July 10, 2024

Matt Gillett
ONEOK, Bakken Pipeline, L.L.C. and ONEOK Elk Creek Pipeline, L.L.C.
Ekalaka I and Ekalaka II Pump Stations
Mill Iron Road
Ekalaka, MT 59324

Sent via email: matthew.gillett@oneok.com

RE: Final Permit Issuance for MAQP #5294-01

Dear Matt Gillett:

Montana Air Quality Permit (MAQP) #5294-01 is deemed final as of July 10, 2024, by DEQ. This permit is for ONEOK, Ekalaka I and Ekalaka II Pump Stations, a pump station. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,

Craig Henrikson

Craig Henrikson
Air Quality Engineer
Air Quality Bureau
(406) 444-6711

Emily Hultin
Air Quality Engineering Scientist
Air Quality Bureau
(406) 444-2049

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau

Montana Air Quality Permit #5294-01

ONEOK, Bakken Pipeline, L.L.C. and ONEOK Elk Creek Pipeline, L.L.C.
Ekalaka I and Ekalaka II Pump Stations
Section 33, Township 2N, Range 60E
Mill Iron Road, Ekalaka, MT 59324

July 10, 2024

MONTANA AIR QUALITY PERMIT

Issued To:	MAQP: #5294-01
ONEOK	Application Complete: 04/25/2024
100 W Fifth Street	Preliminary Determination Issued: 05/28/2024
Tulsa, OK 74103	DEQ's Decision Issued: 6/24/2024
	Permit Final: 07/10/2024

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to ONEOK Bakken Pipeline, L.L.C., and Elk Creek Pipeline L.L.C., - Ekalaka I and Ekalaka II Pump Station (ONEOK), 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. Permitted Equipment

ONEOK operates two adjacent natural gas liquids (NGL) pump stations, Ekalaka I and Ekalaka II, which will be referred to as the "facility." Ekalaka I was started in 2014 with an annual potential to emit (PTE) less than 25 tons per year of any individual criteria pollutant operating three electric pumps and one flare to control emissions from maintenance events. ONEOK proposes to install a second pump station, Ekalaka II, adjacent to Ekalaka I that will consist of three electric pumps and one flare to control emissions from maintenance events.

Emissions for this facility are comprised of fugitive emissions and emissions from combustion due to the flare.

B. Plant Location

This facility is located in Section 33, Township 2N, Range 60E, approximately 13 miles east of Ekalaka, in Carter County, Montana.

C. Current Permit Action

On April 5, 2024, DEQ received an application request from ONEOK Bakken Pipeline, L.L.C. and ONEOK Elk Creek Pipeline, L.L.C. – Ekalaka I and Ekalaka II Pump Station in Ekalaka, Carter County, Montana to modify the MAQP to increase the annual number of maintenance strainer blowdowns at Ekalaka II from one to twelve.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Each valve, flange or other connection, pump seal, and other such source of fugitive volatile organic compound (VOC) emissions from leaks shall be inspected quarterly for

leaks, and all leaks repaired as soon as reasonably practicable. Inspection methods may include utilizing sight, sound, or smell, soap bubble methods, Method 21 organic vapor analyzers, or optical gas imaging cameras, to actively inspect for and detect leaks. For any two consecutive quarters with no leaks detected, the inspections may thereafter be conducted every 6 months beginning with the next quarter, until a leak is observed. No less than 30 days shall separate each inspection. Inspections shall be recorded in a log including noting the inspection method(s) utilized, results of the inspection, the date the inspection was made, and the individual performing the inspection. The same log shall be used to record the date of repair and a description of the repair (ARM 17.8.749 and ARM 17.8.752).

2. The facility shall be designed and operated such that VOCs from the maintenance blowdowns (pumps blowdowns, pump strainer blowdowns and valve blowdowns) and seal flush filter changes are directed to and combusted in a flare with a 98% or greater destruction efficiency (ARM 17.8.749 and ARM 17.8.752).

3. ONEOK shall use best management practices (BMP) to minimize the VOC and HAPs emissions that result from blowdowns, startup/shutdown, and maintenance activities, and emergency events by implementing operational procedures (ARM 17.8.752).

4. The flare shall be designed and operated for no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours (ARM 17.8.752).

5. ONEOK 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).

6. ONEOK 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).

7. ONEOK 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.6 (ARM 17.8.749).

B. Testing Requirements

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

2. The Department of Environmental Quality (DEQ) may require further testing (ARM 17.8.105).

3. Within 180 days of commencement of operation, or at the first use of the Ekalaka II flare, whichever is later, ONEOK shall perform a Method 22 test while the flare is operating. Thereafter, ONEOK shall perform a Method 22 test upon request (ARM 17.8.105, ARM 17.8.749).

C. Operational Reporting Requirements

1. ONEOK shall supply the DEQ with annual production information for all emission points, as required by the DEQ 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 DEQ by the date required in the emission inventory request. Information shall be in the units required by the DEQ. 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. ONEOK shall notify the DEQ 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 DEQ, 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).

3. All records compiled in accordance with this permit must be maintained by ONEOK 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 DEQ, and must be submitted to the DEQ upon request. These records may be stored at a location other than the plant site upon approval by the DEQ (ARM 17.8.749).

D. Notification

1. ONEOK shall notify DEQ in writing of the date construction commenced on the Ekalaka II Pump Station at the facility within 15 days of commencement.

2. ONEOK shall notify DEQ in writing of the date operation commenced at Ekalaka II Pump Station within 15 days of commencing operation.

SECTION III: General Conditions

A. Inspection – ONEOK shall allow the DEQ'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 ONEOK fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving ONEOK 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 DEQ's decision may request, within 15 days after the DEQ 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 DEQ'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 DEQ'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 DEQ's decision on the application is final 16 days after the DEQ'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 DEQ at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by ONEOK 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
ONEOK Bakken Pipeline, L.L.C. and Elk Creek Pipeline, L.L.C.
Ekalaka I & Ekalaka II Pump Station
MAQP #5294-01

I. Introduction/Process Description

A. Facility Description

ONEOK Elk Creek Pipeline (ONEOK) owns and operates the Ekalaka I Pump Station since 2014. ONEOK proposes to construct and operate Ekalaka II Pump Station adjacent to Ekalaka I. Ekalaka I and Ekalaka II will be known as the "facility." ONEOK uses this facility to maintain the pressure of natural gas liquids (NGL) in the pipelines. The facility is located at Mill Iron Road, in Ekalaka, MT, 59324, and is known as the Ekalaka I & Ekalaka II Pump Station.

B. Permitted Equipment

Ekalaka I operates three (3) electric pumps, one (1) flare, and associated piping. Ekalaka II is proposed to also operate with three (3) electric pumps, one (1) flare, and associated piping. Emission from this facility is comprised of fugitive emissions and combustion emissions from the flare to control emissions.

C. Permit History

MAQP #5294-00 was originally issued to ONEOK Bakken Pipeline, L.L.C. and ONEOK Elk Creek Pipeline, L.L.C., -- Ekalaka I and Ekalaka II Pump Stations by the Montana Department of Environmental Quality (DEQ) on November 27, 2023. The MAQP covered Ekalaka I and Ekalaka II Pump Stations, each consisting of three (3) electric pumps, one (1) flare, and associated piping. Ekalaka II was proposed to also operate with three (3) electric pumps, one (1) flare, and associated piping. Emission from this facility was comprised of fugitive emissions and combustion emissions from the flare to control emissions.

D. Current Permit Action

On April 5, 2024, DEQ received an application request from ONEOK Bakken Pipeline, L.L.C. and ONEOK Elk Creek Pipeline, L.L.C. – Ekalaka I and Ekalaka II Pump Station in Ekalaka, Carter County, Montana to modify the MAQP to increase the annual number of maintenance strainer blowdowns at Ekalaka II from one to twelve. MAQP #5294-01 replaces MAQP #5294-00.

E. 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.

F. Response to Public Comments

Person/Group Commenting	Permit Reference	Comment	DEQ Response
Western Environmental Law Center on behalf of Montana Environmental Information Center (MEIC)	5294-01	The Ekalaka I and II Pump Station serves ONEOK's Elk Creek Pipeline. The Elk Creek Pipeline was constructed and put into service in 2019, in order to facilitate more natural gas production in the Bakken region. The Elk Creek pipeline is a 900-mile, 20-inch diameter pipeline with a capacity of transporting 240,000 barrels per day of Bakken natural gas liquids (NGLs) from Richland County, Montana to Rice County, Kansas.1 ONEOK, Inc., has proposed an expansion of the Elk Creek Pipeline.2 The pump station will be used to maintain the pressure of the NGLs transported in the Elk Creek Pipeline.	This comment can be read to imply that DEQ is required to evaluate the impacts of the Elk Creek Pipeline allegedly increasing natural gas production in the Bakken region. DEQ is, however, not evaluating the Elk Creek Pipeline in this EA. As the commentor acknowledges, the Elk Creek Pipeline was constructed and went into service in 2019. Instead, the proposed action addressed by this EA is the Ekalaka II Pump Station. DEQ's analysis in this EA, accordingly, does not evaluate impacts attributable to the Elk Creek Pipeline and the EA only examines impacts stemming from the Ekalaka II Pump Station. The Commentor's suggestion that DEQ evaluate the end use GHG impacts of combustion of natural gas products transported by the Elk Creek Pipeline is also beyond the scope 1 analysis used by DEQ in this EA. The U.S. Environmental Protection Agency ("EPA") defines scope 1 analysis to include "direct GHG emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles)." U.S. Environmental Protection Agency, Center for Corporate Climate Leadership, "Scopes 1, 2 and 3 Emissions Inventorying and Guidance," https://www.epa.gov/climateleadership/scopes-1-2-and-3-emissions-inventorying-and-guidance (accessed June 21, 2024).
		The Draft EA acknowledges that the facility may contribute up to 63,791 metric tons of carbon dioxide equivalent ("CO2e") comprised of carbon dioxide ("CO2"), nitrous oxide ("N2O"), methane ("CH4"), and volatile organic compounds per year, without	Please see Section 23 - "Cumulative Impacts", first paragraph explains the use of the EPA State Inventory Tool and the associated modules for reporting the State of Montana's total GHG data by industry. DEQ was trying to convey to the EA reader that each year the EPA State Inventory Tool becomes updated with data each year and if this Proposed Action were to be approved it would be accounted within the State of Montana's GHG total going forward.

		describing the sources of uncertainty in the EPA's State Inventory Tool, or explaining how emissions are calculated for a given source (the EA notes that "future GHG emissions from operations such as this site" would be represented within the statewide module for fossil fuel and transportation sectors).	
		"While reductions of both methane and CO2 are critical to addressing the climate crisis, activities that result in methane emissions need to be scrutinized with particular care, and affirmative measures taken to adequately mitigate their effects."	The CO2 and methane potentially emitted for this proposed project have been reported as CO2e as specified in Section 23 of the EA. Under MEPA, DEQ has completed the EA analyzing the impacts from the Proposed Action and No Action Alternatives. The measures to mitigate the CO2e impacts from this Proposed Project would be the following: 1) the No Action Alternative, which could not be selected by DEQ if the applicant were to submit a substantive, administrative, and technically complete application. This alternative would be the full release of methane into the environment which is more impactful than CO2. 2) The Proposed Action, utilizing the flare with its 98% destruction efficiency, reduces the release of methane into the atmosphere.
		Then, without analysis, the Draft EA concludes that "this action results in negligible impacts to air quality and GHG emissions in Carter County, Montana.	Section 23 "Greenhouse Gas Assessment" of the EA describes the way in how GHG impacts for the Proposed Action are calculated, the tools for calculating the total CO2e number, the direct, secondary and cumulative impacts associated with this total CO2e for the Proposed Action. The analysis conducted in the Preliminary Determination and the entirety of the attached EA informs this conclusion and is done with substantial analysis.
		It is well settled law in federal courts under the framework of the National Environmental Policy Act that federal agencies are required to consider in environmental analyses not only the direct emissions	The commenter references National Environmental Policy Act (NEPA), NEPA case law and definitions. This EA was completed under the requirements of Montana Environmental Policy Act (MEPA). As the commenter pointed out, NEPA has "indirect impacts" which MEPA does not have. In NEPA and in the cases referenced in the comment are dealing with impacts that are "reasonably foreseeable" under the Indirect and Cumulative impact definitions in NEPA. Please see 75-1-220(4), MCA, for the definition of Cumulative impacts and ARM 17.4.603(18) for the definition of Secondary impact under MEPA.

		that will result from the development of projects that facilitate fossil fuel production or transport, but also the downstream, indirect impacts of the combustion of the fossil fuels that are produced or transported as a result (or whose production or transportation is facilitated as a result) of the action in question and that are, by definition, reasonably foreseeable results of such projects. See, e.g. Sierra Club v. FERC, 867 F.3d 1357, 1374 (D.C. Cir. 2017 (downstream GHG emissions were an indirect effect of pipeline project and required the agency to provide a quantitative estimate of the downstream GHG emissions resulting from the burning of the natural gas to be transported by the pipeline or explain why it could not do so, and to discuss the significance of these emissions). Courts have upheld and echoed this reasoning in numerous other contexts in addition to pipeline permitting, including coal transport, mine plan modifications, and oil and gas development, to name a few. Most recently, the Council on	The downstream GHG impacts the commentor requests DEQ examine (i.e., the potential end use combustion of the liquified natural gas transported by the Elk Creek Pipeline) is beyond the Scope 1 GHG assessment used in this EA, as discussed in response to comment 1. While this project contemplates GHG impacts, the project approved here includes a flare, which is estimated to destroy 98% of methane that would otherwise be released into the atmosphere without the flare. *See* Final EA at 19–22 (discussing direct and cumulative impacts of GHG emissions). As the Commentor acknowledges, methane, in the short term, has a greater greenhouse effect than other GHGs like CO2.

