

Standing Rock Sioux Tribe

**Call for the Shutdown of the
Dakota Access Pipeline
and
Comments on the Army Corps of Engineers'
Draft Environmental Impact Statement**

December 13, 2023



Prepared under the direction of

Janet Alkire, Chairwoman
and the Economics Committee
of the Standing Rock Sioux Tribe

Part 1 of 3

Contents

I.	Executive Summary.....	3
II.	DAPL is Unsafe, Operating Illegally and Must be Shut Down Immediately	6
A.	DAPL is Unsafe	6
B.	DAPL is Operating in Violation of Numerous Federal laws.....	11
1.	DAPL Violates the Mineral Leasing Act of 1920.....	11
2.	DAPL Violates the National Environmental Policy Act of 1969.....	12
3.	DAPL Violates Section 311 of the Clean Water Act	13
4.	Energy Transfer Violated Section 110(k) of the National Historic Preservation Act.....	14
5.	The Pipeline Must be Shut Down under the Administrative Procedure Act.....	15
III.	The Corps of Engineers Must Comply with the 1851 and 1868 Fort Laramie Treaties in the Draft EIS	17
A.	1851 Fort Laramie Treaty.....	18
B.	1868 Fort Laramie Treaty.....	20
IV.	DAPL Violates the 1851 and 1868 Fort Laramie Treaties	23
A.	DAPL Violates Land Rights Under the 1851 Treaty and Article 2 of the 1868 Treaty	23
B.	The Draft EIS Fails to Identify Impacts to Water Rights Reserved in the 1851 and 1868 Fort Laramie Treaties	28
C.	Hunting and Fishing Rights.....	32
D.	Gathering Rights – Natural Foods and Medicines and Indigenous Traditional Ecological Knowledge	35
E.	The Draft EIS Ignores the Treaty Right to Protection from Bad Men	36
1.	The Bad Man Clause Applies to Energy Transfer’s Criminal Convictions.....	36
2.	The Corps of Engineers Must Give Serious Consideration to DAPL’s Impact on the Safety of Indian Women	37
F.	The Corps Violated the Treaty Right to Consultation	40
V.	The Corps of Engineers has Failed to Properly Define the Purpose and Need and the Scope of the Draft EIS.....	44
A.	The Purpose and Need Section Identifies the Wrong Pipeline Capacity	44
B.	The Scope of the Draft EIS is too Narrow	45
VI.	The Corps Has Not Demonstrated Compliance with the Consultation and Cultural Resource Protection Obligations	48
A.	The Corps Has Not Fulfilled its NHPA Consultation and Cultural Resource Protection Requirements	49
B.	The Corps Failed to Properly Consult on the Area of Potential Effects	52
C.	Tribal Ownership of the Bed of the Missouri River	53
D.	Significance of the Goodhouse Report.....	55
E.	Inadequate Treatment of Traditional Cultural Properties.....	56
F.	Sacred Sites.....	57
VII.	The Corps Has Failed to Address the Allegations of Anticipatory Demolition in Violation of NHPA Section 110(k).	59
VIII.	The Corps of Engineers Failed to Identify Heightened Risk Factors and Made Erroneous Findings on DAPL’s Impact on the Environmental Justice Community of the Standing Rock Sioux Tribe.	61
A.	The Corps Failed to Collect and Analyze Sufficient Data	61
B.	The Corps Failed to Engage in Environmental Justice Scoping	63

C. The Draft EIS Fails to Identify the Heightened Environmental and Health Risk to Standing Rock Tribal Members.....	65
D. The Draft EIS Contains Erroneous Conclusions on the Environmental and Public Health Impacts to Standing Rock	69
E. The Secrecy and Lack of Transparency Violate Environmental Justice.....	70
IX. The Draft EIS Fails to Consider the Cumulative Effects of DAPL and the Corps' Construction and Operation of Oahe Dam Under the 1944 Flood Control Act and 2024 Annual Operating Plan.....	72
A. The Relocation of Cannon Ball and Other Communities had a Devastating Effect on the Standing Rock Sioux Tribe that Continues to be Experienced Today	72
B. The Corps Must Evaluate the Cumulative Impacts of DAPL and the Regulation of Reservoir Levels under the Master Water Control Manual and Annual Operating Plan	75
Figure 1 Adjudicated Treaty Lands of the Oceti Sakowin Oyate	23
Figure 2 Adjudicated Aboriginal Boundaries of the Standing Rock Sioux Tribe.....	26
Figure 3 Dakota Access Pipeline Trespassing on Standing Rock Treaty and Aboriginal Land	27

I. Executive Summary

The Dakota Access Pipeline is unsafe and is operating illegally. It must be shut down immediately.

The pipeline is unsafe because of a failure to properly integrate the safety systems. There is inadequate pressure surge relief at the shut off valves at Lake Oahe, creating a high risk of over-pressurization of the pipeline at the Standing Rock Reservation. Under the applicable regulations, the DAPL Lake Oahe crossing is characterized as a “high consequence area” due to the existence of sensitive environmental receptors as well as the drinking water supply of the Standing Rock Sioux Tribe. High consequence areas require a higher level of integrity management planning, due to the high environmental and public health values that could be affected by a spill.

A court-ordered independent assessment in 2018 and an inspection by federal regulators in 2021 and 2022 found DAPL’s operations, maintenance and emergency plans to violate federal regulations, in addition to other violations. In fact, the operators of DAPL have the worst compliance record in the federal tracking database. They have even been convicted of environmental crimes. On August 5, 2022, Energy Transfer and its related companies were convicted of 23 counts of criminal violations of the Pennsylvania Clean Water Act.

The criminal conduct in Pennsylvania resembles the way Energy Transfer has treated the Standing Rock Sioux Tribe. The emergency plans for an oil spill on the Reservation are largely redacted. No information has been shared with the Tribal Council, or the Standing Rock Department of Emergency Management. Repeated invitations by the Tribe to Energy Transfer were ignored or disrespected. From the limited information available, the Tribe understands that Energy Transfer has significantly under-estimated the amount of Bakken crude oil that could be released into the Missouri River and onto the Standing Rock Reservation.

DAPL went on line in 2017, but the Corps of Engineers has yet to prepare a proper environmental impact statement for the pipeline. DAPL has been operating illegally for over six years. Nevertheless, on September 8, 2023, the Corps released the *Draft Environmental Impact Statement, Dakota Access Pipeline Lake Oahe Crossing* (Draft EIS) and has requested public comment. This three-part report constitutes the Standing Rock Sioux Tribe’s comments to the Draft EIS.

DAPL crosses the Treaty land of the Standing Rock Sioux Tribe and Oceti Sakowin Oyate (Seven Council Fires of the Lakota, Dakota and Nakota Nation), under the Fort Laramie Treaties of 1851 and 1868. The Tribe retains extensive usufructory and other Treaty rights to this land, but in the Draft EIS the Corps of Engineers downplays the impacts to Standing Rock's Treaty rights. Other than a brief compilation of fauna and flora species of interest to the Tribe, the Corps ignores Standing Rock's Treaty rights, in violation of federal and international law and policy. Indeed, DAPL is a Treaty and human rights violation against the Standing Rock Sioux Tribe.

Nevertheless, it appears that the Corps has drafted an environmental study designed to re-approve an easement for the pipeline (it has been operating illegally on federally-administered land without an easement) at nearly double the original capacity. Although the Corps identified five separate alternatives in the Draft EIS, the document clearly expressed a bias toward alternative 4 – reapproving and re-upping the pipeline, with requirements that Energy Transfer provide alternate food and water sources when there is an oil spill, and monitor the water. None of these decisions were made in consultation with Standing Rock, as required by law.

Energy Transfer is not even eligible for an easement. During pipeline construction, Energy Transfer learned in papers filed by the Tribe in court of the existence of Tribal burials adjacent to the pipeline route. Company contractors then graded, dug up and destroyed the sites. That violates section 110(k) of the National Historic Preservation Act. Under this statute, an applicant for federal assistance, such as Energy Transfer LP, is ineligible for the assistance if they intentionally destroy historic properties or Native burials.

Similarly, as a result of its criminal convictions, Energy Transfer is debarred from federal assistance under General Service Administration regulations. By law, the government generally does not do business with criminals. The U.S. Environmental Protection Agency has temporarily debarred Energy Transfer and is considering permanent debarment. This also disqualifies Energy Transfer from obtaining an easement for DAPL.

In its Draft EIS, the Corps of Engineers failed to note these significant developments. The Corps continues to refuse to engage in a proper, scientific risk analysis at Standing Rock. DAPL fails to comply with numerous important industry-sponsored safety standards and federal regulations, which mandates consideration. The Corps accepted the worst case discharge

calculations for DAPL, which Tribal experts opine may under-state the potential pollution by 100,000 barrels.

The Corps of Engineers has not made a serious effort to evaluate DAPL's environmental impact to the Reservation environment at Standing Rock. It relies on unsupported findings that oil spills are rare occurrences, and the hope that there will be not be a spill in Lake Oahe. There is a real Alice in Wonderland aspect to the Draft EIS.

The Standing Rock Sioux Tribe and residents of the Cannon Ball community deserve better. In the Draft EIS, the Corps of Engineers continues to demonstrate its unwillingness to fulfill its Treaty and trust responsibilities to Standing Rock. The Corps should implement Alternative 2 in the Draft EIS and permanently shut down DAPL.

II. DAPL is Unsafe, Operating Illegally and Must be Shut Down Immediately

A. DAPL is Unsafe

The Dakota Access Pipeline is an unsafe pipeline operated by a company that has been convicted of numerous environmental crimes. DAPL must be shut down immediately.

The Dakota Access Pipeline should not be operating due to the failure to properly design and operate the pipeline system in a manner that complies with the federal regulations and industry standards for integrity management and protection from over-pressurization. DAPL is at serious risk of over-pressurization, which could cause a serious breach or an explosion. Energy Transfer's own Pressure Surge Report acknowledges this.¹

The DAPL Missouri River crossing is designated a "high consequence area." A high consequence area is a pipeline crossing that could affect drinking water systems or sensitive environmental receptors, such as the Missouri River, bald eagle nests along the river and Native American cultural resources,² all of which would be affected by an oil spill from DAPL. The federal regulations subject a pipeline crossing in a high consequence area to enhanced integrity management planning requirements and the deployment of "best available technology," to meet enhanced risk reduction targets for critical safety devices.³ DAPL fails to meet these requirements, on account of inadequate surge protection and other factors.

The failure to install by-pass storage at the Lake Oahe emergency flow restriction devices creates a potential for dangerous pressurization of the pipeline. This design failure could result in a catastrophic over-pressurization of the pipeline, in the event of a spurious valve closure. It is a major fatal flaw resulting in an unsafe pipeline.

The pipeline was constructed and has been operated without a secondary power supply at the Lake Oahe valves. Closure of the valves during inclement weather may require manual closure. The valves were built in a remote location, which would be difficult to access during

¹ Fluid Flow Consultants, DAPL Gathering System, DAPL Mainline and ETCOP Oil Pipeline Surge Analysis (June 2017).

² 49 CFR §195.450; *see also* the definition of "Unusually sensitive area" in 49 CFR §195.6.

³ 49 CFR §195.452.

inclement winter weather. If there is an oil spill during a power outage, the operators may have to travel over undeveloped roads to a remote location and close the devices by hand.

Nevertheless, in the *Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement* (“draft EIS”), the Corps of Engineers endorses the 12 minute shutdown time identified in Appendix G, Energy Transfer’s Facility Response Plan (“FRP”) for the Lake Oahe crossing. That is completely unrealistic for emergency planning purposes. Based on that assumption, the Corps accepts Energy Transfer’s estimate of the worst case discharge of 16,996 barrels of crude oil into the Missouri River. By way of contrast, the Environmental Protection Agency On-Scene Coordinator for the Mid-Missouri River Sub-Area Contingency Plan estimates the worst case discharge from a pipeline of DAPL’s diameter to be 50,800 barrels, over 300 percent more oil than estimated by Energy Transfer and the Corps of Engineers.⁴

The entire planning program for remediation of an oil spill on the Standing Rock Reservation fails to comport with reality. The plan is to clean up less than one-third of the oil that could spill on the Standing Rock Reservation. Although the spill response zone at Lake Oahe is within the Reservation, the operator has no working relationship with the Tribal Council or the Tribal Emergency Response Commission that will oversee spill response, and at present is not even permitted to enter Tribal land. There is no adequate plan for oil spill remediation during winter conditions or periods of low water. Some of the control points identified in the original FRP for oil spill recovery do not even exist, and none of them are accessible during periods of low water. Ultimately, the Standing Rock Sioux Tribe and its first responders are put in undue risk due to the Corp’s failure to require a realistic shut down time and worst case discharge, and prepare emergency plans in compliance with the Oil Pollution Act and applicable regulations.⁵

Energy Transfer has a terrible safety record, with dozens of major spills, civil penalties and criminal convictions. Since 2017, Energy Transfer has the worst spill record among hazardous liquid pipeline operators in the database of the Pipeline and Hazardous Materials

⁴ The *Mid-Missouri River Sub-Area Contingency Plan* (April 16, 2015) p. 10, located at <https://www.nrt.org/sites/32/files/Final%20MO%20with%20Appendices%204.17.15.pdf>

⁵ The facility response plan requirements are prescribed in section 311 of the Oil Pollution Act, 33 U.S.C. §1321(j)(5). The regulations for response plans are located at 49 CFR Part 194.

Safety Administration (“PHMSA”). During this time, Energy Transfer has experienced 66 “significant incidents” – about one per month. That is more than any other pipeline operator in the United States. From 2017 to the present, Energy Transfer pipelines have spilled 48,005 barrels (2,016,210 gallons) of oil, or about 600 barrels (25,200 gallons) per month. During this time, Energy Transfer oil spills have caused property damage totaling \$56,877,719, or \$710,971 per month.

The land and water that is vulnerable to a release of oil from DAPL is protected for the Standing Rock and other Sioux Tribes by the Treaty of Fort Laramie of April 29, 1868. The value of this land to the Tribe is immeasurable, yet the Tribe is facing potential damages from a publicly traded, politically connected oil and gas pipeline company, that has been liable for over \$700,000 in property damage per month over the past six years. Tribal Treaty land is at risk from DAPL.

This pipeline company is dangerous. Literally, they are criminals. On October 5, 2021, the Pennsylvania Attorney General charged Energy Transfer with 48 criminal violations of the state Clean Water Act in the construction of the Mariner East pipeline.⁶ The charges involved significant groundwater contamination with illegal and unapproved drilling fluid, and the failure to report violations. Four months later, on February 2, 2022, the state filed nine additional charges related to the explosion in 2018 of the Revolution pipeline. Energy Transfer pled no contest and was convicted on August 5, 2022 of 23 of the nearly-60 criminal charges that had been filed.

On July 22, 2021, PHMSA issued a Notice of Probable Violation to Energy Transfer for the Dakota Access Pipeline. The notice stated:

The items inspected and the probable violations are:

§195.264 Impoundment (and) normal/emergency venting or pressure vacuum relief for aboveground (sic) relief tanks.

§195.401(b)(1) Whenever an operator discovers any condition that could adversely affect the safe operation of its pipeline system, it must correct

⁶ <https://www.attorneygeneral.gov/wp-content/uploads/2022/08/2022-08-05-energy-transfer-fact-sheet.pdf>

the condition within a reasonable time.... Energy Transfer failed to correct a condition that could adversely affect the safe operation of its pipeline within a reasonable time on its relief valves that utilize a nitrogen supply for correct operation ... Relief valves are used on this pipeline to relieve overpressure conditions and these relief valves operated by nitrogen are part of the surge protection for the pipeline... [F]rom June 1, 2017 to December 13, 2019, Energy Transfer failed to correct a condition that could adversely affect the safe operation of its pipeline by allowing the relief valve setpoints to fluctuate

§195.402 Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies)... Energy Transfer failed to prepare and follow its Operations and Maintenance Manual.

§195.406(b) No operator may permit the pressure in a pipeline during surges or other variations to exceed 110 percent of the operating pressure limit.

§195.428(a) [E]ach operator shall inspect and inspect each pressure limiting device, relief valve, pressure regulator, or other item of pressure control equipment to determine that it is functioning properly.

§195.440(c) A review of Energy Transfer's public awareness program evidenced that it did not consider consequences from a spill designated as high consequence areas.⁷

For its part, the Corps of Engineers received notice of many of these violations years earlier, on April 2, 2018, when Energy Transfer filed the *Independent Assessment of Dakota Access Pipeline, U.S. Army Corps of Engineers Easement Special Conditions* with the district court.⁸ The Corps has known for years that there was no compliant Operations, Maintenance and Emergency Manual, and other required plans to protect high consequence areas such as the Missouri River crossing. Yet the Corps did nothing to protect the Tribe.

⁷ https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2021-07/Energy%20Transfer-Dakota%20Access%202021049NOPV_PCP%20PCO_07222021_%2821-211190%29.pdf. The sections of the cited regulations are in the Code of Federal Register volume 49.

⁸ *Standing Rock Sioux Tribe v. Army Corps of Eng'rs*, 1:16-cv-01534-JEB ECF 347-2, filed April 2, 2018.

In the Draft EIS, the Corps downplays the significance of Energy Transfer's failed inspection for DAPL. The Corps stated, "[I]t is important to understand that the items above are notices of *probable* violations... these violations have all been corrected."⁹ Even though the Corps has been on notice of DAPL's pipeline safety violations since the Independent Assessment was filed in 2018, as confirmed by PHMSA on July 21, 2022, the Corps states in the Draft EIS, "To date, the USACE has not identified any non-compliance with the existing easement conditions."¹⁰

Worse yet, the Corps also wrote that "none of the violations affect the likelihood or consequences of a crude oil release at Lake Oahe."¹¹ Actually, the Probable Violations all relate to a lax, corners-cutting safety culture at Energy Transfer, which directly affects the operation at the Lake Oahe crossing. Violation number 6 directly relates to coordination with local emergency responders in high consequence areas, such as the Lake Oahe crossing at Standing Rock.

At every juncture, and throughout the draft EIS, the Corps of Engineers ignores DAPL's risk factors. The Corps hypes minimum compliance by the pipeline operator with weak regulations, and ignores the operators' failure to comply with numerous industry best practices, as described in this report. Neither the Corps of Engineers nor any other federal agency are protecting public health or the environment of the Standing Rock Indian Reservation.

DAPL is unsafe. The pipeline lacks completed and integrated safety systems and devices, such as by-passes at key shut-off valves. The emergency response plans fail to plan for remediation for a worst case discharge into the Missouri River, and fail to address recovery of oil during winter conditions or periods of low water. Integrity management and the manuals for operations and emergencies have been found to be inadequate. Energy Transfer has the most significant oil spills of any pipeline operator in the United States, as evidenced by criminal

⁹ *Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement* (2023) ("Draft EIS") p. 3-11.

¹⁰ *Id.* at 2-15.

¹¹ *Id.* at 3-11.

convictions for intentional violations. As stated by Judge James Boasberg, “the seriousness of the Corps’ deficiencies outweighs the negative effects of halting the oil flow...”¹²

The Standing Rock Sioux Tribe is at undue risk. DAPL must be shut down immediately.

B. DAPL is Operating in Violation of Numerous Federal laws

The continuing operation of the Dakota Access Pipeline violates numerous federal laws. By allowing DAPL to operate illegally, the Corps of Engineers undermines the rule of law in the United States. DAPL is brazenly illegal and should not be in operation.

1. DAPL Violates the Mineral Leasing Act of 1920

An easement is required to cross all federally-managed land, under the Mineral Leasing Act of 1920.¹³ On February 8, 2017, the Corps issued an easement to Energy Transfer for DAPL to cross the Corps-administered land at Oahe Reservoir immediately adjacent to the Standing Rock Reservation. On July 6, 2020, Judge Boasberg vacated the easement granted by the Corps for DAPL, for failure to comply with the National Environmental Policy Act (NEPA) prior to issuing the permit.¹⁴ On January 26, 2021, the Court of Appeals for the D.C. Circuit affirmed that ruling.¹⁵

The Mineral Leasing Act requires the environmental compliance under NEPA and related statutes “prior to granting a right-of-way or permit.”¹⁶ The environmental review under NEPA must be completed *before* a pipeline may be permitted to operate across federally-administered land. As Judge Boasberg wrote, “If you can build first and consider environmental impacts later, NEPA’s action-forcing purpose loses its bite.”¹⁷ For this reason, the federal courts have repeatedly called upon the Corps of Engineers to shut down DAPL.

¹² *Standing Rock Sioux Tribe v. Army Corps of Eng’rs*, 1:16-cv-01534-JEB, slip op. at *9 (July 6, 2020).

¹³ 30 U.S.C. §185.

¹⁴ *Standing Rock Sioux Tribe v. Army Corps of Eng’rs*, 1:16-cv-01534-JEB, slip op. at 9.

¹⁵ *Standing Rock Sioux Tribe v. Army Corps of Engineers*, 985 F.3d 1032, 1039 (D.C. Cir. 2021).

¹⁶ 30 U.S.C. §185(h)(2).

¹⁷ *Standing Rock Sioux Tribe v. Army Corps of Eng’rs*, 1:16-cv-01534-JEB, slip op. at 19.

Notwithstanding repeated instruction from this Court and the D.C. Circuit to “decide promptly” and “in the first instance” how “it will enforce (the Mineral Leasing Act)” *vis-à-vis* the pipeline’s encroaching on federal land at Lake Oahe, the Corps has not yet issued any determination at all – more than 10 months since the invalidation of the original easement... For now, it suffices to note that by ducking the controversy surrounding the Lake Oahe crossing, the Corps actively tolerates DAPL’s continued operation under a key federal waterway *it lacks the necessary authorization to traverse*.¹⁸

DAPL violates the Mineral Leasing Act due to its operation on federally-managed land without a required easement.¹⁹ It should be shut down immediately.

2. DAPL Violates the National Environmental Policy Act of 1969

DAPL also violates the National Environmental Policy Act,²⁰ due to the Corps’ failure to properly evaluate its potential environmental impacts prior to approval of its operation. On March 25, 2020, the District Court ruled that the Corps’ 2016 Environmental Assessment on DAPL violated NEPA in three respects: (1) failure to identify impacts of an oil to Treaty-protected hunting and fishing rights; (2) failure to resolve controversies relating to the impacts of a spill; and (3) failure to identify environmental impacts to the environmental justice community of the Standing Rock Sioux Tribe.²¹ The Corps of Engineers filed a report purporting to address those issues in February 2019.²² On March 25, 2020, the court ruled that the Corps failed to resolve the controversy surrounding the impacts of an oil spill at Standing Rock, that the 2016 environmental assessment failed to comply with NEPA, and ordered the Corps of Engineers to prepare an environmental impact statement.²³ The court explained, “If *any* ‘significant’

¹⁸ *Id.* at 29.

¹⁹ 30 U.S.C. §185.

²⁰ 42 U.S.C. §4231 *et seq*

²¹ *Standing Rock Sioux Tribe v. Army Corps of Engineers*, 255 F.3d 101 (D.D.C. 2017).

²² *Id.*, ECF No. 398.

²³ *Standing Rock Sioux Tribe v. Army Corps of Engineers*, 440 F. Supp.3d 1, 11 (D.D.C. 2020).

environmental impacts might result from the proposed agency action[,] then an EIS must be prepared *before* agency action is taken.”²⁴

The D.C. Circuit Court of Appeals also warned the Corps to shut down DAPL:

It may well be – though we have no occasion to consider it here – that the law or the Corps’ regulations oblige the Corps to... requir(e) the pipeline to cease operation... To do otherwise would be to issue a de facto outgrant without engaging in the NEPA analysis that the Corps concedes such action requires.²⁵

The Corps’ refusal to shut-down DAPL pending compliance with NEPA violates federal law and places the members of the Standing Rock Sioux Tribe at undue and unevaluated risk – exactly what NEPA is designed to prevent. The pipeline should be shut down.

3. DAPL Violates Section 311 of the Clean Water Act

The Corps of Engineers operates the Missouri River main stem dams under the authorization of the Flood Control Act of 1944.²⁶ The dams are operated for downstream flood control and navigation, as well as hydropower generation and downstream water supply. The Corps’ operations have a significant adverse effect on the water supplies available at Lake Oahe for the Standing Rock Sioux Tribe. Flood waters are stored in Oahe Reservoir, and then are released to the lower Missouri Basin for navigation and municipal intakes. The Corps’ operations result in dramatic fluctuations in the reservoir levels at Lake Oahe, causing the erosion of Tribal land, degradation of fish and wildlife habitat, and diminished water supplies for Tribal municipal and agricultural intakes.

Section 311 of the Clean Water Act governs oil and hazardous substance liability.²⁷ Subsection (j) establishes the National Response System for “methods and procedures for the removal of discharged oil and hazardous substances.”²⁸ The requirements for “facility response plans” for a release of oil are prescribed in subsection (j)(5). This section requires:

²⁴ *Id.* at 8, *quotations omitted*, emphasis in original.

²⁵ *Standing Rock Sioux Tribe v. Army Corps of Engineers*, 255 F.3d 101.

²⁶ 58 Stat. 887.

²⁷ 33 U.S.C. §1321.

²⁸ *Id.* at §1321(j)(1).

[A]n owner or operator of a tank vessel or facility... to prepare and submit to (PHMSA) a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat to such a discharge, of oil or a hazardous substance.²⁹

DAPL has a Facility Response Plan and a Geographic Response Plan, compiled as Appendix F to the Draft EIS. However, the plans fail to comply with section 311(j)(5) of the Clean Water Act. As discussed in detail below, the calculation of the worst case discharge is significantly under-stated. The plans fail to comply with the statutory requirements that they properly calculate the worst case discharge and be sufficient to remediate the release of oil “to the maximum extent practicable.”

The manner in which the Corps operates the dams causes dramatic fluctuations in the elevation of Oahe Reservoir. The Corps’ water releases at Oahe Dam have the effect of lowering water elevations to a level that impedes boat access to the reservoir. As the DAPL response plans rely exclusively on surface containment and removal of oil, the deployment of equipment that will be necessary to remove oil cannot be accomplished as a practical matter. Access to the water is frustrated by the Corps of Engineers’ own operation of Oahe Dam. The pipeline operator’s plan fails to provide for a response to a worst case discharge “to the maximum extent practicable” because it relies on water elevations much higher than 1598 msl – the elevation on December 11, 2023, which is 9 feet below the normal elevation at the top of Oahe’s multi-purpose pool.

The Corps implements its functions under the 1944 Flood Control Act in a manner that undermines the ability of DAPL’s operators to comply with section 311(j)(5) of the Clean Water Act. Accordingly, DAPL must be shut down.

4. Energy Transfer Violated Section 110(k) of the National Historic Preservation Act

Section 110(k) of the National Historic Preservation Act addresses the “anticipatory demolition of historic properties by federal permit applicants. The statute provides:

²⁹ *Id.* at §1321(j)(5).

Each Federal agency shall ensure that the agency shall not grant... a permit, license, or other assistance to an applicant who, with the intent to avoid the requirements of section (106 of the NHPA), has intentionally significantly adversely affected a historic property to which the grant would relate, or having the legal power to prevent it, allow the significant adverse effect to occur.³⁰

On September 3, 2016, Energy Transfer violated this section by intentionally bulldozing up to 27 burial sites, immediately adjacent to the Corps-administered lands at the Lake Oahe crossing. As described by the district court in *Standing Rock I*:

Mentz, over the course of several days beginning on August 30 (2016), avers that he surveyed the private land around the pipeline right-of-way. During these surveys, he observed several rock cairns and other sites of cultural significance inside the 150 foot corridor staked for DAPL construction.... Mentz documented the presence of several sites that he believed to be of great cultural note nearby, including a stone constellation used to mark the burial site of a very important tribal leader... The next day, on September 3, Dakota Access graded this area.³¹

This violation of section 110(k) of the National Historic Preservation Act disqualifies Energy Transfer from obtaining the easement for DAPL. The violation should be identified in the Draft EIS and the pipeline should be shut down.

5. The Pipeline Must be Shut Down under the Administrative Procedure Act

The judicial review provisions of the Administrative Procedure Act authorize the district courts to review and set aside agency actions found to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”³² The D.C. Circuit Court of Appeals stated that is the case: “the Tribes or others could seek judicial relief under the APA should the Corps fail to do so (shut down DAPL).”³³

³⁰ 54 U.S.C. §306113.

³¹ *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, 205 Supp.3d 4, 25 (D.D.C. 2016).

³² 5 U.S.C. §706(2)(A).

³³ *Standing Rock Sioux Tribe v. Army Corps of Engineers*, 255 F.3d 101.

The continued operation of DAPL, in violation of the Mineral Leasing Act, NEPA, the Clean Water Act, and the National Historic Preservation Act renders the Corps of Engineers in violation of the Administrative Procedure Act. The failure of the Corps to comply with these laws renders the current NEPA process a farce.

III. The Corps of Engineers Must Comply with the 1851 and 1868 Fort Laramie Treaties in the Draft EIS

The Corps of Engineers must comply with the Treaty of Fort Laramie of September 15, 1851³⁴ and the Treaty of Fort Laramie of April 29, 1868.³⁵ DAPL affects the Treaty rights of Standing Rock and the entire *Oceti Sakowin Oyate* (“Seven Council Fires” comprising the bands of what is referred to as the Great Sioux Nation). The Draft EIS has a short section on subsistence hunting and fishing, but it generally ignores the Treaty rights of the Standing Rock Sioux Tribe in the Draft EIS.

The Fort Laramie Treaties recognize the *Oceti Sakowin Oyate*, of which Standing Rock is a part, as a sovereign nation capable of making Treaties. The U.S. Supreme Court has recognized the status of these Treaties under international law:

The words “treaty” and “nation” are words of our own language, selected in our diplomatic and legislative proceedings, by ourselves, each having a definite and well understood meaning. We have applied them to Indians as we have applied them to other nations of the earth. They are applied to all in the same sense.³⁶

Ultimately, the Corps of Engineers has an international law obligation to uphold the Fort Laramie Treaties. That is completely ignored in the Draft EIS.

The late Jesse Taken Alive, was a Chairman and longtime Tribal leader of the Standing Rock Sioux Tribe, and a prominent teacher of Lakota history and culture. Chairman Taken Alive explained that the binding nature of the 1868 Fort Laramie Treaty stems from the spiritual act of smoking from a sacred pipe, when negotiations were completed. An eye witness account of his explanation of this to U.S. Senator Tom Daschle is as follows:

(Chairman Taken Alive) stated that he learned about the importance of the Treaty from the elders on the Reservation. He explained that when his ancestors negotiated the Fort Laramie Treaty, upon reaching the agreement they smoked from a sacred pipe. To the Lakotas, it was more than a peace treaty that established land boundaries. There was a religious connotation.

