370 Van Gordon Street
Lakewood, CO 80228

September 7, 2016

# MONTANA AIR QUALITY PERMIT

| | | |
|---|---|---|
| Issued To: | Hiland Crude, LLC<br>Vaira Station<br>370 Van Gordon Street<br>Lakewood, CO 80228 | MAQP: #4598-03<br>Administrative Amendment (AA)<br>Request Received: 7/25/2016<br>Department Decision Issued: 8/19/2016<br>Permit Final: 9/7/2016<br>AFS #: 083-0795 |

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Hiland Crude, LLC (Hiland), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

Hiland owns and operates a crude oil unloading facility located in the NW¼ of the NW¼ of Section 4, Township 24 North, Range 54 East, in Richland County, Montana, and is referred to as the Vaira Station.

B. Current Permit Action

On July 25 2016, the Department received a request from Hiland Partners Holdings, LLC, to change the mailing address and to update the facility contact for facilities operating under the name Hiland Crude, LLC.

Section II: Conditions and Limitations

A. Emission Limitations

1. Hiland shall unload, into the crude oil tanks, crude oil only. Hiland shall limit the combined throughput of crude oil through the facility to a total of not more than 119,574,000 gallons per year (ARM 17.8.749).

2. Hiland shall be limited to tanker truck unloading operations only. No loading of tanker trucks shall take place at the facility (ARM 17.8.749).

3. Loading of crude oil into the tanks shall be restricted to submerged fill loading. Submerged fill loading may be accomplished via the submerged fill pipe method and/or the bottom fill loading method (ARM 17.8.752).

4. Hiland shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

5. Hiland shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

6. Hiland shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.5 (ARM 17.8.749 and ARM 17.8.752).

B. Inspection and Maintenance Requirements

1. Each calendar month, tanks, valves, flanges, pump seals, open-ended lines, connectors, hatches, man way covers, and air eliminators shall be inspected for excessive leaks. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable (ARM 17.8.105 and ARM 17.8.752).

2. Hiland shall (ARM 17.8.105 and ARM 17.8.752):

   a. Make a first attempt at repair for any leak no later than 5 calendar days after the leak is detected; and

   b. Repair any leak as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in Section II.B.3.

3. Delay of repair of equipment for which a leak has been detected would be allowed if repair within 15 days is technically infeasible. Such equipment shall be repaired as soon as reasonably possible (ARM 17.8.752).

C. Recordkeeping Requirements

1. Hiland shall document the monthly inspections, indicating the date of the inspection and the results (ARM 17.8.749).

2. For any repair delayed under the exception of II.B.3 above, the duration of the leak, a general description of the repair required, and the reasons justifying the delay, shall be recorded and maintained with the records required in Section II.C.1 (ARM 17.8.749).

3. All records compiled in accordance with this permit must be maintained by Hiland as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Testing Requirements

1. The Department may require testing (ARM 17.8.105).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

E. Operational Reporting Requirements

1. Hiland shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. A copy of any records kept as required by Section II.C.2 shall be submitted to the Department postmarked within 30 days of the inspection in which the leak was detected. A follow up report, if needed, shall follow describing corrective actions taken (ARM 17.8.749).

3. Hiland shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit,*** change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

SECTION III: General Conditions

A. Inspection – Hiland shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Hiland fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Hiland of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Hiland may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit Analysis
Hiland Crude, LLC- Vaira Station
MAQP #4598-03

I. Introduction/Process Description

Hiland Crude, LLC (Hiland) owns and operates a crude oil unloading station. The facility is located in the NW¼ of the NW¼ of Section 4, Township 24 North, Range 54 East, and is known as the Vaira Station.

A. Permitted Equipment

- Twelve (12) 400 barrel (bbl) Vertical Fixed Roof Tanks
- Crude Oil Tanker Truck Unloading Station
- Fugitive emissions from vapor losses from valves, pump seals, flanges, connectors, hatches, man-way covers, and air eliminators.