		Environmental Quality has incorporated these accepted legal premises into its updated guidance to agencies involved in the permitting of fossil gas infrastructure.	
		The Draft EA's greenhouse gas assessment fails the hard look requirement essential to an adequate analysis under MEPA. First, the Draft EA's comparison of proposed emissions with Montana's total emissions is designed to yield results that appear de minimis.	The word "de minimis" does not appear in the EA. DEQ is presenting the CO2e calculations as calculated in the EPA Simplified GHG Calculator version May 2023 for the Proposed Project.
		The Draft EA's comparative analysis of project emissions to total state emissions says nothing about how the additional emissions will affect the environment, "only that there are other, larger sources of GHGs."	DEQ believes the commenter is discussing the Cumulative Impacts of Section #23 of the EA. Please see the Secondary Impacts in Section #23 of the EA of the potential impacts of CO2e on the human environment. Also, DEQ compares the Proposed Project's CO2e impacts to the total of Montana's 2021 CO2e footprint. The EA does not take the Proposed Action's CO2e number and compares it to the worldwide total. This public comment also overlooks the secondary impacts discussion in the EA, which explains that GHGs contribute to radiative forcing that causes climate impacts. The EA also cites a Bureau of Land Management (BLM) study that states GHGs contribute to environmental impacts like flooding, drought, rising temperature, and invasive species. Thus, the EA does explain how additional GHG emissions from the project will impact the environment.
		Second, the Draft EA makes no attempt to use available tools to contextualize the predicted emissions and associated climate impacts, such as the Social Cost of	DEQ did use the available tool of CO2e to contextualize the Proposed Project's impacts for readers. The use of CO2e allows different types of greenhouse gases to be easily compared in terms of their total global warming impact. CO2e is a recognized unit to quantify a project's greenhouse gas assessment by the scientific community. DEQ declines to conduct its Greenhouse Gas Assessment through the lens of Social Cost of Greenhouse Gases (SC-GHG), which would have added an economic or dollar figure on top of CO2e. SC-GHG, additionally,

		Greenhouse Gases ("SC-GHG").	compares the costs and benefits of the project under several assumptions like a discount rate for future damages related to GHG emissions. EPA, Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, November 2023. DEQ finds that SC-GHG's evaluation of one impact in such economic terms would be inconsistent with the remainder of the EA, which does not evaluate impacts through quantitative economic measures. Instead, the EA generally discusses the project's benefits alongside its environmental impacts. Besides maintaining consistency in methodology within the EA, DEQ declining to adopt SC-GHG is warranted because MEPA does not require the precise quantitative cost-benefit analysis contemplated by SC-GHG. *State ex rel. Montana Wilderness Ass'n v. Board of Natural Resources & Conservation*, 200 Mont. 11, 33, 648 P.2d 734, 746 (1982); *Belk v. Mont. Dep't of Envtl. Quality*, 2022 MT 38, ¶ 29, 408 Mont.1, 504 P.3d 1090 (MEPA "require[s] assessments of impacts on human populations—including health, agriculture, tax bases, and culture—but they do not require quantitative economic forecasts.") (emphasis added).
		The Draft EA also fails to analyze reasonable alternatives or identify available mitigation measures to avoid, minimize, or compensate for climate effects of the proposed action.	The CO2 and methane potentially emitted for this proposed project have been reported as CO2e as specified in Section 23 of the EA. Under MEPA, DEQ has completed the EA analyzing the impacts from the Proposed Action and No Action Alternatives. The measures to mitigate the CO2e impacts from this Proposed Project would be the following: 1) the No Action Alternative, which could not be selected by DEQ if the applicant were to submit a substantive, administrative, and technically complete application. This alternative would be the full release of methane into the environment which is more impactful than CO2. 2) The Proposed Action, utilizing the flare with its 98% destruction efficiency, reduces the amount of methane being released into the atmosphere.
		These shortcomings render the Draft EA's significance finding under ARM 17.4.608 meaningless.	Please see "Conclusions and Findings" in the EA regarding ARM 17.4.608.
		Now that the unconstitutional prohibition on the analysis of GHG emissions and climate effects has been enjoined through the Held v. Montana decision discussed below, DEQ is required to not only disclose	Please see Section #23 of the EA.

		but also to analyze such impacts. Thus, an analysis of GHG emissions and climate impacts is required for DEQ and the public to make an informed decision on whether to authorize the issuance of a Clean Air Act permit for the facility.	
		The Draft EA's failure to evaluate the significance of the proposed GHG emissions and climate impacts is an unlawful omission that violates MEPA, the Constitution, and the Montana First Judicial District Court's order in Held v. State, that found "each additional ton of GHGs emitted into the atmosphere exacerbates impacts to the climate." Held v. State, No. CDV-2020-307 (Mont. First Jud. Dist. Ct. Aug. 14, 2023) (Findings of Fact, Conclusions of Law, and Order at 24). The omission of an analysis of context and significance of the disclosed GHGs in the present analysis represents a failure to take the hard look at climate change required by MEPA.	Please see the section titled "Conclusions and Findings" in the EA.
		This unlawful omission violates MEPA and the Montana First Judicial District	Please see Section #23 of the EA.

		Court's order in Held v. State, that permanently enjoined Section 75-1-201(2)(a), MCA, which had unlawfully and unconstitutionally prohibited state agencies from disclosing and analyzing the harmful climate impacts of its fossil fuel permitting decisions in associated MEPA reviews. Held v. State, No. CDV-2020-307 (Mont. First Jud. Dist. Ct. Aug. 14,2023) (Findings of Fact, Conclusions of Law, and Order at 102). As such, DEQ has failed to take the hard look at climate change required by MEPA.	
		We therefore request that DEQ conduct a robust GHG emissions and climate change analysis in its permitting decisions, take the hard look at climate that MEPA requires, and revise its EA to contextualize and disclose to the public the climate harms associated with this facility.	Please see Section #23 and the section titled "Conclusions and Findings" in the EA.
ONEOK	Environmental Assessment	Clarification on GHG calculations for both construction and flare operation	ONEOK provided an additional spreadsheet to supplement the tables provided in the permit application. This spreadsheet included detailed calculations for construction emissions as well as flare emissions. These calculations were used by DEQ to help confirm the total GHGs from the EPA GHG calculator.

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 (DEQ). Upon request, the DEQ 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 DEQ, 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 DEQ.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the DEQ, 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).

   ONEOK 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 DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) The DEQ 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 PM10

ONEOK 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, ONEOK 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 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.

6. 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.

a. 40 CFR Part 60, Subpart A – General Provisions:
   i. None of the operations at Ekalaka I and Ekalaka II Pump Station are subject to other specific NSPS and therefore are not subject to Subpart A.

b. 40 CFR 60, Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015:
   i. Subpart OOO does not apply to Ekalaka I and Ekalaka II since these stations are in natural gas liquids service and do not include any equipment which is an affected facility under these rules.

c. Subpart OOOOa- Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015
   i. Subpart OOOOa fugitive emission requirements do not apply to Ekalaka I and Ekalaka II since the stations are in natural gas liquids service, which is not an affected source under these rules.

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.

   a. 40 CFR 61, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:

   b. 40 CFR 61, Subpart V- National Emission Standard for Equipment Leaks (Fugitive Emission Sources): ONEOK shall comply with the standards and provisions of Subpart V as it releases fugitive HAPs from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottom receivers, and control devices. This subpart applies for any equipment that either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP).

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 DEQ. ONEOK submitted the appropriate permit application fee for the current permit action.

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 DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the DEQ. 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. DEQ 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. ONEOK 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. ONEOK submitted the required permit application for the current permit action.
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. ONEOK submitted an affidavit of publication of public notice for the April 12, 2024, issue of The Ekalaka Eagle, a newspaper of general circulation in the Town of Ekalaka in Carter County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by DEQ 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 DEQ 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 ONEOK 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 DEQ'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 17.8.760 Additional Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. 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.

13. 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).

14. 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.

15. 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 DEQ.

16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to DEQ for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).

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 DEQ may establish by rule; or
   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM10) in a serious PM10 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 #5294-01 for ONEOK, 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 PM10 nonattainment area.

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

   e. This facility may be subject to current NESHAP standards.

   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.

   The facility is not a major source and, thus a Title V operating permit is not required.

   DEQ determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

   Based on these facts, DEQ determined that ONEOK will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, ONEOK will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. ONEOK 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 submitted by Trinity Consultants in permit application #5294-01, addressing some available methods of controlling VOC emissions from blowdown/. DEQ reviewed these methods, as well as previous BACT determinations. The following control options have been reviewed by DEQ in order to make the following BACT determination.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

Blowdown/Venting BACT

A search was conducted using the Reasonably Available Control Technology (RACT)/Best Available Control Technology (BACT)/Lowest Achievable Emission Reduction (LAER)database, (RBLC), to identify possible control technologies for blowdown and venting VOC emissions and the following controls were identified:

- No venting directly to the atmosphere
- Proper piping design
- Best management practices

Control technologies for pigging operations were reviewed as well and the following controls were identified:

- Best management practices
- Condenser, flare, thermal oxidizer, vapor recovery unit, or other air cleaning device with at least 95% control
- VOC emissions limit of 10 TPY
- Use of add-on control (vapor recovery, flare/combustor or equivalent).

Best management practices typically have included installing liquid ramps, installing liquid drains, routing high-pressure chambers to a low-pressure line or vessel, using ball valve type chambers, or using multiple pig chambers in addition to recordkeeping and reporting.

Both VOC and HAPs emissions are anticipated from the scheduled blowdown events and venting. ONEOK proposed to control these emissions by utilizing a flare. The flare design has a 98% control and makes it a superior control method and is utilized throughout the industry.

Best management practices (BMP) requirements seek to minimize the VOC and HAPs emissions that result from blowdowns, startup/shutdown, maintenance activities, and emergency events by implementing operational procedures. BMP recordkeeping and reporting requirements that include estimates of air pollutant emissions along with reason and duration of each episode.

ONEOK will ensure that the emissions from the scheduled maintenance activities are routed to the facility flare and BMP practices of recordkeeping and reporting (inclusive of monthly emissions calculations) are implemented to ensure these limits stated here in the permit are not exceeded.

IV. Emission Inventory

Table 1. Ekalaka I and II Pump Station Emissions Summary (Controlled)

Ekalaka I Pump Station Emissions Summary - Controlled

ID	Description	NO_X		CO		VOC		HAP		CO_2	CH_4	N_2O	CO_2e
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	tpy			tpy
Fug. I	Component Fugitives	-	-	-	-	1.84	8.06	0.11	0.47	-	-	-	-
Mtn. I	Maintenance Blowdowns	-	-	-	-	Controlled by Flare				-	-	-	-
SFF I	Seal Flush Filter Change	-	-	-	-	Controlled by Flare				-	-	-	-
Flare I	Flare	5.09	0.07	23.22	0.31	75.98	0.35	4.40	0.02	50.85	6.12E-05	2.22E-04	50.91
PSL I	Pump Seal Losses	-	-	-	-	-	0.01	-	6.89E-04	-	-	-	-
Total Emissions for Ekalaka I Pump Station		**5.09**	**0.07**	**23.22**	**0.31**	**77.82**	**8.43**	**4.50**	**0.49**	**50.85**	**6.12E-05**	**2.22E-04**	**50.91**

Ekalaka II Pump Station Emissions Summary - Controlled

ID	Description	NO_X		CO		VOC		HAP		CO_2	CH_4	N_2O	CO_2e
		lb/ hr	tpy	lb/hr	tpy	lb/ hr	tpy	lb/ hr	tpy	tpy			tpy
Fug. II	Component Fugitives	-	-	-	-	2.90	12.69	0.17	0.73	-	-	-	-
Mtn. II	Maintenance Blowdowns	-	-	-	-	Controlled by Flare				-	-	-	-
SFF II	Seal Flush Filter Change	-	-	-	-	Controlled by Flare				-	-	-	-
Flare II	Flare	8.04	0.11	36.64	0.52	119.97	1.04	6.94	0.06	148.58	1.79E-04	3.70E-04	148.69
PSL II	Pump Seal Losses	-	-	-	-	-	0.01	-	6.89E-04	-	-	-	-
Total Emissions for Ekalaka II Pump Station		**8.04**	**0.11**	**36.64**	**0.52**	**122.87**	**13.74**	**7.11**	**0.79**	**149**	**0.00**	**0.00**	**149**