³⁴ 11 Stat. 749.

³⁵ 15 Stat. 638.

³⁶ *Worcester v. Georgia*, 31 U.S. (6 Pet.) 513, 559-560 (1832).

Taken Alive explained that, for these reasons, he could not agree to give up Treaty land.³⁷

With respect to the Draft EIS, the Council on Environmental Quality (CEQ) has published guidance on implementing environmental justice for Treaty Tribes.³⁸ The CEQ Guidance provides that “Where environments of Indian tribes may be affected, agencies *must consider pertinent treaty (and) statutory... rights.*”³⁹ Nevertheless, the Draft EIS contains very limited references to the predominant issue of Treaty rights. It fails to comply with the CEQ Guidance for Environmental Justice in NEPA.

Most important, DAPL violates the 1851 and 1868 Fort Laramie Treaties. The binding nature of Treaties with the Indian Nations such as Standing Rock is codified in Executive Order 13175. Executive Order 13175 requires all agencies, including the Corps of Engineers, to respect Treaty rights when making decisions such as whether to issue an easement for DAPL:

Agencies shall respect Indian tribal self-government and sovereignty (and) honor **treaty and other rights...**⁴⁰

DAPL violates the Fort Laramie Treaties of 1851 and 1868. Yet in the Draft EIS, the Corps of Engineers generally fails to consider DAPL’s impacts on the Treaty rights of the Standing Rock Sioux Tribe and the *Oceti Sakowin Oyate*. The Draft EIS ignores DAPL’s Treaty violations. It is a fatal flaw.

A. 1851 Fort Laramie Treaty

DAPL crosses the Treaty and aboriginal lands of Standing Rock and the Oyate for hundreds of miles, but the Corps ignores this in the EIS. Under Article 5 of the 1851 Treaty, the

³⁷ Peter Capossela, *THE LAND ALONG THE RIVER: THE ONGOING SAGA OF THE SIOUX NATION LAND CLAIM 1851-2012* (2015) 184.

³⁸ Council on Environmental Quality, *Environmental Justice: Guidance Under the National Environmental Policy Act* (1997), located at https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf.

³⁹ *Id.* at 9.

⁴⁰ Executive Order 13175 on *Consultation and Coordination with Indian Tribal Governments*, 65 Fed. Reg. 67250 (Nov. 9, 2000) (emphasis added).

United States recognized the land base of the Sioux Nation, including the bands comprising the Standing Rock Sioux Tribe, as follows:

The territory of the Sioux or Decotah Nation, commencing at the mouth of the White Earth River on the Missouri River; thence in a southwesterly direction to the forks of the Platte River; thence up the north fork of the Platte River to a point known as the Red Butte, or where the road leaves the river; thence along the mountain range known as the Black Hills, to the headwaters of the Heart River; thence down Heart River to its mouth and thence down the Missouri River to the place of beginning.⁴¹

The 1851 Fort Laramie Treaty established as Sioux land a vast territory of the northern plains, ranging from the crest of the Big Horn mountains, to the Yellowstone and Heart Rivers to the Missouri River, and south to the Platte and Republican Rivers. In exchange, the United States was granted the right to cross the Oregon Trail, through Sioux territory. As explained by the late Johnson Holy Rock, Tribal President and historian of the Oglala Sioux Tribe, “The 1851 Treaty, as you are probably aware, was just a guarantee of right of way across Indian Country while the settlers, the emigrants, head west. A right of way. Nothing more, nothing less.”⁴²

But the 1851 Treaty did not hold. As the prominent scholar, Vine Deloria Jr. of the Standing Rock Sioux Tribe, explained, “It is clear that the United States never intended to keep any of its promises” made in the Treaty.⁴³ Professor Deloria’s admonition rings true today, as evidenced by the Corps of Engineers’ Treaty violations in approving DAPL in 2017, and in its lies about the potential environmental impacts of DAPL in the 2023 Draft EIS.

Nevertheless, in 1863, gold was discovered in the northern Rocky Mountains, near the headwaters of Standing Rock and the Oyate’s Mni Sose – Missouri River. The 1851 Treaty gave the emigrants the right to traverse the Oregon Trail westward, but the ensuing gold rush resulted in trespassers moving northward on the “Bozeman Trail,” and the construction of military forts to protect the trespassers. The Lakota Nation resisted these violations of the 1851 Treaty. In the

⁴¹ 11 Stat. 749.

⁴² Herman J. Viola, *LITTLE BIG HORN REMEMBERED: THE UNTOLD STORY OF CUSTER’S LAST STAND* (1999) p. 67.

⁴³ Vine Deloria Jr., *CUSTER DIED FOR YOUR SINS: AN INDIAN MANIFESTO* (1969) p. 55.

Powder River War of 1866-1867, Lakota forces under the Oglala Chief Red Cloud defeated U.S. deployments led by John Fetterman, leading the government to seek a peace treaty.⁴⁴

As explained by historian Charles M. Robinson:

Once again, an entire military force had been annihilated by the Sioux... As Red Cloud had anticipated... military defeat, together with constant guerilla warfare along the trails, had worn down the government. The Bozeman Trail was blocked by the Indians. Communications between military posts was difficult. Crazy Horse and Small Hawk surrounded Fort Reno, and Red Cloud kept (Fort) Phil Kearney under constant surveillance.⁴⁵

The Lakota Nation defeated the United States in the Powder River War of 1866-1867. The U.S. government sued for peace. Thus came about the Treaty of Fort Laramie of April 29, 1868.

B. 1868 Fort Laramie Treaty

Out of the vast area of the northern plains recognized in the 1851 Fort Laramie Treaty as Sioux Country, the 1868 Treaty established the Great Sioux Reservation from the east bank of the Missouri River to the 103rd parallel (the present-day boundary between South Dakota and Wyoming). This Reservation encompasses all of present-day South Dakota west of the Missouri. This land:

.... shall be and the same is, set apart for the **absolute and undisturbed use** and occupation of the Indians herein named... and the United States now solemnly agrees that no persons, except those herein designated and authorized so to do... shall ever be permitted to pass over, settle upon, or reside in the territory described in this article.⁴⁶

Under Article 16 of the 1868 Fort Laramie Treaty, the Sioux Nation retained aboriginal lands previously recognized as Sioux territory in the 1851 Fort Laramie Treaty:

⁴⁴ James C. Olson, RED CLOUD AND THE SIOUX PROBLEM (2000).

⁴⁵ Charles M. Robinson III, A GOOD YEAR TO DIE: THE STORY OF THE GREAT SIOUX WAR (1995) 20-21.

⁴⁶ 15 Stat. 635.

The United States hereby agrees and stipulates that the country north of the North Platte River and east of the summits of the Big Horn mountains shall be held and considered to be **unceded** Indian territory, and also stipulates and agrees that no white person or persons shall be permitted to settle upon or occupy any portion of the same; or without the consent of the Indians, first had and obtained, to pass through the same.⁴⁷

In the Draft EIS, the Corps wrote, “The Treaty of Fort Laramie of 1851 has been superseded by other agreements and legislation that cede any claim to the land.”⁴⁸ The above language from Article 16 of the 1868 Treaty makes clear that there was no cession of 1851 Treaty lands. The historical revisionism on page 3-214 of the Draft EIS mis-states the broad extent of Tribal usufructory and other Treaty rights throughout the lands identified in Article 16 of the 1868 Treaty.

Article 12 of the Treaty was designed to protect the Treaty lands from future land takings or cessions:

No treaty for the cession of any portion or part of the reservation herein described... shall be of any validity or force as against said the Indians, unless executed and signed by at least three-fourths of all adult male Indians.⁴⁹

These Treaty obligations have the same status as treaties with foreign nations under international law. Once DAPL crosses the Heart River, it encroaches upon Sioux land as recognized in the Article 5 of the 1851 Treaty, which remained uncaded Sioux territory under Article 15 of the 1868 Treaty, with hunting and fishing rights preserved.⁵⁰ Recognized Treaty rights throughout this area also include gathering natural fruits, foods and medicines;⁵¹ public safety and the right of indigenous women to remain safe; the right to Nation-to-Nation consultation and consent;⁵² protection and repatriation of cultural objects and burials;⁵³ and the

⁴⁷ *Id.* at 639.

⁴⁸ Draft EIS at 3-214.

⁴⁹ *Id.* at 638.

⁵⁰ *E.g. Herrera v. Wyoming*, 139 S. Ct. 1686, 1694 (2019).

⁵¹ *E.g. Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172 (1999),

⁵² *E.g.* 54 U.S.C. §§302706(b); 306108.

⁵³ *E.g.* 25 U.S.C. §3001 *et al.*

right to access sacred sites and engage in traditional religious practices – the right to continue to exist as Lakota and Dakota.

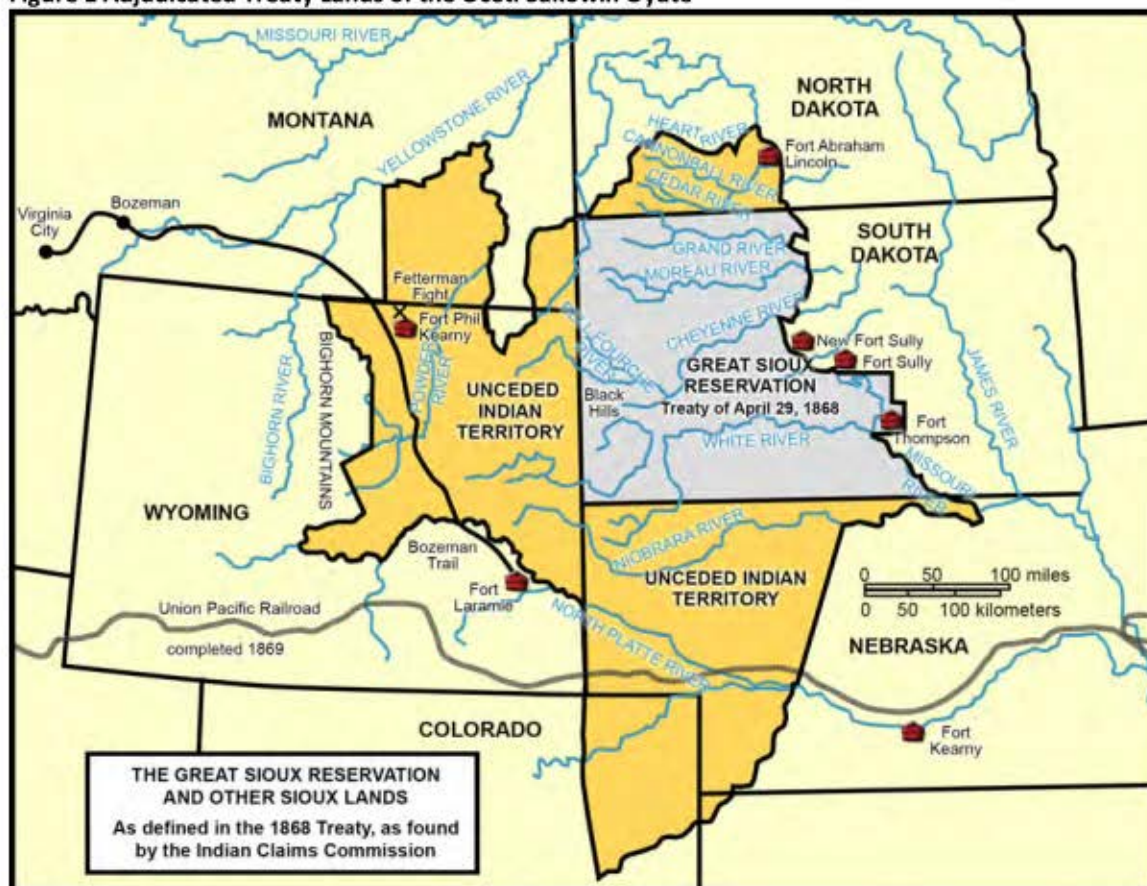
DAPL violates these Treaty rights of the Standing Rock Sioux Tribe. The Draft EIS fails to consider these impacts.

IV. DAPL Violates the 1851 and 1868 Fort Laramie Treaties

A. *DAPL Violates Land Rights Under the 1851 Treaty and Article 2 of the 1868 Treaty*

Article 5 of the 1851 Treaty establishes the Heart River as the northern boundary of Sioux territory. Article 16 of the 1868 Treaty deemed this land “unceded” and reaffirmed hunting rights on this land.

Figure 1 Adjudicated Treaty Lands of the Oceti Sakowin Oyate



By a well-established rule of interpretation, the Treaties with Indian Nations, such as the Fort Laramie Treaties with the Sioux, are interpreted “to give effect to the terms as the Indians

themselves understood them.”⁵⁴ With respect to Article 2 of the 1868 Fort Laramie Treaty, the term “*undisturbed use and occupation*” is interpreted as reserving a Treaty right to protect Tribal members from the undue risk of a dangerous high capacity hazardous liquid pipeline on Treaty lands adjacent to the Standing Rock Reservation.

DAPL violates Article 2 of the 1868 Fort Laramie Treaty because of its adverse impact on Standing Rock’s “absolute and undisturbed use” of its Treaty and Reservation lands. DAPL constitutes a trespass on Treaty lands under Article 5 of the 1851 Fort Laramie Treaty and Articles 2 and 16 of the 1868 Treaty.

Standing Rock’s right to exclude dangerous projects on Treaty lands is recognized under international law in the *U.N. Declaration on the Rights of Indigenous Nations*. Article 32 outlines the international law consent requirement:

Indigenous peoples have the right to determine and develop priorities and strategies for the development and use of their lands or territories and other resources.

States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources.⁵⁵

The Declaration also provides international law authority to implement the “undisturbed use and occupation” language in Article 2 of the 1868 Fort Laramie Treaty. Article 7 of the Declaration states: “Indigenous peoples have the collective right to live in freedom, peace and security as distinct peoples.”⁵⁶ DAPL violates Standing Rock’s Treaty right to the peaceful occupation of its permanent homeland, and in doing so, it violates international human rights law.

Incredibly, in the Draft EIS, the Corps of Engineers explicitly claims to possess the authority to violate international law with respect to DAPL. The Corps uses the same anodyne and misleading language that permeates the Draft EIS:

⁵⁴ *Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172, 196 (1999).

⁵⁵ G.A. Res. 61/295, Art. 32 (Sept. 13, 2007).

⁵⁶ *Id.* at Art. 7.

Neither FPIC nor UNDRIP is legally binding on the federal government, however, robust federal laws and processes are consistent with them.⁵⁷

As described above, provisions in the Declaration buttress Treaty rights, yet IN THE Draft EIS, the Corps contends it has unilateral authority to violate the Treaties, while claiming to comply with unnamed “robust” federal laws. It is an admission to violating Standing Rock’s Treaty rights, as well as the directive in E.O. 13175 to comply with Treaty rights.

DAPL also trespasses upon Standing Rock and Oceti Sakowin Oyate’ aboriginally-occupied lands east of the Missouri River. In the case of *United States v. Sioux Nation of Indians*, the U.S. Supreme Court described the government’s violations of the 1868 Treaty: “A more ripe and rank case of dishonorable dealings will never, in all probability, be found in our history.”⁵⁸ The Docket 74 land claim adjudicated before the Indian Claims Commission and the judgment affirmed by the Supreme Court identified the aboriginal land of the Standing Rock Sioux Tribe and *Oceti Sakowin Oyate*.

As explained in COHEN’S HANDBOOK OF FEDERAL INDIAN LAW:

[A]boriginal title... refers to land claimed by a tribe by virtue of its possession and exercise of sovereignty rather than by virtue of... any formal conveyance... The Supreme Court has continuously held that tribes have a “legal as well as just claim to retain possession” of the lands they historically occupied within the United States that is not dependent on the United States’ recognition for its existence. Aboriginal title is also recognized today by... international law.⁵⁹

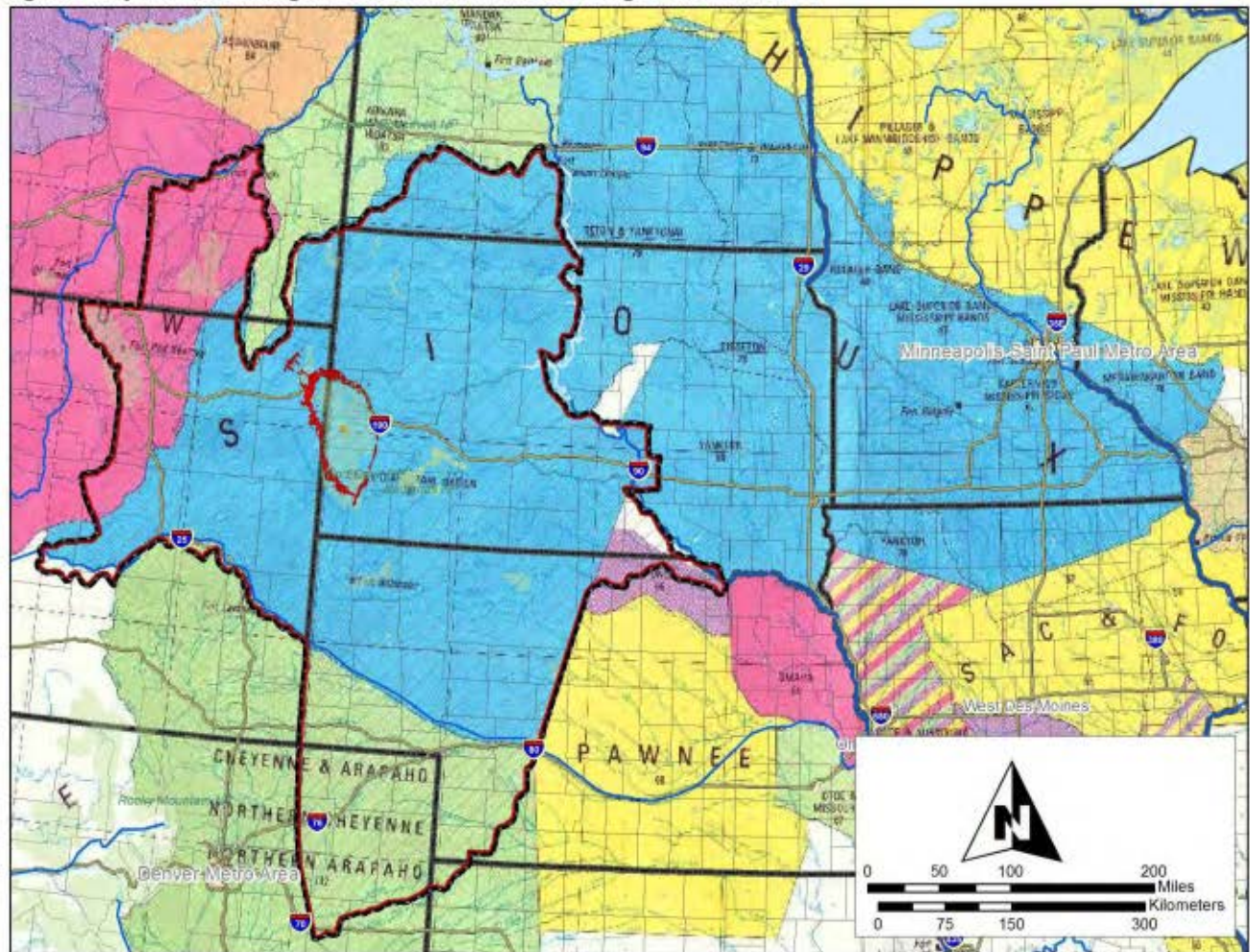
The adjudicated aboriginal lands of the Standing Rock Sioux Tribe and *Oceti Sakowin Oyate* extend well east of the Great Sioux Reservation boundary on the east bank of the Missouri River. The aboriginal boundary extends eastward to the Mississippi and Wisconsin Rivers. DAPL crosses this territory for hundreds of miles. As its adjudicated aboriginal land, Standing Rock possesses certain rights on this land, particularly in the area of traditional cultural properties and Native American burials.

⁵⁷ Draft EIS 1-22.

⁵⁸ *United States v. Sioux Nation of Indians*, 448 U.S. 371, 388 (1980).

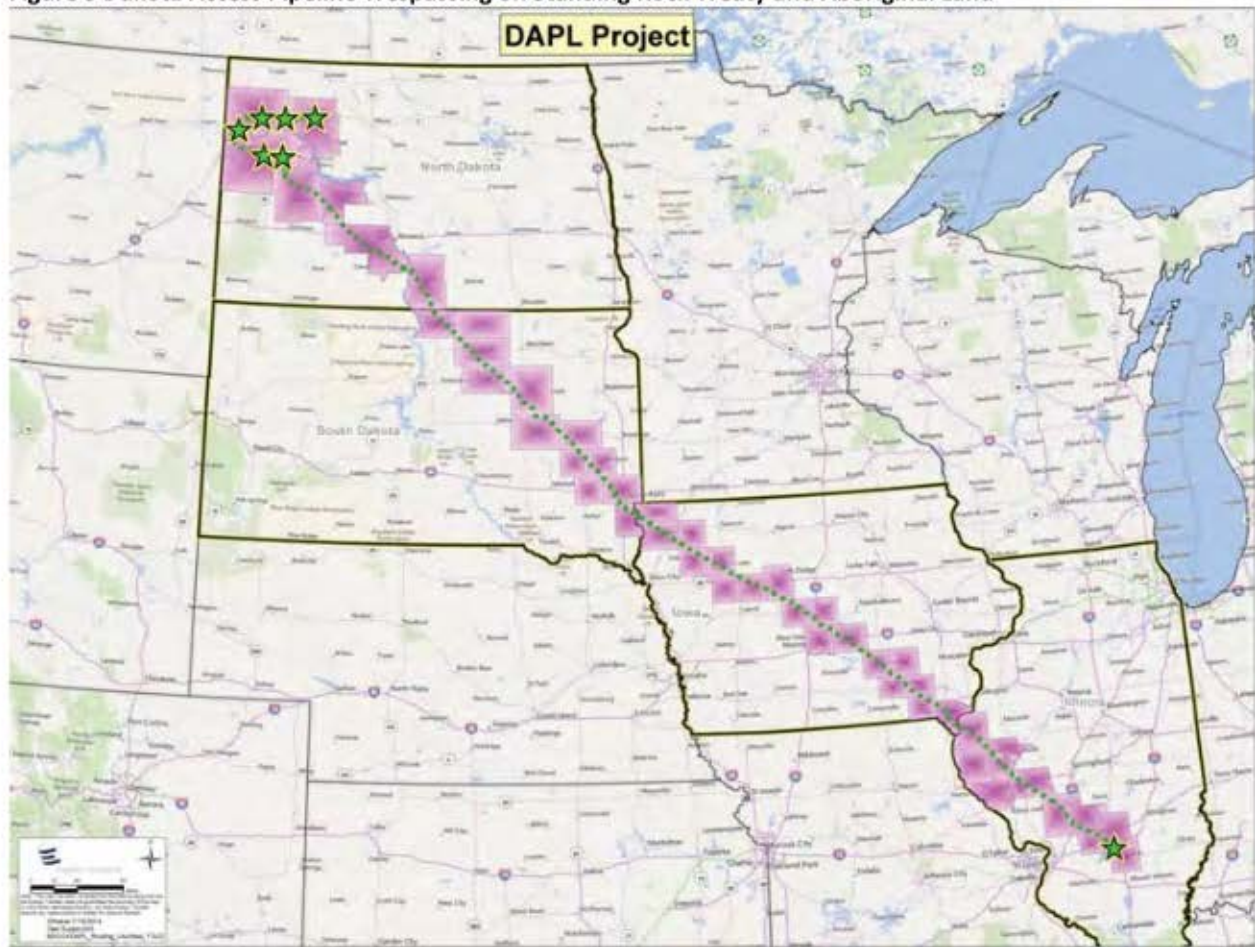
⁵⁹ COHEN’S HANDBOOK OF FEDERAL INDIAN LAW (2005 Ed.) 969-970.

Figure 2 Adjudicated Aboriginal Boundaries of the Standing Rock Sioux Tribe



As discussed in more detail below, Standing Rock possesses statutory rights on aboriginal lands, including the right of repatriation of certain Native American human remains and funerary and other cultural objects, and the right of consultation on the identification, evaluation and determination of a project's impacts to traditional cultural properties.

Figure 3 Dakota Access Pipeline Trespassing on Standing Rock Treaty and Aboriginal Land



Under section 2(a) of the Native American Graves Protection and Repatriation Act:

The ownership or control of Native American cultural items which are excavated or discovered on Federal or tribal land... shall be... in the Indian tribe or Native Hawaiian organization that has the closest cultural affiliation... (or) if the cultural affiliation of the objects cannot be reasonably ascertained and if the objects were discovered on Federal land that is recognized by a final judgment of the Indian Claims Commission or the United States Court of Claims... in the Indian tribe that is recognized as aboriginally occupying the area.⁶⁰

Similarly, Standing Rock possesses the right of consultation for impacts to traditional cultural properties surveyed along the DAPL pipeline route on its aboriginal lands, as part of the

⁶⁰ 25 U.S.C. §3002(a)(2)(B) & (C)(1).

National Historic Preservation Act section 106 process. Under the applicable regulations of the Advisory Council for Historic Preservation:

When Indian Tribes and Native American organizations attach religious and cultural significance to historic properties off tribal lands, section 101(d)(6)(b) of the act requires Federal agencies to consult with such Indian tribes and Native Hawaiian organizations in the section 106 process. Federal agencies should be aware that frequently historic properties of religious and cultural significance are located on ancestral, aboriginal, or ceded lands of Indian tribes and Native Hawaiian organizations and should consider that when complying with the procedures in this part.⁶¹

Thus, the Standing Rock Sioux Tribe possesses valuable statutory rights on the aboriginal lands adjudicated by the Indian Claims Commission in Docket 74. This includes much of the land traversed by DAPL east of the Missouri River. The Corps of Engineers ignored the Tribe's rights on its adjudicated aboriginal lands in the Draft EIS.

B. The Draft EIS Fails to Identify Impacts to Water Rights Reserved in the 1851 and 1868 Fort Laramie Treaties

In the 1851 and 1868 Treaties, the Standing Rock Sioux Tribe implicitly reserved water rights for its Reservation homelands. That is the well-established principle recognized by the U.S. Supreme Court in *Winters v. United States*.⁶² Under the Winters Doctrine, the Treaties and other agreements between Indian Nations and the United States that identified Reservation lands for the Tribes also reserved the amount of water needed to fulfill the purpose of the Reservation.⁶³

As stated above, under Article 15 of the Fort Laramie Treaty, the purpose of the Sioux Reservation is a "permanent home."⁶⁴ Thus, Standing Rock's reserved water rights for all present and future beneficial uses are extensive. The Tribe's water rights extend to the Missouri River, its tributaries bordering, flowing through or within the Standing Rock Reservation, and to groundwater. The waters of the Missouri River and the affected aquifer that could be polluted by

⁶¹ 36 CFR §800.2(c)(2)(ii)(D).

⁶² 207 U.S. 564, 573 (1908).

⁶³ *Id.*

⁶⁴ 15 Stat. 639.

a breach of the Dakota Access Pipeline are subject to Standing Rock's reserved water rights claims, under the 1851 and 1868 Fort Laramie Treaties.

The U.S. Supreme Court has described Indian reserved water rights as "present, perfected rights."⁶⁵ Standing Rock's reserved water rights to the Missouri River are property rights. The Corps of Engineers must disclose the fact that oil released into the Missouri River will immediately pollute waters of the Tribe under the Winters Doctrine. The fact that there are treaty-protected property rights subject to trespass and degradation upon a release of oil from DAPL warrants disclosure and strong consideration in the determination of impacts. The Corps failed to do so in the Draft EIS.

The Reservation's drinking and agricultural intakes on the Missouri River are not accurately identified in the Draft EIS. Consequently, the impacts to the public health of Tribal members and to the Tribe's agricultural economy are not accurately evaluated.

Standing Rock's reserved water rights contemplate the right to water of a sufficient quality for Tribal beneficial uses. As explained in COHEN'S HANDBOOK ON FEDERAL INDIAN LAW:

Indian reserved water rights should be protected against these impairments of water quality, as well as diminutions of water quantity...Fulfilling the purposes of Indian Reservations depends on the tribes receiving water of adequate quality as well as sufficient quantity. Many of the purposes for which tribes hold water rights involve consumptive uses of water... Each use, however, requires water that is clean enough to support the use.⁶⁶

DAPL directly threatens the water quality needed for Tribal beneficial uses of water on the Standing Rock Reservation. As water rights are Treaty rights, the pipeline directly jeopardizes the exercise of Treaty rights on the Standing Rock Reservation. This must be disclosed in the Draft EIS. Instead, the Corps strains to minimize DAPL's potential impact to the Tribe's water:

In the event of a WCD crude oil release under Alternative 3, short to long-term and minor to moderate water quality impacts would occur to surface waters. With the implementation of mitigation measures,

⁶⁵ *Arizona v. California*, 373 U.S. 546, 600 (1963).

⁶⁶ COHEN'S HANDBOOK ON FEDERAL INDIAN LAW (2005 Ed.) 1199-1200.

temporary to long-term, minor to major impacts would occur on agricultural and drinking water intakes, depending on the depth of the intake and how long the intakes are offline. The SRST, CRST, and Mni Wiconi Project drinking water intakes would not likely be affected... as the potential for a crude oil release is remote to very unlikely, these alternatives (3 and 4, which re-approve the easement) would not significantly impact surface waters.⁶⁷

The description of impacts to Standing Rock's surface water is so vague – “short to long-term and minor to moderate water quality impacts... temporary to long-term, minor to major impacts would occur on agricultural and drinking water intakes” – as to be completely meaningless. The findings in the Draft EIS on impacts to surface waters fail to meet the applicable standard in the CEQ regulations: “Statements shall be concise, clear and to the point.”⁶⁸ Moreover, the hope and prayer that “a crude oil release is remote (and) unlikely” is not “environmental analysis” as required.⁶⁹

Standing Rock's reserved water rights extend to groundwater.⁷⁰ In the Draft EIS, the Corps of Engineers makes the same mistake for groundwater as surface water. The Corps wrote:

Under Alternatives 3 and 4, a crude oil release would result in temporary minor (e.g. from a shallower release) to long-term major impacts depending on the location, volume and extent of the release if it resulted in groundwater contamination. However, the potential for occurrence is remote to very unlikely.⁷¹

Vague generalizations and conclusory statements do not constitute environmental analysis under NEPA. The Draft EIS does not provide a basis for determining the potential impacts to the Standing Rock Reservation groundwater.