B. Source Description

Hiland owns and operates a crude oil unloading facility. Crude oil enters the facility via tanker truck and pipeline and is stored in various sized tanks. Crude oil is transferred off-site by way of pipeline using an electric pump. The natural gas fired heaters are employed to heat the crude oil, reducing its viscosity to facilitate the oil transfer process. Evaporative losses during storage and during filling and emptying operations occur from the tanks. Fugitive emissions occur from vapor losses from valves, pump seals, flanges, connectors, hatches, man-way covers, and air eliminators.

C. Permit History

On September 21, 2010 the Montana Department of Environmental Quality (Department) received a complete Montana Air Quality Permit Application for the operation of a crude oil unloading facility to be known as the Vaira Station. **MAQP #4598-00** was issued final on November 25, 2010.

The Department received a letter from Hiland on June 13, 2012, requesting an administrative amendment to change their name from Banner Transportation Co, LLC to Hiland Crude, LLC. **MAQP#4598-01** replaced MAQP#4598-00.

On February 25, 2013, the Department received an application for modification of MAQP #4598-01from Bison Engineering, Inc. (Bison), on behalf of Hiland, proposing to increase the throughput capacity of all the tanks at the facility. Hiland Crude is proposing a total facility throughput permit limit of 119,574,000 gallons per year. The permit action updates the permit language and emission inventory to reflect the increase in emissions. **MAQP #4598-02** replaced MAQP #4598-01.

D. Current Permit Action

On July 25 2016, the Department received a request from Hiland Partners Holdings, LLC, to change the mailing address from 2 North Nevada Avenue, Colorado Springs, CO 80903 to 370 Van Gordon Street, Lakewood, CO 80228 and to update the facility contact for facilities operating under the name Hiland Crude, LLC. The current permit action updates the mailing and contact information. **MAQP #4598-03** replaces MAQP #4598-02

F. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Hiland shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for $PM_{10}$

Hiland must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Hiland shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR Part 60.

9. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

10. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with any applicable requirements of 40 CFR Part 63:

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. The current permit action is considered an administrative amendment; therefore, Hiland was not required to submit an application fee.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Hiland has a PTE greater than 25 tons per year of volatile organic compounds (VOC); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. The current permit action is considered an administrative amendment; a permit application was not required. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. The current permit action is considered administrative amendment; therefore, does not require a publication of public notice.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Hiland of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

a. PTE > 100 tons/year of any pollutant;

b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less ($PM_{10}$) in a serious $PM_{10}$ nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #4598-03 for Hiland, the following conclusions were made:

a. The facility's PTE is less than 100 tons/year for any pollutant.

b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

c. This source is not located in a serious $PM_{10}$ nonattainment area.

d. This facility is not subject to any current NSPS.

e. This facility is not subject to any current NESHAP.

f. This source is not a Title IV affected source, or a solid waste combustion unit.

g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Hiland will be a minor source of emissions as defined under Title V.

## III. BACT Determination

A BACT determination is required for each new or modified source. Hiland shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT analysis was not required for the current permit action because the current permit action is considered an administrative permit action.

## IV. Emission Inventory

MAQP 4598-03 Vaira Station
Allowable Emissions in Tons Per Year

| Source | VOC | HAPs | PM | $PM_{10}$ | $PM_{2.5}$ | CO | $NO_X$ | $SO_X$ |
|---|---|---|---|---|---|---|---|---|
| A1 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| A2 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| A3 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| A4 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| A5 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| A6 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| B1 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| B2 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| B3 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| B4 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| B5 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| B6 - 400 bbl Tank (Vertical Fixed Roof) | 2.59 | .097 | ND | ND | ND | ND | N/A | ND |
| Fugitive Leak Emissions | 6.85 | 3.10 | ND | ND | ND | N/A | N/A | N/A |
| Fugitive Vehicle Emissions | N/A | N/A | 12.03 | 3.77 | .38 | N/A | N/A | N/A |
| **TOTAL:** | 37.93 | 4.26 | 12.03 | 3.77 | .38 | 0 | 0 | 0 |