Overall Total Controlled Emissions (Ekalaka I Pump Station + Ekalaka II Pump Station

Description	NO_X		CO		VOC		HAP		CO_2	CH_4	N_2O	CO_2e
	lb/ hr	tpy	lb/hr	tpy	lb/ hr	tpy	lb/ hr	tpy	tpy			tpy
Ekalaka I Pump Station	5.09	0.07	23.22	0.31	77.82	8.43	4.50	0.49	50.85	6.12E-05	2.22E-04	50.91
Ekalaka II Pump Station	8.04	0.11	36.64	0.52	122.87	13.74	7.11	0.79	149	0.00	0.00	149
Aggregated Emissions	**13.13**	**0.18**	**59.87**	**0.83**	**200.70**	**22.17**	**11.61**	**1.28**	**199**	**0.00**	**0.00**	**200**

Table 2. Ekalaka I and II Pump Stations Emissions Summary (Uncontrolled)

Ekalaka I Pump Station Emissions Summary - Uncontrolled

ID	Description	VOC tpy	HAP tpy
Fug. I	Component Fugitives	8.06	0.47
Mtn. I	Maintenance Blowdowns	17.12	0.99
SFF I	Seal Flush Filter Change	0.62	0.04
Flare I	Flare	-	-
PSL I	Pump Seal Losses	0.01	6.89E-04
Total Emissions for Ekalaka I Pump Station		**25.81**	**1.49**

Ekalaka II Pump Station Emissions Summary - Uncontrolled

ID	Description	VOC tpy	HAP tpy
Fug. II	Component Fugitives	12.69	0.73
Mtn. II	Maintenance Blowdowns	51.21	2.96
SFF II	Seal Flush Filter Change	0.62	0.04
Flare II	Flare	-	-
PSL II	Pump Seal Losses	0.01	6.89E-04
Total Emissions for Ekalaka II Pump Station		**64.53**	**3.73**

Overall Total Uncontrolled Emissions (Ekalaka I Pump Station + Ekalaka II Pump Station)

Description	VOC tpy	HAP tpy
Existing Ekalaka I Pump Station	25.81	1.49
New Construction Ekalaka II Pump Station	64.53	3.73
Aggregated Emissions	**90.35**	**5.23**

ONEOK - Ekalaka I Pump Station
Potential to Emit (PTE) Emission Estimates

Maintenance Activities
Pump Station Facility includes three Pumps (Electric), Pump Strainer, Flare

Equipment	Length (feet)	Inner Dia. (inches)	Inner Dia. (feet)	Volume (cf)	Volume (bbl/event)	Liquid Density (lb/bbl) [1]	% VOC [2]	% HAP [3]	VOC (lb/event) [4]	HAP (lb/event) [4]	Release to	Events/yr [5]	Volume (bbl/yr) [6]	Uncontrolled VOC (tons/yr) [7]	Uncontrolled HAP (tons/yr) [8]	Controlled VOC (tons/yr)	Controlled HAP (tons/yr)
Pump Strainer Blowdowns	-	-	-	-	19	200.0	100%	5.79%	3,799	220	flare	1	19.00	1.90	0.11	See Flare	Neg.
Pump Blowdown (each, including piping)	-	-	-	-	5	200.0	100%	5.79%	1,000	58	flare	8	40.00	4.00	0.23	See Flare	Neg.
Valve Blowdowns (inc. piping)	50	15.2	1.27	63.0	11.2	200.0	100%	5.79%	2,244	130	flare	10	112.22	11.22	0.65	See Flare	Neg.
Subtotal Maintenance (Other Blowdown)					**35.2**				**7,043**	**407**		**19**	**171.2**	**17.1**	**0.99**	**See Flare**	Neg.
									Maintenance (Scheduled VOC Blowdowns) =		**(To atmosphere)**		**0.00**	**0.00**	**0.00**		
									Maintenance (Scheduled VOC Blowdowns) =		**(To flare)**		**171.2**	**17.1**	**0.99**		

[1] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.
[2] %VOC assumed to be 100% for conservatism.
[3] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[4] VOC or HAP (lb/event) = Volume (bbl/event) x Liquid Density (lb/bbl) x % VOC or % HAP
[5] Total Maintenance Blowdown (Mtn.) events include 1 pump strainer blowdown, 8 pump blowdowns, and 10 valve blowdowns.
[6] Volume (bbl/yr) = Volume (bbl/event) x Events per year (events/yr)
[7] Uncontrolled VOC emissions (tons/yr) = VOC (lb/event) x Events per year (events/yr) / 2000 lb/ton
[8] Uncontrolled HAP emissions (tons/yr) = HAP (lb/event) x Events per year (events/yr) / 2000 lb/ton

Seal Flush Filter Change Emissions (Flared) - Ekalaka I Pump Station

Seal Flush Filter Change Volume (gal/event) [1]	Sampling Frequency (events/year) [2]	Seal Flush Filter Change Volume (gal/year) [3]	Seal Flush Filter Change Volume (bbl/year) [4]	Liquid Density (lb/bbl) [5]	VOC % [6]	Uncontrolled VOC Emissions (ton/yr) [7]	HAP % [8]	Uncontrolled HAP Emissions (ton/year) [9]	Flare DRE (%)	Controlled VOC Emissions (tons/yr)	Controlled HAP Emissions (tons/yr)
5	52	260	6.19	200.0	100%	0.62	5.79%	0.036	98%	See Flare	Neg.

[1,2] Seal Flush Filter Change volume and Sampling Frequency based on operational data.
[3] Annual Seal Flush Filter Change Volume (gal/year) = Seal Flush Filter Change Volume (gal/event) * Sampling Frequency (events/year)
[4] Annual Seal Flush Filter Change Volume (bbl/year) = Annual Seal Flush Filter Change Volume (gal/year) / 42 (gal/bbl)
[5] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.
[6] %VOC assumed to be 100% for conservatism.
[7] Uncontrolled VOC Emissions (tons/year) = Annual Seal Flush Filter Change Volume (bbl/year) * Liquid Density (lb/bbl) * VOC % / 2000 lb/ton
[8] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[9] Uncontrolled HAP Emissions (tons/year) = Annual Seal Flush Filter Change Volume (bbl/year) * Liquid Density (lb/bbl) * HAP % / 2000 lb/ton

Pump Seal Loss Emissions (Uncontrolled) - Ekalaka I Pump Station

Pump Seal Loss Volume (gal/event) [1]	Pump Startup Frequency (events/year) [2]	Pump Seal Loss Volume (gal/year) [3]	Pump Seal Loss Volume (bbl/year) [4]	Liquid Density (lb/bbl) [5]	VOC % [6]	Uncontrolled VOC Emissions (ton/yr) [7]	HAP % [8]	Uncontrolled HAP Emissions (ton/year) [9]
0.02	250	5	0.12	200.0	100%	0.01	5.79%	6.89E-04

[1,2] Pump Seal Loss Volume and Pump Startup Frequency based on operational data.
[3] Annual Pump Seal Loss Volume (gal/year) = Pump Seal Loss Volume (gal/event) * Pump Startup Frequency (events/year)
[4] Annual Pump Seal Loss Volume (bbl/year) = Annual Pump Seal Loss Volume (gal/year) / 42 (gal/bbl)
[5] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.
[6] %VOC assumed to be 100% for conservatism.
[7] Uncontrolled VOC Emissions (tons/year) = Annual Pump Seal Loss Volume (bbl/year) * Liquid Density (lb/bbl) * VOC % / 2000 lb/ton
[8] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[9] Uncontrolled HAP Emissions (tons/year) = Annual Pump Seal Loss Volume (bbl/year) * Liquid Density (lb/bbl) * HAP % / 2000 lb/ton

Flare Calculations - Ekalaka I Pump Station

Flared Gas Composition

Component	MW (lb/lb-mol)	Composition [2] (Mol%)	Component Mass [3] (lb/lb-mol)	Flared NGL Composition [4] (Wt%)	HHV [5] (Btu/scf)	Heat Content [6] (Btu/scf * wet vol %)	Carbon Content [7] (kgC / kgCmpd)
CO_2	44.01	0.02000%	0.00880	0.01579%	0	0.0	
Methane	16.04	0.060%	0.0096	0.0173%	919	0.55	142
Ethane	30.07	5.4%	1.62	2.91%	1619	87	25,507
Propane	44.10	43.4%	19.1	34.3%	2315	1004	307,861
i-Butane	58.12	6.86%	3.99	7.15%	3000	206	64,927
n-Butane	58.12	19.3%	11.2	20.1%	3011	581	182,668
i-Pentane	72.15	5.37%	3.87	6.95%	3699	199	63,531
n-Pentane	72.15	7.24%	5.22	9.37%	3707	268	85,655
Hexanes[1]	86.18	12.39%	10.68	19.15%	4404	546	146,584
Total NMNEHC (VOC)		100% 94.53%	55.7			2891	876,876

[1] Molecular weight of Hexanes+ assumes 100% C6, in order to more conservatively estimate total heat input to the flare.
[2] Composition is based on estimated worst-case composition. It is assumed that gas molar fractions are equivalent to volume fractions (ideal gas law).
[3] Component mass is calculated as Mol% x MW (lb/lb-mole). The overall molecular weight of the flared product is the sum of individual component mass.
[4] Flared gas is assumed to have the same composition as the provided analysis. The Wt% of each component is calculated as lb/lb-mol / total moles.
[5] Component HHVs obtained from GPSA Engineering Handbook.
[6] It is assumed that gas molar fractions are equivalent to volume fractions (ideal gas law). Heat content is calculated as HHV (Btu/scf) x Flared gas composition (Vol%). The overall heat content of the flared product is the sum of individual heat content.
[7] Carbon content is calculated as Mol% x Annual flared volume (scf/yr) x (Destruction efficiency of the flare) x Number of carbon atoms in the gas hydrocarbon constituent.

Flare Parameters

Description	Value
Manufacturer	Zeeco, Inc.
Model	(AFDS-3 Dual Flare Tip)
Flare Type	Elevated-open, air assisted
Flare Efficiency	98%
Height (feet)	20
Diameter (inches)	12
Exit gas temperature (°F)	1,873

Fuel Data (Pilot)

Description	Value	Source
Pilot Rating (scf/hr)	65	Design Spec Sheet (using natural gas rating as a conservative measure)
Pilot Rating (MMscf/hr)	6.50E-05	
Heat Rating (Btu/scf)	2,315	Propane, Gross Heating Value [1]
Pilot Rating (MMBtu/hr)	0.150	
Flare Efficiency	98%	
Total Number of Flaring events per year (Events/yr)	19 52	Maintenance (19 events/yr) Seal Flush Filter Change (52 events/yr)
Flare Pilot Operational Time [2] (hours/yr)	8,760	

[1] Heating value of propane obtained from Physical Constants of Hydrocarbons. Gross Heating Value is conservatively used to calculate pilot emissions.
[2] Pilot emissions are conservatively based on 8,760 hours of operation per year, however the flare is a maintenance flare and actual operational time is estimated as less than 4 hours per flaring event.

Fuel Data (Flared Gas)

Description	Value
Blowdown Volume from Maintenance Activities (bbl/year)[1]	177
Max Hourly Blowdown Volume (bbl/hr)[2]	19
Molecular Weight [3]	55.7
Density (lb/bbl)	200.0
Heating Value (Btu/scf) [3]	2,891
Max MMscf/hr [4]	0.026
Max MMBtu/hr [5]	75
MMscf/yr [4]	0.24
MMBtu/yr [5]	698

[1] Blowdown Volume includes the volume from Maintenance Activities (171 bbl/yr), and from Seal Flush Filter Change (6.19 bbl/yr).
[2] Maximum hourly blowdown volume is conservatively based on the maintenance event with the largest volume (pump strainer blowdown) being flared in one hour. Actual operational time is estimated as less than 4 hours per flaring event.
[3] Molecular Weight and Heating Value calculated in the table above.
[4] Blowdown volume (MMscf/hr or MMscf/yr) is calculated as flared volume (bbl/hr or bbl/yr) x Liquid Density (lb/bbl) / Molecular weight of flared product (lb/lb-mol) x 379.4 ft^3/lb-mol. The ft^3/ lb-mole conversion is based on any gas at standard temperature (60 F) and standard pressure (14.696 psia), per GPA 2261, Appendix D.
[5] Heat input is calculated as blowdown volume (MMscf/hr or MMscf/yr) x Heating Value of flared product (Btu/scf).

Flare Calculations - Ekalaka I Pump Station

Emission Factors

Pollutant	Emission Factor[1,2]	
NO_X	0.068	lb/MMBtu
CO	0.31	lb/MMBtu
N_2O	0.0001	kg/MMBtu

[1] Emission factors per U.S. EPA AP-42 Tables 13.5-1 and 13.5-2 (02/18)
[2] Emission factor for N_2O per 40 CFR Part 98, Subpart C, Table C-2.