Moreover, the proposed mitigation for the protection of surface and groundwater is wholly inadequate and reflects the Corps' failure to consult and work cooperatively with the Standing Rock Sioux Tribe. The Corps described its future mitigation plan for Alternative 4 (re-

⁶⁷ Draft EIS at ES-12.

⁶⁸ 40 CFR §1502.1

⁶⁹ *Id.*

⁷⁰ *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water Dist.*, 849 F.3d 1262, 1270-1271 (9th Cir. 2017).

⁷¹ Draft EIS at ES-12.

approving the easement and allowing the flow increase to 1.1 million barrels per day, with additional conditions) on page 3-95:

To confirm there is no contamination of groundwater from an undetected pipeline release at the Lake Oahe crossing, Dakota Access shall develop a groundwater monitoring plan and install and maintain a groundwater monitoring network within surficial aquifers connected to Lake Oahe to monitor for the presence of petroleum-based hydrocarbons (specifically GROs/DROs). The plan shall specify location and extent of the network based on regulatory expertise (e.g. NDDEQ). If there is any increase in hydrocarbon levels, Dakota Access shall immediately inspect the pipeline for leaks. Dakota Access shall make sampling results publicly available online, and an annual report summarizing results shall be provided to the USACE, NDDEQ, and interested Tribes.⁷²

This “proposed additional conditions” in Alternative 4 is designed to allow DAPL to remain in operation at double the flow. They are meaningless, because the Standing Rock Sioux Tribe Department of Water Resources, in consultation with the Environmental Protection Agency, has *already* developed and is implementing a groundwater monitoring plan downstream of the DAPL Missouri River crossing. For over two years, the Tribe has been doing what the EIS proposes as future mitigation to be conducted by DAPL and the North Dakota DEQ.

In the Draft EIS, the Corps of Engineers appears to be completely unaware of the Tribe’s on-going groundwater monitoring program below the Lake Oahe crossing, and other current mitigation efforts. That demonstrates a total lack of the requisite Nation-to-Nation consultation with the Standing Rock Sioux Tribe. The proposed reliance on the North Dakota Department of Environmental Quality to devise the program is an insult to the Tribal government whose Reservation will be affected by an oil spill, and which has already established such a program.

Similarly, the description of the affected water resources on page 3-74 of the Draft EIS references North Dakota law, rather than the Standing Rock Clean Water Code and Tribal Water Quality Standards. That is misleading, because Tribal law applies to the Missouri River within the Reservation boundaries. The Corps cites the wrong law, and in doing so offends the sovereignty of the Tribe.

⁷² Draft EIS at 2-17, 3-95.

The proposal to require Energy Transfer to provide an alternate water supply and food supply upon an oil spill is likewise inadequate mitigation to the environmental threat to Treaty-protected and federal trust resources from an oil spill. This proposal is insulting. Ultimately, the proposed additional conditions in Alternative 4 do nothing to protect Standing Rock's water.

Alternatives 3 and 4 pose serious jeopardy to the Missouri River and underlying aquifer. The Standing Rock Sioux Tribe possesses property rights to these waters under the Winters Doctrine, and depends upon them for the Tribe's water supplies. Alternatives 3 and 4 must be rejected by the Corps of Engineers.

There is a brief section in the Draft EIS captioned "Tribal Water Rights" on pages 3-215-3-216, but it focuses on the land taking for Oahe Dam, not the Tribe's right to the waters impacted by an oil spill from DAPL, or the Tribe's current or future water needs. The 2-page "Tribal Water Rights" section in the Draft EIS contains no evaluation whatsoever of DAPL's potential impacts on the Tribe's water rights.

The construction and operation of Oahe Dam also has an on-going significant impact on the water resources of the Standing Rock Sioux Tribe. The Corps failed to consider those impacts as a cumulative impact in the Draft EIS, despite Standing Rock's request to do so in the *Report to the Corps of Engineers on the Scope of the Court-Ordered Environmental Impact Statement for an Easement for the Dakota Access Pipeline*, submitted on November 24, 2020. The Corps' operations under the AOP and Master Manual are "present and reasonably foreseeable future actions" that affect the water resources and fish and wildlife habitat of the Reservation. Under 40 CFR §§1508.7 and 1508.9(b), the Corps must evaluate the impacts of DAPL on Standing Rock's water cumulatively with the impacts of the Corps' actions in operating the dams. The failure to consider the cumulative impacts to the Standing Rock Reservation environment of the *Missouri River Mainstem System 2023-2024 Annual Operating Plan* and the *Master Water Control Manual*, added to the impacts of DAPL, is a significant omission in the Draft EIS.

C. Hunting and Fishing Rights

As stated above, the Corps of Engineers ignores virtually all of the Tribe's Treaty rights in the Draft EIS. The impacts to fish and wildlife habitat from an oil spill is addressed briefly. However, there was no quantitative or qualitative analysis of the impacts of different oil spill scenarios on habitat, species or the food chain, and the impact to Tribal harvests of game and fish at Standing Rock.

The CEQ regulations require that "Environmental impact statements shall be analytic rather than encyclopedic."⁷³ In the Draft EIS, the Corps compiled some information on species, but otherwise conducted no analysis on DAPL's potential adverse economic or cultural impacts related to subsistence activities, and no serious analysis of impacts to the wetlands that sustain fish and wildlife resources on the Standing Rock Reservation. The only Treaty right of the Standing Rock Sioux Tribe referred to in the Draft EIS, characterized as "subsistence resources," is addressed in the bare minimum, with actual impacts ignored.

The Draft EIS states in section 3.3.3:

A worst case discharge event would result in habitat contamination and wildlife injury and mortality. However, the potential for a worst case discharge crude oil release event is considered remote to very unlikely; therefor these alternatives (3 and 4) are not expected to have significant impacts.

The Corps concludes that DAPL does not impact Standing Rock's Treaty right to hunt and fish on its Reservation and Treaty land. The Corps' erroneous conclusion is based upon the conclusory and unsupported statement that is repeated over and over in the Draft EIS, that a "crude oil release event is considered remote..."⁷⁴

Actually, a crude oil release occurs in the United States virtually every day. A Natural Resources Defense Council report issued in 2019 found that from 2010-2018, there were 5,500 total pipeline incidents.⁷⁵ Nevertheless, the proper risk analysis for an oil spill would reveal the risk of a spill from *this* pipeline – DAPL. As discussed below, the risk of a spill from DAPL on

⁷³ 40 CFR §1502.2(a).

⁷⁴ Draft EIS, section 3.3.3.

⁷⁵ Amy Mall, *Pipeline Incident Statistics Reveal Significant Dangers*, located at <https://www.nrdc.org/bio-amy-mall/pipeline-incident-statistics-reveal-significant-dangers>.

the Standing Rock Reservation is very significant, because of the operator's atrocious safety record, and shortcuts in the planning, design and construction of the pipeline.

The EIS must "be supported by evidence that the agency has made the necessary environmental analyses."⁷⁶ In the Draft EIS, the Corps acknowledges "habitat contamination and wildlife injury and mortality," but dismisses it because "it is considered remote." That is a hope, a "consideration," not an environmental analysis as required by the applicable regulations. And this problem affects the Corps' analysis of DAPL environmental impacts for all environmental media, as well as the impacts to the Standing Rock Sioux Tribe.

The Missouri River bounds the Standing Rock Reservation for approximately 95 miles, with the east bank designated in Article 2 of the 1868 Fort Laramie Treaty as the boundary of the Great Sioux Reservation. In the 30 miles below the Lake Oahe crossing of DAPL on the Standing Rock Reservation, there are 40,000 acres of wetland types. The most vulnerable wetlands are in the reaches just below the mouth of the Cannon Ball River – just below DAPL.

A 2017 inventory of the Standing Rock Game and Fish program revealed a fairly diverse remaining riparian corridor, with 80 upland floral species. Approximately 1,000 fish were collected, with 24 species of fish represented. They forage and spawn at the mouth of the Cannon Ball – immediately below the pipeline. The Tribe identified 41 bird species from 3,366 observations in this area. This habitat is a high consequence area and an extremely valuable resource of the Tribe.

The exercise of Treaty-protected hunting and fishing rights are core economic and lifeway activities of the Tribe. These activities, which could be permanently harmed by an oil spill from DAPL, are also adversely impacted by the operation of Garrison and Oahe Dams, under the Missouri River Master Water Control Manual and the 2024 Annual Operating Plan. Nevertheless, the cumulative impacts analysis in the Draft EIS ignores that impact. Consequently, the Corps significantly understates DAPL's impact to subsistence hunting and fishing, and its cumulative impact on Tribal hunting and fishing rights, with the operation of the Missouri River main stem dams.

⁷⁶ 40 CFR §1502.1.

D. Gathering Rights – Natural Foods and Medicines and Indigenous Traditional Ecological Knowledge

The Corps acknowledges “Access to traditional resources (including fish, wildlife and culturally important plants) is a right the Tribes had traditionally exercised and that they reserved to themselves in treaties.”⁷⁷ Yet the draft EIS fails to identify environmental impacts to gathering practices *today*. It fails to evaluate DAPL’s potential impacts to natural fruits and traditional foods and medicines of the Tribe.

As with game species, the Corps did include a list of common plant species that serve as food or medicines, from a report compiled by the Standing Rock Department of Game and Fish. The list consists mostly of riparian plants, which could inevitably be impacted by an oil spill. Many of the fruits listed may be found in low-lying draws along the reservoir, where oil on the reservoir surface could pool. This is not discussed in the Draft EIS.

There are some important plant species not listed:

- Wild onion (*Allium canadense*)
- Wild turnip (*Psoralea esculenta*)
- Wild mint (*Mentha arvensis* L.)
- Mouse bean (*Amphicarpaes bracteate*).

The flaw for NEPA purposes is the failure by the Corps to do anything with the information provided by the Tribe. There is no analysis of the proximity of the listed plants to the oil spill response zone, of the respective importance of the different species listed, or whether they are food or medicine that is ingested, or topical medicines applied to the skin, or plants burned in ceremony. There is no discussion of the cumulative impacts to plants from the operation of the dams under the Annual Operating Plan and Master Manual, added to the risk of an oil spill.

The Corps compiled a list that was provided by the Tribe, that is all. There is no analysis of the impacts of the different alternatives to plant habitat. That is what is required under NEPA.

The identification and uses of fruits and plants stems from indigenous traditional ecological knowledge. On November 30, 2022, the Council on Environmental Quality and

Office of Science and Technology Policy issued *Guidance for Federal Departments and Agencies on Indigenous Knowledge*. Under the Guidance, agencies such as the Corps of Engineers are to consider, include and apply “Indigenous Knowledge in Federal research, policies and decision making.” It is recognized that:

Agencies often lack the expertise to appropriately consider and apply Indigenous Knowledge. As a result, consultation and collaboration with Tribal Nations and Indigenous Peoples is critical to ensuring that Indigenous Knowledge is considered and applied in a manner that respects Tribal sovereignty and achieves mutually beneficial outcomes for Tribal and Indigenous communities.⁷⁸

The Corps of Engineers ignored Indigenous Knowledge in the Draft EIS. The document does not comply with the requirements of the CEQ Guidance. There is no cooperation or collaboration on the part of the Corps of Engineers. In the environmental review of an easement for DAPL, Tribal priorities with respect to natural foods and culturally-significant plants, and the impacts to sensitive environmental and cultural resources have been ignored by the Corps. The Corps did not consider Indigenous Knowledge in the Draft EIS; the agency has not demonstrated that it can be trusted with Indigenous Knowledge, or be trusted at all.

E. The Draft EIS Ignores the Treaty Right to Protection from Bad Men

1. The Bad Man Clause Applies to Energy Transfer’s Criminal Convictions

Under Article I of the 1868 Treaty,

If bad men among the whites, or among people subject to the authority of the United States, shall commit any wrong upon the person or property of the Indians, the United States will... proceed at once to cause the offender to be arrested and... also reimburse the injured person for the loss sustained.⁷⁹

⁷⁷ Draft EIS at 3-214.

⁷⁸ Located at <https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf>.

⁷⁹ 15 Stat. 635.

The “Bad man clause” should be considered in the Draft EIS. It is relevant to DAPL in at least two respects: Energy Transfer and its related companies have been convicted of crimes, and DAPL contribution to Bakken production threatens the safety of Indian women, resulting in an epidemic of missing and murdered Indian women.

As stated above, Energy Transfer and its related companies pled no contest and were convicted on August 5, 2022 of 23 of the nearly-60 criminal charges filed in Pennsylvania for criminal violations of the state’s Clean Water Act. Arguably, Energy Transfer is a “bad man” within the meaning of Article I. One commentator explained:

The question that remains is how to determine what the bad men clauses *do* mean... (and) the work of interpreting these treaties naturally rests on nuanced historical inquiry... For instance, one of the complaints that the Indian tribes made during this period was that white traders entered their reservations and cheated them through dishonest practices...⁸⁰

As discussed above, Treaties are to be interpreted as understood by the Tribes, and there is historical evidence indicating that trespassers and swindlers were considered a significant problem. Energy Transfer is a convicted criminal “under the authority of the United States,” as evidenced by the requirement in the Mineral Leasing Act that DAPL have an easement for the Lake Oahe crossing. The Corps of Engineers should invoke Article I of the 1868 Treaty and deny the easement for DAPL under Alternative 2 of the Draft EIS.

2. The Corps of Engineers Must Give Serious Consideration to DAPL’s Impact on the Safety of Indian Women

In the socioeconomics section of the Draft EIS, the Corps wrote one-third of a page on human trafficking, merely identifying it as a concern associated with the Bakken oil region.⁸¹ In contrast, there is an entire section opining on North Dakota’s lost revenue if DAPL were to be shut down.

Under the applicable regulations, the EIS for DAPL must identify effects relating to “social or health,” and the determination of whether effects are “significant” includes “[t]he

⁸⁰ Note, *A Bad Man is Hard to Find*, 127 HARVARD L. REV. 2521, 2538-2539 (2014).

⁸¹ Draft EIS at 3-243.

degree to which the proposed actions affect public safety.”⁸² A Harvard study has determined there is an “[i]ntersection of sex trafficking and the extractive industries in the Bakken.”⁸³ An earlier report commissioned by the Department of Justice revealed that American Indian and Alaska Native women are victims of rape or sexual assault at rates two and one-half times higher than non-Native women, and are more likely to be murdered, assaulted or stalked.⁸⁴ Indigenous women have been victimized by violent crime and human trafficking throughout the United States, but in particular in the Bakken region of North Dakota. The Harvard study details a 31 percent increase in federal crimes from 2012-2013 in western North Dakota.⁸⁵

The Corps approvingly cites information filed with the District Court by Lynn D. Helms of the North Dakota Industrial Commission that the shut-down of DAPL would result in significant job losses in North Dakota – between 4,475 and 7,175 permanent jobs were estimated to be lost.⁸⁶ There is no documentation to verify Helms’ claim. But if it is true, a large percentage of a workforce of whom a small but significant number may engage in violence or human trafficking of Indian women in North Dakota, will no longer be employed in the Bakken region.

If 4-7,000 oil workers are forced to leave the state, Indian women will be safer. Nevertheless, in the Draft EIS, the Corps makes no mention of the positive impact to women’s safety that would result from Alternatives 1 or 2, the shutdown of DAPL. The Corps ignores this. Consequently, the Draft EIS fails to comply with the regulations requiring intensity analysis to include public safety.

The Draft EIS includes a brief and oblivious discussion on the potential threat to women from an influx of emergency workers in the event of an oil spill. The Corps wrote:

⁸² 40 CFR §§1508.8(b) & 1508.27(b)(2).

⁸³ Kathleen Finn et al., *Responsible Resource Development and Prevention of Sex Trafficking: Safeguarding Native Women and Children on the Fort Berthold Reservation*, 40 HARV. J.L. & GENDER 1, 7-8 (2017).

⁸⁴ Ronet Bachman et al., *Violence Against American Indian and Alaska Native Women and the Criminal Justice Response: What is Known* (2008) 33, 48, 59-60, located at <https://www.ojs.gov/pdffiles1/nij/grants/223691.pdf>.

⁸⁵ Finn et al. at 8.

⁸⁶ Draft EIS at 3-206.

Emergency responders would be a combination of local and non-local personnel. Non-local responders would seek rental housing rather than being housed in work camps. Therefore, human trafficking, which is typically associated with work camps, is not anticipated.⁸⁷

The threat to women's safety from oil workers in the Bakken is an extremely serious issue. The glib language in the Draft EIS completely ignores the threat from the overall workforce in the oil fields. The Corps suggests that the only threat to women from DAPL would result from an influx of workers for clean-up of an oil spill. The proposed mitigation for women's safety is to house these workers in "rental housing."

The oil spill response zone for DAPL's Lake Oahe crossing is practically entirely within the Standing Rock Indian Reservation. On the Reservation, 12 percent of all homes are over-crowded, and 16.5 percent of rental homes are over-crowded, based on Housing and Urban Development definitions.⁸⁸ Nearly one in four respondents to the Tribe's community survey were under-housed, doubling up with family or friends.⁸⁹

The point is that there is no rental housing available on the Reservation for an influx of emergency workers. As a matter of emergency planning and as a matter of women's safety, the language in the Draft EIS purporting to address the housing for an influx of emergency workers is quite ridiculous.

This is a serious issue, which the Corps of Engineers fails to treat seriously in the Draft EIS. The safety of women is a Treaty issue under Article 1 of the 1868 Fort Laramie Treaty, and under international law. As explained by one commentator:

The crisis of missing and murdered Indian women in North America is an example of environmental violence and must be analyzed as a violation

⁸⁷ Draft EIS at 3-246.

⁸⁸ Standing Rock Sioux Tribe Community Development Corporation, *Housing Needs and Home Ownership Study 2* (2019) located at https://www.sdnativehomeownershipcoalition.org/2019/wpcontent/uploads/2020/09/SDNHC_S RCDC_Final_Report.pdf.

⁸⁹ *Id.* at 3.

of international human rights standards, including the rights to life, to dignity, to live free from violence (and) cruel and inhumane treatment.⁹⁰

Advocates for the rights of Indigenous women note the lack of information associated with missing and murdered Indian women. In the draft EIS, the Corps barely mentions this issue, and conducts no analysis of the impact of the different alternatives on the safety of Indian women at Standing Rock and throughout North Dakota. Under the applicable regulations: “[W]hen an agency is evaluating reasonably foreseeable significant adverse effects... and there is incomplete or unavailable information, the agency shall always make clear such information is lacking.”⁹¹

In the draft EIS, the Corps should take the issue of women’s safety seriously. If there are to be job losses in the oil industry, the Draft EIS should acknowledge that there may be a positive impact to the safety of women. Gaps in the available information should be identified, as required in the applicable regulations.

F. The Corps Violated the Treaty Right to Consultation

The consultation rights of the Standing Rock Sioux Tribe arise from Article 5 of the 1868 Fort Laramie Treaty. This provision states:

The United States agrees that the agent for said Indians shall in the future make his home at the agency building; that he shall reside among them, and keep an office open at all times for the purpose of prompt and diligent inquiry by and against the Indians as may be presented for investigation under the provisions of their treaty stipulations.⁹²

In Article 11 of the 1868 Treaty, the parties included a provision requiring the formation of a commission, to include a head man of the Tribe, prior to approval of “works of utility or

⁹⁰ Laura Cahier, Environmental Justice in the United Nations Human Rights System: challenges and Opportunities for the Protection of Indigenous Women’s Rights Against Environmental Violence, 13 George Washington J. Energy & Env’tl L. 37,

⁹¹ 40 CFR §1502.22.

⁹² 15 Stat. 636.

necessity.”⁹³ Thus, the 1868 Treaty includes specific provisions for Tribal consultation on issues such as DAPL.

The Treaty right of consultation is exercised today through administrative authorities such as Executive Order 13175. E.O. 13175 provides in part –

The United States continues to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, tribal trust resources, and Indian treaty and other rights.

Agencies shall respect Indian tribal self-government and sovereignty, honor treaty rights and other rights... (and) ensure meaningful and timely input by tribal officials...⁹⁴

Under section 5, each agency is to establish a Tribal consultation policy and process. The Corps of Engineers developed its Tribal Consultation Policy, which requires:

Open, timely, meaningful, collaborative and effective deliberative communication process that emphasizes trust, respect and shared responsibility... [C]onsultation works toward mutual consensus and begins at the earliest planning stages, before decisions are made and actions are taken.⁹⁵

The Corps of Engineers has complied with none of these policies in the preparation of the Draft EIS. The Tribal Consultation Policy requires the Corps to consult with the Tribe “at the earliest possible stage.” But the Corps of Engineers published the Notice of Intent for the EIS on September 10, 2020, outlining the alternatives to be evaluated and the scoping process, well before any outreach to Standing Rock on a Nation-to-Nation basis. The Corps did not consult in a timely manner. In the Draft EIS, the Corps actually doubled down on its violations of the Tribal Consultation Policy:

The SRST expressed concerns that the scoping process was initiated prior to government consultation. The scoping process allows the lead

⁹³ *Id.* at 639.

⁹⁴ Executive Order 13175 on *Consultation and Coordination with Indian Tribal Governments*, 65 Fed. Reg. 67249-67250, Nov. 9, 2000.

⁹⁵ https://www.spk.usace.army.mil/Portals/12/documents/tribal_program/USACE%20Native%20American%20Policy%20brochure%202013.pdf--

agency to receive input from all stakeholders on the range of issues to be addressed in the EIS. The USACE acknowledges the importance of engaging in government-to-government consultation early in the process; however, the NEPA process does not dictate when consultation needs to occur in relation to scoping.⁹⁶

E.O. 13175 and the Corps' Tribal Consultation Policy require consultation to be "timely" and "early." There is no "however," in the executive order or Tribal Consultation Policy, but there is in the Draft EIS. The above passage demonstrates how the Corps fails to comply with E.O. 13175 and its own Tribal Consultation Policy, even on a high-profile issue such as DAPL.

Under E.O. 3175 and the Corps' Consultation Policy, Standing Rock has every right to early consultation on the alternatives to be considered in the EIS, prior to their publication by the Corps. The Tribe has every right to have input into the public scoping process, in order to ensure the voices of Tribal members are heard. The statement on page 1-17 of the Draft EIS that the consultation requirements do not apply to the NEPA process for a hazardous liquid pipeline at the Reservation boundary is outrageous. It demonstrates that the Corps has violated the consultation policies on the Draft EIS from the outset.

Nevertheless, the Tribe attempted to cooperate with the Corps during the NEPA process. The Tribe initially agreed to serve as a cooperating agency, but withdrew less than a year later, due to the lack of transparency and the Corps' refusal to share technical documents relied upon in preparing the Draft EIS. The Tribe attended meetings with the Corps during the NEPA process, but virtually every request for information was denied or ignored. There was no "collaboration" or "deliberative communication" as prescribed in the Corps' Tribal Consultation Policy. The Tribe has been completely stonewalled by the Corps of Engineers at every juncture, and that is reflected in the Draft EIS.

In the *Scoping Report* submitted on November 24, 2020, Standing Rock requested consultation from the Corps prior to its' retaining any consultants for the EIS on DAPL. The Corps ignored this request. The Tribe requested early consultation on the scope of the Draft EIS, to ensure adequate consideration of the need to shut down DAPL pending completion of the EIS

⁹⁶ Draft EIS at 1-17.

process. There was no such consultation, and the Corps has refused to comply with the law and shut it down.

The Tribe also requested consultation on the risk assessment methodology to be utilized in the Draft EIS, and pointed out that the risk analysis in the 2016 Environmental Assessment was outdated. The Corps refused to collaborate with the Tribe on risk. The Draft EIS contains the exact same obsolete risk index (Figure 3-1 on page 3-4) used in the EA. The Corps relies on the discredited risk approach to support the finding, repeated *ad infinitum* in the Draft EIS, that DAPL has no significant impact on Standing Rock because an oil spill is “remote and very unlikely”

As stated above, Nation-to-Nation consultation is much more than executive branch administrative policy, it is a Treaty right. In the process of developing the Draft EIS, the Corps violated the consultation requirements in Article 5 of the 1868 Treaty, as well as Executive Order 13175, the Corps’ own Tribal Consultation Policy, and President Biden’s *Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships*.⁹⁷ Consequently, the Draft EIS does not provide a legal basis for the continued operation of the Dakota Access Pipeline.

⁹⁷ <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/26/memorandum-on-tribal-consultation-and-strengthening-nation-to-nation-relationships/>

V. The Corps of Engineers has Failed to Properly Define the Purpose and Need and the Scope of the Draft EIS

A. The Purpose and Need Section Identifies the Wrong Pipeline Capacity

This NEPA study relates back to an agency action taken by the Corps of Engineers on February 8, 2018, approving an easement for DAPL at a capacity of 574,000 barrels per day. That approval relied upon the Finding of No Significant Impact approved on July 25, 2017. The FONSI was vacated on March 25, 2020, and, as described above, DAPL has been operating in violation of NEPA since that time.

This EIS relates back to agency actions taken in July 2017 and February 2018. The Purpose and Need for the Draft EIS is to comply with NEPA for a pipeline whose capacity was 574,000 barrels at the time NEPA compliance was required. The purpose and need for the EIS must be to evaluate DAPL's environmental impacts at a capacity of 574,000 barrels per day, not 1.1 million barrels per day. Nevertheless, the Draft EIS states on page 1-10:

The purpose and need for this EIS is to evaluate whether a new easement can be issued under the MLA for the DAPL Project to cross USACE-managed land at Lake Oahe. This evaluation considers the Project purpose of the Applicant Proposed Action to be the purpose of the proposed project (to transport up to 1,100,000 bpd from the Bakken and Three Forks Production region in North Dakota to a crude oil market hub located in Patoka, Illinois, and ultimately to refineries in the Midwest and the Gulf Coast).

The regulations require that "Statements shall be concise, clear and to the point."⁹⁸ The description of the Purpose and Need in the Draft EIS is barely comprehensible. It is also wrong.

Energy Transfer made two requests: (1) an easement for a pipeline with capacity of 574,000 barrels per day; and (2) an increase in capacity to 1.1 million barrels per day. The first request had been approved, but the approval was subsequently vacated by the district court, which was affirmed by the court of appeals. This court-ordered EIS is being prepared to decide whether to re-approve an easement for the current pipeline, not a significantly altered project.

⁹⁸ 40 CFR §1502.1.

By defining the Purpose and Need as approval of the increase in capacity, the Corps is ignoring the fact that the environmental impacts of the pipeline currently operating have never been evaluated or disclosed as required by NEPA. The task at hand is to evaluate these impacts, not the impacts of a different project because that is what the pipeline company wants now.

The Corps is combining a two-step analysis into one belated step. First, the Corps should evaluate and disclose the environmental impacts of the DAPL pipeline at 574,000 bpd. That should have been done in 2016. Second, the Corps should evaluate the operator's level of compliance, and the Management of Change documentation for any requested increase. By combining Energy Transfer's two separate requests together, the Corps has lost sight of its mission in this EIS. The Corps of Engineers studied the wrong project.

B. The Scope of the Draft EIS is too Narrow

The Corps states on page 1-7 of the Draft EIS:

Whether Dakota Access should continue to operate the pipeline during preparation of this EIS is outside of the scope of this EIS.⁹⁹

It is an outrageous violation of federal and international law for the Corps to expose the Standing Rock Sioux Tribe to unevaluated environmental risk, by permitting DAPL to continue to operate. The continued operation of the pipeline demonstrates the Corps of Engineers' willingness to violate NEPA. By ignoring this and limiting the scope of the EIS, the Corps is violating applicable CEQ regulations.

The EIS must discuss, as an environmental consequence of DAPL:

Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies, and controls for the area concerned.¹⁰⁰

The conflict exists today, and the Corps facilitates the conflict by allowing DAPL to operate illegally. DAPL is one-half mile from Cannon Ball Community School, and is near the intake for the Cannon Ball Irrigation Project. Community public health in Cannon Ball, and

⁹⁹ Draft EIS at 1-7.

¹⁰⁰ 40 CFR §1502.16(c)

Tribal schools and infrastructure are directly adjacent to DAPL. The Tribe has had to develop and institute expensive ground and surface water monitoring, and oil spill response plans (all of which are ignored by the Corps in the Draft EIS).

The operation of DAPL today creates “possible conflicts” within the meaning of the regulation. The Corps should shut down DAPL; at the very least it should take its head out of the sand and expand the scope of the EIS and properly evaluate the current risk facing the Tribe.

The Corps’ refusal to shut down the pipeline, or to even address the issue in the Draft EIS, gives rise to concerns of prejudgment on its part. The CEQ regulations require agencies to make decisions based upon the findings in the final EIS, and not to pre-judge the decision:

Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.¹⁰¹

The continuing illegal operation of the pipeline totally discredits the NEPA process that is underway. The Corps of Engineers cannot be trusted to follow NEPA. The decision appears to already have been made to allow DAPL to continue operating indefinitely, regardless of the findings in the Draft EIS.

The improper bias is further illustrated by the conflicted consultant retained by the Corps for assistance with the EIS. The firm Environmental Resources Management is an oil industry consulting firm and member of the American Petroleum Institute. The API filed an amicus brief against the Tribe in *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*. The consultant assisting the Corps with the EIS is a member of an organization that argued in the litigation there is no need for the EIS. And they ended up writing it.

“Agencies shall ensure the professional integrity... of the discussions and analyses in environmental impact statements.”¹⁰² There may be legitimate concern with the “professional integrity” of the work of a consultant whose trade association challenged the need for the very environmental study it is now preparing. Similarly, many of the sources used for socioeconomic and environmental impacts appear to be publications by partisan non-governmental

¹⁰¹ 40 CFR §1502.2(g).

¹⁰² 40 CFR §1502.24

organizations, rather than authoritative or peer-reviewed papers. For example, the Manhattan Institute has been characterized as “an extremely conservative organization... funded largely by major corporations and conservative foundations.”¹⁰³ The Fraser Institute has been criticized for climate science denialism and promotion of fossil fuels. The use of these sources and publications lend question to the credibility of the assumptions relating to the continued output of the Bakken if DAPL were to be shut down. Indeed, the scope of the EIS should include the projected future demand for Bakken crude, and whether the dangerous high-capacity pipeline is even needed in light of declining demand.