**Emissions Inventory Notes:

bbl = oil barrel (42 Gallons)
CO = carbon monoxide
Deg F = degrees Fahrenheit
ft = foot
gal = gallons
HAPs = hazardous air pollutants
lbs = pounds
N/A = not applicable
ND = no data available
$NO_X$ = oxides of nitrogen
PM = particulate matter
$PM_{10}$ = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
psia = actual pounds per square inch
psig = pounds per square inch as read by gauge (not including atmospheric pressure)
RVP = Reid vapor pressure
$SO_X$ = oxides of sulfur
TPH = tons per hour
TPY = tons per year
VOC = volatile organic compounds
yr = year

400 bbl Vertical Fixed Roof
Tanks

VOC emissions calculated using EPA's TANKS 4.0.9d Emissions Calculation Software

Turnovers Per Year:

| | | | |
|---|---|---|---|
| Maximum Rated Design Process Rate: | 237,250 | bbl/yr | |
| Working Volume of Tank: | 403 | bbl/yr | (based on actual dimensions) |
| Calculations: | | | |
| 237250bbl/yr*(1/403 bbl) = | 588.71 | turnovers/yr | |

*TANKS Notes
- Tank color is actually tan - medium gray was chosen to approximate in TANKS
- Breather Vent settings were left at TANKS 4.0.9d default values
- Dome radius was set to 6 ft vs. 12 ft in the application (tank characteristics indicate 0 height)

VOC Emissions = 5189/yr * 0.0005ton/lb = **2.59** **TPY**

# TANKS 4.0.9d
## Emissions Report - Detail Format
## Tank Indentification and Physical Characteristics

**Identification**

| | |
|---|---|
| User Identification: | Vaira Station- Max in Each Tank |
| City: | |
| State: | Montana |
| Company: | Hiland Crude LLC |
| Type of Tank: | Vertical Fixed Roof Tank |
| Description: | Richland County Tank is actually tan in color. API Gravity - 40 Annual Emission Inventory |

**Tank Dimensions**

| | |
|---|---|
| Shell Height (ft): | 20.00 |
| Diameter (ft): | 12.00 |
| Liquid Height (ft) : | 20.00 |
| Avg. Liquid Height (ft): | 10.00 |
| Volume (gallons): | 16,920.59 |
| Turnovers: | 1,597.35 |
| Net Throughput(gal/yr): | 27,028,062.00 |
| Is Tank Heated (y/n): | N |

**Paint Characteristics**

| | |
|---|---|
| Shell Color/Shade: | Gray/Medium |
| Shell Condition | Good |
| Roof Color/Shade: | Gray/Medium |
| Roof Condition: | Good |

**Roof Characteristics**

| | |
|---|---|
| Type: | Dome |
| Height (ft) | 0.00 |
| Radius (ft) (Dome Roof) | 12.00 |

**Breather Vent Settings**

| | |
|---|---|
| Vacuum Settings (psig): | -0.03 |
| Pressure Settings (psig) | 0.03 |

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

**Vaira Station - - Vertical Fixed Roof Tank**

| 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 | 49.69 | 39.44 | 59.95 | 44.51 | 2.3409 | 1.8900 | 2.8749 | 50.0000 | | | 207.00 | Option 4: RVP=5 |