Emission Rates - Pilot

Pollutant	Emissions (lb/hr) [1]	Emissions (tpy) [2]
NO_X	0.01	4.48E-02
CO	0.05	2.04E-01
N_2O	3.32E-05	1.45E-04

[1] Hourly Emissions (lb/hr) calculated as Annual Emissions (tons/yr) / Hours of Flare Operation (hr/yr) x (2,000 lb/ton)
[2] Annual Emissions (tpy) calculated as Emission Factor (lb/MMBtu or kg/MMBtu) x Flare Pilot Rating (MMBtu/yr) / (2,000 lb/ton)

Emission Rates - Flared gas

Pollutant	Emissions (lb/hr) [1]	Emissions (tpy) [2,3,4]
NO_X	5.08	0.02
CO	23.18	0.108
VOC [5]	75.98	0.35
HAP	4.40	0.02
CO_2	101,686	50.85
CH_4	1.31E-02	6.12E-05
N_2O	1.65E-02	7.70E-05

[1] Hourly Emissions (lb/hr) conservatively based on the maintenance event with the largest volume (pump strainer blowdown) being flared in one hour. Pump strainer blowdowns occur up to once a year. Actual operational time is estimated as less than 4 hours per flaring event.
[2] Annual NO_X, CO, and N_2O emissions (tpy) calculated as Emission Factor (lb/MMBtu or kg/MMBtu) x Flare Gas Heat Rating (MMBtu/yr) / 2000 (lb/ton).
[3] Annual Controlled VOC/HAP/CH_4 Emissions (tpy) = Annual flared volume (bbl/yr) x Liquid Density (lb/bbl) x Total VOC/HAP/CH_4 % x (1- Destruction efficiency of the flare) / 2,000 (lb/ton).
[4] Annual Controlled CO_2 Emissions (tpy) = Annual flared volume (MMscf/yr) x Total CO_2 % + (Carbon Content) / 2,000 (lb/ton).
[5] %VOC assumed to be 100% for conservatism.

ONEOK - Ekalaka I Pump Station

Fugitive Components (ID: Fugitive Equipment Leaks)

Component Type [1]	Light Liquid	Light Liquid (With 10% Safety Factor) [2]
Connections	845	930
Flanges	108	119
Open-Ends	0	0
Pumps	6	7
Valves	181	200
"Others" [3]	4	5
Totals	1,144	**1,261**

[1] Component counts are based on actual counts.
[2] Components used for permitting are inclusive of a 10% safety factor.
[3] "Others" could include check valves, compressors, pressure relief valves, etc.

Unspeciated Emissions from Fugitive Leaks

Component Type	Emission Factor [1] Light Liquid (kg/hr/source)	Hourly Emission Rate [2] Light Liquid (lb/hr)	Annual Emission Rate [3] Light Liquid (tpy)
Connections	2.10E-04	0.43	1.88
Flanges	1.10E-04	0.03	0.13
Open-Ends	1.40E-03	0.00	0.00
Pumps	1.30E-02	0.20	0.88
Valves	2.50E-03	1.10	4.82
"Others"	7.50E-03	0.08	0.36
	Totals	1.84	8.06

[1] Emission factors for light liquids obtained from U.S. EPA, Protocol for Equipment Leak Emission Estimates, Table 2-4 *Oil and Gas Production Operations Average Emission Factors (November 1995)*.

[2] Emission Rate (lb/hr) = Emission Factor (kg/hr/source) x Number of sources x (2.2 lb/kg).

Example "Connections" Hourly Emission Rate (lb/hr) = $\frac{2.10\text{E-}04 \text{ kg}}{\text{hr-source}} \times 930 \text{ sources} \times \frac{2.2 \text{ lb}}{\text{kg}} = \frac{0.43 \text{ lb}}{\text{hr}}$

[3] Emission Rate (tpy) = Emission rate (lb/hr) x (8,760 hr/yr) / (2,000 lb/ton).

Example "Connections" Annual Emission Rate (tpy) = $\frac{0.43 \text{ lb}}{\text{hr}} \times \frac{8{,}760 \text{ hr}}{\text{yr}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = \frac{1.88 \text{ ton}}{\text{yr}}$

VOC and HAP Emission Speciation

Pollutant	Wt% [1]	Emission Rate	
		lb/hr [2]	tpy [3]
VOC [4]	100	1.84	8.06
n-Hexane	4.69	0.09	0.38
Benzene	0.44	0.008	0.035
2,2,4-TMP	0.36	6.61E-03	0.029
Ethylbenzene	0.016	2.93E-04	1.28E-03
Toluene	0.20	0.004	0.016
Xylenes	0.086	1.58E-03	0.007
Total HAP	5.79	0.11	0.47

[1] Based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[2] VOC (lb/hr) = Unspeciated Hourly Emission Rate (lb/hr) x VOC wt%
[3] VOC (tpy) = Unspeciated Annual Emission Rate (tpy) x VOC wt%
[4] %VOC assumed to be 100% for conservatism.

ONEOK - Ekalaka II Pump Station
Potential to Emit (PTE) Emission Estimates

Maintenance Activities
Pump Station Facility includes three Pumps (Electric), Pump Strainer, Flare

Equipment	Length (feet)	Inner Dia. (inches)	Inner Dia. (feet)	Volume (cf)	Volume (bbl/event)	Liquid Density (lb/bbl) [1]	% VOC [2]	% HAP [3]	VOC (lb/event) [4]	HAP (lb/event) [4]	Release to	Events/yr [5]	Volume (bbl/yr) [6]	Uncontrolled VOC (tons/yr) [7]	Uncontrolled HAP (tons/yr) [8]	Controlled VOC (tons/yr)	Controlled HAP (tons/yr)
Pump Strainer Blowdowns	-	-	-	-	30	200.0	100%	5.79%	5999	347	flare	12	360.00	35.99	2.08	See Flare	Neg.
Pump Blowdown (each, including piping)	-	-	-	-	5	200.0	100%	5.79%	1000	58	flare	8	40.00	4.00	0.23	See Flare	Neg.
Valve Blowdowns (inc. piping)	50	15.2	1.27	63.0	11.2	200.0	100%	5.79%	2244	130	flare	10	112.22	11.22	0.65	See Flare	Neg.
Subtotal Maintenance (Other Blowdown)					**46.2**				**9242**	**535**		**30**	**512.2**	**51.2**	**2.96**	**See Flare**	Neg.
						Maintenance (Scheduled VOC Blowdowns) =					**(To atmosphere)**		0.00	0.00	0.00		
						Maintenance (Scheduled VOC Blowdowns) =					**(To flare)**		**512.2**	**51.2**	**2.96**		

[1] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.
[2] %VOC assumed to be 100% for conservatism.
[3] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[4] VOC or HAP (lb/event) = Volume (bbl/event) x Liquid Density (lb/bbl) x % VOC or % HAP
[5] Total Maintenance Blowdown (Mtn.) events include 12 pump strainer blowdowns, 8 pump blowdowns, and 10 valve blowdowns.
[6] Volume (bbl/yr) = Volume (bbl/event) x Events per year (events/yr)
[7] Uncontrolled VOC emissions (tons/yr) = VOC (lb/event) x Events per year (events/yr) / 2000 lb/ton
[8] Uncontrolled HAP emissions (tons/yr) = HAP (lb/event) x Events per year (events/yr) / 2000 lb/ton

Seal Flush Filter Change Emissions (Flared) - Ekalaka II Pump Station

Seal Flush Filter Change Volume (gal/event) [1]	Sampling Frequency (events/year) [2]	Seal Flush Filter Change Volume (gal/year) [3]	Seal Flush Filter Change Volume (bbl/year) [4]	Liquid Density (lb/bbl) [5]	VOC % [6]	Uncontrolled VOC Emissions (ton/yr) [7]	HAP % [8]	Uncontrolled HAP Emissions (ton/year) [9]	Flare DRE (%)	Controlled VOC Emissions (tons/yr)	Controlled HAP Emissions (tons/yr)
5	52	260	6.19	200.0	100%	0.62	5.79%	0.036	98%	See Flare	Neg.

[1,2] Seal Flush Filter Change volume and Sampling Frequency based on operational data.
[3] Annual Seal Flush Filter Change Volume (gal/year) = Seal Flush Filter Change Volume (gal/event) * Sampling Frequency (events/year)
[4] Annual Seal Flush Filter Change Volume (bbl/year) = Annual Seal Flush Filter Change Volume (gal/year) / 42 (gal/bbl)
[5] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.
[6] %VOC assumed to be 100% for conservatism.
[7] Uncontrolled VOC Emissions (tons/year) = Annual Seal Flush Filter Change Volume (bbl/year) * Liquid Density (lb/bbl) * VOC % / 2000 lb/ton
[8] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[9] Uncontrolled HAP Emissions (tons/year) = Annual Seal Flush Filter Change Volume (bbl/year) * Liquid Density (lb/bbl) * HAP % / 2000 lb/ton

Pump Seal Loss Emissions (Uncontrolled) - Ekalaka II Pump Station

Pump Seal Loss Volume (gal/event) [1]	Pump Startup Frequency (events/year) [2]	Pump Seal Loss Volume (gal/year) [3]	Pump Seal Loss Volume (bbl/year) [4]	Liquid Density (lb/bbl) [5]	VOC % [6]	Uncontrolled VOC Emissions (ton/yr) [7]	HAP % [8]	Uncontrolled HAP Emissions (ton/year) [9]
0.02	250	5	0.12	200.0	100%	0.01	5.79%	6.89E-04

[1,2] Pump Seal Loss Volume and Pump Startup Frequency based on operational data.

[3] Annual Pump Seal Loss Volume (gal/year) = Pump Seal Loss Volume (gal/event) * Pump Startup Frequency (events/year)

[4] Annual Pump Seal Loss Volume (bbl/year) = Annual Pump Seal Loss Volume (gal/year) / 42 (gal/bbl)

[5] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.

[6] %VOC assumed to be 100% for conservatism.

[7] Uncontrolled VOC Emissions (tons/year) = Annual Pump Seal Loss Volume (bbl/year) * Liquid Density (lb/bbl) * VOC % / 2000 lb/ton

[8] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.

[9] Uncontrolled HAP Emissions (tons/year) = Annual Pump Seal Loss Volume (bbl/year) * Liquid Density (lb/bbl) * HAP % / 2000 lb/ton

Flare Calculations - Ekalaka II Pump Station

Flared Gas Composition

Component	MW (lb/lb-mol)	Composition [2] (Mol%)	Component Mass [3] (lb/lb-mol)	Flared NGL Composition [4] (Wt%)	HHV [5] (Btu/scf)	Heat Content [6] (Btu/scf * wet vol %)	Carbon Content [7] (kgC / kgCmpd)
CO_2	44.01	0.02000%	0.00880	0.01579%	0	0.0	
Methane	16.04	0.060%	0.0096	0.0173%	919	0.55	414.85054
Ethane	30.07	5.4%	1.62	2.91%	1619	87	74534.81356
Propane	44.10	43.4%	19.1	34.3%	2315	1004	899603.39447
i-Butane	58.12	6.86%	3.99	7.15%	3000	206	189724.97997
n-Butane	58.12	19.3%	11.2	20.1%	3011	581	533774.36056
i-Pentane	72.15	5.37%	3.87	6.95%	3699	199	185645.61634
n-Pentane	72.15	7.24%	5.22	9.37%	3707	268	250293.15871
Hexanes[1]	86.18	12.39%	10.68	19.15%	4404	546	428333.18183
Total		100%	55.7			2891	2562324.35597
NMNEHC (VOC)		94.53%					

[1] Molecular weight of Hexanes+ assumes 100% C6, in order to more conservatively estimate total heat input to the flare.

[2] Composition is based on estimated worst-case composition. It is assumed that gas molar fractions are equivalent to volume fractions (ideal gas law).

[3] Component mass is calculated as Mol% x MW (lb/lb-mole). The overall molecular weight of the flared product is the sum of individual component mass.

[4] Flared gas is assumed to have the same composition as the provided analysis. The Wt% of each component is calculated as lb/lb-mol / total moles.

[5] Component HHVs obtained from GPSA Engineering Handbook.

[6] It is assumed that gas molar fractions are equivalent to volume fractions (ideal gas law). Heat content is calculated as HHV (Btu/scf) x Flared gas composition (Vol%). The overall heat content of the flared product is the sum of individual heat content.

[7] Carbon content is calculated as Mol% x Annual flared volume (scf/yr) x (Destruction efficiency of the flare) x Number of carbon atoms in the gas hydrocarbon constituent.

Flare Parameters

Description	Value
Manufacturer	Zeeco, Inc.
Model	(AFDS-3 Dual Flare Tip)
Flare Type	Elevated-open, air assisted
Flare Efficiency	98%
Height (feet)	20
Diameter (inches)	12
Exit gas temperature (°F)	1,873

Fuel Data (Pilot)

Description	Value	Source
Pilot Rating (scf/hr)	65	Design Spec Sheet (using natural gas rating as a conservative measure)
Pilot Rating (MMscf/hr)	6.50E-05	
Heat Rating (Btu/scf)	2,315	Propane, Gross Heating Value [1]
Pilot Rating (MMBtu/hr)	0.150	
Flare Efficiency	98%	
Total Number of Flaring events per year (Events/yr)	30 52	Maintenance (30 events/yr) Seal Flush Filter Change (52 events/yr)
Flare Pilot Operational Time [2] (hours/yr)	8,760	

[1] Heating value of propane obtained from Physical Constants of Hydrocarbons. Gross Heating Value is conservatively used to calculate pilot emissions.