¹⁰³ *Fact sheet: Manhattan Institute* (no date) *centerjd.org*. Available at: <https://centerjd.org/content/fact-sheet-manhattan-institute#:~:text=The%20Manhattan%20Institute%20for%20Policy,former%20CIA%20director%20William%20J.> (Accessed: 04 November 2023).

VI. The Corps Has Not Demonstrated Compliance with the Consultation and Cultural Resource Protection Obligations

In the Scoping Report, Standing Rock Tribe provided an initial detailed inventory of the issues that the agency must address in the context of its Environmental Impact Statement (“EIS”) to comply with federal law requirements regarding government-to-government consultation, the National Historic Preservation Act (“NHPA”)¹⁰⁴, as well as applicable Executive Orders and Department of Defense guidance and policy.¹⁰⁵ The decision as to whether to grant the easement constitutes a new and separate “undertaking” by the federal agency. Thus, the consultation requirements apply anew, and with full force, to the preparation of the EIS. As such, the agency must demonstrate that it has met all relevant federal law requirements with respect to the EIS analysis and its decision on whether to grant or deny the easement, under what conditions and subject to what mitigation measures.

Unfortunately, as prefaced by the Scoping Report, letters submitted to the agency by the Standing Rock Sioux Tribal Historic Preservation Office and others, and as discussed below, the agency has yet to meet all relevant requirements with respect to its consultation requirements and the inventory, assessment, and protection of historic and cultural resources. Indeed, the agency appears to have neglected to even address several of the NHPA issues raised in the Scoping Report and the Tribal Historic Preservation Office’s submissions. As a result, the Draft Environmental Impact Statement requires substantial and substantive revision in order to comply with the National Environmental Policy Act (“NEPA”)¹⁰⁶ and the NHPA.

¹⁰⁴ 16 U.S.C. §§ 470, *et seq.*

¹⁰⁵ As the *November 24, 2020 Report* makes clear, meaningful government-to-government consultation is a Treaty right held by the Standing Rock Sioux Tribe and other Treaty tribes. The detailed discussion of the applicable Fort Laramie Treaties of 1851 and 1868 contained in the *November 24, 2020 Report*, at pp. 6-12, is expressly incorporated herein and forms the backbone of the obligations of the federal government, including the Corps, to conduct itself in good faith and fulfill its federal trust responsibility to the Standing Rock Sioux Tribe.

¹⁰⁶ 42 U.S.C. §§ 4231, *et seq.*

A. *The Corps Has Not Fulfilled its NHPA Consultation and Cultural Resource Protection Requirements*

The federal courts have addressed the strict NHPA mandates:

Under the NHPA, a federal agency must make a reasonable and good faith effort to identify historic properties, 36 C.F.R. § 800.4(b); determine whether identified properties are eligible for listing on the National Register based on criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found, 36 C.F.R. §§ 800.4(c), 800.5, 800.9(a); determine whether the effect will be adverse, 36 C.F.R. §§ 800.5(c), 800.9(b); and avoid or mitigate any adverse effects, 36 C.F.R. §§ 800.8[c], 800.9(c). The [federal agency] must confer with the State Historic Preservation Officer (“SHPO”) and seek the approval of the Advisory Council on Historic Preservation (“Council”).¹⁰⁷

The Advisory Council on Historic Preservation (“ACHP”), the independent federal agency created by Congress to implement and enforce NHPA section 106, determines the methods for compliance with the NHPA section 106’s requirements.¹⁰⁸ The ACHP’s regulations “govern the implementation of Section 106,” not only for the Council itself, but for all other federal agencies, including the Corps.¹⁰⁹

NHPA Section 106 requires federal agencies, prior to approving any “undertaking,” to “take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register.”¹¹⁰ Section 106 applies to properties already listed in the National Register, as well as those properties that may be eligible for listing.¹¹¹ Section 106 provides a mechanism by which governmental agencies may play an

¹⁰⁷ *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 805 (9th Cir. 1999). See also, 36 C.F.R. § 800.8(c)(1)(v)(agency must “[d]evelop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties....”).

¹⁰⁸ See *National Center for Preservation Law v. Landrieu*, 496 F. Supp. 716, 742 (D.S.C.), *aff’d per curiam*, 635 F.2d 324 (4th Cir. 1980).

¹⁰⁹ *Id.* See also *National Trust for Historic Preservation v. U.S. Army Corps of Eng’rs*, 552 F. Supp. 784, 790-91 (S.D. Ohio 1982).

¹¹⁰ 16 U.S.C. § 470(f).

¹¹¹ See *Pueblo of Sandia v. United States*, 50 F.3d 856, 859 (10th Cir. 1995).

important role in “preserving, restoring, and maintaining the historic and cultural foundations of the nation.”¹¹²

If an undertaking is the type that “may affect” an eligible site, the agency must make a reasonable and good faith effort to seek information from consulting parties, other members of the public, and Native American tribes to identify historic properties in the area of potential effect.¹¹³

The NHPA also requires that federal agencies consult with any “Indian tribe ... that attaches religious and cultural significance” to the sites.¹¹⁴ Consultation must provide the tribe “a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking’s effects on such properties, and participate in the resolution of adverse effects.”¹¹⁵ The Tribe must be involved in all three efforts:

- (1) identifying historic or cultural resources;
- (2) evaluating impacts on historic or cultural resources and those resources’ eligibility for inclusion on the National Register of Historic Places (NRHP); and,
- (3) developing project alternatives or mitigation measures to protect those resources that are or may be eligible.

As the D.C. Circuit confirmed, NEPA imposes a separate but closely related set of duties on federal agencies to identify and assess impacts to cultural resources when engaging in any permitting exercise.¹¹⁶ In addition to Section 106 NHPA duties, NHPA Section 110 also contains requirements to ensure proper identification and evaluation of cultural resources.¹¹⁷ These duties extend beyond those imposed by the Section 106 consultation process and cannot be satisfied by mere outreach letters.

¹¹² 16 U.S.C. § 470.

¹¹³ 36 C.F.R. § 800.4(b)(1). *See also*, *Pueblo of Sandia*, 50 F.3d at 859-863 (agency failed to make reasonable and good faith effort to identify historic properties).

¹¹⁴ 16 U.S.C. § 470(a)(d)(6)(B).

¹¹⁵ 36 C.F.R. § 800.2(c)(2)(ii).

¹¹⁶ *Oglala Sioux Tribe v. NRC*, 896 F.3d 520, 526 (D.C. Cir. 2018).

¹¹⁷ 16 U.S.C. § 470h-2.

Federal policy confirms that “federal agencies have affirmative responsibilities under section 110 that go beyond the responsibility for compliance with section 106.”¹¹⁸ “This responsibility extends to a systematic consideration of properties not under the jurisdiction or control of the agency, but potentially affected by agency actions.”¹¹⁹ Further, “[f]ull consideration of historic properties includes consideration of all kinds of effects on those properties: direct effects, indirect or secondary effects, and cumulative effects.”¹²⁰

The Corps has yet to demonstrate compliance with its federal consultation requirements, including those mandated by NHPA Section 106. In the DEIS, the Corps’ primary evidence of NHPA Section 106 compliance is a laundry list of letters and phone calls that it asserts fulfills its government-to-government and NHPA Section 106 consultation requirements.¹²¹ However, that list does not demonstrate compliance with NHPA 106, as it merely represents an attempt to substitute quantity of communication for quality of communication.

For instance, several of the entries the Corps relies on for consultation are mere phone voicemail messages, emails attempting to schedule discussions, and the like. Relying on such outreach without more is not “reasonable” for purposes of identifying, assessing, and protecting cultural resources. To the extent the list references meetings and letters between the agency and Tribal representatives, no details regarding the substance of those discussions is provided. Federal courts have expressly rejected such an approach:

Preliminarily, several points bear noting. First, the sheer volume of documents is not meaningful. The number of letters, reports, meetings, etc. and the size of the various documents doesn’t in itself show the NHPA-required consultation occurred.

Second, the [agency’s] communications are replete with recitals of law (including Section 106), professions of good intent, and solicitations to consult with the Tribe. But mere *pro forma* recitals do not, by themselves, show [the agency] actually complied with the law. As discussed below,

¹¹⁸ 63 Fed.Reg. 20496 (April 24, 1998).

¹¹⁹ 63 Fed.Reg. 20496, 20503 (April 24, 1998) citing NHPA Section 110(a)(2)(C).

¹²⁰ *Id.*

¹²¹ DEIS 1-26 to 1-31 (Table 1.6-1: Government-to-Government Consultation and Coordination Summary), and generalized discussion located at DEIS 3-183 to 3-193 (Section 3.7).

documentation that might support a finding that true government-to-government consultation occurred is painfully thin.¹²²

B. The Corps Failed to Properly Consult on the Area of Potential Effects

The Corps' failure to address issues of substance in its consultation efforts related to the Draft EIS is an overriding problem. The Corps has failed to do so with respect to the scope of its arbitrarily designated Area of Potential Effect ("APE") for purposes of its NHPA Section 106 consultation. According to the NHPA, the APE is defined as:

...the geographic area or areas within which an undertaking **may directly or indirectly cause changes in the character or use of historic properties**, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.¹²³

In this instance, however, the Corps has defined the APE so narrowly as to negate its legal obligation to assess indirect impacts to cultural resources from the project. This issue of an inappropriately narrow APE is articulately presented to the Corps through the letter sent to Col. Mark R. Himes of the Corps' Omaha District from Dr. Thomas F. King, PhD on behalf of the Standing Rock Sioux Tribe¹²⁴ as well as in the Tribe's Scoping Report.¹²⁵

In this case, the APE must be extended to include the portions of the Standing Rock Reservation immediately downstream from the pipeline river-crossing where oil or other contaminants associated with a leak may migrate. The Corps' refusal to consult and seek resolution of this issue with the Standing Rock Sioux Tribe undermines the entirety of its NHPA (and NEPA) analysis, because it unilaterally excludes the potential effects to the Standing Rock Reservation.

¹²² *Quechan Tribe of Fort Yuma Indian Rsrv. v. U.S. Dep't of Interior*, 755 F. Supp. 2d 1104, 1118 (S.D. Cal. 2010); see also, *In the Matter of Powertech USA, Inc. (Dewey-Burdock in Situ Uranium Recovery Facility)*, 81 N.R.C. 618, 656 (Apr. 30, 2015) ("quantity does not necessarily equate with meaningful or reasonable consultation") *aff'd*, 84 N.R.C. 219, 247 (Dec. 23, 2016).

¹²³ 36 C.F.R. § 800.16(d)(emphasis added).

¹²⁴ SRST Enclosure #10, included in DEIS Appendix B.

¹²⁵ *November 24, 2020 Report* at 34, 29-30.

This failure by the Corps to meaningfully consult in good faith on extending the APE is contrary to its trust responsibility to the Standing Rock Sioux Tribe and is an unlawful tactic to undermine NHPA Section 106 consultation. The ACHP regulations specifically require “consultation with the Indian tribe regarding undertakings occurring on such tribe's lands or effects on such tribal lands shall be in addition to and on the same basis as consultation with the SHPO.”¹²⁶ Thus, the Corps’ decision to unreasonably construe the APE effectively devalues the Standing Rock Sioux Tribe’s lawful NHPA Section 106 consultation opportunities.

This decision to arbitrarily limit the NHPA consultation (and NEPA analysis) to an unreasonably narrow APE to exclude the potential direct and indirect effects within the boundaries of the Standing Rock Sioux Reservation has the added problem of not just excluding the Standing Rock THPO from his rightful role in the process, but also the U.S. Department of the Interior. This was the basis of the Department of the Interior’s criticism of the Corps’ flawed determination to not prepare an EIS for the project. As the D.C. Circuit Court of Appeals recognized, the Department urged an EIS “given the pipeline’s potential impact on trust resources, criticizing the Corps for ‘not adequately justify[ing] or otherwise support[ing] its conclusion that there would be no significant impacts upon the surrounding environment and community.’”¹²⁷ Given the potential environmental impacts overall, including potential direct and indirect effects on cultural resources, the Corps must revisit its NHPA Section 106 consultation with the Standing Rock Sioux Tribe and involve the Department of the Interior to assess the potential impacts on trust resources.

C. Tribal Ownership of the Bed of the Missouri River

Notably, when Congress passed the laws providing for the taking of portions of the Standing Rock Reservation for the creation of Lake Oahe, the Standing Rock Sioux Tribe retained hunting, fishing, and grazing rights on the taken lands, subsurface mineral rights, and

¹²⁶ 36 C.F.R. § 800.3(d)

¹²⁷ *Standing Rock Sioux Tribe v. United States Army Corps of Engineers*, 985 F.3d 1032, 1040 (D.C. Cir. 2021), cert. denied sub nom. *Dakota Access, LLC v. Standing Rock Sioux Tribe*, 142 S. Ct. 1187, 212 L. Ed. 2d 54 (2022).

guaranteed access to the reservoir.¹²⁸ Also, significantly, Congress omitted payment to the Standing Rock Sioux Tribe of compensation for the bed of the Missouri River within the Reservation.¹²⁹ Consequently, any activities contemplated in the bed of the Missouri River, or that may have direct or indirect effects on any of the Standing Rock Sioux Tribe's reserved rights, requires attention by the Corps in fulfilling its NHPA Section 106 and Section 110 responsibilities – as well as its NEPA analysis. The Corps has not yet done so.

Indirect impacts that should have been, but were not, the subject of NHPA 106 consultation and NHPA 110 cultural resource protection protocols include such basic issues as the potential impact on burials and sacred sites from with an oil spill from DAPL. In the Draft EIS, the Corps avoids addressing these topics in its consultation efforts by simply claiming that the risk of a spill or leak is “remote to very unlikely.”¹³⁰ However, as discussed elsewhere in the Standing Rock Sioux Tribe's submission on the DEIS, the “remote to very unlikely” risk assessment is not scientifically supportable and cannot lawfully form the basis of the Corps' refusal to directly engage the Standing Rock Sioux Tribe in Section 106/110 Consultation regarding these direct and indirect effects. Indeed, the D.C. District Court remand that gave rise to the DEIS was highly critical of the Corps' faulty leak analysis:

The many commenters in this case pointed to serious gaps in crucial parts of the Corps' analysis — to name a few, that the pipeline's leak-detection system was unlikely to work, that it was not designed to catch slow spills, that the operator's serious history of incidents had not been taken into account, and that the worst-case scenario used by the Corps was potentially only a fraction of what a realistic figure would be — and the Corps was not able to fill any of them.¹³¹

Effects to cultural resources resulting from a spill from the pipeline must be part of the NHPA Section 106 consultation and must be analyzed in the Draft EIS.

¹²⁸ Act of Sept. 2, 1958, Pub. L. No. 85-915, 72 Stat. 1762, 1763-64.

¹²⁹ See H.R. REP. NO. 58-1888, at 29 (1958) (“The Corps of Engineers elected not to acquire the bed of the Missouri River The bed of the Missouri River continues to be part of the reservation, and marks the eastern boundary of the reservation.”).

¹³⁰ DEIS at 3-191.

¹³¹ March 25, 2020 Remand Order, at 35.

In any case, and perhaps indicating a higher likelihood of a leak than disclosed, the Corps has included in the Draft EIS, as a mitigation measure, a Facility Response Plan describing the methods the applicant will implement to attempt to control a leak from the pipeline.¹³² In multiple places, the Facility Response Plan expressly contemplates the use of excavating machinery to attempt containment of a spill. The use of excavating machinery is expressly proposed for spills on land, including in exposed river bottoms, to construct large and small earthen berm structures for spill containment, as well as for river bottom soil excavation as an oil recovery method.¹³³ The applicant's Geographical Response Plan contains the same express direction to use excavating machinery to create earthen berm structures in the exposed river mud flats (i.e. river bottoms) for containment and recovery of spilled oil from the pipeline.¹³⁴

D. Significance of the Goodhouse Report

Critically, the authoritative scholarly report prepared by Dakota W. Goodhouse, M.A. an enrolled member of the Standing Rock Sioux Tribe, documents in detail and with original sources, the extensive occupation and uses of the Missouri River bottomlands at and near the Cannonball-Missouri River confluence by multiple cultures and peoples over many centuries.¹³⁵ Based on the direct evidence of long-term occupation of the site and the still-existing cultural resources at the site, including numerous documented burials, the author's conclusions include "that the area of the Cannonball-Missouri Confluence, the north bank of the Cannonball River at the mouth of the Cannonball River, and the floodplain in the vicinity of the confluence . . . qualify . . . for nomination to the National Register of Historic Places."¹³⁶

Further, as the Corps is aware due to the lengthy discussion contained in the Scoping Report, the Missouri River bottomlands were fundamental and sacred to the Sioux culture, providing not only shelter, food, and grounds for ceremonies, among myriad other uses, but also

¹³² DEIS Appendix F.

¹³³ DEIS Appendix F at 39 (Facility Response Plan at 32).

¹³⁴ DEIS Appendix F at 171 (Geographical Response Plan at 17).

¹³⁵ The Cannonball River Occupations and Events for the NEPA Process by the Corps of Engineers for the Environmental Review of the Dakota Access Pipeline, prepared by Dakota W. Goodhouse, M.A. ("Goodhouse Report") (November 1, 2023; Updated: December 1, 2023)

¹³⁶ *Id.* at 43.

burial grounds – all of which have a high likelihood of leaving physical evidence on and in the ground.¹³⁷ As a result, the applicant’s proposed mitigation plan for spills would have direct and indirect effects on as-of-yet undetermined cultural resources. The Corps has not conducted the required government-to-government consultations on these issues, including those required under NHPA Section 106 and NHPA Section 110.

Indeed, with respect to mitigation, the NHPA regulations unambiguously state that “the agency official shall consult with the SHPO/THPO and other consulting parties, including Indian tribes. . . to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects to historic properties.”¹³⁸ Absent an analysis of these effects and consultation thereon, the Corps cannot meet its obligations under either NEPA or the NHPA. This is in addition to the failure of the Corps or the applicant to address the serious practical issues of how to even implement either the Facility Response Plan or the Geographical Response Plan, and especially the use of mechanical excavating equipment, depending on the water level of Lake Oahe. As discussed below, in recent times has fallen so low as to make access to the Missouri River infeasible for the required equipment.

E. Inadequate Treatment of Traditional Cultural Properties

Additional effects that the Corps has largely, if not entirely, ignored in both its NHPA and NEPA compliance are those associated with landscape level cultural resources. These are sometimes referred to as Traditional Cultural Properties (“TCP”). The Corps concedes that “[n]o federal lands were surveyed for archaeological, architectural, or TCPs because no Project impacts were anticipated to occur between the HDD workspaces on either side of Lake Oahe.”¹³⁹ However, as amended in 1992, the NHPA allows that “properties of traditional religious and cultural importance to an Indian tribe” may be determined to be eligible for inclusion on the

¹³⁷ *November 24, 2020 Report* at 83-87. See also *Yankton Sioux Tribe v. U.S. Army Corps of Eng’rs*, 83 F. Supp. 2d 1047, 1048 (D.S.D. 2000) (documenting use of Missouri River bottomlands for cemetery purposes).

¹³⁸ 36 C.F.R. § 800.6(a)

¹³⁹ DEIS at 3-186

National Register.¹⁴⁰ The 1992 amendments direct federal agencies, including the Corps, “to consult ... with any tribe ... that attaches religious and cultural significance” to a site regarding federal “undertakings” that may affect it.¹⁴¹

The Corps’ attempt to escape these consultation requirements by simply defining the area of potential effect in the narrowest possible terms is inconsistent with the NHPA, which requires “reasonable and good faith” consultation¹⁴² and is contrary to Department of Defense policy embodied in Instruction 4719.02,¹⁴³ which requires the Corps to establish “mutually agreed to” protocols for consultation.¹⁴⁴ The Scoping Report provides significant, detailed discussion on the contours of the Department of Defense policy as well as Executive Order 13175 *Consultation and Coordination with Indian Tribal Governments*, both of which emphasize the collaborative approach to consultation.¹⁴⁵ These admonitions to Corps are in stark contrast to the unilateral and hard-nosed tactics the agency has employed here so as to attempt to minimize and devalue the Standing Rock Sioux Tribe’s meaningful involvement in the assessment of effects to cultural resources.

F. Sacred Sites

In addition, in contrast to the primarily procedural requirements of the NHPA, Executive Order 13007 directs federal agencies to: “(1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites.”¹⁴⁶ Executive Order 13007 defines a “sacred site” as “any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an

¹⁴⁰ 36 C.F.R. 800.16(l)(1).

¹⁴¹ 54 U.S.C. § 306108; 36 C.F.R. § 800.4(c).

¹⁴² 36 C.F.R. § 800.4(b)(1).

¹⁴³ Department of Defense Instruction 4710.02 on Interactions with Federally Recognized Tribes.

¹⁴⁴ *Id.* at 4, n. i; 5.

¹⁴⁵ *November 24, 2020 Report* at 13-16.

¹⁴⁶ Executive Order 13007, “Indian Sacred Sites” (May 24, 1996), 61 Fed. Reg. 26771, Sec. 1(a).

Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.”¹⁴⁷

Numerous other decisions have recognized the federal government’s mandate to protect sacred sites on public land under EO 13007. “Because of the unique status of Native American societies in North American history, protecting Native American shrines and other culturally-important sites has historical value for the nation as a whole.”¹⁴⁸ Federal courts have expressly recognized the need to protect sacred sites under the EO as part of the government’s public land management authorities:

Executive Order no. 13007 signed by President Clinton, May 24, 1996, orders Federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.¹⁴⁹

Here, the Goodhouse Report goes into scholarly detail as to the significance of the cultural landscape through which the project transverses, including the area of the Cannonball-Missouri Confluence, the north bank of the Cannonball River at the mouth of the Cannonball River, and the floodplain in the vicinity of the confluence. Similarly, the letter sent to Col. Mark R. Himes of the Corps’ Omaha District from Dr. Thomas F. King, PhD on behalf of the Standing Rock Sioux Tribe¹⁵⁰ demonstrates the same, referencing the Standing Rock Sioux Tribe THPO’s concurrence as to the significance of this landscape. Given this highly credible evidence of the extreme cultural significance of this landscape, further review by the Corps is required in order to meet the letter and intent of both the NHPA and E.O. 13007.¹⁵¹

¹⁴⁷ *Id.* at Sec. 1(b).

¹⁴⁸ *Cholla Ready Mix, Inc. v. Civish*, 382 F.3d 969, 976 (9th Cir. 2004).

¹⁴⁹ *Wyoming Sawmills, Inc. v. U.S. Forest Service*, 383 F.3d 1241, 1245 (10th Cir. 2004).

¹⁵⁰ SRST Enclosure #10, included in DEIS Appendix B.

¹⁵¹ *See Independent Meat Packers Ass’n v. Butz*, 526 F.2d 228 (8th Cir. 1975), rehearing and rehearing en banc denied, 96 S.Ct. 1461 (1976) (“Presidential proclamations and orders have the force and effect of laws when issued pursuant to a statutory mandate or delegation of authority from Congress.”) *Conservation Law Foundation v. Secretary of Interior*, 864 F.2d 954, 960 n. 12 (1st Cir. 1989).

VII. The Corps Has Failed to Address the Allegations of Anticipatory Demolition in Violation of NHPA Section 110(k).

As discussed in detail in the Scoping Report, NHPA Section 110 also imposes a mandatory duty on all federal agencies to ensure that no permit or license is issued to any applicant that has intentionally destroyed an historic property in order to undermine the NHPA Section 106 review process. The NHPA provides:

Each agency shall ensure that the agency shall not grant a... permit, license, or other assistance to an applicant who, with intent to avoid the requirements of section (106)... has intentionally, significantly, adversely affected a historic property to which the grant would relate...¹⁵²

The National Park Service (“NPS”), the agency delegated the authority by Congress for developing guidance and protocols for all federal agencies, including the Corps, for implementation of NHPA Section 110, has confirmed:

When an historic property is destroyed or irreparably harmed with the express purpose of circumventing or preordaining the outcome of section 106 review (e.g., demolition or removal of all or part of the property) prior to application for Federal funding, a Federal license, permit, or loan guarantee, the agency considering that application is required by section 110(k) to withhold the assistance sought, unless the agency, after consultation with the Council, determines and documents that “circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.”¹⁵³

Further, federal administrative adjudications confirm that “where an applicant may have engaged in ‘anticipatory demolition’—that is, violated Section 110(k)—the [agency] is **required** to make a determination on that issue before granting a permit or license or providing any other assistance to an applicant.”¹⁵⁴ This requirement to make a determination as to a violation of

¹⁵² 54 U.S.C. § 306113.

¹⁵³ 63 F.R. 20496, 20503 (April 24, 1998) citing NHPA Section 110(k).

¹⁵⁴ *Consol. Rail Corp.-Abandonment Exemption-in Hudson Cnty., N.J. CSX Transportation, Inc.-Discontinuance of Serv. Exemption-in Hudson Cnty., N.J. Norfolk S. Ry. Co.-Discontinuance of Serv. Exemption-in Hudson Cnty., N.J.*, No. AB 167 (SUB-1189X), 2022 WL 3595013, at *3 (Aug. 18, 2022) (emphasis added).

NHPA Section 110(k) is triggered anytime “consulting parties . . . [have] made allegations of ‘anticipatory demolition’” to the action agency.¹⁵⁵ Recent examples include the process carried out by the Federal Energy Regulatory Commission against Energy Transfer Partners, where the Commission issued a show cause order and a proposed \$20.1 million fine to the applicant based on allegations of deliberate destruction of historic and cultural resources, specifically finding that an investigation is required because “Section 110(k) prohibits [federal agencies] from approving an application if the applicant significantly adversely affected a historic property with the intent to avoid the requirements of section 106.”¹⁵⁶

The Tribe’s Scoping Report provides the required fact-based allegation of “anticipatory demolition” to trigger the Corps’ mandatory investigation in this matter prior to issuance of any easement as contemplated under any action alternative in the Draft EIS.¹⁵⁷ Surprisingly, and despite the legally-mandated investigation, the Draft EIS appears to be completely silent as to this matter. Federal courts have held that agency action cannot survive federal Administrative Procedure Act judicial review unless the agency has investigated such a credible allegation and provided a reasoned basis for its analysis and determination on the administrative record.¹⁵⁸ The failure to do so renders the any permitting decision by the Corps illegitimate and unlawful.

¹⁵⁵ *Id.*

¹⁵⁶ *Rover Pipeline, LLC, & Energy Transfer Partners, L.P.*, 174 FERC ¶ 61,208, 61,883 (2021).

¹⁵⁷ *November 25, 2020 Report* at p. 28-30.

¹⁵⁸ *Protect Our Parks, Inc. v. Buttigieg*, 39 F.4th 389, 402 (7th Cir. 2022).

VIII. The Corps of Engineers Failed to Identify Heightened Risk Factors and Made Erroneous Findings on DAPL's Impact on the Environmental Justice Community of the Standing Rock Sioux Tribe.

A. *The Corps Failed to Collect and Analyze Sufficient Data*

The Draft EIS often reads more like a legal argument, than an objective environmental review document. For example, the Corps wrote:

The SRST stated that the geographic extent of the analysis in the 2016 EA was too limited and therefore could misrepresent the socioeconomic disparities of the tribal populations. The environmental justice analysis in this EIS addresses the SRST's concern by: 1) expanding the 2016 EA's geographic extent of analysis from 1-mile buffer of the Missouri River to include reservations that may be directly affected by a crude oil release from DAPL at the Lake Oahe crossing... 2) analyzing the input provided by the SRST, CRST and the Oglala Sioux Tribe through USACE outreach; and 3) further considering the interrelated environmental, socioeconomic, and cultural factors that amplify the environmental effects of a potential release.¹⁵⁹

That is weak. The Corps should not take credit for recognizing DAPL's potential environmental impacts to Standing Rock in the Draft EIS. Instead, the fact that it failed to do so in 2016 should be a source of embarrassment. Second, the "Corps' outreach" is ineffective. Third, although the Corps compiled some documentation on animal and plant species of concern, the Draft EIS is generally devoid of "consideration of interrelated environmental, socioeconomic and cultural factors." The Corps failed to compile relevant data on the impacts to the Tribe, and failed to conduct a scientific impacts analysis on the environmental justice population on the Standing Rock Reservation. The Draft EIS reflects the overall institutional failure on the part of the Army Corps of Engineers to take environmental justice seriously in the upper Missouri River Basin.

The Draft EIS suffers from the Corps' failure over decades to work cooperatively with the Tribes to implement the subsistence data requirements of Executive Order 12898 on *Federal*

¹⁵⁹ Draft EIS at 3-208.

*Actions to Address Environmental Justice in Minority and low Income Populations.*¹⁶⁰ According to the CEQ *Guidance: Environmental Justice Under the National Environmental Policy Act*, “the Executive Order makes clear that its provisions apply fully to programs involving Native Americans.”¹⁶¹ Section 4-4 governs “Subsistence Consumption of Fish and Wildlife.” Subsection 4-401 requires agencies such as the Corps of Engineers to “collect, maintain, and analyze information on the consumptive patterns of populations who principally rely on fish and/or wildlife for subsistence.”¹⁶²

This section requires the Corps to work cooperatively with other agencies “to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or wildlife.”¹⁶³ The Corps’ decisions must be based on scientific information.

For years, the Corps has done none of the things required in E.O. 12898 relating to Tribal subsistence hunting and fishing in the Missouri River. The Corps has not established a relationship of trust to enable Standing Rock to share information about the Tribal subsistence harvest. The “collaboration” and “mutual consensus” contemplated in the Corps’ Tribal Consultation Policy are mere words on paper.

For decades, the Corps has made no effort to work cooperatively with our Tribe, and now it has prepared a Draft EIS purporting to evaluate impacts on Standing Rock’s subsistence hunting, fishing and gathering. But the Corps does not how to do it, because it has skirted its environmental justice responsibilities to Standing Rock for decades. As a result, the Draft EIS fails miserably to comply with E.O. 12898 as well as E.O. 14096 on *Revitalizing Our Nation’s Commitment to Environmental Justice for All*.¹⁶⁴

¹⁶⁰ 59 Fed. Reg. 7629 (Nov. 11, 1994).

¹⁶¹ CEQ, *Guidance: Environmental Justice Under the National Environmental Policy Act* at 1.

¹⁶² 59 Fed. Reg. 7631.