# TANKS 4.0.9d
# Emissions Report - Detail Format
# Detail Calculations (AP-42)

## Vaira Station - - Vertical Fixed Roof Tank

| Annual Emission Calcaulations | |
|---|---|
| Standing Losses (lb): | 657.9258 |
| Vapor Space Volume (cu ft): | 1,224.0621 |
| Vapor Density (lb/cu ft): | 0.0214 |
| Vapor Space Expansion Factor: | 0.1611 |
| Vented Vapor Saturation Factor: | 0.4268 |
| Tank Vapor Space Volume: | |
| Vapor Space Volume (cu ft): | 1,224.0621 |
| Tank Diameter (ft): | 12.0000 |
| Vapor Space Outage (ft): | 10.8231 |
| Tank Shell Height (ft): | 20.0000 |
| Average Liquid Height (ft): | 10.0000 |
| Roof Outage (ft): | 0.8231 |
| Roof Outage (Dome Roof) | |
| Roof Outage (ft): | 0.8231 |
| Dome Radius (ft): | 12.0000 |
| Shell Radius (ft): | 6.0000 |
| Vapor Density | |
| Vapor Density (lb/cu ft): | 0.0214 |
| Vapor Molecular Weight (lb/lb-mole): | 50.0000 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 2.3409 |
| Daily Avg. Liquid Surface Temp. (deg. R): | 509.3644 |
| Daily Average Ambient Temp. (deg. F): | 41.4292 |
| Ideal Gas Constant R (psia cuft / (lb-mol-deg R)): | 10.731 |
| Liquid Bulk Temperature (deg. R): | 504.1792 |
| Tank Paint Solar Absorptance (Shell): | 0.6800 |
| Tank Paint Solar Absorptance (Roof): | 0.6800 |
| Daily Total Solar Insulation Factor (Btu/sqft day): | 1,217.5000 |
| Vapor Space Expansion Factor | |
| Vapor Space Expansion Factor: | 0.1611 |
| Daily Vapor Temperature Range (deg. R): | 41.0192 |
| Daily Vapor Pressure Range (psia): | 0.9849 |
| Breather Vent Press. Setting Range(psia): | 0.0600 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 2.3409 |
| Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia): | 1.8900 |
| Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): | 2.8749 |
| Daily Avg. Liquid Surface Temp. (deg R): | 509.3644 |
| Daily Min. Liquid Surface Temp. (deg R): | 499.1096 |
| Daily Max. Liquid Surface Temp. (deg R): | 519.6192 |
| Daily Ambient Temp. Range (deg. R): | 24.7750 |
| Vented Vapor Saturation Factor | |
| Vented Vapor Saturation Factor: | 0.4268 |
| Vapor Pressure at Daily Average Liquid: Surface Temperature (psia): | 2.3409 |
| Vapor Space Outage (ft): | 10.8231 |
| Working Losses (lb): | 4,532.0300 |

| **HAPs emissions from Tanks:** | | | |
|---|---|---|---|
| HAP | Speciation Factor (%) | Total VOC Emissions (TPY) | HAP Emissions (TPY) |
| 2,2,4-trimethylpentane | 0.56% | 31.08 | 0.17 |
| Benzene | 0.12% | 31.08 | .037 |
| Ethylbenzene | 0.09% | 31.08 | 0.028 |
| m&p xylene | 0.46% | 31.08 | 0.14 |
| n-hexane | 2.20% | 31.08 | 0.68 |
| o-xylene | 0.11% | 31.08 | 0.034 |
| toluene | 0.23% | 31.08 | 0.071 |
| TOTAL HAPs from Tanks: (=sum HAPs * 12 tanks) | | | 1.16 |
| TOTAL HAPs per tank: | | | **.097** |

Speciation factors from EPA Speciate Program Profile No. 1208 - Crude Oil Production (Version 4.2)

| **$CO_2e$ Emissions From Tanks** | | | |
|---|---|---|---|
| GHG | Speciation Factor (%) | Total Vapor Emissions (TPY) | Emissions (TPY) |
| Methane | 27.40% | 2.59 | 0.71 |
| $CO_2e$ per tank (= Methane x 21) | | | 14.9 |
| $CO_2e$ From Tanks = (per tank * 12 tanks) | | | **178.83** |

Speciation factor from: http://www.epa.gov/gasstar/documents/ll_final_vap.pdf

**Fugitive Leak Emissions**

| Component | | Em issions Factor (lb/hr/source) | TOC (TPY) |
|---|---|---|---|
| Total Number of Valves | 150 | 0.0055 | 3.61 |
| Total Number of Pump Seals | 7 | 0.029 | 0.89 |
| Total Number of Others | 29 | 0.017 | 2.16 |
| Total Number of Connectors | 0 | 0.00046 | 0.00 |
| Total Number of Flanges | 175 | 0.00024 | .18 |
| Total Number of Open Ended Lines | 0 | 0.0031 | 0.00 |
| TOTAL TOC EMISSIONS: | | | 6.85 |

Emissions Factors from Protocol for Equipment Emissions Estimates, EPA 453/R-95-017, 11/95
(assumed light oil for conservative estimates)