[2] Pilot emissions are conservatively based on 8,760 hours of operation per year, however the flare is a maintenance flare and actual operational time is estimated as less than 4 hours per flaring event.

Fuel Data (Flared Gas)

Description	Value
Blowdown Volume from Maintenance Activities (bbl/year)[1]	518
Max Hourly Blowdown Volume (bbl/hr)[2]	30
Molecular Weight [3]	55.7
Density (lb/bbl)	200.0
Heating Value (Btu/scf) [3]	2,891
Max MMscf/hr [4]	0.041
Max MMBtu/hr [5]	118
MMscf/yr [4]	0.71
MMBtu/yr [5]	2040

[1] Blowdown Volume includes the volume from Maintenance Activities (512 bbl/yr), and from Seal Flush Filter Change (6.19 bbl/yr).

[2] Maximum hourly blowdown volume is conservatively based on the maintenance event with the largest volume (pump strainer blowdown) being flared in one hour. Actual operational time is estimated as less than 4 hours per flaring event.

[3] Molecular Weight and Heating Value calculated in the table above.

[4] Blowdown volume (MMscf/hr or MMscf/yr) is calculated as flared volume (bbl/hr or bbl/yr) x Liquid Density (lb/bbl) / Molecular weight of flared product (lb/lb-mol) x 379.4 ft^3/lb-mol. The ft^3/ lb-mole conversion is based on any gas at standard temperature (60 F) and standard pressure (14.696 psia), per GPA 2261, Appendix D.

[5] Heat input is calculated as blowdown volume (MMscf/hr or MMscf/yr) x Heating Value of flared product (Btu/scf).

Flare Calculations - Ekalaka II Pump Station

Emission Factors

Pollutant	Emission Factor[1,2]	
NO_X	0.068	lb/MMBtu
CO	0.31	lb/MMBtu
N_2O	0.0001	kg/MMBTU

[1] Emission factors per U.S. EPA AP-42 Tables 13.5-1 and 13.5-2 (02/18)
[2] Emission factor for N_2O per 40 CFR Part 98, Subpart C, Table C-2.

Emission Rates - Pilot

Pollutant	Emissions (lb/hr) [1]	Emissions (tpy) [2]
NO_X	0.01	4.48E-02
CO	0.05	2.04E-01
N_2O	3.32E-05	1.45E-04

[1] Hourly Emissions (lb/hr) calculated as Annual Emissions (tons/yr) / Hours of Flare Operation (hr/yr) x (2,000 lb/ton)
[2] Annual Emissions (tpy) calculated as Emission Factor (lb/MMBtu or kg/MMBtu) x Flare Pilot Rating (MMBtu/yr) / (2,000 lb/ton)

Emission Rates - Flared gas

Pollutant	Emissions (lb/hr) [1]	Emissions (tpy) [2,3,4]
NO_X	8.03	0.07
CO	36.60	0.316
VOC [5]	119.97	1.04
HAP	6.94	0.06
CO_2	297,136	148.576
CH_4	2.07E-02	1.79E-04
N_2O	2.60E-02	2.25E-04

[1] Hourly Emissions (lb/hr) conservatively based on the maintenance event with the largest volume (pump strainer blowdown) being flared in one hour. Pump strainer blowdowns occur up to once a year. Actual operational time is estimated as less than 4 hours per flaring event.
[2] Annual NO_X, CO, and N_2O emissions (tpy) calculated as Emission Factor (lb/MMBtu or kg/MMBtu) x Flare Gas Heat Rating (MMBtu/yr) / 2000 (lb/ton).
[3] Annual Controlled VOC/HAP/CH_4 Emissions (tpy) = Annual flared volume (bbl/yr) x Liquid Density (lb/bbl) x Total VOC/HAP/CH_4 % x (1- Destruction efficiency of the flare) / 2,000 (lb/ton).
[4] Annual Controlled CO_2 Emissions (tpy) = Annual flared volume (MMscf/yr) x Total CO_2 % + (Carbon Content) / 2,000 (lb/ton).
[5] %VOC assumed to be 100% for conservatism.

ONEOK - Ekalaka II Pump Station
Fugitive Components (ID: Fugitive Equipment Leaks)

Component Type [1]	Light Liquid	Light Liquid (With 10% Safety Factor) [2]
Connections	1,222	1,345
Flanges	169	186
Open-Ends	3	4
Pumps	6	7
Valves	284	313
"Others" [3]	16	18
Totals	1,700	**1,873**

[1] Ekalaka II Pump Station counts assumed to be the most conservative of actual component counts conducted at multiple pump stations.
[2] Components used for permitting are inclusive of a 10% safety factor.
[3] "Others" could include check valves, compressors, pressure relief valves, etc.

Unspeciated Emissions from Fugitive Leaks

Component Type	Emission Factor [1] Light Liquid (kg/hr/source)	Hourly Emission Rate [2] Light Liquid (lb/hr)	Annual Emission Rate [3] Light Liquid (tpy)
Connections	2.10E-04	0.62	2.72
Flanges	1.10E-04	0.05	0.20
Open-Ends	1.40E-03	0.01	0.05
Pumps	1.30E-02	0.20	0.88
Valves	2.50E-03	1.72	7.54
"Others"	7.50E-03	0.30	1.30
	Totals	2.90	12.69

[1] Emission factors for light liquids obtained from U.S. EPA, Protocol for Equipment Leak Emission Estimates, Table 2-4 *Oil and Gas Production Operations Average Emission Factors (November 1995)*.
[2] Emission Rate (lb/hr) = Emission Factor (kg/hr/source) x Number of sources x (2.2 lb/kg).

Example "Connections" Hourly Emission Rate (lb/hr) = $\frac{\text{2.10E-04 kg}}{\text{hr-source}} \times \text{1345 sources} \times \frac{\text{2.2 lb}}{\text{kg}} = \frac{\text{0.62 lb}}{\text{hr}}$

[3] Emission Rate (tpy) = Emission rate (lb/hr) x (8,760 hr/yr) / (2,000 lb/ton).

Example "Connections" Annual Emission Rate (tpy) = $\frac{\text{0.62 lb}}{\text{hr}} \times \frac{\text{8,760 hr}}{\text{yr}} \times \frac{\text{1 ton}}{\text{2,000 lb}} = \frac{\text{2.72 ton}}{\text{yr}}$

VOC and HAP Emission Speciation

Pollutant	Wt% [1]	Emission Rate	
		lb/hr [2]	tpy [3]
VOC [4]	100	2.90	12.69
n-Hexane	4.69	0.14	0.60
Benzene	0.44	0.013	0.055
2,2,4-TMP	0.36	1.04E-02	0.046
Ethylbenzene	0.016	4.61E-04	2.02E-03
Toluene	0.20	0.006	0.025
Xylenes	0.086	2.49E-03	0.011
Total HAP	5.79	0.17	0.73

[1] Based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[2] VOC (lb/hr) = Unspeciated Hourly Emission Rate (lb/hr) x VOC wt%
[3] VOC (tpy) = Unspeciated Annual Emission Rate (tpy) x VOC wt%
[4] %VOC assumed to be 100% for conservatism.

V. Air Quality Impacts

This permit contains conditions and limitations that would protect air quality for the site and surrounding area.

VI. Existing Air Quality

This permit contains conditions and limitations that would protect air quality for the site and surrounding area. This is currently designated as an attainment/unclassified for all pollutants.

VII. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #5294-01, DEQ determined that the impact from this permitting action will be minor. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard.
A health risk assessment (HRA) was not required for this permitting action (17.8.749(3)).

VIII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the DEQ conducted a private property taking and damaging assessment which is located in the attached environmental assessment and is located in the attached environmental assessment.

IX. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act (MEPA), was completed for this project. A copy is attached.

Analysis Prepared By: Emily Hultin
Date: May 2, 2024

FINAL ENVIRONMENTAL ASSESSMENT

ONEOK Bakken Pipeline, L.L.C., and ONEOK Elk Creek Pipeline, L.L.C.
Ekalaka I and Ekalaka II Pump Stations

June 24, 2024

Air Quality Bureau

Air, Energy, and Mining Division

Montana Department of Environmental Quality

Table of Contents

Project Overview

COMPANY NAME:	ONEOK Bakken Pipeline, L.L.C. and ONEOK Elk Creek Pipeline, L.L.C. – Ekalaka I and Ekalaka II Pump Station (ONEOK)
EA DATE:	May 28, 2024
SITE NAME:	Ekalaka I and Ekalaka II Pump Station
MAQP#:	5294-01
Application Received Date:	April 5, 2024

Location

Township 2 North, Range 60 East, Sections 33
County: Carter
PROPERTY OWNERSHIP: FEDERAL STATE PRIVATE X

Compliance with the Montana Environmental Policy Act

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This Environmental Assessment (EA) will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608. DEQ may not withhold, deny, or impose conditions on the Permit based on the information contained in this EA (§ 75-1- 201(4), MCA).

Proposed Action

ONEOK has applied for a Montana Air Quality permit modification under the Clean Air Act of Montana to increase the annual number of maintenance strainer blowdowns at Ekalaka II from one to twelve and include the greenhouse gas (GHG) assessment for the construction of the Ekalaka II Pump Station. The state law that regulates air quality permitting in Montana is the Clean Air Act of Montana, §§ 75-2-101, et seq., (CAA) Montana Code Annotated (MCA). DEQ may not approve a proposed project contained in an application for an air quality permit unless the project complies with the requirements set forth in the CAA of Montana and the administrative rules adopted thereunder, ARMs 17.8.101 et. Seq. The proposed action would be located on privately owned land, in Ekalaka, Carter County, Montana. All information included in this EA is derived from the permit application, discussions with the applicant, analysis of aerial photography, topographic maps, and other research tools.

Purpose and Need

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The Proposed Action is considered to be a state action that may have an impact on the human environment and, therefore, DEQ must prepare an environmental review. This EA will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may

result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in ARM 17.4.608.

TABLE 1: SUMMARY OF ACTIVITIES PROPOSED IN APPLICATION

Table 1. Summary of Proposed Activities in Application	
General Overview	To increase the annual number of maintenance strainer blowdowns at Ekalaka II from one to twelve and include the greenhouse gas (GHG) assessment for the construction of the Ekalaka II Pump Station
Duration and Timing	Construction: Approximate timeline of October 2023 to September 2024 of the Ekalaka II Pump Station—approximately 300 days. Construction of Ekalaka II Pump Station was earlier authorized under MAQP #5294-01. No construction is required to increase the number of strainer blowdowns at Ekalaka II. Operation: Maintenance activities can occur for four hour periods between 6am to 6pm.
Estimated Disturbance	Approximately 15.4 acres will be disturbed to construct the Ekalaka II Pump Station authorized under MAQP #5294-01. No new disturbance would occur for the additional maintenance blowdowns.
Equipment	Standard construction equipment, including but not limited to, cranes, trucks, forklifts, etc. for the Ekalaka Pump Station. No industrial equipment would be required for the maintenance blowdowns.
Location	Location: Township 2 North, Range 60 East. Sections 33 See Figure 1 and Figure 2 below.
Personnel on-site	Construction: Approximately 25-30 construction personnel on site every day during the construction phase for the Ekalaka II Pump Station. Operation: No additional personnel would be required.
Location and Analysis Area	Section 33, Township 2N, Range 60E, approximately 13 miles east of Ekalaka, in Carter County, Montana. The analysis area is the area of the ONEOK site and immediate surrounding area.
Air Quality	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.
Water Quality	This project would not affect water quality. The Applicant would be required to comply with the applicable local, county, state, and federal requirements pertaining to water quality.
Erosion Control and Sediment Transport	This project is on property currently in use for industrial purposes. Some sediment transport could be anticipated due to the construction of Ekalaka II. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport.
Solid Waste	This project would have no effect on solid waste in the area. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to solid waste.

Cultural resources	The property is already in use as industrial property, and there would be no effects on cultural resources. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources.
Aesthetics	The property is already in use as industrial property, and there would be no effects on aesthetics, as it is being built next to Ekalaka I Pump Station. There would be a minor change in aesthetics with the addition of the second pump station, but it is already in the location of an existing pump station. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to aesthetics.
Hazardous Substances	This project does not contribute any hazardous substances to the facility. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to hazardous substances.
Weed Control	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to weed control.
Reclamation Plans	The property is already in use as industrial property, so no reclamation is necessary.

Cumulative Impact Considerations	
Past Actions	The Ekalaka I and Ekalaka II Pump Stations were previously permitted in 2023. Prior to that, Ekalaka I has been in operation since 2014, but did not require an air quality permit as it was below the permitting threshold. With the addition of Ekalaka II, this location required an MAQP.
Present Actions	Ekalaka II Pump Station is increasing the annual number of maintenance strainer blowdowns at Ekalaka II from one to twelve and include the greenhouse gas (GHG) assessment for the construction of the Ekalaka II Pump Station
Related Future Actions	Summary of related future projects

See Figure 1 and Figure 2 below for the project location of the Ekalaka I and Ekalaka II Pump Station site.