¹⁶³ *Id.* at 7631-7632.

¹⁶⁴ 88 Fed. Reg. 25251 (April 21, 2023).

B. The Corps Failed to Engage in Environmental Justice Scoping

The CEQ *Guidance* emphasizes scoping as integral to the determination of a project's impacts on environmental justice communities. The *Guidance* provides that: "During the scoping process, an agency should preliminarily determine whether an area potentially affected by a proposed agency action may include low income populations, minority populations or Indian tribes, and seek input accordingly."¹⁶⁵ Thus, potential impacts to Tribes from a federally-permitted project automatically trigger environmental justice protections – there is no need for the common census block analysis to determine the relative population of Indians and non-Indians in the area.

With respect to DAPL, *any* release of oil into the Missouri River automatically affects the Standing Rock Sioux Tribe, because it could contaminate the food chain relied upon to support subsistence hunting and fishing. Consequently, the Corps must comply with CEQ scoping recommendations for environmental justice communities:

Participation of low-income populations, minority populations or Indian tribes may require adaptive or innovative approaches to overcome linguistic, institutional, cultural, economic, historical, or other potential barriers to effective participation.¹⁶⁶

Accordingly, scoping in environmental justice communities such as Standing Rock is *necessary* to accurately identify and evaluate a project's potential impacts. The CEQ *Guidance* provides the requisite road map for effective scoping in environmental justice communities such as Standing Rock, which includes stakeholder outreach to:

- Local Tribal media;
- Religious organizations on the Reservation;
- Colleges, such as Sitting Bull College;
- Local schools and school boards;
- Local business organizations, such as the Tribal Chamber of Commerce;
- Community development organizations;

¹⁶⁵ CEQ *Guidance* at 10-11.

¹⁶⁶ *Id.* at 13.

- Legal services' providers, such as Dakota Plains Legal Services;
- Homeowner organizations, such as the Standing Rock Housing Authority; and
- Senior citizen groups.¹⁶⁷

Scoping for the Draft EIS must demonstrate outreach efforts to these Standing Rock Reservation stakeholders. This is necessary in order for the Corps to accurately determine DAPL's impacts on the Standing Rock Reservation.

For example, outreach to the Standing Rock Housing Authority would enable the Corps to identify the location of homesites and residents in the Cannon Ball community, which is one-half mile from the DAPL Lake Oahe crossing, and whose residents will be most affected by an oil spill. These families may have to be evacuated if airborne benzene caused acute health risk, such as in Marshall, Michigan in 2010. The CEQ Guidance instructs that the Corps should have met with the Cannon Ball Community School Board, and researched the number of children attending classes closest to the pipeline, and background health concerns from the School Nurse.

The CEQ instructs that "Agencies should recognize the interrelated cultural... factors that may amplify the natural and physical environmental effects of the proposed agency action."¹⁶⁸ On pages 3-217 – 3-218 of the Draft EIS, the Corps cites this Guidance and quotes from two letters Standing Rock sent the Corps, two court declarations by a Cheyenne River Tribal witness on the importance of the waters of the Reservation, and a statement by the Yankton Tribal THPO on gathering plants. But court documents and EA comment letters and testimonials are no substitute for scoping, and it shows in the Draft EIS. The Corps made no effort to collect data related to the intensity of the environmental impact to resources that relate to the cultural impacts identified in the testimonials.

This information could have been obtained, for example, through meetings with the Standing Rock Elders Preservation Council, or the ethnobotany researchers in the Environmental Sciences Department at Sitting Bull College. In its Scoping Report, the Tribe requested the Corps to consult with Mor-Gran-Sou Rural Electrical Cooperative, to determine the frequency of power outages that could affect the Lake Oahe shut-off valves, which have lacked a secondary power source.

¹⁶⁷ *Id.* at 11.

For the Draft EIS, the Corps conducted no actual scoping meetings at all. The Corps' Notice of Intent to prepare this EIS was published in the Federal Register on September 10, 2020, prior to any consultation with the Standing Rock Sioux Tribe.¹⁶⁹ The Corps stated in the Notice: "Due to the ongoing coronavirus (COVID-19) pandemic, virtual meetings will be held on October 15 and 16, 2020... The meeting information can be accessed at <https://go.usa.gov/xG2PT>."¹⁷⁰

The Tribe asked the Corps in its Scoping Report to shut down DAPL pending completion of the EIS, and delay the scoping phase of the NEPA process until COVID subsided, and then to work collaboratively to conduct Environmental Justice scoping on the Reservation. Notwithstanding the requirement in the Corps' Tribal Consultation Policy for "collaborative and effective deliberative communication (and) shared responsibility," the Corps ignored the Tribe's request, has kept the dangerous pipeline operating, and never conducted any scoping in the Environmental Justice community on the Standing Rock Reservation.

It is little wonder, then, that the Corps failed to accurately identify DAPL's environmental impacts at Standing Rock.

C. The Draft EIS Fails to Identify the Heightened Environmental and Health Risk to Standing Rock Tribal Members

"There is a high degree of variability in response to humans to different levels of pollution."¹⁷¹ The Corps of Engineers has failed to disclose specific information relating to the composition of Bakken crude transported by DAPL, or the chemical additives and friction reducers that could also be released into the Reservation environment. Nevertheless, available information does indicate that Standing Rock Tribal members are at heightened risk from an oil spill.

The Centers for Disease Control (CDC) estimates that Native Americans generally suffer diabetes mellitus at twice the rate of white Americans, and at Standing Rock the rate may be

¹⁶⁸ *Id.* at 9.

¹⁶⁹ 85 Fed. Reg. 55843 (Sept. 10, 2020).

¹⁷⁰ *Id.*

even higher.¹⁷² The rate of deaths from diabetes among Native Americans is estimated at 430 percent higher than the general population.¹⁷³ Diabetes is also the leading causes of kidney failure among Native Americans, necessitating costly and difficult dialysis treatments, kidney transplant surgery, and medications. Kidney failure from diabetes among Native Americans is the highest of any race.

Diabetes can require a lifetime of daily medical treatments and management. Diabetics living in poverty in rural areas have difficulty affording the fresh meats and vegetables necessary to control their blood sugar. Meanwhile, subsistence hunting and fishing are part of the Tribe's culture, which makes Tribal members more vulnerable to pollutants contaminating the food chain. The public health baseline on the Reservation, in combination with high unemployment and poverty levels, and a diet related to subsistence hunting and fishing practices, results in a heightened vulnerability of Standing Rock Tribal members to certain pollutants. This is ignored by the Corps of Engineers in the Draft EIS.

A DAPL pipeline release – even one that is of low volume – could exacerbate diabetes and kidney disease among Tribe residents. Benzene – the main component of Bakken crude – is well known for its toxicity to blood, including its causal link to leukemia and other blood disorders. Benzene has been shown in both laboratory rodent studies and in human epidemiologic studies to increase insulin resistance. Persistent ambient benzene exposure may be a heretofore contributor to the epidemics of diabetes and cardiovascular disease.

The contaminants in Bakken crude oil contain volatile organic compounds (VOCs) and hazardous air pollutants, including benzene, toluene, ethylbenzene and xylene (BTEX). These contaminants cause endocrine disruption activity. VOCs are chemical compounds that vaporize in air and dissolve in water. They are endocrine disruptors, which “interfere with the body's endocrine system and produce adverse developmental, reproductive, neurological and immune

¹⁷² Robert R. Kuehn, *The Environmental Justice Implications of Quantitative Risk Assessment*, 1996 U. ILL. L. REV. 103, 122.

¹⁷³ Centers for Disease Control, *Vital Signs: Native Americans with diabetes*. Atlanta, GA: US Department of Health and Human Services (2017) located at <https://www.cdc.gov/vitalsigns/aian-diabetes/index.html>

¹⁷³ www.doh.gov/nndep/campaign/DIABET-2DOC.

effects in both humans and animals.”¹⁷⁴ There are impacts to the functions of the adrenal and thyroid glands, which control metabolism and bone growth, as well as reproductive organs.

Even at low levels, endocrine disruptors can affect “male and female reproduction, breast development and cancer, neuroendocrinology, the thyroid gland, metabolism and obesity, and cardiovascular endocrinology.”¹⁷⁵ The adrenal glands regulate sugar, and consequently the endocrine disruptors in Bakken crude directly disproportionately affects diabetics. Consequently, Standing Rock Tribal members, who suffer diabetes at rates twice as high as the general population, are a highly vulnerable population to the endocrine disruptors found in the Bakken crude transported by DAPL. The Corps of Engineers fails to disclose this in the Draft EIS.

Women are also especially vulnerable to these contaminants, due to impacts to the reproductive system and to breast development and health. Women of child-bearing age are especially at risk. The Standing Rock Reservation population is younger than the surrounding communities and the general population. For example, in Sioux County on the Standing Rock Reservation, the U.S. Census estimates that 35.8 percent of the female population is 18 years old or younger – approaching child-bearing age.¹⁷⁶ In nearby Burleigh County, North Dakota, the figure is 23 percent, which is also the national average.

Thus, there is a significantly higher percentage of women of child-bearing age amongst Standing Rock Tribal members than in nearby communities and the nation as a whole. Consequently, the young women of the Standing Rock Sioux Tribe are at elevated risk from the VOCs and BTEX contaminants in Bakken crude, and are disproportionately impacted by DAPL.

Significantly, the risk of an oil spill from DAPL threatens current Tribal efforts to protect public health on the Reservation. Contaminating or collapsing traditional food sources that provide health, affordable, and readily available foods for the community, are undermine Tribal efforts to prevent diabetes and kidney disease. The Standing Rock Sioux Tribe has had measurable success in tacking its diabetes epidemic using population health and wellness plans

¹⁷⁴ Madelon L. Finkel, *The Human and Environmental Impact of Fracking: How Fracturing Shale for Gas Affects Us and Our World* (2015) 26.

¹⁷⁵ *Id.* at 27.

¹⁷⁶ <https://www.census.gov/quickfacts/siouxcountynorthdakota>.

that re-connect people to local production of healthy traditional foods, traditional physical activities, and traditional health knowledge. The Tribe has worked with the CDC since 2008 to design and launch a successful Traditional Foods Projects, using traditional foods and sustainable ecological approaches to promote health and prevent Type 2 Diabetes.

Standing Rock is a founding partner of the CDC project, with its highly successful *Native Gardens Project: An Indigenous Permaculture Approach to the Prevention and Treatment of Diabete'*. These successful strategies rely on traditional methods for food gathering and preparation, including organic growing methods that protect the environment and increase local and affordable access to health foods. Some of the most popular items are wild turnips (timpisila), chokecherries, wild plums, squashes, corn, potatoes, and onions – all used in traditional healthy foods like soups, wojapi, and wasna (a patty of dried wild meat and chokecherries).

The Standing Rock Native Gardens Coalition is also growing the local economy, by regularly hosting Farmer's Market days that regularly serve several thousand consumers. Its partners including the Tribal diabetes program, and nutrition programs for elders, school students, and local extension services.

A DAPL pipeline release – even one that is relatively low-volume or of short duration – could easily undo these hard-won gains, by contaminating soil and irrigation water, reducing crop output, and contaminating or killing the crops, forage, and wild game that provide nutritious food for the Tribe. A spill of only days or even hours during critical windows of crop production could compromise the year's output, injuring the health of the Tribe and robbing it of both its local food sources and the economic contribution provided by selling fresh produce at its market gardens. Yet none of these impacts are identified by the Corps of Engineers in the Draft EIS.

D. The Draft EIS Contains Erroneous Conclusions on the Environmental and Public Health Impacts to Standing Rock

The Draft EIS acknowledges that “The intensity of impacts may be greater on tribal communities because of their cultural and spiritual connection to the natural environment.”¹⁷⁷ That is a truism, but it is not helpful in determining the impacts to Standing Rock, because the Corps failed to evaluate those impacts – the intensified impacts of BTEX to diabetics, pregnant women, etc.

Instead, the Corps relies on the proposed mitigation in Alternative 4:

Mitigation measures have been developed to minimize and reduce impacts to tribal communities... therefore, high and adverse disproportionate impacts on environmental justice communities are not anticipated with the implementation of the additional easement conditions.¹⁷⁸

In the Draft EIS, the Corps concedes that an oil spill could affect Tribal communities and that the impacts are magnified by cultural considerations. But the Corps assumes that the mitigation measures in Alternative 4 will ensure any impacts are temporary and insignificant. The record does not bear that out.

The conditions that are supposed to save the Tribe include the use improved leak detection technologies as they come available, which the operator must do anyway; trucking in alternative food and water supplies if the river is polluted, which is unacceptable and is compensation, not mitigation; and water monitoring, which the Tribe is already doing. In other words, the proposed mitigation that is supposed to protect the Tribe from disproportionate and adverse impacts is meaningless and will make no difference. The conclusion that the project has no adverse disproportionate effect on the Standing Rock Sioux Tribe is patently erroneous.

NEPA requires that the agency take a “hard look” at the impacts, alternatives, mitigation measures, and other aspects of a federal action at the earliest stages of the decision process, in recognition that when a “decision is made without the information that NEPA seeks to put before

¹⁷⁷ Draft EIS at 3-230.

¹⁷⁸ *Id.* at 3-230, 3-235.

the decisionmaker, the harm that NEPA seeks to prevent occurs.”¹⁷⁹ The NEPA hard look must emerge from an engagement in informed and reasoned decision making, as the agency ‘obtains opinions from its own experts, obtains opinions from experts outside the agency (and) gives careful scientific scrutiny.’”¹⁸⁰

The Corps failed to comply with these requirements in the Draft EIS. The Corps relies on optimistic assumptions of “remote occurrence” of an oil spill, without evaluating the factors that cause spills, or detailing the impacts to sensitive environmental and public health receptors on the Standing Rock Reservation. The Draft EIS is replete with unsupported conclusions of no impact.

NEPA’s “hard look” mandate prohibits agency reliance upon conclusions or assumptions that are not supported by scientific or objective data.¹⁸¹ “Unsubstantiated determinations or claims lacking in specificity can be fatal for an [environmental study] Such documents must... (contain) thoughtful and probing reflection of the possible impacts associated with the proposed project.”¹⁸² Under NEPA, the Corps much more than include a few quotes from letters or court affidavits, and propose meaningless mitigation measures.

D. The Secrecy and Lack of Transparency Violate Environmental Justice

Environmental justice also requires transparency. The EPA defines environmental justice as “the fair treatment and meaningful involvement of all people, regardless of race, color, national origin or income, with respect to the... implementation and enforcement of environmental laws.”¹⁸³ Standing Rock has been denied “meaningful involvement” in the NEPA process due to the secrecy surrounding the data and documents relied upon by the Corps for its conclusions in the Draft EIS.

¹⁷⁹ See *Sierra Club v. Marsh*, 872 F.2d 497, 500 (1st Cir. 1989) quoting *Commonwealth of Massachusetts v. Watt*, 716 F.2d 946 at 953 (1st Cir. 1983).

¹⁸⁰ *Hughes River Watershed Conservancy v. Johnson*, 165 F.3d 283, 288 (4th Cir. 1999) (citing *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 378–85 (1989)).

¹⁸¹ *Citizens Against Toxic Sprays, Inc. v. Bergland*, 428 F.Supp. 908 (D. Or. 1977).

¹⁸² *Committee to Preserve Boomer Lake Park v. Dept. of Transportation*, 4 F.3d 1543, 1553 (10th Cir. 1993).

¹⁸³ www.epa.gov/environmental/justice.

The applicable regulations provide that:

NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and actions are taken. The information must be of high quality... public scrutiny (is) essential to implementing NEPA.¹⁸⁴

In the Draft EIS, the Corps purports to support its conclusions of no adverse impact to Standing Rock by reference to information that is redacted and undisclosed. For example, the Corps states:

(The) FRP Modeling Report (Appendix G) include(s) modeling analysis to identify impacts on drinking water intakes upstream and downstream of the crossing location... The modeling predicts there will be no dissolved hydrocarbons present at this depth or distance and the SRST drinking water intake would likely be unaffected.¹⁸⁵

Thus, the Corps relies on the spill model to conclude there will be no impact, but the results of the spill model in Appendix G are redacted and remain secret. The redactions violate 40 CFR § 1500.1(b), and conclusions based upon undisclosed data violates the admonition in 40 CFR § 1500.2 that the conclusions “shall be supported by evidence.”

The Draft EIS violates Environmental Justice and does not remedy the NEPA violations identified in *Standing Rock Sioux Tribe v. Army Corps of Engineers*. It does not establish a legal basis for the continued operation of DAPL under Alternatives 3 or 4 of the Draft EIS.

¹⁸⁴ 40 CFR § 1500.1(b).

IX. The Draft EIS Fails to Consider the Cumulative Effects of DAPL and the Corps' Construction and Operation of Oahe Dam Under the 1944 Flood Control Act and 2024 Annual Operating Plan.

A. The Relocation of Cannon Ball and Other Communities had a Devastating Effect on the Standing Rock Sioux Tribe that Continues to be Experienced Today

The Cannon Ball community is located at the Reservation's northern boundary, near the confluence of the Missouri and Cannon Ball Rivers. It is about one-half mile from DAPL. The U.S. Census estimates the 2018 population as 945,¹⁸⁶ but it is likely considerably higher, per historical under-counting of Reservation populations by the Census. The Cannon Ball elementary school at the center of the community is the closest school to the pipeline, and may have to be evacuated in the event of a spill from DAPL. The children of the Cannon Ball community may be at higher risk than children in any other town along the 1,170-mile pipeline route.

Cannon Ball is known for the perfectly rounded tuft rocks deposited and formed at the mouth the Cannon Ball and Rivers. The community and surrounding riverine areas have fertile and productive soils. The intake for the 800-acre Standing Rock irrigation project Cannon Ball Unit is approximately one mile downstream from DAPL. In the EA and the remand *Analysis* document, the Corps ignored this intake and erroneously stated that a non-Tribal water intake was the closest one to DAPL. An important component of the Tribal farm system is adjacent to the pipeline, providing a pathway of exposure.

There are successful Tribal-member owned ranches and livestock operations in this area, as well. Local wells for livestock watering could be affected, providing an exposure pathway and jeopardizing the livelihood of Indian ranching families in Cannon Ball district.

Life in Cannon Ball and its neighboring communities on the Standing Rock Reservation was seriously disrupted by the construction of the Oahe Dam. Authorized by Congress in the 1944 Flood Control Act as part of the Pick-Sloan Missouri Basin program, Oahe is one of the

¹⁸⁵ Draft EIS at 3-233,

largest dam and reservoir projects in the United States. "The Oahe Dam destroyed more Indian land than any other public works project in America."¹⁸⁷

As the Tribe indicated in the *Impacts of an Oil Spill* report, the Standing Rock Reservation was dramatically impacted by Oahe Dam:

The Corps of Engineers acquired 56,000 acres of Standing Rock Reservation land for the site of Lake Oahe, under the authority of the Act of September 2, 1957. This land was prime Missouri River bottomland, teaming with timberlands and wildlife; a low-lying area in the plains with abundant water supplies and fertile soil. Four Reservation communities (including Cannon Ball) were located in this area and forcibly relocated by the Corps of Engineers in the winter of 1960.¹⁸⁸

Further:

For those unfamiliar with Sioux culture and the geography of the Dakotas, it is perhaps difficult to appreciate how important the bottomlands were to their way of life. The trees along the river had provided the tribes with their primary source of fuel and lumber... The inundation of the bottomlands destroyed 99 percent of the timber (at Standing Rock)...

The gathering and preserving of wild fruits and vegetables was a traditional facet of Plains Indian culture. The many herbs, roots, berries, currants, plums, cherries and beans that grew in the bottomlands added bulk and variety to the diet... Traditionally, they were also used for medicinal purposes. Buffalo berries, for example, were... used in female puberty rites, and chokecherries were a cure for (digestive ailments)... A form of wild bean called "mouse bean" was regarded... as a palatable wild vegetable... According to tradition, the Sioux always replaced the beans they took with an equal amount of corn or other grain (as an offering)... The loss of these and other plants greatly reduced the Indian natural food supply.

The wooded bottomlands also served as shelter and feeding grounds for many kinds of wildlife. Deer, beaver, rabbits and raccoons were abundant year-round, and thousands of pheasants and other game birds wintered there. The hunting and trapping of this game provided the tribes with an important source of food, income and recreation. Destruction of this environment by the Pick-Sloan dams reduced the wild game and plant supply... by 75 percent.

¹⁸⁶ <https://worldpopulationreview.com/us-cities/cannon-ball-nd-population>.

¹⁸⁷ Michael L. Lawson, *DAMMED INDIANS: THE PICK-SLOAN PLAN AND THE MISSOURI RIVER SIOUX, 1944-1980* (1980), p. 50.

¹⁸⁸ Standing Rock Sioux Tribe, p. 24.

Damages caused by the Pick-Sloan projects touched every aspect of Sioux life. Abruptly the tribes were transformed from a subsistence to a cash economy, and forced to develop new ways of making a living.

Because of their close relationship with nature, the Sioux had a sacred attachment to their land. The areas along the river had afforded them a comfortable and relatively scenic environment with resources to sustain their way of life. The loss of this land and livelihood had a strong emotional impact.¹⁸⁹

The Corps moved four townsites on the Reservation, including Cannon Ball, the Tribal community adjacent to DAPL. Hundreds of Standing Rock families were uprooted in the middle of winter, against their will. Many elders on the Reservation remember growing up in the pleasant area along the river, and then being forced out by the Army Corps during the frigid winter in January 1960. The people of Standing Rock remember how they were treated by the Army. There is significant historical trauma, and the Standing Rock Reservation economy continues to suffer from these losses, today.¹⁹⁰

The Bureau of Indian Affairs recently estimated the unemployment rate on the Standing Rock Reservation to be 63 percent.¹⁹¹ The poverty rate at Standing Rock is approximately 51 percent, as compared to 15 percent nationwide.¹⁹² Per capita income on the Standing Rock Reservation is \$9,688, as compared to \$28,774 nationwide, and median household income on the Reservation is \$26,440, as compared to \$55,322 for the nation as a whole.¹⁹³ The loss of economic resources and community infrastructure as a result of Oahe Dam directly contributed to the socioeconomic challenges facing the Tribe today.

Consequently, under the requisite cumulative impacts analysis, the Corps of Engineers must consider the environmental and socioeconomic impacts of the taking of Tribal land and relocation of Reservation communities in the Draft EIS. It failed to do so.

¹⁸⁹ *Id.* at 24-25, quoting Michael L. Lawson, DAMMED INDIANS REVISITED: THE CONTINUING SAGA OF THE PICK-SLOAN PLAN AND MISSOURI RIVER SIOUX (2009), p. 50-51.

¹⁹⁰ *Final Recommendations of the Garrison Unit Joint Tribal Advisory Comm.: Joint Hearing of the S. Comm. on Indian Aff., S. Comm. on Energy and Natural Res. and the H. Comm. on Interior and Insular Affairs*, 100th Cong. 100-249.

¹⁹¹ Bureau of Indian Affairs, 2013 *American Indian Population and Labor Force Report*, p. 50 (2014).

¹⁹² <https://www.minneapolisfed.gov/indiancountry/resources/reservation-profiles/standing-rock-reservation>.

B. The Corps Must Evaluate the Cumulative Impacts of DAPL and the Regulation of Reservoir Levels under the Master Water Control Manual and Annual Operating Plan

The Corps' operation of the Missouri River mainstem reservoir system is a federal agency action that adversely affects the Standing Rock Reservation environment. In the EIS, the Corps must evaluate the cumulative impact of its Missouri River operations under the Master Manual and 2024 Annual Operating Plan with the potential impacts of DAPL. This is particularly the case with respect to the impact of low water on the implementation of the DAPL Facility and Geographic Response Plans.

As of December 10, the elevation of Oahe Reservoir was 1598.56 msl, which is about 9 feet below the multi-purpose pool level of 1607.5 msl. When water is this low, the Corps describes its operational plans as follows: "The water stored in this zone... will maintain downstream flows through a succession of well-below normal run-off years into the System."¹⁹⁴ Thus, Corps prioritizes downstream water service, to the detriment of Standing Rock.

The impacts at Standing Rock are devastating. Water supplies available for community and economic uses on the Reservation are degraded and the Tribe suffers water shortages, as the Corps manages water flows for the benefit of non-Indian communities downstream. Recently, the intake at the Tribe's Eagle Unit Irrigation Project was damaged by eroding land from water fluctuations. This requires expensive repairs. The intake for the Cannon Ball Unit Irrigation Project shall also require expensive rehabilitation work due to low water.

In recent years, receding reservoir levels have exposed thousands of acres of mud flats, which now surround the Cannon Ball, Long Soldier, Kenel and Wakpala communities. Invasive plants and insects are causing ecological damage to important fish and wildlife habitat. The proliferation of invasive midges is infecting upland game. Tribal subsistence hunting, fishing and gathering is adversely affected by low water. Extensive fish spawning beds on the Reservation are de-watered, causing damage to prey fish, which in turn diminishes important food sources for walleye, northern pike and small mouth bass. The boat docks relied upon by

¹⁹³ *Id.*

Tribal members to access fishing rights are not usable at the present time. They no longer reach the water.

The fluctuation of reservoir levels on the Reservation impacts Tribal roads and other infrastructure. Tribal and family-owned allotted lands in Cannon Ball, Long Soldier and Wakpala are being eroded, with some homes literally falling into Oahe Reservoir.

These significant adverse impacts experienced by Standing Rock from the Corps of Engineers' actions in operating Oahe Dam must be evaluated cumulatively with the potential impacts of an oil spill from the Dakota Access Pipeline.

¹⁹⁴ U.S. Army Corps of Engineers, *Master Water Control Manual, Missouri River Mainstem System* (2018) VII-6 – VII-7.

Standing Rock Sioux Tribe

**Call for the Shutdown of the
Dakota Access Pipeline
and
Comments on the Army Corps of Engineers'
Draft Environmental Impact Statement**

December 13, 2023



Prepared under the direction of

Janet Alkire, Chairwoman
and the Economics Committee of the
Standing Rock Sioux Tribe

Part 2 of 3

Contents

I. The Corps' EIS has Failed to Evaluate the True Risk of a DAPL Oil Spill into the High Consequence Area of the Lake Oahe Pipeline Undercrossing.	2
A. Overview	2
B. The Corps' Approach to Pipeline Safety Risk Assessment and Spill Prevention is Not Supported by Industry Pipeline Safety Standards and has been Withdrawn by the Cited Source 8	
C. Since 2017, Energy Transfer L.P. and its subsidiaries have the worst pipeline spill and integrity management performance. The Corps has omitted this relevant data from their analysis.....	17
II. The Corps fails to ensure that pipeline system safety critical elements such as surge protection and prevention, emergency flow restriction devices (EFRDs) and pipeline leak detection are functional, effective, and subject to performance testing and verification to prevent major incidents. Relevant safety standards requiring a high degree of availability for the safety critical elements are not applied to the Corps' DEIS review.....	29
III. The Corps has Grossly Underestimates Lake Oahe DAPL Worst Case Discharge and Spill Risk, Harming Emergency Response and Endangering Responders.....	42
IV. A Hydrogeological Analysis Supports the Conclusion that a Bakken Crude Oil Spill 90 to 120 Feet Under the Lakebed Will Reach the Waters of Lake Oahe. The Corps Erroneously Asserts that Non-engineered Remnants of HDD Drilling Mud Will Act as a Barrier to an Oil Release into Lake Oahe.	49
V. DAPL Currently Lacks a Feasible Emergency Oil Spill Response Plan - Made Worse by a Low Water Crisis at The Lake Oahe Oil Spill Response Zone.	56
VI. The Oil Spill Modeling Reports in Appendix G are all Highly Redacted Severely Restricting Important Information. The narrative that is Available for Review Contains Inaccurate and Incomplete Responses to Issues Relating to Oil Spill Modeling and Recovery Claims.	69

I. The Corps' EIS has Failed to Evaluate the True Risk of a DAPL Oil Spill into the High Consequence Area of the Lake Oahe Pipeline Undercrossing.

A. Overview

The Standing Rock Sioux Tribe (SRST) detailed in its November 2020 DAPL EIS (DEIS) Scoping Report¹ and appended Safety and Environmental Impact Analysis Report² critical safety and environmental deficiencies concerning the design, integrity management, emergency response procedures and operation of the Dakota Access Pipeline (DAPL). These reports documented that the DAPL parent corporation Energy Transfer L.P. and the Corps in its evaluation leading up to the EIS had failed to meet or apply even minimum pipeline safety regulatory requirements³ in their operating history since 2012.⁴ The Tribe's Scoping Report described how Energy Transfer had not applied the pipeline safety management system requirements of recent pipeline industry safety standards⁵ that required risk reduction and continuous improvement. These SRST scoping documents are incorporated into this report by reference.

The Corps in its DEIS ignored the Tribe's scoping input and has failed to address these serious concerns. In fact, now in the DEIS the Corps has omitted the application of consensus safety standards all together out of their analysis in 3.1 Reliability and Safety. As a result, safety critical hazards and vital needed controls remain unevaluated or verified - and even more importantly unimplemented for DAPL. This is a critical omission. Recommended Practices and standards such as those from the American Petroleum Institute (API) have been updated in recent years incorporating important lessons learned from major pipeline incidents. API RP 1173 emphasizes "Pipeline operators conform to applicable industry codes and consensus standards with the goal of reducing risk, preventing releases, and minimizing the occurrence of abnormal

¹ *Report to the U.S. Army Corps of Engineers on the Scope of the Court-Ordered Environmental Impact Statement for an Easement for the Dakota Access Pipeline*, Standing Rock Sioux Tribe, November 24, 2020.

² *Safety and Environmental Impact Analysis of the Energy Transfer's Dakota Access Pipeline Report to the Standing Rock Sioux Tribe*, Donald S. Holmstrom, 2020.

³ See Safety and Environmental Impact Analysis e.g. worst case discharge, integrity management plans; operations, maintenance, and emergency response procedures.

⁴ *Id.* e.g., American Petroleum Institute Recommended Practices 1160, 1173, 1174, 1175, 1130, and 1133.