TOTAL VOC Emissions: **6.85** **TPY**

| HAPs emissions from Fugitive Leaks: | | | |
|---|---|---|---|
| HAP | Speciation Factor (%) | Total VOC Emissions (TPY) | HAP Emissions (TPY) |
| 2,2,4-trimethylpentane | 0.56% | 6.85 | 0.0383 |
| Benzene | 0.12% | 6.85 | 0.0082 |
| Ethylbenzene | 0.09% | 6.85 | 0.0062 |
| m&p xylene | 0.46% | 6.85 | 0.0315 |
| n-hexane | 2.20% | 6.85 | 0.1506 |
| o-xylene | 0.11% | 6.85 | 0.0075 |
| toluene | 0.23% | 6.85 | 0.0157 |
| TOTAL HAPs from fugitives: | | | **3.10** |

Speciation factors from EPA Speciate Program Profile No. 1208 - Crude Oil Production (Version 4.2)

**Fugitive Vehicle Emissions (Haul Roads)**

AP-42 13.2 (11/2006)

$$E = k\,(s/12)^a (W/3)^b$$

where k, a, b, c and d are empirical constants (Reference 6) given below and

E = size-specific emission factor (lb/VMT)
s = surface material silt content (%)
W = mean vehicle weight (tons)

| Constant | Industrial Roads (Equation 1a) | | | Public Roads (Equation 1b) | | |
|---|---|---|---|---|---|---|
| | PM-2.5 | PM-10 | PM-30* | PM-2.5 | PM-10 | PM-30* |
| k (lb/VMT) | 0.15 | 1.5 | 4.9 | 0.18 | 1.8 | 6.0 |
| a | 0.9 | 0.9 | 0.7 | 1 | 1 | 1 |
| b | 0.45 | 0.45 | 0.45 | - | - | - |
| c | - | - | - | 0.2 | 0.2 | 0.3 |
| d | - | - | - | 0.5 | 0.5 | 0.3 |
| Quality Rating | B | B | B | B | B | B |

*Assumed equivalent to total suspended particulate matter (TSP)

| | | | |
|---|---|---|---|
| s = | 9.41 | % | (avg AP-42) |
| W = | 31.9 | tons | (application) |
| Vehicle Miles Traveled: | 5 | VMT/day | {Estimated} |

PM Emissions:

PM Emission Factor (Rated Load Capacity <50 tons):

| | | |
|---|---|---|
| a = | 0.7 | |
| b = | 0.45 | |
| k = | 4.9 | |
| E = | 11.97224 | lb/VMT |
| Control Factor = | 50.00% | |

| | | |
|---|---|---|
| PM= | 59.34 | Lbs/day |
| | **5.41** | **ton/yr** |

$PM_{10}$ Emissions:

PM Emission Factor (Rated Load Capacity <50 tons):

| | | |
|---|---|---|
| a = | 0.9 | |
| b = | 0.45 | |
| k = | 1.5 | |
| E = | 3.490773 | lb/VMT |

| | | |
|---|---|---|
| PM= | 17.30 | Lbs/day |
| | **1.58** | **ton/yr** |

$PM_{2.5}$ Emissions:

| | | |
|---|---|---|
| a= | 0.9 | |
| b= | 0.45 | |
| k= | 0.15 | |
| E= | 0.349077 | lb/VMT |
| | 1.730084 | lbs/day |
| | **0.16** | **ton/yr** |

V. Existing Air Quality

The location of the Vaira Station is currently designated as attainment/unclassifiable for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined that there will be no impacts from this permitting action based on the action having no impact to the emissions of the facility. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

| YES | NO | |
|---|---|---|
| x | | 1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights? |
| | x | 2. Does the action result in either a permanent or indefinite physical occupation of private property? |
| | x | 3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property) |
| | x | 4. Does the action deprive the owner of all economically viable uses of the property? |
| | x | 5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)]. |
| | | 5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests? |
| | | 5b. Is the government requirement roughly proportional to the impact of the proposed use of the property? |
| | x | 6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action) |
| | x | 7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? |
| | x | 7a. Is the impact of government action direct, peculiar, and significant? |
| | ` | 7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded? |
| | x | 7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question? |
| | x | Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas) |

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Analysis Prepared By: Loni Patterson
Date: 8/16/2016