Figure 1. Ekalaka I and Ekalaka II Pump Station Location

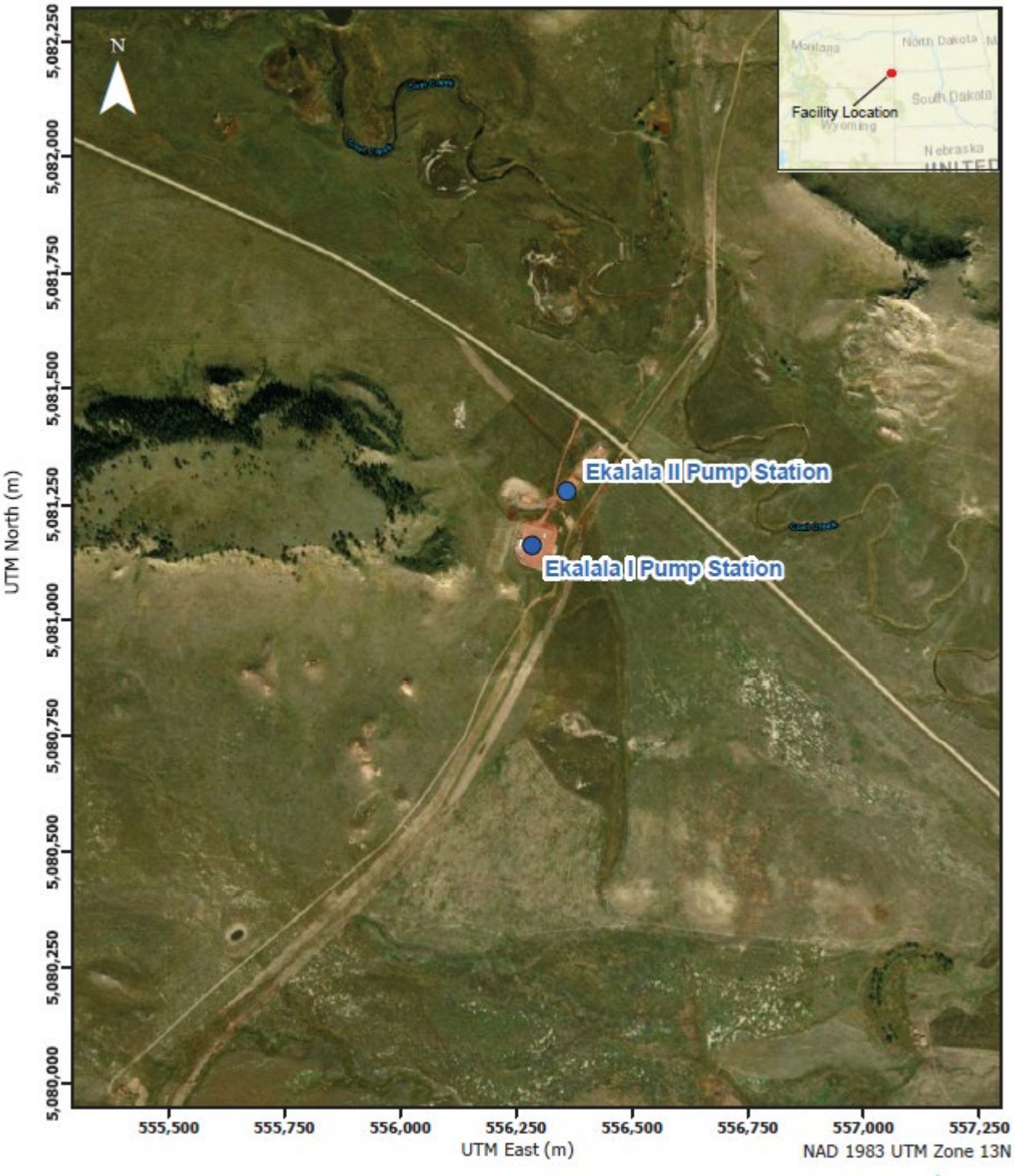
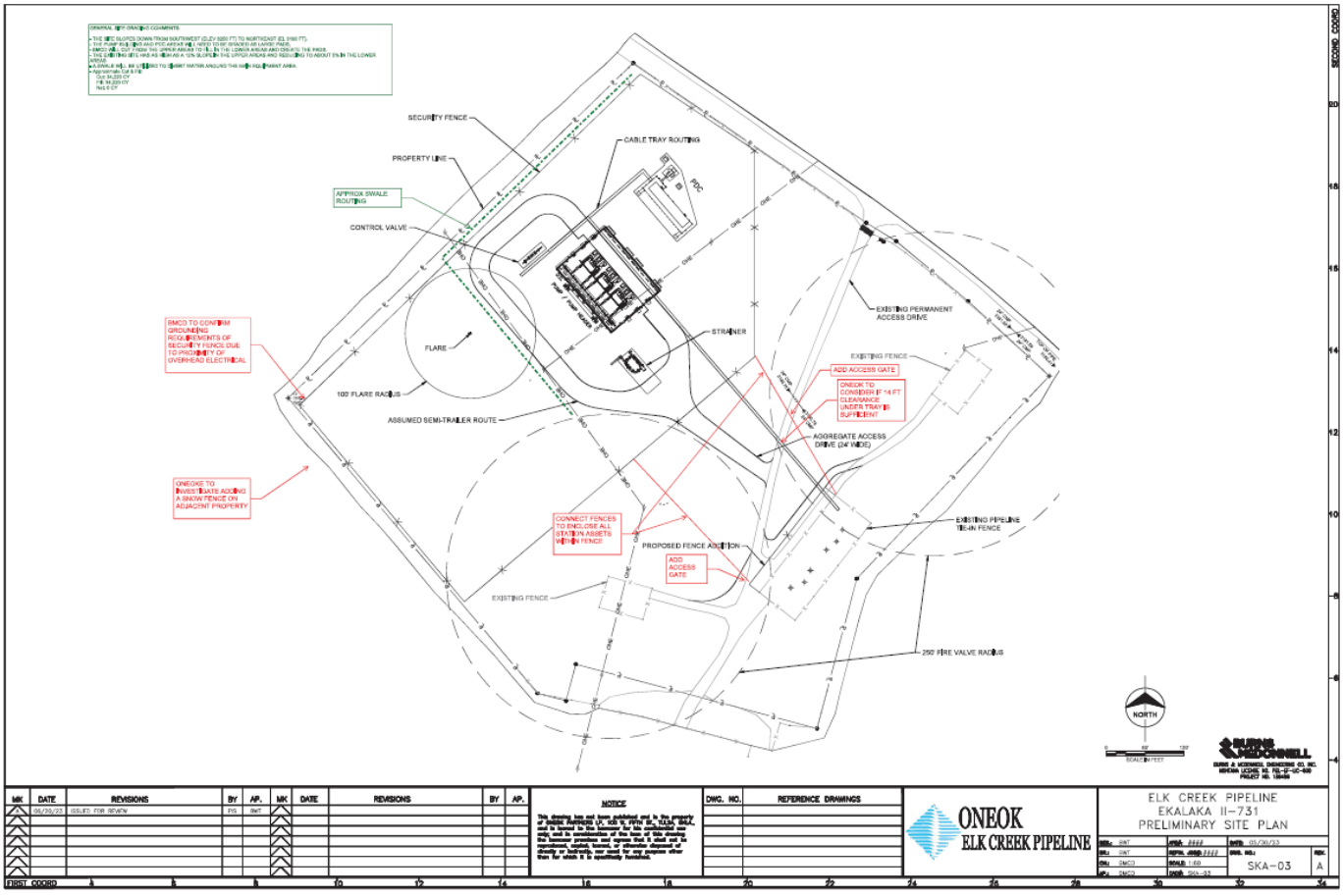


Figure 2. Ekalaka I and Ekalaka II Plot Plan



Evaluation Of Affected Environment And Impact By Resource:

The impact analysis will identify and evaluate whether the impacts are direct or secondary impacts to the physical environment and human population in the area to be affected by the proposed project. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described.

Cumulative impacts are the collective impacts on the human environment within the borders of Montana that could result from the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future impacts must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. The activities identified in Table 1 were analyzed as part of the cumulative impacts assessment for each resource.

The duration is quantified as follows:

- Construction Impacts (short-term): These are impacts to the environment during the construction period. When analyzing duration, please include a specific range of time.
- Operation Impacts (long-term): These are impacts to the environment during the operational period. When analyzing duration, please include a specific range of time.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

1. Geology and Soil Quality, Stability, and Moisture

The Applicant proposes to complete this project on existing industrial use property. Ekalaka I and Ekalaka II were previously permitted in November 2023, with Ekalaka I being in operation since 2014. Geology and Soil will be disturbed due to the ongoing construction of Ekalaka II, but this current permit action of increasing the annual amount of strainer blowdowns will have no impact as it is a current maintenance activity at an existing industrial site.

Direct Impacts:

The proposed project is on land currently used for industrial purposes. There are no known direct impacts on the geology and soil from increasing the annual amount of strainer blowdowns.

Secondary Impacts:

There are no predicted secondary impacts associated with this project from increasing the annual amount of strainer blowdowns.

Cumulative Impacts:

Since there are no direct or secondary impacts, there are also no cumulative impacts anticipated from this project from increasing the annual amount of strainer blowdowns.

2. Water Quality, Quantity, and Distribution

This project would not impact any surface or groundwater in the area. The project is proposed on property that is already used for industrial purposes, and it would not impact the surrounding property.

Direct Impacts:

There are no direct impacts expected to water quality, quantity, and distribution from this project from increasing the annual amount of strainer blowdowns.

Secondary Impacts:

There are no secondary impacts expected from this project from increasing the annual amount of strainer blowdowns.

Cumulative Impacts:

There are no cumulative impacts expected from this project from increasing the annual amount of strainer blowdowns.

3. Air Quality

As of April 9, 2024, Carter County is designated as an Unclassifiable/Attainment area for all criteria pollutants according to 40 CFR 81.327.

Applicants are required to comply with all laws relating to air, such as the Federal Clean Air Act, National Ambient Air Quality Standards set by the Environmental Protection Agency (EPA), and the Clean Air Act of Montana.

Direct Impacts:

The air quality impacts would be minor for this project. The increase in annual strainer blowdowns from one to twelve, will have minor impacts to air quality as demonstrated by the emissions noted in the MAQP #5294-01 emissions inventory. Emission totals associated with the increase in annual strainer blowdowns from one to twelve are shown below, as well as previously in the permit in the Emission Inventory Section of the Permit.

The emission inventory shown here is for increasing the annual strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

ONEOK - Ekalaka II Pump Station
Potential to Emit (PTE) Emission Estimates

Maintenance Activities
Pump Station Facility includes three Pumps (Electric), Pump Strainer, Flare

Equipment	Length (feet)	Inner Dia. (inches)	Inner Dia. (feet)	Volume (cf)	Volume (bbl/event)	Liquid Density (lb/bbl) [1]	% VOC [2]	% HAP [3]	VOC (lb/event) [4]	HAP (lb/event) [4]	Release to	Events/yr [5]	Volume (bbl/yr) [6]	Uncontrolled VOC (tons/yr) [7]	Uncontrolled HAP (tons/yr) [8]	Controlled VOC (tons/yr)	Controlled HAP (tons/yr)
Pump Strainer Blowdowns	-	-	-	-	30	200.0	100%	5.79%	5999	347	flare	12	360.00	35.99	2.08	See Flare	Neg.
Pump Blowdown (each, including piping)	-	-	-	-	5	200.0	100%	5.79%	1000	58	flare	8	40.00	4.00	0.23	See Flare	Neg.
Valve Blowdowns (inc. piping)	50	15.2	1.27	63.0	11.2	200.0	100%	5.79%	2244	130	flare	10	112.22	11.22	0.65	See Flare	Neg.
Subtotal Maintenance (Other Blowdown)					**46.2**				**9242**	**535**		**30**	**512.2**	**51.2**	**2.96**	**See Flare**	Neg.
						Maintenance (Scheduled VOC Blowdowns) =					**(To atmosphere)**		0.00	0.00	0.00		
						Maintenance (Scheduled VOC Blowdowns) =					**(To flare)**		**512.2**	**51.2**	**2.96**		

[1] NGL density (lb/bbl) is based on theoretical conservative composition to account for possible fluctuations in composition.
[2] %VOC assumed to be 100% for conservatism.
[3] %HAP calculated based on theoretical maximum based on Chemical Analysis Report data to account for possible fluctuations in composition.
[4] VOC or HAP (lb/event) = Volume (bbl/event) x Liquid Density (lb/bbl) x % VOC or % HAP
[5] Total Maintenance Blowdown (Mtn.) events include 12 pump strainer blowdowns, 8 pump blowdowns, and 10 valve blowdowns.
[6] Volume (bbl/yr) = Volume (bbl/event) x Events per year (events/yr)
[7] Uncontrolled VOC emissions (tons/yr) = VOC (lb/event) x Events per year (events/yr) / 2000 lb/ton
[8] Uncontrolled HAP emissions (tons/yr) = HAP (lb/event) x Events per year (events/yr) / 2000 lb/ton

Secondary Impacts:

No secondary impacts are anticipated due to the permitting action of increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

Cumulative Impacts:

Cumulative impacts would be negligible based on minor increases in emissions as detailed in the Emissions Inventory section of this permit.