⁵ American Petroleum Institute (API) Recommended Practice (RP) 1173, *Pipeline Safety Management Systems* (2015) and *Managing System Integrity for Hazardous Liquid Pipelines*, American Petroleum Institute (API) Recommended Practice (RP) 1160, Third Ed., 2019.

operations” as a principle of its Recommended Practice. Many of these changes have occurred from federal government agency recommendations and bipartisan Congressional activity. Major chemical accident prevention requires both prescriptive and goal setting elements. The source for prescriptive requirements typically comes from consensus industry safety standards and recommended practices.⁶ The Federal pipeline safety regulator PHMSA recognizes this and has incorporated many pipeline safety standards into its regulatory scheme.⁷ However there have been no standards incorporated in over ten years making the application of the recent, more rigorous revisions incorporating lessons learned from recent disasters even more important.⁸ It is critical that the oil industry be held accountable to apply the safety standards they developed. PHMSA has not incorporated key modern standards into their regulatory scheme that will be referenced in this report into including API RP 1173, RP 1160 (2019), RP 1174, RP 1133, or RP 1175.

Federal law has long recognized the importance of the use of voluntary consensus technical standards to carry out agency decision-making. The National Technology Transfer and Advancement Act of 1995⁹ states that

Except as provided in paragraph (3) of this subsection, all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.¹⁰

The language in the Act broadly addresses the use consensus technical standards¹¹ and is not limited to the use of standards by agencies that have been incorporated by reference in federal

⁶ “A prescriptive regulation or standard describes the specific means or activity-based actions to be taken for hazard abatement and compliance. Performance or goal-based regulations, on the other hand, state the objective to be obtained (such as risk reduction or hazard abatement) without describing the specific means of obtaining that objective.” *Chevron Regulatory Report*, US CSB, 2014, p. 9.

⁷ 49 CFR § 195.3

⁸ For example, PHMSA has not incorporated a new API standard by reference into their regulatory scheme since 2013. 49 CFR § 195.3. API standards are typically updated on a 5-year schedule. PHMSA has not incorporated key modern standards into their regulatory scheme under 49 CFR § 195.3 including API RP 1173, RP 1160, RP 1174, RP 1133 or RP 1175.

⁹ The National Technology Transfer and Advancement Act of 1995, Pub. L. No. 104-113, 110 Stat. 775 (Mar. 7, 1996).

¹⁰ *Id.* § 12(d)(1). Exceptions are provided in Section 12(d)(3) for standards that are “inconsistent with applicable with federal law or otherwise impractical.” It will be argued herein that these exceptions do not apply.

¹¹ *Id.* The Act defines “technical standards” as “performance based or design-specific technical specifications and related management systems practices.”

regulations. Federal agencies such as the Army Corps are required to use relevant consensus standards in their activities, including in the EIS process but have failed to do so.

Since 2017, Energy Transfer L.P. and its subsidiaries' pipeline safety record is the worst among those corporate pipeline families with the most incidents. More recently, from 2022 to present Energy Transfer has been criminally convicted of 23 pipeline spill related Clean Water Act violations, debarred by the EPA from Federal contracting, and experienced nine 1000 Bbl spills with its hazardous liquid¹² pipeline subsidiaries. The data shows these serious incidents are pervasive across the corporation's pipeline subsidiaries, hazardous liquid product, and the part of the pipeline system involved in the incident. For example, of the recent nine 1000 Bbl. spills four were crude spills from the PHMSA system part designation "pipeline including valve sites" rebutting the Corps' truncated review of Energy Transfer's safety record. The Tribe will provide a detailed data analysis of many safety issues of concern and address why these DAPL safety threats have become more dire.

These serious spill incidents are corporate safety management system deficiencies - a prevention approach supported by more rigorous and essential industry pipeline safety standards developed in response to recent disasters but not applied by the Corps. These standards emphasize that corporate leadership is responsible for developing effective pipeline safety systems and performance improvement. Energy Transfer's deficiencies are corporate wide, pervasive, and not specific to DAPL or its operator Sunoco.¹³ A striking documented example of these widespread management system failures is the recent October 14, 2023, PHMSA Notice of Proposed Safety Order (Appendix C)¹⁴ to Energy Transfer's Mid-Valley subsidiary. In the notice, PHMSA details 34 failures since 2014, six of which were in the last 10 months "from various causes, including internal corrosion, pump failures, third-party damage, faulty equipment, hydrogen cracking, stress

¹² PHMSA defines hazardous liquids as "petroleum, petroleum products, anhydrous ammonia and ethanol." 49 CFR 195.2 Definitions. Hazardous liquid "commodity released" categories analyzed for this report include crude oil, highly volatile liquid (HVL) and refined products. PHMSA regulates these hazardous liquids under a common framework as they present similar hazards. This report will analyze Energy Transfer's safety performance under the defined commonality of hydrocarbon hazardous liquid pipeline operations, emergency response, etc.

¹³ Energy Transfer was designating Sunoco its wholly owned subsidiary as the DAPL operator and drafting a Facility Response Plan as early as June 2015. See *Sunoco Pipeline L.P. Facility Response Plan Dakota Access Pipeline North Response Zone*, V.1, June 2015.

¹⁴ Appendix C, *Notice of Proposed Safety Order, Mid-Valley Pipeline Co. LLC*; PHMSA; October 14, 2023; [https://primis.phmsa.dot.gov/comm/reports/enforce/documents/42023056NOPSO/42023056NOPSO_Notify%20of%20Proposed%20Safety%20Order_10132023_\(23-281044\).pdf](https://primis.phmsa.dot.gov/comm/reports/enforce/documents/42023056NOPSO/42023056NOPSO_Notify%20of%20Proposed%20Safety%20Order_10132023_(23-281044).pdf) last accessed 12-4-23.

corrosion cracking, pipeline exposures, failed repairs, operator errors, and unidentified causes.”¹⁵ PHMSA identified more systemic deficiencies as well including failure to investigate incident causes, disregarding PHMSA requests for pipe removal and testing, not performing needed follow-up evaluations, and an accident history that indicates the threats “are unmitigated.”

There have been releases due to time dependent threats such as external corrosion, internal corrosion, stress corrosion cracking, and hydrogen cracking. It is unclear what preventative and mitigative measures the Energy Transfer has taken to prevent additional similar failures.¹⁶

PHMSA also found pervasive problems with Energy Transfer’s leak detection and self-monitoring systems:

Numerous failures have been discovered by members of the public and or contractors. Other failures were discovered by Energy Transfer personnel during routine movements around its facilities, and not through Energy Transfer’s instrumentation and control system. These trends indicate Energy Transfer’s inability to self-monitor and detect failures.

It is particularly important to note that the systemic issues such as failure to investigate incident causes or follow integrity management good practices for equipment testing created common failure modes such as internal corrosion across different equipment types (pump stations, pipeline and valves, breakout tanks). This is evidence of broader a safety management system (SMS) failure that are the root causes of incidents.¹⁷ The same corporate-level SMS deficiencies can be causal to incidents across subsidiaries, pipelines equipment types as seen in Mid-Valley, or transporting different hazardous liquid [crude oil, highly volatile liquids (HVL), or refined products]. These safety management system deficiencies can cause similar incidents that are not limited to one part of a pipeline operation or hazardous liquid commodity. As with PHMSA, the Tribe has concluded that Energy Transfer’s troubling incident history is systemic and pervasive. The data will show Energy Transfer’s SMS deficiencies impact all corporate pipeline operations. Consequently, because these serious problems are corporate-wide, this report will examine the

¹⁵ *Id.* at p. 10.

¹⁶ *Id.* at p. 12.

¹⁷ *Guidelines for Investigating Chemical Process Incidents*, Center for Chemical Process Safety (CCPS) of the American Institute of Chemical Engineers (AIChE), 1992, at p.130. CCPS states that these specific failures may be immediate causes or initiating events but not root causes. Underlying them is a management system failure such as a faulty design, integrity management or root cause investigative system.

safety performance of all hazardous liquid pipelines and other serious pipeline incidents operated by Energy Transfer and its subsidiaries.

As the Federal Energy Regulatory Commission found in its Rover pipeline investigation, Energy Transfer's failed corporate safety culture "**equally infected the executives.**" The Corps summarily dismissed these issues and drastically narrowed the scope of its evaluation to exclude information that contradicts its conclusions. This treatment is emblematic of the Corps' approach to all pipeline safety issues raised by the Tribe. The Tribe will show that statements by the Corps are replete with omissions, inaccurate facts, misleading conclusions, and superficial analysis. When there is a response, it is typically a bald assertion without supporting analysis or citation to credible authority. The DEIS reads not as a scientific document but more like a legal brief in defense of DAPL on issues raised by the Tribe. Some examples of critical gaps and deficiencies of the Corps' safety and environmental spill risk analysis include the following:

- Since 2017, Energy Transfer L.P. and its subsidiaries including Sunoco Pipeline, the operator of DAPL have **the worst spill record** for hazardous liquid pipelines in terms of spill numbers, significance, volume, and enforcement record among pipeline corporate families with the most spills. In the last 20 months alone, Energy Transfer's hazardous liquid pipelines have had nine hazardous liquid spills over 1000 Bbls. (42,000 gals.), the next worst in that period had one. From 2017 to present **DAPL-ETCO had the most hazardous spills (16)** for all pipelines with a single operator ID for PHMSA-defined new installations.¹⁸
- In 2022 Energy Transfer and Sunoco have been **criminally convicted** of 23 pipeline spill related Clean Water Act (CWA) criminal violations. As a result of the Pennsylvania CWA convictions-, the Environmental Protection Agency (EPA) had **debarred both DAPL's parent company Energy Transfer L.P. and DAPL operator Sunoco from Federal Agency contracting. Consequently, the Energy Transfer is debarred from contracting a Lake Oahe easement with The Corps.**
- In December 2021, the Federal Energy Regulatory Commission (FERC) found 176 pipeline drilling fluid spills laden with toxic waste were "the product of a **corporate culture—one that equally infected the executives...**that favored speed and

¹⁸ New installations refer to new equipment, pipelines systems; and expansions, extensions, or replacements. The review focused on new installations since 2017, the year that DAPL began operations.

construction progress over regulatory compliance” The executive named was the same executive over the construction and HDD drilling of DAPL highlighting the commonality of corporate level SMS flaws that can impact different pipelines transporting different hazardous commodities. **FERC also found that Energy Transfer did not self-report the violations and committed “obstructionist conduct”** during its investigation that led in part to the large \$40 million fine.

- On October 14, 2023, PHMSA issued a Notice of Proposed Safety Order to Energy Transfer’s Mid-Valley crude pipeline finding pervasive deficiencies from an examination of 34 spill incidents across the 1048-mile pipeline that “pose a pipeline integrity risk to public safety, property, or the environment.”
- Use of an outmoded and unsupported risk assessment methodology that is inappropriate for low frequency major accident and not specific to the DAPL project, the operation of the pipeline, or the safety performance of the operator - consequently, important critical hazards were not evaluated and needed safety controls not implemented.
- A sole focus on minimum compliance with pipeline safety regulatory requirements that have not kept pace with changes to industry practices and standards and important lessons from recent pipeline disasters. Minimum regulatory compliance is insufficient to ensure DAPL safety.
- A failure to apply any good practice consensus pipeline safety standards to its evaluation of DAPL risk or Energy Transfer’s operations or performance.
- Safety critical elements and related standards addressing the design, surge relief, instrumentation, and verification of DAPL safety systems are lacking or ineffective.
- Energy Transfer’s (ET) leak detection methodology and past performance are seriously flawed. From 2012 to present, using the same methodology as the PHMSA leak detection study, Energy Transfer’s Computational Pipeline Monitoring (CPM) system only detected hazardous liquid pipeline releases 14% of the time.
- The Corps has failed to identify and ensure effective controls for the hazards of Bakken crude that have been identified by the EPA and other Federal and state agencies with emergency response authority. Recent scientific reports have determined that Bakken crude has the flammability of gasoline with elevated components of toxic and

carcinogenic BTEX.¹⁹ This omission leaves the Tribe and its emergency responders vulnerable to serious harm.

- Energy Transfer's Geographical Response Plan (2018) fails to effectively address the threat of chronic low water conditions on Lake Oahe to emergency response planning. Energy Transfer's spill model contradicts the focus of Lake Oahe spill mitigation. Emergency Response plans fail to identify critical safety concerns for successful spill response in winter conditions.

B. The Corps' Approach to Pipeline Safety Risk Assessment and Spill Prevention is Not Supported by Industry Pipeline Safety Standards and has been Withdrawn by the Cited Source

The Tribe's Scoping Report emphasized that the pipeline risk assessment and management approaches taken by the Corps were not supported by the more rigorous methodologies developed by industry in response to recent serious pipeline disasters. This issue was ignored by the Corps. The Corps in the DEIS uses a simplified and non-pipeline specific risk matrix "to identify the significance of impacts associated with a crude oil release at Lake Oahe."²⁰ The Corps does not provide a rationale why it does not apply widely recognized consensus pipeline industry risk and integrity management standards such as the American Petroleum Institute (API) Recommended Practice (RP) 1173, *Pipeline Safety Management Systems* (2015) and API RP 1160, *Managing System Integrity for Hazardous Liquid Pipelines* (2019) that adopt a safety management system framework. These recommended Practices adopt a "plan-do-check-act approach for pipeline spill prevention and continuous improvement. The methodology of these API RPs is company-specific, and data driven to achieve required risk reduction. The API RPs, appropriate for potentially high consequence but low frequency incidents, do not focus on generic equipment failure rates like the Corps approach - ignoring hazards and risk factors for a particular pipeline project or operator's performance.

The 2010 Enbridge Marshall MI disaster underscores why the pipeline safety management system (SMS) approach is critical to incident and spill prevention and the Tribe's critique of the Corps' DAPL EIS. It is important to note that crude spills can be catastrophic - this spill was a

¹⁹ Benzene, toluene, ethylbenzene, xylene (BTEX)

²⁰ *Environmental Impact Statement Dakota Access Pipeline Lake Oahe Crossing Project*, US Army Corps of Engineers (Omaha District), at 3-3, September 2023. Hereinafter DAPL EIS or DEIS.

disaster that spilled over a million gallons of diluted bitumen (tar sands) crude that reached 40 miles down the Kalamazoo River and likely will never be fully cleaned up. This incident and the San Bruno gas pipeline multi-fatality incident also investigated by the NTSB led to many calls for reform of pipeline safety and critiques of PHMSA. The top leadership of PHMSA was eventually forced to resign due to their inaction from calls for reform. PHMSA had been severely criticized for lengthy delays in rulemaking by Congress, GAO, and the DOT IG.²¹ Subsequent pipeline safety rulemaking highlighted these two disasters as the need for reform.

The NTSB Marshall MI report²² focused on the importance of Enbridge's organizational and management system safety deficiencies. The NTSB noted that PHMSA did not require a pipeline safety system framework and that was causal to the incident. This approach focuses on how safety systems under control of management are the root cause of all incidents. This approach is widely recognized for chemical accident prevention rather than solely focusing on "operator error," and "unavoidable" or "unanticipated" events or the result of equipment failure rates separate from root causes. The NTSB report cites the 2007 US Chemical Safety Board's (CSB) BP Texas City report²³ for the importance of organizational analysis and the SMS approach. Reviewing recent pipeline incidents, the NTSB concluded that the application of a safety management system approach was "needed to enhance the safety of pipeline operations."²⁴ The NTSB made a recommendation to the oil trade association API to adopt a pipeline safety system recommendation. API RP 1173 was developed with active participation by PHMSA and CSB staff. The NTSB graded the API response as "exceeds" acceptable action. The NTSB specifically stated pipeline operators should not wait from action by PHMSA before improving safety. API RP 1173

²¹ The PHMSA Inspector General has noted: "PHMSA has long faced criticism from Congress for its lack of timeliness in implementing statutory requirements—mandates—and recommendations from NTSB, GAO, and OIG reports." A 2017 report summarized that while PHMSA has made some progress, 60 of NTSB's 118 recommendations remain open, 25% of regulatory mandates were unimplemented, and 75% of its mandated deadlines were missed. *Insufficient Guidance, Oversight, and Coordination Hinder PHMSA's Full Implementation of Mandates and Recommendations*, U.S. Department of Transportation, Office of Inspector General, Report Number: ST-2017-002, at 1 (Oct. 2017) (found at <https://trid.trb.org/view/1427434>).

²² *Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall Michigan, July 25, 2010*; National Transportation Safety Board Accident Report, 2012. Last accessed 12-2-23, <https://www.nts.gov/investigations/AccidentReports/Reports/PAR1201.pdf>

²³ BP Texas City Final Investigation Report, US Chemical Safety and Hazard Investigation Board (CSB), 2007. Last accessed 12-2-23, <https://www.csb.gov/file.aspx?DocumentId=5596>

²⁴ *Id.* at p.116.

underscores the problems with the Corp's DEIS analysis and ET's failed safety performance. API's RP 1162 on Integrity Management (2019) takes a similar management safety system approach.

In the Marshall, MI report, while the technical failure was a crack that "grew and coalesced" from corrosion fatigue there were several broader organizational and management system deficiencies that were the root cause that led to the incident – insufficient margin of safety, failure to incorporate lessons learned, etc. A key reason to adopt this approach is that fixing these broader issues will have a greater preventative impact. The purpose of incident investigation is to **more broadly prevent similar incidents not just the fact pattern of the one investigated**. These broader organizational root causes and recommendations can lead to preventing other incidents in the corporation's pipeline operations not just in the equipment or section of pipeline where the incident occurred. A prime example with Energy Transfer are the production pressures and use of unapproved additives in drilling fluid that led to toxic releases to sensitive environments in both the Mariner 2 East/Revolution pipeline CWA criminal convictions and the FERC \$40 million fine with ET's Rover pipeline. FERC correctly identified that these were organizational causes – a failed "corporate culture" going all the way to the "executive level."

So different pipelines, different corporate subsidiaries, with different hazardous material, can have serious hazardous material releases related to common organizational and cultural deficiencies within the corporate parent. It is critical to point out that from the Tribe' review of PHMSA data Energy Transfer's safety deficiencies are serious and widespread - evident in all hazardous liquid subsidiaries (11 largest examined), hydrocarbon hazardous liquid pipeline commodities (crude, highly volatile liquids, refined products) and equipment types (pipeline and valves, pump/meter stations and breakout tanks). The importance of a broader review of Energy Transfer's pipeline operations shows systematic failures of more serious incidents "large spills" in High Consequence Areas (HCAs),²⁵ "significant spills" as defined by PHMSA.

²⁵ To be classified as a large HCA spill by PHMSA the release must result in death or personal injury requiring hospitalization, property damage greater than \$50,000, a release of more than 5 barrels, fire or explosion, or pollution of water.

Energy Transfer L.P. experienced nine 42,000-gallon (1000 Bbl.) spills in the last 20 months alone (the nearest worst performer had one similar spill). ET's record from either 2012 or 2017 to date is equally alarming. As with the Marshall MI pipeline disaster, the organizational failures are corporate safety system failures which are impacting specific equipment at a specific pipeline but the SMS deficiencies have the potential as the data shows to impact a broad array of similar incidents unless preventative measures at the corporate level are implemented.

Large spills are "low frequency, high consequence events. These serious spills are infrequent, rare, etc. (because incidents have multiple causes all of which must line up, yet fortunately seldom do). **However, they are not rare for Energy Transfer.** Low frequency incidents with catastrophic potential require different risk approaches. They focus more on consequences and effective controls than rationalizing low frequency as a reason to dismiss the threats or needed protections. ET's incident record is additional strong evidence that ET's corporate safety leadership, oversight and safety system performance are severely deficient. ET has a "run-to-failure" integrity management system as the data shows. For the Corps' DEIS their choice of an inappropriate risk management approach (simplistic risk matrix withdrawn by the source cited) using generic incident frequency data (rather than company and project specific data), and a truncated review of ET's safety record (limited timeframe, hazardous liquid commodity types, pipeline equipment, etc.) are not supported by PHMSA regulations or pipeline consensus safety standards. The API risk approach looks at continuous improvement to the corporations' safety performance, something sorely lacking for ET. The Corps wants to artificially restrict what is examined (only certain equipment, only a specific geographical location, only crude oil, only from 2018 -2020, etc. It should also be pointed out that much the Corps data is misstated. A narrow approach is taken by the Corps because a broader review reveals larger more serious problems that are directly relevant to the safety of DAPL.

The Corps uses a risk methodology that has been withdrawn by the primary authority cited, the UK HSE. The new UK HSE risk assessment guidance urges at a minimum the implementation of authoritative good practice which the Corps has failed to do in the DEIS. The references for the risk matrix in the DEIS²⁶ cite to a 2005 document from United Kingdom

²⁶ DEIS at p. 3-4.

(UK) Health and Safety Executive²⁷ and a paper authored by individuals from a symposium published by the UK iChemE.²⁸ The UK HSE is a credible source for guidance related to major chemical accident prevention. In the UK hazardous liquid pipelines are covered under their major accident hazard regulations. UK HSE regulations and guidance on driving major chemical accident risk to As Low as Reasonably Practicable or ALARP are recognized internationally. However, the approach and conclusions of the cited DEIS document - UK HSE *Guidance on ALARP decisions in COMAH*, SPC/Permissioning/12 (2005) - **was withdrawn**. The current 2023 version of *Guidance on ALARP decisions in COMAH*, SPC/Permissioning/37²⁹ on the UK HSE website states:

*This document aims to give guidance specifically on ALARP³⁰ demonstrations in the COMAH³¹ context **and replaces SPC/Perm/12 which is withdrawn (emphasis added).***

This change is important as significant revisions were made that underscore the importance of preventative action rather than idiosyncratic risk estimates to overlook or deny risk. In particular, the HSE emphasizes the use of industry good practice standards and guidelines. The withdrawn 2005 version of the HSE Guidance that the Corps recommends the use of a risk matrix as a one “simple qualitative approach” to risk assessment. The document provides an illustrative example and guidance for its use. The current version has eliminated the discussion of the use of a risk matrix and now emphasizes that “operators to “take all measures necessary (AMN) to prevent major accidents” which at a minimum must implement “authoritative good practice.”

*“HSE starts with the expectation that suitable controls must be in place to address all significant hazards and that those controls, **as a minimum, must implement authoritative good practice** irrespective of situation based risk estimates” (emphasis added).*

²⁷ *Guidance on ALARP decisions in COMAH*, HSE (UK Health and Safety Executive), 2005..

²⁸ *Risk Ranking of Events by Frequency, Consequence and Attenuating Factor: A Three Variable Risk Ranking Technique*; Lee, et al; iChemE Hazards XXII, Symposium Series NO. 156; 2011. iChemE is the professional society of chemical engineers in the UK. This paper is authored by individuals in UK that are subject to the regulatory requirements and guidance provided in the HSE’s *Guidance on ALARP decisions in COMAH*.

²⁹ *Guidance on ALARP decisions in COMAH* SPC/Permissioning/37 (last accessed on 12-1-23) https://www.hse.gov.uk/foi/internalops/hid_circes/permissioning/spc_perm_37/

³⁰ As Low as Reasonably Practicable (ALARP)

³¹ Control of Major Accident Hazards (COMAH)

The HSE guidance now places more emphasis on effective controls in place to prevent major hazards and the use of “authoritative good practice.” The HSE makes clear that risk tools and estimates that ignore good practice are unacceptable. This is a criticism of the use of risk assessments and tools to deny major hazard risk with individual operator risk estimates. An example is the use of individual frequency or consequence analysis while failing to implement good practice or examine the operators performance. The new HSE guidance reflects the modern view of major chemical accident prevention that places less focus on an emphasis on the use of frequency in the risk assessment and more on the controls in place to prevent high consequence releases to the environment. As emphasized in the Tribes Scoping Report:³²

Dated constructs of risk are typically characterized by a static and narrow examination of the risk management equation often resulting in a check-the-box exercise. Evaluating the probability of failure and the magnitude of consequence is an important component but insufficient, particularly where the consequence can be a catastrophic incident. Major hazardous material incidents – large spills and toxic releases, fires, and explosions, etc. – are described in industry safety guidelines as low frequency, high consequence events. Even though these major incidents are infrequent, because of the potential for catastrophic consequences, risk evaluation and treatment for these events must receive high priority.

The changes to the UK HSE Guidance strongly undermine the Corps’ primary risk emphasis – the inappropriate use of questionable equipment failure rates to assert a DAPL spill is “remote,” “unlikely,” “very unlikely,” etc. while failing to apply “authoritative good practice” or evaluate Energy Transfer’s troubled SMS performance.

An infamous example of the inappropriate use of a simplified generic risk matrix was the risk assessment performed by Transocean for the Macondo well leading up to the Deepwater Horizon disaster that killed 11 workers and was the worst environmental disaster in US history. The US CSB in its Macondo report³³ identified that the use of a generic risk matrix is ineffective to prevent major chemical disasters. Transocean had determined that because no blowout had occurred on the Deepwater Horizon the likelihood of occurrence was low. Both Transocean and BP stated that a well blowout in the Gulf of Mexico was unheard of and highly unlikely. Despite

³² SRST Scoping Report, at p. 38.

³³ Deepwater Horizon Incident Investigation Report, Drilling Rig Explosion and Fire at the Macondo Well, Volume 3, US CSB, pp.174-175, <https://www.csb.gov/file.aspx?DocumentId=5992> last accessed 12-3-23.

the credible scenario of catastrophic consequences, the assessment consideration of event frequency was used to dismiss the risks. Therefore, the risk was downgraded, and effective controls were not considered. Post-incident Transocean itself concurred the generic risk matrix approach was ineffective and agreed that more effective risk methodologies such as the “bowtie” approach were preferred.

The Corps, like Transocean uses a simplified generic risk matrix for a proposed increase in DAPL capacity to 1.1 million BPD in a PHMSA defined environmental high consequence area. In the Reliability and Safety section of the DEIS uses a generic equipment-based frequency analysis, specific to a geographical location to dismiss the risk of a spill from DAPL in the project area to a near impossibility (for example, 1 in 949,116 years for a spill >1000 Bbls and <10,000 Bbls).³⁴ This is despite doubling the flow, Energy Transfer’s pipeline-related criminal convictions and Federal government-wide debarment, worsening safety record of Energy Transfer, safety critical DAPL design defects, and failure to apply widely recognized pipeline safety standards. All these factors are ignored or summarily dismissed by the Corps. However, Energy Transfer’s SMS serious deficiencies significantly elevate both DAPL spill consequences and likelihood. This renders DAPL an unsafe and high risk pipeline.

There are many other serious deficiencies with the Corps’ identification of hazards, risk assessment and implementation of controls.

- There is no evidence in the DEIS section 3.1 that the Corps conducted a formal hazard assessment identifying DAPL hazards, reviewing all credible incident scenarios, evaluating the corporate and operator performance, identifying SMS deficiencies, implementing needed controls using the hierarchy of controls and verifying the existing controls are in place and operating effectively as required by industry standards such as API RP 1173.
- The Corps has failed to conduct or evaluate an Energy Transfer Management of Change (MOC) review for the nearly doubling of the DAPL capacity proposed in the DEIS. The production of a technical MOC review and report is required by API RP 1173 and 1160 to assess the safety implications of the change. Safety issues specific to the doubling of the capacity not examined by the Corps include impacts to integrity management, surge prevention and protection, safety critical equipment

³⁴ DEIS at p. 3-24.

performance in response to a spill, and emergency response. An MOC review typically requires an updated risk analysis to assist in evaluating the changes and needed controls. There is no evidence in the DEIS that an updated risk analysis has been conducted even though nearly doubling DAPLs capacity greatly increases the WCD and consequences from a spill.

- API RP 1173 recognizes that covered pipelines are subject to high consequence low frequency events that requires focus on risk reduction and continuous improvement. The API RP omits reference to risk matrixes or use of generic incident or equipment frequency as preferred risk management approaches unlike the Corps methodology in the DEIS.³⁵ API RP 1173 and 1160 focus on the pipeline operator's own SMS performance and not the generic performance of other pipeline operators.
- The DEIS fails to look at all credible release scenarios and grossly underestimates DAPL consequences including the worst case discharge (WCD, see section x). A much larger WCD significantly the consequences of a spill and hence spill risk. The DEIS for example does not effectively consider a spill under the detection limit such as for a 10-day period between aerial surveillance or under winter ice cover conditions. The Corps baldly asserts DAPL's risk assessment approach "focused on prevention of releases for scenarios that had high consequences and low probabilities to reduce the overall risk"³⁶ but all the DEIS cited scenarios show otherwise.
- In their risk approach, the Corps only examines single event incident causes of generic equipment incidents and makes faulty assumptions from this mischaracterization. Industry safety guidelines recognize that major chemical incidents have multiple causes. While equipment failures can be initiating events of incidents, root causes are management system failures. This issue was raised in the Tribe's reports in the context of WCD and the need to consider leak detection human factors issues in addition to equipment performance. DC Circuit Court of Appeals decision³⁷ found it to be an unresolved issue amongst experts and determined the Corps' failure to explain why it dismissed the issue left "unresolved a substantial dispute as to its worst case discharge calculation." Unfazed, the Corps makes the same bald assertion that it is "important to avoid consideration" of multiple event causation referring to it as "double jeopardy." This is a startling acknowledgement that the Corps considers understanding the various possible causes of incidents not as an important opportunity for prevention but rather a

³⁵ API RP 1173, 7.0 Risk Management

³⁶ DEIS at p. 3-25

³⁷ *Standing Rock Sioux Tribe et al. v. United States Army Corps of Engineers*, F.3d 1032 (DC Cir. 2021)

punitive “double jeopardy.” This also ignores the language of the PHMSA WCD regulation³⁸ and API RP 1130 (incorporated into the PHMSA regulations by reference) where every element including detection time must be considered separately for worst case determination. Given the possibility of false alarms and instrument indications, API RP 1130 requires pipeline control operators to evaluate leak detection alarms which is part of the process of detecting a leak and must be considered in the WCD despite the Corps unexplained concern for double jeopardy.

- The risk matrix and spill scenarios do not evaluate consequences without mitigation from failures related to leak detection and operation of the Lake Oahe EFRDs. Given the lack of verification of actual performance of safety critical elements such as DAPL’s leak detection system and EFRD valve closure mitigation cannot be credited as functioning in the WCD or risk evaluation. Verification of performance is required by pipeline industry safety standards.
- The DEIS fails to address the dire consequences of a DAPL crude oil release 90-120 feet under Oahe’s lakebed. The DEIS acknowledges that that a leak under the detection limit “would likely take a substantial amount of time to reach Lake Oahe.”³⁹ A leak under a detection limit of 2% of the flow⁴⁰ could release up to 22,000 BPD and last for 10 days if detected by aerial surveillance or possibly longer under winter ice cover. The oil would pool and accumulate for “a substantial amount of time” creating a large reservoir of toxic crude oil released into Lake Oahe over time. This type of spill is extremely difficult if not impossible to mitigate and remediate. The flow of crude from under the lakebed into Lake Oahe could last for years and never be effectively remediated, harming the Tribe and environment for decades (see Section x).
- The Corps’ risk approach is an exercise in risk denial and consequently works to dismiss the critical need for more effective controls such as improved surge protection and prevention, use of industry safety standards, verification of actual pipeline performance, or correction of Energy Transfer’s failed safety management systems reflected in their pipeline spill record.

The Corps fails to apply any good practice consensus pipeline safety standards to its evaluation of DAPL risk or Energy Transfer’s operations or performance. The Corps’ DEIS Section 3.1 on Reliability and Safety is devoid of citations to any consensus safety standards in

³⁸ Worst Case Discharge, 49 CFR 194.105(1)

³⁹ DEIS at p. 3-25.

⁴⁰ The DEIS cannot take credit for a 1% leak detection rate lacking actual performance verification. The actual CPM leak detection rate for Energy Transfer from 2012 to present is 14% undermining the DEIS claims that their CPM performance is state of the art.

use by DAPL or critically applied in their analysis.⁴¹ This is a fatal flaw of the EIS – the very safety standards developed out of recent pipeline disasters that require more rigorous performance to prevent spills are not referenced by the Corps or applied to DAPL. This is especially concerning given Energy Transfer’s worst-in-class pipeline spill and enforcement record.

- C. Since 2017, Energy Transfer L.P. and its subsidiaries have the worst pipeline spill and integrity management performance. The Corps has omitted this relevant data from their analysis.

The Corps falsely claims that “generic pipeline release data is worse than Energy Transfer’s incident record, therefore using industry-wide pipeline incident data is more conservative.”⁴² PHMSA requires that hazardous liquid pipeline spills meeting specific criteria be reported to the agency⁴³ and assigns an Operator ID for each pipeline system identified in PHMSA submissions. Since 2017, Energy Transfer L.P. and its subsidiaries including Sunoco Pipeline, the operator of DAPL have **the worst spill record** for hazardous liquid pipelines looking at the full picture of spill numbers, significance, volume, and enforcement record among pipeline corporate families with the most spills (see Table XI-3). Evaluating the risk of DAPL’s Lake Oahe undercrossing requires analyzing the incident and integrity management performance data. It’s important to note that even the oil industry trade association – the American Petroleum Institute (API) states the goal for pipeline safety is **zero spills**.⁴⁴ The risk management approach of API RP 1173 emphasizes gathering data related to the specific pipeline system to assess the operator’s performance:

These data serve as the **foundation of risk management** and shall include available data over the pipeline life cycle and shall be updated based on work performed and as needed during the life of the pipeline. Incident data, including the cause of incidents, shall be included as appropriate. The pipeline operator shall conduct a regular review to identify data gaps and evaluate data quality as part of risk assessment, consistent with continuous improvement⁴⁵ (emphasis added).

⁴¹ The only reference to pipeline safety API Recommended Practices (RPs) is on page 3-30. The Corps abstractly notes that some pipeline leak detection scenarios with ineffective performance “can be mitigated by following API RP 1175 and API RP 1130.” However, the DEIS neither applies this approach critically in their analysis nor evaluates Energy Transfer’s application or performance verification with the RPs.

⁴² DEIS at p. 314.

⁴³ 49 CFR §195.50. Reporting Accidents requires an accident report for hazardous liquid spills (with some exceptions) that result in spills over 5 gallons, explosion or fire, death of a person, personal injury requiring hospitalization, estimated property damage exceeding \$50,000.

⁴⁴ API RP 1173, p.vii.

⁴⁵ API RP 1173, 7.2 Risk Management, Data Gathering, p.11.

The Corps presents a false picture of Energy Transfer's safety performance with the data presentation in Table 3.1.3-1. As the Tribe detailed in its SRST Scoping Report⁴⁶ Sunoco was purchased by Energy Transfer Partners in 2012 for \$5.3 billion.⁴⁷ In 2012, Energy Transfer announced the "successful completion of merger" between Sunoco and Energy Transfer Partners another subsidiary of Energy Transfer Equity.⁴⁸ The Corps severely truncates the data presented to examine only incidents from 2018 to 2020 leaving out data from 2012 to 2017 and 2021 to present. They claim Sunoco "operated entirely independently from Energy Transfer"⁴⁹ during those dates. However, contrary to that assertion from 2012 onward Sunoco was described as a "consolidated subsidiary" in the parent corporation 10K Reports with Sunoco's liabilities listed as those of Energy Transfer. For example, while the Corps' claims ETE had no responsibility or liability for Sunoco's pipelines from 2012 to 2017, ETE's 2016 10K Report states otherwise. In its 2016 10K section on legal proceeding, ETE lists eight legal proceedings for hazardous liquid spills or other environmental violations against Sunoco including liability for MTBE contamination across multiple states, spills in Ohio, Texas, Oklahoma. ETE as the parent corporation was responsible and liable for Sunoco's safety and environmental performance as detailed in their own 10K report to the US SEC⁵⁰ (p.67-69.) These and other Sunoco legal proceedings were listed from 10k reports from 2013 to 2016 during which the Corps falsely states ETE had no accountability or liability for Sunoco's violations.⁵¹

Both Sunoco and Energy Transfer Partners were subsidiaries of Energy Transfer Equity L.P. (ETE), the parent corporation. ETE was the predecessor to Energy Transfer L.P.⁵² As the

⁴⁶ SRST Scoping Report at p.

⁴⁷ *Energy Transfer Partners to Acquire Sunoco in \$5.3 Billion Transaction*; Energy Transfer Press Release; April 2012, <https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-partners-acquire-sunoco-53-billion-transaction> last accessed 12-5-23.

⁴⁸ Energy Transfer Partners and Sunoco Announce Successful Completion of Merger, Energy Transfer Website, 10-5-2012. <https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-partners-and-sunoco-announce-successful> last accessed 12-7-23.

⁴⁹ DEIS, p. 3-13.

⁵⁰ 2016 US Security Exchange Commission, Form 10K, Energy Transfer L.P. 2017, <https://ir.energytransfer.com/static-files/64885901-c785-4b94-8493-62c70602978d> last accessed 12-4-23.

⁵¹ Energy Transfer Reports, on their website <https://ir.energytransfer.com/financial-profile/annual-reports> last accessed 12-4-23.

⁵² Energy Transfer Equity LP (ETE) merged with its subsidiary Energy Transfer Partners in 2018 to form Energy Transfer LP in a move described as a name change that simplified its corporate structure – "Energy Transfer Equity now called Energy Transfer LP," *Energy Transfer Equity, L.P. And Energy Transfer Partners, L.P. Complete Merger, Simplify Structure*, Energy Transfer Press Release, October 19, 2018, <https://ir.energytransfer.com/news->

parent company ETE was responsible for not only the liabilities but also ultimately the safe operation of Sunoco's pipelines. The Corps acknowledges Sunoco's terrible safety record, "Sunoco Pipeline's release record is one of the worst pipeline release records to date."⁵³ Yet, the Corps mischaracterizes the relationship and fails to point out that Sunoco was a subsidiary of the parent ETE starting in 2012.⁵⁴ It was not operating "independently"⁵⁵ through 2017 as the Corps claims. The Corps also misstates facts related to the 2017 merger. The merger was between two subsidiaries Energy Transfer Partners and Sunoco – not with the parent Energy Transfer (ETE).⁵⁶ The Corps cannot disconnect responsibility for the Sunoco incidents that occurred from the date of purchase in 2012 and the acknowledged Sunoco "worst pipeline release record to date" through omissions and mischaracterizations. There was certainly enough control for Energy Transfer to make Sunoco its "consolidated subsidiary" with the "worst" pipeline record - the named DAPL operator as early as 2015 - prior to the claimed pivotal merger. These facts are important as they underscore the Corps efforts to diminish Energy Transfer's responsibility and accountability for a harmful record of spills and property damage including in HCAs like Lake Oahe. This also reflects a lack of corporate safety leadership over safe operations and continuous improvement as emphasized in API RP 1173.⁵⁷ This approach is seen throughout Section 3.1 on Reliability and Safety – omitting and mischaracterizing facts perceived as negative for Energy Transfer rather employing balanced judgement and a scientific methodology. This report will review Energy Transfer 's record of incidents including Sunoco's pipelines from 2012 to present (8-31-23). The report will also examine the safety data from 2017 and 2022 to present to see if there is improvement from the Sunoco "worst pipeline" years as the Corps asserts.

[releases/news-release-details/energy-transfer-equity-lp-and-energy-transfer-partners-lp](https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-equity-lp-and-energy-transfer-partners-lp) . Prior to the merger, Energy Transfer Partners had been a consolidated subsidiary of ETE, *Energy Transfer Equity 2012 Annual Report*, p.4, <https://ir.energytransfer.com/static-files/6a687e75-d5fc-4a96-bc4d-b346e79ab250> .

⁵³ DEIS, p. 3-13

⁵⁴ *2012 Annual Report*, Energy Transfer Equity (ETE), 2013, p. 4. "Unless the context requires otherwise, references to "we," "us," "our," the "Partnership" and "**ETE**" mean **Energy Transfer Equity, L.P. and its consolidated subsidiaries**, which include **ETP**, ETP GP, ETP LLC, Regency, Regency GP, Regency LLC, Southern Union, **Sunoco**, **Sunoco Logistics** and Holdco. References to the "Parent Company" mean Energy Transfer Equity, L.P. on a stand-alone basis. <https://ir.energytransfer.com/static-files/6a687e75-d5fc-4a96-bc4d-b346e79ab250> last accessed 12-4-23.

⁵⁵ *Ibid.*

⁵⁶ Sunoco Logistics Partners and Energy Transfer Partners Announce Successful Completion of Merger, Energy Transfer Press Release, April 28, 2017. <https://ir.energytransfer.com/news-releases/news-release-details/sunoco-logistics-partners-and-energy-transfer-partners-announce> last accessed 12-4-23.

⁵⁷ API RP 1173, at

The Corps omits and mischaracterizes the safety and enforcement record of DAPL. DAPL and ETCO are considered the same “Bakken Pipeline” in the Corps 10K reports to the US Security Exchange Commission (SEC): ⁵⁸ “the Dakota Access Pipeline and Energy Transfer Crude Oil Pipeline are collectively referred to as the ‘Bakken Pipeline’.” Both pipelines were constructed in 2017 and they are described by Energy Transfer as connected and functioning together: “the Bakken Pipeline is a 1,915-mile pipeline that transports domestically produced crude oil from the Bakken/Three Forks production areas in North Dakota to a storage and terminal hub outside of Patoka, Illinois, or to gulf coast connections including our crude terminal in Nederland, Texas.”⁵⁹ In the PHMSA database DAPL-ETCO has one Operator Primary ID and all data for incidents, integrity management information, and PHMSA enforcement actions are reported under DAPL-ETCO. The Corps distorts the relationship and separates out the data related to DAPL in the DEIS which presents the appearance of fewer incidents and harm than including the full record for the Bakken Pipeline (DAPL-ETCO).

The Bakken Pipeline (DAPL-ETCO) has experienced 16 spills since beginning operations in 2017. A review of spill occurrences in newer installations⁶⁰ commencing in 2017 to present shows DAPL-ETCO had the most spills (16) for all pipelines with a single operator ID. From 2017 to present, DAPL-ETCO has spilled 154 Bbls. (6,468 gals) of crude oil leading to \$191,428 of property damage not addressed in the DEIS. DAPL-ETCO during this period experience one significant spill as defined by PHMSA and one spill in a High Consequence Area also not listed.

Significantly for a new installation, there have been three separate enforcement actions against DAPL all initiated in 2021 involving violations, fines, and warning letters upheld by PHMSA. In the DEIS only one of the three enforcement actions is mentioned.⁶¹ Three PHMSA enforcement actions in one year for a new installation raises serious concerns and this omission by the Corps is flagrant.

⁵⁸ 2022 US Security Exchange Commission, Form 10K, Energy Transfer L.P., p. 27, 2023.

⁵⁹ *Ibid.*

⁶⁰ New installations refer to PHMSA defined new equipment, pipelines systems; and expansions, extensions, or replacements. The review focused on new installations since 2017, the year that DAPL began operations.

⁶¹ DEIS, at p. 3-11.

The 7-22-21 DAPL PHMA enforcement action issued a Notice of Probable Violation (NOPV) listing seven categories of probable violations some with multiple offenses.⁶² Some violations were reduced or dropped in a Consent Agreement which is a typical negotiated resolution for many PHMSA enforcement cases. However, the Corps mischaracterizes and omits important details concerning the resolution of the enforcement action that attempts to lessen the severity of Energy Transfer's unsafe operations. In the Consent Agreement three violations were upheld, two probable violations were changed to warnings letters and two violations were withdrawn.⁶³ The Corps misstates that four violations were withdrawn but fails to acknowledge that two of those were turned into warning letters. The rationale for withdrawing the two violations was the detail that Energy Transfer "completed the actions" proposed by PHMSA and for one of the withdrawn items, agreed to provide follow-up data. This fact is omitted by the Corps.⁶⁴

The Corps claims without justification that none of the violations were relevant to the DAPL Lake Oahe undercrossing. However, two of violations upheld in the Consent agreement were of concern to the safety of DAPL-ETCO pipeline system. The cited deficiencies of procedures that were not included in the Procedural Manual for Operations, Maintenance, and Emergencies are by definition relevant to the entire pipeline system including the project area.⁶⁵ The Manual applies to the DAPL-ETCO pipeline system. The upheld violation that found Energy Transfer "failed to evaluate the consequences of a failure on the high consequence area when it identified which pipeline segments could affect a high consequence area"⁶⁶ could clearly have a negative safety impact the high consequence area of the DAPL undercrossing at Lake Oahe. This is another example of an omission and mischaracterization by the Corps that leaves a false impression of the resolution of the enforcement action and Energy Transfer's safety record.

⁶² Notice of Probable Violation and Compliance Order; PHMSA Correspondence to Matt Ramsey, Chief Operating Officer, Energy Transfer L.P.; July 22, 2021
[https://primis.phmsa.dot.gov/comm/reports/enforce/documents/32021049NOPV/32021049NOPV_PCP%20PCO_07222021_\(21-211190\).pdf](https://primis.phmsa.dot.gov/comm/reports/enforce/documents/32021049NOPV/32021049NOPV_PCP%20PCO_07222021_(21-211190).pdf) last accessed 12-4-23.

⁶³ Consent Decree and Consent Order; PHMSA Correspondence to Matt Ramsey, Chief Operating Officer, Energy Transfer L.P.; p. 3-5, January 11, 2022.

⁶⁴ *Ibid.*

⁶⁵ Notice of Probable Violation and Compliance Order, at pp. 3-7.

⁶⁶ *Ibid.* See also Consent Decree and Consent Order at p. 5.

In the 2020 DAPL/ETCO Hazardous Liquid Pipeline Annual Report to PHMSA, Energy Transfer revealed significant mechanical issues for a pipeline that had been in service for only three years. Energy Transfer reported four “anomalies” that required excavation and repair, three of which could affect a High Consequence Area (HCA) like Lake Oahe (see 2.a.1 below). More concerning is one of those HCA impacting anomalies was an “immediate repair condition”⁶⁷ which required PHMSA notification and immediate shutdown or reduction in pressure for repair. It is concerning that a condition that required shutdown or pressure reduction was required for a relative new pipeline.

	Enterprise	Energy Transfer/% of All Pipelines	Magellan	Plains Pipeline	Colonial	Kinder Morgan	Phillips	Marathon 32147; 40149	Enbridge	All HL Pipelines
Incidents 2017-2023	223	191/12%	85	44	64	75	79	51	55	1609
1000 Bbls 2017-23 PHMSA Significant Incidents	12	15/18%	3	1	1	2	5	6	0	82
PHMSA Defined Serious Incident	57	68/9%	23	14	7	12	7	5	2	749
		1								1

Table x.1. Hazardous liquid pipeline incidents from nine pipeline companies including corporate subsidiaries with largest number of spills 2017 to 8-31-23.

From 2017 to through August 2023, Energy Transfer had the worst overall pipeline spill record with Enterprise a close second. The Tribe’s analysis examined PHMSA data⁶⁸ for 11 of

⁶⁷ Hazardous Liquid Integrity Management Performance Measures, PHMSA website, “Immediate Repair - More specifically defined in 49 CFR 195.452 (h)(4) (i), these repairs are deemed important enough to require a temporary reduction in operating pressure or shutdown of the pipeline until such time as the urgent repair is completed.” <https://www.phmsa.dot.gov/pipeline/hazardous-liquid-integrity-management/hl-im-performance-measures#:~:text=Immediate%20Repair%20%2D%20More%20specifically%20defined,the%20urgent%20repair%20is%20completed>. Last accessed 12-4-23.

⁶⁸ PHMSA Operator data is available at https://opsweb.phmsa.dot.gov/primis_pdm/pub_op_search.asp, last accessed 12-3-23)

Energy Transfer L.P. largest⁶⁹ hazardous liquid pipeline subsidiaries⁷⁰ and compared it to other pipeline operators and their subsidiaries that had experienced the most spills in that period (Figure x-1). While Enterprise had the most spills, Energy Transfer has the most “significant” incidents⁷¹ (68) as defined by the federal pipeline safety regulator PHMSA. **Also, since 2017 ET has the most spills over 1000 Bbls.⁷² (15) or 18% of 1000 Bbl. spills for all hazardous liquid pipelines.** The Corps’ Table 3.1.3-1 is truncated and incorrect. For Energy Transfer’s spills in this period, 133 were crude oil spills with 46 of those occurring on pipeline and valve sites – not the 20 listed by the Corps.

	Bakken Pipeline DAPL-ETCO (2017-23; 39205)	Energy Transfer (2012-23; 32099) 32683	Inland Corps (2015-23; 12470)	Mid Valley (2012-23; 12470)	Permian Express (2017-23; 39596)	Sunoco Pipeline (2012-23; 18718)	West Texas Gulf (2012-23; 22442)	ET Crude Operating/Rock (2020-23; 31476)	Bayou Bridge (2016-23; 39462)	CHFs Pipeline (2020-23; 32288)	Enable Gas Gathering (2022; 39147)	TOTAL
HL Total Barrels Spilled	154	16,757	1,318	6,379	6880	14,570	443	310	22	7	1965	48,009
HL Total Property Damage	\$191,428.00	\$4,776,025.00	\$8,731,288.00	\$7,999,419.00	\$843,956.00	\$28,630,097.00	\$1,419,227.00	\$501,888.00	\$1,729,875.00	\$18,716.00	\$1,036,800.00	\$56,877,719.00
PHMSA Significant Incidents	1	15	5	5	2	31	3	1	2	1	2	68
PHMSA Serious Incidents	0	1	0	0	0	0	0	0	0	0	0	1
Spill in Water	0	0	3	2	1	9	2	0	1	0	2	20
HCA Inspected	1	1	4	4	4	34	1	0	0	0	0	49

Table XI.2. Energy Transfer Hazardous liquid pipeline incidents with 11 corporate subsidies from 2017 to 8-31-23.

⁶⁹ Data was taken from eleven of the larger (over 100 miles) Energy Transfer LP subsidiaries hydrocarbon hazardous liquid (HL) pipelines [crude, refined products, highly volatile liquids (HVLs) excluding CO₂, Ammonia, etc. and terminals/tank farms, offshore, etc.]. See Table XI.2 for the Energy Transfer subsidiaries analyzed. Note Enable Gas Gathering has over 100 miles of crude pipeline. PHMSA 2022 data indicates there are 223,970 miles of crude, refined product and HVL U.S. pipelines active in 2022. The active pipeline operator count is 197. ET’s hydrocarbon HL combined (crude, HVL and refined products) mileage is 19,702 or 8.7% of the total combined mileage.

⁷⁰ The subsidiaries of the parent Energy Transfer L.P. have been confirmed in the corporation’s 10K Reports to the SEC and are connected in the PHMSA database with the same Primary Operator ID for Energy Transfer (32099) and Safety Program Relationship (SPR).

⁷¹ Significant Incidents are those including any of the following conditions, but Fire First incidents are excluded: 1. Fatality or injury requiring in-patient hospitalization, 2. \$50,000 or more in total costs, measured in 1984 dollars, 3. Highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more, 4. Liquid releases resulting in an unintentional fire or explosion.

⁷² 49 CFR 194.101, A pipeline operator not experiencing a >1000 Bbl spill is one criteria among others such as a pipeline length and minimal pipeline diameter that exempts an operator from submitting an emergency response plan.

Since 2017, Energy Transfer hazardous liquid pipelines have spilled 48,005 Bbls. (2,016,210 gals.) (Table XI-2). ET's hazardous liquid property damage since 2017 totals \$56,877,719. Of that total, 22,035 Bbls (925,470 gals) of crude oil was spilled with \$34,638,012 in property damage. Energy Transfer had 20 spills in water and 49 spills in high consequence area like Lake Oahe. Compared to the total number of spills for this period, 26% of Energy Transfer's spills occurred in an HCA.

Energy Transfer's performance has not improved examining the company's spill record from 2012-2023 compared to 2017-2023. Again, looking at the nine operators with the most spills, Enterprise had the most spills (428) with Energy Transfer second worst with 336. Energy Transfer had the most PHMSA-defined significant spills (127) while Enterprise had 93. Energy Transfer and Enterprise both had 23 1000 Bbl. spills. From 2012 to present Energy Transfer and its relevant subsidiaries spilled 78,593 Bbls (3,300,906 gals.) of hazardous liquid causing \$122,664,671 in property damage. As Judge Boasberg found in the Federal District Court NEPA litigation their safety record "does not inspire confidence."

	Enterprise	Energy Transfer/% All Pipelines	Magellan	Plains Pipeline	Colonial	Kinder Morgan	Phillips	Marathon 32147; 40149	Enbridge	All HL Pipelines
Incidents 2022-23	40	48/15%	19	6	15	11	4	17	9	314
1000 Bbls 2022-23	1	9/47%	0	1	0	0	0	1	0	19
PHMSA Significant Incidents	7	10/16%	1	3	1	3	1	8	0	162
PHMSA Defined Serious Incident		1/100%								1

Table XI.3. Hazardous liquid pipeline incidents from nine pipeline companies including corporate subsidies with largest number of spills 2022 to 8-31-23.

Yet rather than acknowledging the safety issues and improving their performance, Energy Transfer's hazardous liquid pipeline safety record is getting worse contrary to the DEIS's claims of "trending downward"⁷³ (see Table XI-3). In the last 20 months alone (2022 to 8-31-23, the company has the highest number of spills in all categories including most incidents, significant incidents and 1000 Bbl. spills. Energy Transfer's hazardous liquid pipelines have had nine

⁷³ DEIS, at p.3-14

hazardous liquid spills over 1000 Bbls. (42,000 gals.), the next worst in that period had a single 1000 Bbl. spill. For all pipeline companies listed with the most spills, Energy Transfer was responsible for 48% of the 1000 Bbl. spills. Energy Transfer in the last 20 months experienced 36 crude oil incidents, 17 of which involved pipeline and valve sites. From 2021-2022⁷⁴ Energy Transfer's hazardous liquid pipelines have experienced eight "large spills" as defined by PHMSA in High Consequence Areas (HCAs) like Lake Oahe. Energy Transfer reported 53 "immediate condition repairs" that required immediate shutdown or reduction in pressure until the urgent repair is completed.⁷⁵

The Tribe's Scoping Report also detailed Energy Transfer's alarming enforcement history from that was not addressed by the Corps in the DEIS other than two enforcement actions. The Tribe found:

Equally concerning is Energy Transfer's history of regulatory violations and enforcement actions both in terms of cases initiated by PHMSA and penalties collected. Since ETE acquired Sunoco in 2012, Energy Transfer's family of pipelines have seen 59 PHMSA enforcement cases resulting in \$3,411,800 in penalties collected and five Corrective Action Orders (CAOs). Most of the more serious enforcement actions have actually occurred recently. From 2016 to present⁷⁶, PHMSA has initiated 37 enforcement cases and collected over \$3.3 million in penalties. The \$3.3 million in penalties collected over the most recent four-year period represents nearly all of the cumulative fines levied on the nine pipelines⁷⁷ over the last 8-years.

A current review of Energy Transfer's enforcement record demonstrates it has not improved. For example, from 2017 to present when the Corps claims Energy Transfer's record was "trending downward," Sunoco L.P. alone has been subject to 23 PHMSA enforcement actions with 32 listed violations and \$635,700 in fines collected.

⁷⁴ PHMSA data is only available through 2022.

⁷⁵ Hazardous Liquid Integrity Management Performance Measures, PHMSA website, "Immediate Repair - More specifically defined in 49 CFR 195.452 (h)(4) (i), these repairs are deemed important enough to require a temporary reduction in operating pressure or shutdown of the pipeline until such time as the urgent repair is completed." <https://www.phmsa.dot.gov/pipeline/hazardous-liquid-integrity-management/hl-im-performance-measures#:~:text=Immediate%20Repair%20%2D%20More%20specifically%20defined,the%20urgent%20repair%20is%20completed>. Last accessed 12-4-23.

⁷⁶ The enforcement data analyzed was up through November 2020.

⁷⁷ Nine pipeline companies analyzed with the most spills.

Energy Transfer's pipeline safety incidents have led to unprecedented incidents and regulatory actions related to the construction and operation of its pipelines, for many different violations on different pipelines throughout the United States. Pipeline safety performance deficiencies that are reflected in a range of activities, locations, hazardous materials transported, and phases of work can be evidence of broader corporate level, systemic problems that has and can impact all operations including DAPL if not corrected. This is the case for Energy Transfer, and it requires a broader review of its safety record.

In 2022 Energy Transfer and Sunoco have been criminally convicted of 23 Clean Water Act (CWA) criminal violations (Appendix D, E, and F)⁷⁸ related to the Mariner 2 East pipeline construction in Pennsylvania and an explosion on the Revolution gas pipeline.⁷⁹ The convictions stemmed in part from over 176 spills of HDD⁸⁰ drilling fluid laden with unapproved toxic additives into environmentally sensitive lakes, rivers, and ground water of Pennsylvania – many of which were (HCAs). Energy Transfer utilized the illegal toxic additives even after being warned by the Pennsylvania DEP – “Even after it learned of the use of unapproved additives, however, Sunoco did not direct drillers to stop, nor did it alert DEP.”⁸¹

As a result of the Pennsylvania CWA convictions, **the Environmental Protection Agency (EPA) had debarred both DAPL's parent company Energy Transfer L.P. and DAPL operator Sunoco from Federal Agency contracting.** The Notice of Proposed Debarment (NPD) has been in effect since August 5, 2022, and is subject to review.⁸² As Energy Transfer acknowledges in the 2022 10K Report submitted to the SEC: **“the NPD presently prevents the named entities from pursuing or renewing Federal government contracts or Federal financial assistance**

⁷⁸ Appended to the SRST Report are Appendix D, Energy Transfer Mariner 2 East Pipeline, Pennsylvania Attorney General Signed Criminal Plea Agreement, August 5, 2022; Appendix E, Energy Transfer Mariner 2 East Pipeline, Pennsylvania Attorney General Signed Criminal Complaint, October 5, 2021; Appendix F, Energy Transfer Mariner 2 East Pipeline, Forty-Fifth Statewide Investigating Grand Jury Presentment to the Court, May 28, 2021.

⁷⁹ *Case Update: Energy Transfer Convicted of Criminal Charges Related to Construction of Mariner East 2 Pipeline, Revolution Pipeline in Pennsylvania*, Pennsylvania Attorney General website, August 5, 2022. <https://www.attorneygeneral.gov/taking-action/case-update-energy-transfer-convicted-of-criminal-charges-related-to-construction-of-mariner-east-2-pipeline-revolution-pipeline-in-pennsylvania/#:~:text=HARRISBURG%2C%20PA%20—Attorney%20General%20Josh,two%20major%20pipelines%20in%20Pennsylvania>.

⁸⁰ Horizontal Directional Drilling (HDD).

⁸¹ *Mariner East 2 Grand Jury Presentment*, Pennsylvania Attorney General, October 5, 2021.

<https://www.attorneygeneral.gov/wp-content/uploads/2021/10/2021-10-05-Mariner-East-Presentment.pdf>

⁸² The Tribe understands that the debarment is still in effect as of the time of the draft of the SRST DEIS Report.

agreements.”⁸³ Any proposed DAPL Lake Oahe easement is a contract between the Corps and Energy Transfer. Consequently, the Corps is debarred from contracting a Lake Oahe easement with Energy Transfer.

Federal Agencies have recently identified that Energy Transfer’s safety deficiencies are pervasive and rise to the executive level. The Federal Energy Regulatory Commission (FERC) recently fined Energy Transfer \$40 million (Appendix G).⁸⁴ Like the Mariner 2 East pipeline, the company spilled HDD drilling fluid (over 2 million gallons) intentionally contaminated with toxic unapproved additives. FERC found “these violations were the product of a **corporate culture—one that equally infected the executives...**that favored speed and construction progress over regulatory compliance” **The executive named was the same executive over the construction and HDD drilling of DAPL.** FERC also found that Energy Transfer did not self-report the violations and committed “obstructionist conduct” during its investigation resulting in part in the large \$40 million fine.

The primary focus of the Corps DEIS DAPL risk analysis is on the element of incident frequency of generic equipment failures based upon the false premise that the generic data from other operators is “worse than Energy Transfer’s incident record.”⁸⁵ As shown the Tribe’s report, a full picture of PHMSA data contradicts this claim. Moreover, major chemical incidents are low frequency, and with Lake Oahe as an HCA, high consequence by definition. As the Corps cited UK HSE guidance states with credible scenarios, operators must take “take all measures necessary” to prevent a major incident. Most concerning is that the frequency-skewed risk assessment based upon omissions and mischaracterizations of the incident record is used by the Corps to rationalize the reliance on ineffective hazard controls such as the lack of Lake Oahe surge protection⁸⁶ and ineffective leak detection.⁸⁷

⁸³ U.S. SEC Form 10K, Energy Transfer L.P. at pp. 70, 94; 2022. <https://ir.energytransfer.com/static-files/659d7251-ddbb-47dd-9a27-76e04b3640d8>

⁸⁴ Appendix G, *FERC Order to Show Cause and Proposed Penalties*, Energy Transfer Rover Pipeline, December 16, 2021, <https://www.ferc.gov/media/in17-4-000> last accessed 12-7-23.

⁸⁵ DEIS at p. 3-14.