4. Vegetation Cover, Quantity, and Quality

There are no known rare or sensitive plants or cover types present in the site area. No fragile or unique resources or values, or resources of statewide or societal importance, are present. DEQ conducted research using the Montana Natural Heritage Program (MTNHP) website and ran the query titled "Environmental Summary Report" dated April 17, 2024. The proposed action is located within the Ekalaka II Pump Station which is currently being constructed.

Direct Impacts:

Since the action is occurring at a facility already used for industrial purposes, there would be no additional impacts to vegetation from increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

Secondary Impacts:

No secondary impacts to vegetation are expected as a result of increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

Cumulative Impacts:

No cumulative impacts are expected as a result of increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

5. Terrestrial, Avian, and Aquatic Life and Habitats

As described earlier in Section 4. Vegetation Cover, DEQ conducted research using the MTNHP website and ran the query titled "Environmental Summary Report" dated April 17, 2024, which produced the following species of concern (SOC): Meadow Jumping Mouse, Merriam's Shrew, North American Porcupine, Sharp-tailed Grouse, Short-eared Owl, Slim-pod Venus'-looking-glass, Bobolink, Common Poorwill, Dickcissel, Fringed Myotis, Hayden's Shrew, Little Brown Myotis, Long-eared Myotis, Long-legged Myotis, Silver-haired Bat, Swift Fox, Townsend's Big-eared Bat, Eastern Screech-Owl, Golden Eagle, Pinyon Jay, Greater Short-horned Lizard, Plains Hog-nosed Snake, Great Plains Toad, Northern Leopard Frog, Suckley Cuckoo Bumble Bee, Narrowleaf Milkweed, Painted Milkvetch, Crawe's Sedge, Smooth Goosefoot, Schweinitz's Flatsedge, Long-sheath Waterweed, Narrowleaf Penstemon, Silver Bladderpod, Dwarf woolly-heads, Eastern Red Bat, Hoary Bat, Spotted Bat, American Bittern, Baird's Sparrow, Black-billed Cuckoo, Brewer's Sparrow, Burrowing Owl, Cassin's Kingbird, Chestnut-collared Longspur, Eastern Bluebird, Loggerhead Shrike, Long-billed Curlew, Red-headed Woodpecker, Sage Thrasher, Sprague's Pipit, Yellow-billed Cuckoo, Monarch, Whooping Crane, and Northern Myotis.

Avian species may be in proximity of the Ekalaka I and Ekalaka II Pump Station due to the remote area.

Direct Impacts:

There are no direct impacts expected from this project of increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station on these habitats.

Secondary Impacts:

No secondary impacts to terrestrial, avian and aquatic life and habitats would be expected from increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

Cumulative Impacts:

There are no cumulative impacts expected from this project of increasing the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

6. Unique, Endangered, Fragile, or Limited Environmental Resources

An approval letter (with a comprehensive mitigation approach addressing project impacts and deviations from Execute Order 12-2015) was received from the Montana Sage Grouse Habitat Conservation Program on September 26, 2018.

Direct Impacts:

A mitigation approach was provided from the Montana Sage Grouse Habitat Conservation program.

Secondary Impacts:
No secondary impacts to sage grouse or sage grouse habitat would be expected as this site due to the provided mitigation approach from the Montana Sage Grouse Habitat Conservation Program. No secondary impacts to unique, endangered, fragile, or limited environmental resources would be expected.

Cumulative Impacts:
No cumulative impacts to unique, endangered, fragile, or limited environmental resources would be expected. A comprehensive mitigation approach addressing project impacts and deviations from Execute Order 12-2015, was received from the Montana Sage Grouse Habitat Conservation Program on September 26, 2018.

7. Historical and Archaeological Sites

This project is proposed on land that is industrial in nature. No new disturbance would occur with the additional strainer blowdowns so no additional impacts to history, culture, and archeological uniqueness are expected.
The State Historic Preservation Office ran a report dated April 12, 2024, and no previously recorded sites are within the designated search locale. Previously, a few cultural resource inventories were done in the area, but based on previous inventory within the project area, there is a low likelihood of cultural properties being impacted.

Direct Impacts:
No direct impacts are expected from this project.

Secondary Impacts:
No secondary impacts to historical and archaeological sites are anticipated.

Cumulative Impacts:
No cumulative impacts to historical and archeological sites would be expected.

8. Aesthetics

The site is located in an industrial area, so no aesthetic impacts are anticipated off the ONEOK property. The permitting action is located within the facility boundary, as shown in Figures 1 and 2, therefore the noise will be contained within the property itself and would not be expected to be audible off the ONEOK property. Ekalaka I and Ekalaka II Pump Stations generate noise at close range, but noise offsite will be within acceptable OSHA regulations.

Direct Impacts:
Impacts would be negligible from the action of increasing the annual number of strainer blowdowns at the Ekalaka II Pump Station.

Secondary Impacts:
No secondary impacts to aesthetics are anticipated.

Cumulative Impacts:

No cumulative impacts to aesthetics would be expected from this project increasing the annual number of strainer blowdowns at the Ekalaka II Pump Station.

9. Demands on Environmental Resources of Land, Water, Air, or Energy

There are minor impacts to the demands on environmental resources of land, water, air, or energy resulting from increasing the annual number of strainer blowdowns at the Ekalaka II Pump Station. The Applicant is required to comply with all applicable federal, state, county, and local regulations and ordinances, permits, licenses, and approvals for the operation of the site, and therefore the impacts are limited by the permit requirements listed in MAQP #5294-01.

Direct Impacts:

Based on the analysis of available data and certifications made by the Applicant, DEQ does not foresee any unusual or excessive demands on land, water, air, or energy from this project. Therefore, limited direct impacts would be anticipated.

Secondary Impacts:

No secondary impacts to demands on environmental resources of land, water, air, or energy would be anticipated.

Cumulative Impacts:

Minor cumulative impacts to demands on environmental resources of land, water, air, or energy would beexpected, as detailed in the sections above concerning land, water, air, and energy.

10. Impacts on Other Environmental Resources

The site is currently on private property for industrial purposes. No impacts to other environmental resources are anticipated.

Direct Impacts:

Based on the analysis of available data and on the certifications made by the Applicant, DEQ does not foresee any impacts on other environmental resources from this project. Therefore, no direct impacts are anticipated.

Secondary Impacts:

No secondary impacts to other environmental resources are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to other environmental resources would be expected.

11. Human Health and Safety

The permitting action of increasing the annual number of strainer blowdowns at the Ekalaka II Pump Station must comply with the permit conditions included in MAQP #5294-01, which are protective of human health and

safety. Since the increase is within the current ONEOK Ekalaka property boundary, the noise would not disturb any nearby properties. The nearest residents from the proposed site are approximately three miles from the site.

Direct Impacts:
Direct impacts to human health and safety are expected to be negligible for this project as it is occurring within existing structures.

Secondary Impacts:
No secondary impacts to human health and safety are anticipated as a result of the proposed project.

Cumulative Impacts:
Minor cumulative impacts are expected from this project.

12. Industrial, Commercial, and Agricultural Activities and Production

This proposed project area has been in use as industrial property and it is anticipated that there will be no additional impacts to industrial, commercial, and agricultural activities from this project.

Direct Impacts:
There are no anticipated direct impacts to industrial, commercial, or agricultural activities as a result of this project.

Secondary Impacts:
No secondary impacts to industrial, commercial, and agricultural activities and production would be expected.

Cumulative Impacts:
No cumulative impacts are expected as a result of this project.

13. Quantity and Distribution of Employment

Existing employees would likely be utilized for this operation. It is not anticipated that this project would create, move, or eliminate a substantial number of jobs.

Direct Impacts:
No direct impacts to quantity and distribution of employment are anticipated as a result this project.

Secondary Impacts:
No secondary impacts to quantity and distribution of employment are anticipated as a result this project.

Cumulative Impacts:
No cumulative impacts to the quantity and distribution of employment would be expected.

14. Local and State Tax Base and Tax Revenues

Local, state, and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefitting from this operation. A minor impact is expected on the tax base and revenue with the proposed action.

Direct Impacts:
Negligible direct impacts to the tax base or revenues are anticipated as a result of this project.

Secondary Impacts:
No secondary impacts to local and state tax base and tax revenues would be expected.

Cumulative Impacts:
No cumulative impacts to local and state tax base and tax revenues would be expected.

15. Demand for Government Services

The proposed project would increase the annual number of strainer blowdowns at the Ekalaka II Pump Station and would become part of ongoing equipment regulated by entities such as DEQ.

Direct Impacts:
Negligible direct impacts to demand for government services would be expected as a result of regulating the additional equipment associated with this project.

Secondary Impacts:
No secondary impacts to government services are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts are anticipated as a result of this project.

16. Locally-Adopted Environmental Plans and Goals

The proposed operation would occur within Carter County, adjacent to the City of Ekalaka. The project would be required to comply with city and county zoning regulations that may have authority in the area.

An online search was conducted on April 17, 2024. No information was found concerning local city planning or city goals. DEQ is not aware of any additional policies and plans.

Direct Impacts:

DEQ is not aware of any other locally-adopted environmental plans or goals that would be impacted by this proposed project or in the project area. Impacts from or to locally-adopted environmental plans and goals would not be expected as a result of this project.

Secondary Impacts:
No secondary impacts to locally-adopted environmental plans and goals are anticipated as a result of the proposed work.

Cumulative Impacts:
No cumulative impacts to locally-adopted environmental plans and goals would be expected.

17. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not limit access to wilderness or recreational areas nearby. The proposed activities would occur on privately owned land already in use as a pump station (Ekalaka I and Ekalaka II). The nearest recreational areas would be water-activities on Coal Creek to the North of the facility. However, the action will be taking place within the Ekalaka II Pump Station, therefore no new disturbances would be anticipated.

Direct Impacts:
Based on the information provided by the Applicant and DEQ's review of the surrounding area, DEQ does not anticipate that any wilderness or recreational areas would be impacted by the proposed project.

Secondary Impacts:
No secondary impacts to wilderness or recreational areas are anticipated.

Cumulative Impacts:
No cumulative impacts to access to, and quality of, recreational and wilderness activities would be expected.

18. Density and Distribution of Population and Housing
The proposed project is not expected to add or remove any housing in the area.

Direct Impacts:
It is unlikely this project would add to the population significantly. No direct impacts are anticipated.

Secondary Impacts:
No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to density and distribution of population and housing are anticipated as a result of this project.

19. Social Structures and Mores

DEQ is not aware of any native cultural concerns that would be affected by the proposed activity. Based on the information provided by the Applicant, it is not anticipated that this project would disrupt traditional lifestyles or communities.

Direct Impacts:
No direct impacts to social structures and mores are anticipated as a result of the proposed project.

Secondary Impacts:
No secondary impacts to social structures and mores are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to social structures and mores would be expected.

20. Cultural Uniqueness and Diversity

Based on the information provided by the Applicant, DEQ is not aware of any unique qualities of the area that would be affected by the proposed activity. The site is currently located on land in industrial use owned by the federal government.

It is not anticipated that this project would cause a shift in some unique quality of the area.

Direct Impacts:
No impacts to cultural uniqueness and diversity are anticipated from this project.

Secondary Impacts:
No secondary impacts to cultural uniqueness and diversity are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to cultural uniqueness and diversity would be expected.

21. Private Property Impacts

The proposed project would take place on private land owned by ONEOK. DEQ's approval of MAQP #5294-01 permit would not affect the applicant's property. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #5294-01 would not have private property-taking or damaging implications.

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

YES	NO	
		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?
	X	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 DEQ determined there are no taking or damaging implications associated with this permit action.

22. Other Appropriate Social and Economic Circumstances

Due to the nature and scope of the proposed project activities, no further direct or secondary impacts would be anticipated from this project.

23. Greenhouse Gas Assessment

Issuance of this permit would authorize the increase in the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station.

This EA takes into account the GHGs from the construction of the Ekalaka II Pump Station as well as the GHGs from the increase in the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station. The construction of the Ekalaka II Pump Station was previously permitted in MAQP #5294-00.

The permitting action for MAQP #5294-01 is for the increase in the annual number of strainer blowdowns from one to twelve at the Ekalaka II Pump Station and the associated GHGs of that action.

The analysis area for this resource is limited to the activities regulated by the issuance of MAQP #5294-01 permit which is the increase in the annual number of strainer blowdowns from one to twelve at the

Ekalaka II Pump Station. The amount of liquified petroleum gas utilized at this site may be impacted by a number of factors including seasonal weather impediments and equipment malfunctions.

In assessing the GHG impacts related to the operation of this project, DEQ considered a range of possible operating hours. First, it considered the maximum hours of operation that would be permitted under ONEOK's permit, which is equivalent to 8,760 hours per year. Second, understanding that ONEOK is unlikely to emit at all the possible hours allowed under its permit, DEQ conducted an alternative analysis assuming 120 operating hours for the year. The results of DEQ's GHG impact analysis under these two scenarios are as follows.

Scenario	Operating Hours	Metric Tons of GHGs
Maximum Hours	8,760	64,098
Likely Operating Hours	120	126

For GHG emissions related to construction of the proposed action, DEQ's and ONEOK's calculations are primarily related to mobile emissions for both road and non-road emissions related to equipment necessary to construct the #2 Pump Station. The construction emissions were also calculated by ONEOK in more detail than the EPA GHG calculator tool allows, as seen in Figure 3 below, with estimated emissions total of 2,233 metric tons based on both vehicle miles traveled for road vehicle as well as operating hours for non-road primarily diesel-fired machinery (Email from H. Warlick to E. Hultin on 6/14/2024). Due to this detailed analysis provided by ONEOK, DEQ's previous analysis has been updated. Utilizing the EPA Calculator tool, the DEQ analysis has been updated to reflect GHG emissions from the construction, of approximately 2,033 metric tons of CO2e.

For the purpose of this analysis, DEQ has defined greenhouse gas emissions as the following gas species: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and many species of fluorinated compounds. The range of fluorinated compounds includes numerous chemicals which are used in many household and industrial products. Other pollutants can have some properties that also are similar to those mentioned above, but the EPA has clearly identified the species above as the primary Greenhouse Gases (GHGs). Water vapor is also technically a greenhouse gas, but its properties are controlled by the temperature and pressure within the atmosphere, and it is not considered an anthropogenic species.

The combustion of liquified petroleum gas at the site would release GHGs primarily being carbon dioxide (CO_2), nitrous oxide (N_2O) and much smaller concentrations of uncombusted fuel components including methane (CH_4) and other volatile organic compounds (VOCs).

DEQ has calculated GHG emissions using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions. This tool totals carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) and reports the total as CO_2 equivalent (CO_2e) in metric tons CO_2e. If there are also fluorinated compounds associated with the project those may also be input into the GHG calculator. The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory.

Direct Impacts

Operation of a liquified petroleum gas fueled flare throughout the life of the proposed project would produce exhaust fumes containing GHGs. The No Action Alternative would still result in the release of unprocessed VOCs and other air quality constituents into the atmosphere. See Section 3 in the EA for Air Quality impacts, along with the Emissions Inventory of permit for specific information. Not utilizing

the flare would result in the release of gases directly into the atmosphere, whereas the flare has a 98% destruction efficiency, effectively decreasing the amount of methane released into the atmosphere.

The proposed project increases the planned maintenance blowdowns associated with the #2 Pump Station resulting in process gas being routed to the flare (flaring). The expected flaring volume associated with the maintenance activities would be expected to be equivalent to 518 barrels of liquified petroleum gas (LPG). ONEOK provided a laboratory analysis in the application identifying the speciation of the process gas. The 518 barrel volume is also equivalent to an annual heating value of 2,040 MMBtu, or approximately 120 hours per year, the likely operating scenario. Based upon the expected flaring volume of gas, speciation, destruction flare efficiency of 98 percent, and physical properties of the gas species, a mass balance produces the resulting GHG emissions. DEQ also prepared a GHG inventory assuming that the maximum flaring volume during the maintenance activities also occurred on a continuous basis (8,760 hours, the maximum hours). The 8,760 maximum hour basis correlates to the 64,098 metric tons presented in the MAQP PD.

Under the likely operating scenario, which assumes 120 hours per year or 518- barrel volume, DEQ calculated 126 metric tons of GHG emissions based on the use of the GHG calculator tool and assuming the flaring gas is equivalent to the heating value of LPG from the GHG calculator. The LPG selection is assumed to be nearly equivalent to the composition of the sampled gas from the facility. Since the LPG fuel gas is not identical to the site process gas, other calculations would yield slightly different GHG emission values, as the type of gas being combusted has a direct correlation to GHG emissions. Therefore, if a different type of fuel than the LPG is selected, a different amount of GHG emissions would be calculated.

DEQ continued to present the 8,760 maximum hour calculation because the MAQP was not conditioned to restrict the flaring volume only to the 518 equivalent barrel basis of the likely operating scenario. Operation of the flare would be considered a preventive control device and use of the flare for combusting process gases would be preferred over uncontrolled venting to atmosphere.

To account for variability due to the factors described above, DEQ has calculated the emissions using the maximum value of the Applicant's estimate. Using the EPA's simplified GHG Emissions Calculator for sources, a maximum of 64,098 metric tons of CO_2e could be produced per year of operation. While the maximum amount of CO_2e is based off 8,760 maximum hours per year, the emissions based off of the likely operating scenario of 2040 MMBtu/year of the flare, would result in approximately 126 metric tons of CO_2e per year.

Secondary Impacts

GHG emissions contribute to changes in atmospheric radiative forcing, resulting in climate change impacts. GHGs act to contain solar energy loss by trapping longer wave radiation emitted from the Earth's surface and act as a positive radiative forcing component (BLM 2021). The impacts of climate change throughout the Northern Great Plains of Montana include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021).

Cumulative Impacts

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory in conjunction with preparation of a possible grant application for the Community Planning Reduction Grant (CPRG) program. This tool was developed by EPA to help states develop their own greenhouse gas inventories, and this relies upon data already collected by the federal government through various agencies. The inventory specifically deals with carbon dioxide, methane, and nitrous oxide and reports

the total as CO_2e. The SIT consists of eleven Excel based modules with pre-populated data that can be used as default settings or in some cases, allows states to input their own data when the state believes their own data provides a higher level of quality and accuracy. Once each of the eleven modules is filled out, the data from each module is exported into a final "synthesis" module which summarizes all of the data into a single file. Within the synthesis file, several worksheets display the output data in a number of formats such as emissions by sector and emissions by type of greenhouse gas.

DEQ has determined the use of the default data provides a reasonable representation of the greenhouse gas inventory for the various sectors of the state, and an estimated annual greenhouse gas inventory by year. The SIT data is currently only updated through the year 2021, as it takes several years to validate and make new data available within revised modules.

As Ekalaka II Pump Station was previously permitted in MAQP#5294-00, it did not take into account GHG emissions from the construction phase the permit. However, over the lifetime of the pump station, the construction would be a cumulative impact as it is in the Analysis Area of this Proposed Action. Over the course of construction of the Ekalaka II pump station, approximately 2,233 metric tons of CO_2e would be emitted, 2,233 metric tons being equivalent to 2462 tons, (Email from H. Warlick to E. Hultin on 6/14/2024, with Additional GHG Calculations received from ONEOK). Once construction is completed, there would be no continuing emissions from the construction phase of what was permitted under MAQP#5294-00. Cumulatively, with the high end of 64,098 metric tons per year of CO_2e from the Proposed Action plus the construction impacts from MAQP#5294-00, construction impacts could be approximately 2,233 CO_2e. The cumulative impacts of the realistic estimate of operating hours, which yields 126 metric tons per year of CO_2e from the Proposed Action, plus the construction impacts from MAQP#5294-00 would be approximately 2,359 metric tons of CO_2e.

Future GHG emissions from operations such as this site would be represented within the module Carbon Dioxide Emissions from Fossil Fuel Combustion, and emissions from the Transportation Sector within the Commercial and Industrial sectors. At present, the State of Montana accounts for approximately 47.7 $MMTCO_2e$ in Montana annually. This project may contribute up to 64,098 metric tons per year of CO_2e. If the flare were to last 20 years, the GHG over the life of the flare would be 1,281,960 million metric tons overall. This project is currently expected to contribute 0.13418% of the GHGs in Montana per year.

Calculations to determine CO_2e were based off the maximum hours of operation 8760 hours per year. While the above section states the maximum amount of CO_2e is based off 8760 hours per year, the emissions based off of the anticipated maximum of 2,040 MMBTu/year of operation of the flare, would result in approximately 126 metric tons of CO_2e per year. With this, the flare would be expected to contribute 0.00026% of the GHGs in Montana per year. If the flare were to last 20 years, the GHGs over the life of the flare would be approximately 2,520 metric tons of CO_2e, based off of the 2,040 MMBTu/year value.

GHG emissions that would be emitted as a result of the proposed activities would add to GHG emissions from other sources. The current industrial utilization or No Action Alternative of the site also produces GHGs. The No Action Alternative would still result in the release of unprocessed VOCs and other air quality constituents into the atmosphere. See Section 3 in the EA for Air Quality impacts, along with the Emissions Inventory of permit for specific information. Not utilizing the flare would

result in the release of gases directly into the atmosphere, whereas the flare has a 98% destruction efficiency, effectively decreasing the amount of methane released into the atmosphere.

PROPOSED ACTION ALTERNATIVES

No Action Alternative: In addition to the proposed action, DEQ must also considered a "no action" alternative. The "no action" alternative would deny the approval of MAQP #5294-01. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.
If the Applicant demonstrates compliance with all applicable rules and regulations required for approval, the “no action” alternative would not be appropriate.

Other Reasonable Alternative(s): No other alternatives were considered.

CONSULTATION

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff. External scoping efforts also included queries to the following websites/databases/personnel:

MAQP #5294-00, MAQP #5294-01 Application, EPA State Inventory Tool, and the EPA GHG Calculator Tool. State Historical Preservation Office, and the Montana Natural Heritage Map Viewer.

PUBLIC INVOLVEMENT

The public comment period for this permit action is from May 28, 2024, through June 12, 2024. Public comments may be submitted to the DEQ through the DEQ website, email, written letter, or in person. Responses to public comments begins on page 7 of the permit.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION

The proposed project would be located on private land. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, or federal agency jurisdiction.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in ARM 17.4.608, which are as follows:

- The severity, duration, geographic extent, and frequency of the occurrence of the impact;
- The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts – identify the parameters of the proposed action;
- The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
- The importance to the state and to society of each environmental resource or value that would be affected.

- Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- Potential conflict with local, state, or federal laws, requirements, or formal plans.

CONCLUSIONS AND FINDINGS

DEQ finds that this action results in negligible impacts to air quality and GHG emissions in Carter County, Montana.

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed air quality project would be limited. The proposed action would not result in any land disturbance at the Ekalaka I and Ekalaka II Pump Stations as it is occurring within the already permitted Ekalaka II Pump Station. The Applicant is proposing to increase the number of annual maintenance blowdowns from one to twelve, at Ekalaka II, as explained in MAQP #5294-01.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed actions for any environmental resource. DEQ does not believe that the proposed activities by the Applicant would have any growth-inducing or growth-inhibiting aspects, or contribution to cumulative impacts. The Ekalaka I and Ekalaka II Pump Stations site does not appear to contain known unique or fragile resources.

There are no unique or known endangered fragile resources in the project area. No underground disturbance would be required for this project. An approval letter (with a comprehensive mitigation approach addressing project impacts and deviations from Execute Order 12-2015) was received from the Montana Sage Grouse Habitat Conservation Program on September 26, 2018.

There would be negligible impacts to view-shed aesthetics as the action of increasing the annual number of maintenance blowdowns would not change any aesthetics as it is going to be occurring within an existing structure. Employees at the base would see and hear the maintenance blowdowns as they occur, when in the immediate area.

Demands on the environmental resources of land, water, air, or energy would not be significant.

Impacts to human health and safety would not be significant because the site is on Privately Owned Land. The public is not allowed on the Ekalaka I and Ekalaka II Pump Stations site.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed activities on any environmental resource.

Issuance of a Montana Air Quality Permit to the Applicant does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the Applicant submits another modification or amendment, DEQ is not committed to issuing those revisions. DEQ would conduct an environmental review for any subsequent permit modifications sought by the Applicant that require environmental review. DEQ would make permitting decisions based on the criteria set forth in the Clean Air Act of Montana.

Issuance of the Permit to the Applicant does not set a precedent for DEQ's review of other applications for Permits, including the level of environmental review. The level of environmental review decision is made based on case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed air quality permitting action by the Applicant would have any growth-inducing or growth inhibiting impacts that would conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed operation is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review for MEPA.

PREPARATION AND APPROVAL

EA and Significance Determination Table prepared by:

Emily Hultin
Air Quality Engineering Scientist

Environmental Assessment Reviewed by:

Approved by: C r a i g H e n r i k s o n

REFERENCES

- MAQP #5294-00
- MAQP #5294-01 Application received from ONEOK on April 5, 2024.
- U.S. Environmental Protection Agency, Center for Corporate Climate Leadership, "Scopes 1, 2 and 3 Emissions Inventorying and Guidance," https://www.epa.gov/climateleadership/scopes-1-2-and-3-emissions-inventorying-and-guidance (accessed June 21, 2024).
- EPA GHG Calculator Tool https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool
- EPA State Inventory Tool, https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool
- 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends, https://www.blm.gov/
- National Heritage Map Viewer – Report dated April 17, 2024
- Caterpillar Performance Handbook
- EPA Greenhouse Gas Equivalencies Calculator
- Email from H. Warlick to E. Hultin on 6/14/2024. with Additional GHG Calculations received from ONEOK