⁸⁶ DEIS at p. 3-48.

⁸⁷ DEIS at p. 3-47.

The frequency claims⁸⁸ are invalid in other ways including:

- API RP 1173 requires risk reduction and continuous improvement⁸⁹ and states “pipeline risk management steps are undertaken to reduce risk and support achieving a goal of zero incidents.”⁹⁰ The Corps’ focus on frequency compares relative degrees of failure as a goal such as spills per mile and rejects the goal of zero incidents as a benchmark.
- The Corps’ presentation of the concerning spill numbers appears not in the context of a performance metric to justify additional preventative measures but rather an effort to suggest there is an acceptable number of spills. This normalizes spills rather than focuses on spill prevention. Risk experts such as Diane Vaughan writing about the space shuttle Challenger disaster have referred to this behavior as the “normalization of deviance.”⁹¹ The Center for Chemical Process Safety (CCPS)⁹² in their major hazard guidance book *Recognizing and Responding to Normalization of Deviance*, defines the term as “the gradual erosion of standards of performance because of increased tolerance of non-conformance.”
- The over emphasis on generic frequency obscures important distinctions relevant to spill consequence and prevention such as spill locations in high consequence areas, spills in water, spills that are a reoccurrence of the same SMS deficiencies or in the same location, the size of the spill, the occurrence of the spill in environmentally sensitive areas or in population centers, or spills that result in significant enforcement actions. A number of Energy Transfer’s PHMSA enforcement actions, such as the Mid-Valley 2023 Notice of Proposed Safety Order, includes repeat violations, failure modes, and incident locations with a history of failure to effectively report or investigate incidents; develop operations, maintenance, and emergency response procedures; and implement integrity management and corrosion control plans.

Energy Transfer has demonstrated that it tolerates systematic safety problems in its hazardous liquid pipeline operations and is an unsafe operator. Energy Transfer has shown no recognition

⁸⁸ DEIS Table 3.1.3-1, Figure 3.1.3-1, Table 3.1.4-1, and 3.1.4-2.

⁸⁹ API RP 1173, *Pipeline Safety Management Systems*, p. x. “The intent of the [management system] framework is to comprehensively define elements that can identify, manage and reduce risk throughout the entirety of a pipeline’s life cycle and, at the earliest stage, help prevent or mitigate the likelihood and consequences of an unintended release or abnormal operations.”

⁹⁰ Ibid. at p. 10. “Risk management is used to understand and evaluate threats throughout the pipeline life cycle and their interrelationships along particular pipelines. Risk management steps are undertaken to reduce risk and support achieving a goal of zero incidents.”

⁹¹ The Challenger Launch Decision, Risky Technology, Culture, and Deviance at NASA, Diane Vaughan, 2015.

⁹² CCPS is an industry alliance within the chemical engineering professional society the American Institute of Chemical Engineers (AIChE) that include major oil industry members such as Chevron, Shell, BP and Conoco.

that it has serious pipeline SMS deficiencies. This is a failure of corporate top management commitment and oversight that pipeline safety standards such as API RP 1173 address in detail.⁹³

The pipeline operator shall establish and maintain a PSMS and build a shared understanding of safety culture. Top management shall communicate expectations by documenting the pipeline operator's policies, goals, and commitment to safety, as well as identifying safety responsibilities of personnel at all levels. The pipeline operator shall improve upon the PSMS⁹⁴ and measure its effectiveness and maturity in accordance with the requirements of this document.

While Energy Transfer is responsible for its worst-in-class incident record, failure to acknowledge serious safety deficiencies and improve, the Corps mischaracterization and omissions of their incident history masks and enables its ongoing magnitude and impact.

- II. The Corps fails to ensure that pipeline system safety critical elements such as surge protection and prevention, emergency flow restriction devices (EFRDs) and pipeline leak detection are functional, effective, and subject to performance testing and verification to prevent major incidents. Relevant safety standards requiring a high degree of availability for the safety critical elements are not applied to the Corps' DEIS review.

DAPL poses an imminent risk lacking effective surge prevention and protection for the Lake Oahe undercrossing; a lack of back-up power and verification of full closure for the safety critical EFR emergency shutoff valves that minimize a spill into the Lake Oahe, an HCA; and ineffective and unverified spill leak detection. The oil industry trend has been towards a more rigorous application of standards and practices developed for identifying hazards and for quantifying the consequences of failures together with verification including third party verification. For oil and gas pipelines, refineries, and related facilities, from the wellhead to the loading terminal, instrumentation and automated controls, known as Safety Instrumented Systems or SIS are designed and installed to meet the required risk reduction to ensure negative

⁹³ API RP 1173, 5.0 Leadership and Management Commitment, at pp. 6-9.

⁹⁴ Pipeline Safety Management System (PSMS).

consequences of hydrocarbon releases are reduced to As Low as Reasonably Practicable or ALARP. A “safety life cycle” approach that considers assessment, design, maintenance, inspection, testing and operation of SISs with performance based requirements, has been adopted in the U.S. as ANSI/ISA 84.00.01-2004 Parts 1-3 (IEC 61511 Mod).⁹⁵ This standard is a recognized and generally accepted good engineering practice throughout the oil and chemical industry where major accident hazards are identified. The Corps in its analysis of DAPLs has not applied standards like ANSI/ISA S84 that would assist in ensuring critical safety systems like surge prevention and protection, EFRDs, and leak detection systems are highly effective and subject to performance verification.

Energy Transfer’s DAPL ETCO Pipeline Surge Analysis Report⁹⁶ specifically identified the potential risk of overpressure at the Lake Oahe HCA. The third party report listed the risk in bold as “**unacceptable.**” No effective action was taken by the company and the Corps fails to address the issue in the DEIS.

In many applications, such as pipelines, storage terminals and marine loading and unloading, it is necessary to include surge relief systems for the purpose of equipment and personnel protection. Surge pressure results from a sudden change in fluid velocity and, without surge relief, these surge pressures can damage pipes, other piping components, equipment, and personnel. These failures can be catastrophic. Pressure surges can be generated by anything that causes the liquid velocity in a line to change quickly (e.g., valve closure, pump trip, Emergency Shut Down (ESD) closure, etc.) and subsequently packing pressure. Total surge pressure may be significantly above the maximum allowable pressure of the system, leading to serious damage. PHMSA regulations establish pressurization limits and provide that:

No operator may permit the pressure in a pipeline during surges or other variations from normal operations to exceed 110% of the operating pressure limit ... Each

⁹⁵ ANSI/ISA S84 (IEC 61511) Standard, Functional safety – Safety instrumented systems for the process industry sector”.

⁹⁶ “Fluid Flow Consultants, Final report, DAPL Gathering System, DAPL Mainline and ETCOP Oil Pipeline Surge Analysis,” DAPL_ETCOP Oil Pipeline System Surge Analysis, June 2, 2017, pages 1-46, RAR017286 - RAR017331.

operator must provide adequate controls and protection equipment to control pressure within this limit.⁹⁷

The fundamental requirements of surge relief systems include the need for fast acting, high capacity valves which can open very quickly to remove surge pressures from the line and then return to the normal (closed) state quickly but without causing additional pressure surge during closure. These valves are often required to open fully in very short periods of time, so that they may pass the entire flowing stream if conditions dictate. The design of such systems is dependent on a complex range of factors including, but not limited to, the potential for pressure increases, the volumes which must be passed by the pressure relief equipment in operation and the capacity of the system to contain pressures.

In bulk liquid transportation, safety systems in the form of pressure control, pressure regulation and surge relief valves are required. To ensure compliance (and safe operations) industry standards were developed to prescribe minimum mandatory requirements for sizing, selection, installation, periodic test and inspection of liquid surge relief valves and surge relief systems. One requirement is to carry out pipeline hydraulic surge analysis (transient analysis) that shall be the basis for the surge relief system design.

Transient pressure waves are generated in a pipeline system whenever there is a sudden change in flow. The waves have both positive crests and negative troughs. The high pressure crest is commonly referred to as “surge pressure.” Generally, a rapid change in flow is caused by: Pump start/stop, or closure of Automatic Emergency Shutdown Valve (EFRD/EIV), or closure of a pipeline Emergency Isolation Valve (Mainline Valve/MLV) like the DAPL EFRDs. The prime concern is to protect the pipeline system from over pressure. A surge suppression system is normally installed to relieve the high pressure peaks that exceed the pipeline Maximum Allowable Transient Pressure (MATP). MATP is the maximum gauge pressure permissible in the piping system under abnormal operating conditions. The MATP is not to exceed 110% of the rated MAOP or internal design pressure.

⁹⁷ 49 CFR §195.406(b)

In the case of ESD, EIV/EFRD, or MLV pipeline valve failure to the closed position, the resulting surge pressure waves may exist for an “Extended Period” (up to four hours). This will depend on the proximity to pumps and the interaction of related instrumentation systems such as pump high discharge pressure trip, which may or may not be activated. For the purpose of selection and sizing of surge relief valves, surge studies shall be conducted to establish the duration and magnitude of the pressure rise. The transient analysis shall consider all of the possible causes of surge pressure waves as applicable to the system under analysis.

As per ASME B31.4⁹⁸, surge calculations should be conducted, and adequate controls and protective equipment shall be provided so that the pressure rise due to surges and other variations from normal operations shall not exceed the internal design pressure at any point in the piping system and equipment by more than 10%. Surge analysis studies shall be conducted without giving credit to process initiated shutdown signals for pump trips, or any other control or shutdown system signals. **This is because surge protection shall be treated as a separate mechanical protection layer.** The surge analysis conducted shall serve as the basis for determining the maximum relieving rates and the maximum relieving amounts.

Energy Transfer contacted with a third party to conduct a surge study for DAPL. The study found there will be a motor operated valve (MOV) at the suction side of each of the operational pump stations and at the Nederland terminal. There are twenty-one Main-Line Valves (MLVs) in the gathering system. Numerous (some two-hundred fifty) MLVs are located along the full DAPL-ETCO pipeline route. **When closed, these valves will cause a high-pressure surge that propagates upstream.** Likewise, when a pump station is shutdown, it initiates a high-pressure surge that travels upstream. The purpose of the surge study was to determine if these station suction MOV closure, MLV closures or pump station shutdown cause excessive pressure (greater than 110% of MOP) and to suggest and control measures, such as Surge Relief Valves (SRVs) and controlled pump station shutdown via the system Programmable Logic Controller

⁹⁸ *Pipeline Transportation Systems for Liquids and Slurries*, B31-4, The American Society of Mechanical Engineers (ASME), 2022. <https://www.asme.org/codes-standards/find-codes-standards/b31-4-pipeline-transportation-systems-liquids-slurries> last accessed at 12-4-23.

(PLC), to mitigate or eliminate any excessive surges. The surge study established several conclusions including the following:

- If the closing of a MLV is the surge initiator and the PLC does not shutdown the pumps, the surge pressure greatly exceed 110% of MOP even if the station suction SRVs are in place. The station suction SRVs do NOT protect the lines against MLV Closure.
- With the MLV closure as the surge initiator the PLC system does not shutdown pumps. In the DAPL's system, the MLVs closing with no Redfield, South Dakota SRV and no PLC station shutdown would experience the highest pressures. The surge pressures in most cases would greatly exceed 110% of MOP. The surge study wrote in bold **"This is unacceptable."**
- The Surge Study specifically identifies that if the EFRD valve ND-390 on the east side of Lake Oahe closes (located at MP 168), the upstream HDD segment will see excessing pressure reaching 1788 psig. (124% MOP) at MP 167.

DAPL's surge study required additional surge prevention and protection measures at the Lake Oahe DAPL undercrossing but none were implemented by Energy Transfer. The overpressure risk due to a spurious closure of a main line valve upstream of the pump station SRV would not be mitigated by the surge relief at the pump station. **The spurious closing of a motor operated valve (MOV) such as the EFRD on the east side of Lake Oahe (ND-390) could lead to surge pressure greatly exceeding 110% of the MOP.** An ND-390 closure would cause major surge upstream of the valve but not be subject to any surge protection downstream at the Redfield, SD pump station. There is no evidence that Energy Transfer added any additional surge protections such as a SRV or PLC to shut down the pumps to protect Lake Oahe from surge in response to the study warning concerning ND-390. This major surge event could lead to a DAPL catastrophic failure and large release of Bakken crude into an HCA. None of this is mentioned in the EIS by the Corps who has access to the surge study from the administrative record and this issue being raised by the Tribe in the SRST Scoping Report.

Considering that the Lake Oahe pipeline undercrossing is considered a High Consequence Area, where operators designing overpressure protection, emergency shutdown, and leak detections systems are require to "evaluate the capability ... as necessary, to protect the high

consequence area” [9 C.F.R. 195.452(i)(3)]. The DAPL surge study found unacceptable overpressure risk at the Lake Oahe HDD pipeline segment. PHMSA requires⁹⁹ additional surge pressure protection at the DAPL Lake Oahe undercrossing to mitigate unacceptable levels of pressure in the event of a spurious closure of the remotely activated emergency isolation valves at both sides of the Lake Oahe pipeline undercrossing. The Corps, however, states that surge is not a concern - not based upon additional surge protection and prevention measures - but rather because a surge event according to its questionable frequency calculations would only occur once every 10,000,000 years.¹⁰⁰ The Corps uses its artificial generic surge frequency analysis to dismiss a critical surge threat to DAPL that Energy Transfer’s own study says is unacceptable. Moreover, the Corps failed to conduct additional studies to evaluate the Lake Oahe surge or in response to the nearly doubling of DAPL capacity with the resulting increase in the velocity of crude flow. This is another example of the Corps omitting safety critical information, mischaracterizing the evidence, underestimating risk, and failing to identify needed safety critical controls to protect the Tribe and the Lake Oahe environment.

Back-up power was required as an easement condition but has not been provided to remotely power the closing of the EFRD valves on each side of the Missouri River in the event of a primary power supply failure. Back-up power was only supplied to the communications signal but not the valve actuator. If the Corps had performed a hazard analysis for the project area, the effects of loss of power preventing EFRD closure would have been identified quickly as key issue. Power failures are not uncommon in the harsh winter environment of rural North Dakota. If a spill occurred during a power failure, the emergency shut-off valves could not be closed remotely. It would likely take many hours to travel to the isolated valve locations to manually shut the valves - especially in harsh winter conditions. In addition, no analysis of the availability of the rural primary power supply to the Emergency Isolation Valve control sites was presented or discussed. The *Independent Assessment* prepared by ETP/Sunoco suggests that there is no back-up power to remotely activate the shut-off valves.¹⁰¹ Even though back-up power was required by the Corps’ easement conditions and a known issue, none to date has been provided. The Corps’ Lake Oahe

⁹⁹ 49 C.F.R 195.406(b)

¹⁰⁰ DEIS at p. 3-48, 49.

¹⁰¹ Process Performance Improvement Consultants, LLC, *Independent Assessment of the Dakota Access Pipeline*, U.S. Army Corps of Engineers, *Special Easement Conditions*, pp. 13-14 (March 29, 2018).

Easement Conditions require “Main line valves must be capable of closure at all times.”¹⁰² “At all times” clearly encompasses a power failure. Now over six years later the Corps’ claims “backup power for remotely actuating the Lake Oahe Valves”¹⁰³ will be implemented if alternative 4 is selected. In the SRST Scoping Report, the Tribe detailed a number of easement conditions that had been violated or unfulfilled by the Corps.¹⁰⁴ If the Corps has failed to implement issues raised by a third party Independent Assessment and its own easement conditions for over six years the Tribe has little confidence that reiterating this condition will lead to its implementation. This also shows that the Corps’ easement conditions are unenforced and an ineffective safety control mechanism.

The Corps’ support for merely partial stroke testing of the safety critical EFRDs endanger Lake Oahe with potentially greater spill impacts.¹⁰⁵ Partial stroke testing of the EFRDs does not demonstrate that the valve will fully close, seat properly, and provide positive isolation as required to protect Lake Oahe. Industry good practice has long recognized that partial stroke testing (PST) of safety critical valves only provides limited diagnostic coverage (detects up to 60% of dangerous failures within emergency isolation valves EIVs). Accepted industry practice for testing of emergency isolation valves within safety instrumented functions that require full valve closure and positive isolation, is to combine “partial stroke testing” (without production interruption quarterly or every six months) with “full stroke testing” carried out yearly or extended to periods when operations allow (pipeline shutdown or via full flow bypass valve with reduced production rates). Given that valves may not over time not fully close can happen for a number of reasons including erosion/corrosion of internal valve and ball, misalignment, pluggage, motor actuator partial failure or damage, misconfiguration, etc. Given that successful full stroke testing of EFRD’s was not documented, additional WCD scenarios to include time to allow “manual” closure of the EFRD’s are necessary to control spills into Lake Oahe. Manual operation of the EFRD’s will extend the time to isolate the pipeline from minutes to hours and will significantly increase the estimated volume of crude released. This is a serious deficiency brought to light via the Tribe’s DEIS review. WCD estimates need to be increased to align with the documented operations and maintenance

¹⁰² Department of the Army Easement for Fuel Carrying Pipeline Right-of-Way Located on Lake Oahe Project Morton and Emmons Counties, North Dakota; February 8, 2017, USACE_ESMT000037.

¹⁰³ DEIS, at p. 2-19.

¹⁰⁴ DEIS at p. 30-32.

¹⁰⁵ DEIS, at 3-7, 3-8.

carried out on the Lake Oahe HCA pipeline segment EFRD's. The assumed time EFRD to remotely close both the EFRD's from the control room in response to a detected leak (minutes) will need to be extended to allow for manual closure of the EFRD's (12 or more hours in winter conditions). This will significantly increase the volume of crude oil released estimated within the Worst-Case Discharge calculation.

Energy Transfer's (ET) leak detection systems and past performance are seriously flawed. From 2012 to present, using the same methodology as the PHMSA leak detection study, Energy Transfer's Computational Pipeline Monitoring (CPM) system only detected pipeline releases 14% of the time. Despite requirements in pipeline safety standards, The DEIS lacks stated application of industry leak detection standards, metrics for leak detection improvement and verification of proven leak detection performance. Given these serious problems the Corps cannot credit the functionality of leak detection at Lake Oahe.

Energy Transfer's (ET) leak detection methodology and past performance are ineffective which will allow for an even greater spill into Lake Oahe. Preventing incidents is key to protecting people and the environment, but if a spill occurs effective leak detection is vital to mitigating the impact of a release of hazardous liquid. The DAPL leak detection system is a safety critical system. Energy Transfer has asserted that its computational pipeline monitoring (CPM) leak detection software is "robust" and will detect all spills at or below 1% of the pipelines flow rate.¹⁰⁶ However, a comprehensive PHMSA study looking at incident data found that CPM only had a successful detection rate of 20% for hazardous liquid spills.¹⁰⁷ Note that PHMSA's study was premised on an examination of all hazardous pipelines as reflecting actual leak detection system performance, rather than only focusing on one hazardous liquid such as crude oil.

The Tribe has updated the data for Energy Transfer using the same methodology as the PHMSA study. From 2012 to 8/2023 for spills in the Right-of-Way where CPM was functional,¹⁰⁸ CPM was functional in 50 of 110 incidents. Of those 50 Energy Transfer spills, only

¹⁰⁶ DEIS at p. 3-9.

¹⁰⁷ Pipeline and Hazardous Materials Safety Administration, Final Report 12-173, Leak Detection Study, at 2-11. <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/technical-resources/pipeline/16691/leak-detection-study.pdf> last accessed 12-4-23.

¹⁰⁸ Note one spill was detected by SCADA where CPM was not functional.

7 were identified by a “CPM Leak Detection System or SCADA¹⁰⁹ based information such as alarms, alerts, events.” **This is a successful detection rate of only 14% - worse than the PHMSA study and worse than the ET leak detection rate of 20%** the Tribe calculated two years ago in the SRST Scoping Report. Other results:

- **26 spills or 52% of the time the leak was detected by members of the public.** Accidental discoveries by random members of the public were more reliable than Energy Transfer’s CPM or SCADA systems,
- 1 by ground patrol,
- 2 by air patrol,
- 2 by “controller,”
- 3 by notification from party that caused the accident,
- 6 by local operating personnel including contractors,
- 3 by “Other”

Energy Transfer’s leak detection performance has declined in relation to CPM/SCADA performance compared to detection by members of the public since the 2020 analysis by the Tribe. Energy Transfer hazardous liquid spills are now nearly 3 times more likely to be discovered by members of the public than their CPM/SCADA systems.

ET has failed to verify its leak detection performance as required by industry standards. API RP 1130 on *Computational Pipeline Monitoring for Liquids* (2007)¹¹⁰ has been incorporated by reference into the PHMSA regulatory scheme. The provisions in the RP are regulatory requirements. RP 1130 provides for testing of leak detection systems through withdrawal of the pipeline hazardous liquid. The DAPL CPM leak detection system must be evaluated under API RP 1130 with actual withdrawal testing to verify capabilities for various leak scenarios, including the controversial 1% detection limit. There is no evidence in the DEIS of any actual CPM performance testing or results. The American Petroleum Institute developed a standard to assist operators to assess and improve leak detection performance, API RP 1175, *Pipeline Leak Detection Management* (2015). RP 1175 explains that the standard has been promulgated in response to mandates and recommendations from Congress and the NTSB to improve identified

¹⁰⁹ Pipeline Supervisory Control and Data Acquisition (SCADA) systems are software and hardware systems that monitoring and control pipeline pressure, flow, alarms, etc. that can assist in leak detection.

¹¹⁰ *Computational Pipeline Monitoring for Liquids*, API Recommended Practice 1130, 2007, Reaffirmed April 2012.

weaknesses in pipeline leak detection.¹¹¹ The recently adopted API RP 1175 includes guidance on the selection of leak detection systems and establishing performance criteria and the use of metrics for system improvement. However, there is no evidence that the Corps has adopted RP1175 to require its provisions in the DEIS or examined whether Energy Transfer has used performance metrics to improve its own troubled leak detection record. This is another example of the Corps failing to adopt a more modern protective safety standard that was developed to improve identified deficiencies in industry performance or require its application by Energy Transfer with DAPL.

The Corps has ignored the Tribe's recommendations for existing external leak detection technologies that provide improved protection for Lake Oahe. For that reason, the Corps claim in Alternative 4 that it will implement future improvements to leak detection "as new technology becomes available" rings exceptionally hollow. The addition of other leak detection technologies can augment the reliability of DAPL's leak detection capabilities. All protective systems can fail and where the consequence of failure can be catastrophic, additional protective layers are an important safeguard. One example is external leak detection technologies that can serve as an additional layer of protection. The Lake Oahe site lacks external leak detection that has advantages over SCADA and CPM and can be used in addition to software systems. The EPA recommended external leak detection for the Keystone XL pipeline in sensitive environmental areas, similar to the Lake Oahe high consequence area (HCA).¹¹² There is no comparable leak detection safety layer for DAPL. The PHMSA leak detection study defines external leak detection as a technology that senses, by some means (fiber optic, acoustic wave, hydrocarbon sensing) that fluid is escaping from the pipeline from outside of the pipeline. The PHMA leak detection study found that most external leak detection technologies can be retrofitted to existing pipelines and have "the potential to deliver sensitivity and time to detection far ahead of any internal system."¹¹³ The PHMSA study noted that the EPA had conducted studies verifying these findings.¹¹⁴ PHMSA found significant benefits to external leak detections systems, yet the Corps in Alternative 4 appears wholly unaware of possible new technologies. The Tribe, however, in its Scoping Report made the Corps well

¹¹¹ API RP 1175, Pipeline Leak Detection Program Management, p. 4 (2015).

¹¹² *Keystone XL Shuns Infrared Sensors to Detect Leaks*, Bloomberg, January 18, 2013, last accessed 12-4-23, <https://www.bloomberg.com/news/articles/2013-06-17/keystone-xl-pipeline-shuns-high-tech-oil-spill-detectors>.

¹¹³ PHMSA Leak Detection Study at p. 2-14.

¹¹⁴ *Id.* at p. 4-21, 22.

aware of the external leak technology alternative and the analysis in the PHMSA Leak Detection study. This was ignored by the Corps and now they focus on “new technology...when it becomes available.” The Tribe again has no confidence the Corps will follow through on any of the weak promises made in Alternative 4 as they have failed to even respond to the Tribe when it engages in good faith on technical issues. The Corps’ Lake Oahe easement conditions have gone unenforced for years and there is no reason to think that this proposal which is only an mere promise of possible future action would be any different.

Energy Transfer’s ineffective leak detection system was highlighted in the 2016 Sunoco L.P. pipeline crude oil spill. The newly in-service 2016 Sunoco L.P. Permian Express II pipeline spilled 361,000 gallons (8600 Bbls) from a pinhole leak that led to \$4 million in property damage in a high consequence area like Lake Oahe. According to ET’s incident report (Appendix H)¹¹⁵ operators on August 29 initially observed “line imbalance indications.” The Corps downplays these “anomalies” stating the release was not detected for 12 days “because the pressure readings never dropped below tolerable levels.”¹¹⁶ However, the anomalies were sufficiently compelling for employees to investigate. Energy Transfer’s incident narrative states the line was patrolled “numerous times,” “meters were checked for accuracy” with issues identified on September 3 and 6. Tank to tank line balance calculations were performed but the results did not indicate a leak condition. On September 9 through 10 a static pressure test indicated a suspected release resulting in a pipeline shutdown 12 days after the suspected “anomalies.”

The Corps emphasizes the CPM leak detection system was not fully functional, yet the Corps fails to mention that the CPM system was operating at the time of the incident. The investigation report states the SCADA system was functional and “provided information...such as alarm(s), alert(s), event(s), and/or volume calculations to assist with the detection of the accident.” This was omitted in the DEIS.¹¹⁷ If that was true then it took Energy Transfer 12 days to evaluate the SCADA indications and sufficiently confirm them to make a shutdown decision. The 12 days was much longer than the 17 hours it took to shut down the catastrophic Enbridge Marshall, MI pipeline that led to Congressional mandating the PHMSA Leak Detection Study. Only by chance,

¹¹⁵ Appendix H, “PHMSA Accident Report – Hazardous Liquid and Carbon Dioxide Pipeline Systems,” Sunoco Pipeline L.P., 8-29-2016, last revision date 7-24-2017, p.23.

¹¹⁶ DEIS, at p. 3-12.

¹¹⁷ *Ibid.*

the Sunoco release was from a pinhole leak and the spill volume was a third the size of the Enbridge disaster. The evidence indicates pipeline was not shut down for 12 days in part due to control operator evaluation and decision making but also the prolonged period highlights the human reluctance to shut down an operating process like the Enbridge incident. The 2016 Sunoco 8600 Bbl. crude spill was the largest incident in Energy Transfer's operating history from 2012 – 2023. One lesson from Sunoco spill is that a pinhole leak over time can result in a major incident and that scenario is an important one to consider in a WCD analysis under what can be the "largest volume"¹¹⁸ release. However, the Corps does not address this issue and in their WCD scenario review only considers pipeline full bore releases.¹¹⁹

The 2016 Sunoco pipeline disaster led to a significant enforcement action that included a Corrective Action Order.¹²⁰ CAOs are one of PHMSA most serious enforcement tools – one that is rarely employed.¹²¹ CAOs require operators to take specific necessary actions to address conditions that PHMSA finds to be hazardous to people, property, or the environment. PHMSA stated in the CAO:

After evaluating the foregoing preliminary findings of fact, I find that continued operation of the pipeline without corrective measures is or would be hazardous to life, property, or the environment. Additionally, having considered the uncertainties as to the cause of the failure; the location of the Failure; the proximity of the pipeline to populated areas, public water intake systems, or other high consequence areas; the young age of the pipeline and the history of known problems or failures on this pipeline, including during construction of the line, I find that a failure to issue this Order expeditiously to require immediate corrective action would result in the likelihood of serious harm to life, property, or the environment.

¹¹⁸ CFR 194.105(b)(1)

¹¹⁹ DEIS, at p. 3-36,37.

¹²⁰ PHMSA Corrective Action Order to Sunoco Pipeline Co. L.P., 9-14-2016, https://primis.phmsa.dot.gov/comm/reports/enforce/documents/420165030H/420165030H_Corrective%20Action%20Order_09142016.pdf last accessed at 12-4-23.

¹²¹ PHMSA has only issued 21 Corrective Action Orders since 2017, https://primis.phmsa.dot.gov/comm/reports/enforce/CAO_opid_0.html#_TP_1_tab_1 last accessed 12-4-23.

SUNOCO PIPELINE L.P.

Case CPF 420165030H

This report lists key information pertaining to a particular enforcement case ⁽¹⁾. For cases initiated after January 1, 2007, electronic files of PHMSA's initial notice letter, the operator's initial response letter (if any), and PHMSA's Final Order (if an Order is issued) are provided. PHMSA only issues Final Orders in certain situations. For example, Final Orders are not issued for Warning Letters and most Notices of Amendment.

Case Summary Documents

Case Summary

Operator	SUNOCO PIPELINE L.P.
Case Number	420165030H
Case Type	Corrective Action Order
Region	Southwest
Date Opened	08/14/16
Status	OPEN

Figure XI.1. PHMSA website showing the 2016 Sunoco Pipeline Spill Corrective Action Order is still listed as open, a key fact not addressed in the Corps DEIS.

It is noteworthy that the CAO issued to Sunoco in 2016 is still listed as “open” on the PHMSA website (Figure x.1).¹²² The fact that the CAO is open implies that PHMSA’s evaluation of Energy Transfer’s implementation of corrective action is still under review. None of these concerning facts were included in the Corps narrative of the incident.

These details are important to DAPL as it requires control operator and likely supervisory decision making to evaluate issues such as potential false alarms, meter accuracy and then the ultimate decision to shut down when CPM and SCADA alarms and instrumentation indicate a spill. The EFRDs at Lake Oahe do not close automatically in response alarms or instrumentation set points. EFRD closure requires human action and decision-making, a fact unaddressed by the Corps. PHMSA found that CPM accuracy is often a balance between instrument sensitivity false or nuisance alarms.¹²³ API RP 1130 states that a CPM alarm:

...could be triggered by many causes including equipment or data failure, an abnormal operating condition, or a commodity release. Since there is the potential that the alarm information identifies conditions that need attention other than a commodity release, the pipeline company procedures should require that all CPM alarms be evaluated... Simply understanding the cause of the alarm condition on a monitored pipeline may not be the end of the alarm evaluation.

¹²² PHMSA Sunoco Enforcement Action Details, Case CPF 420165030H, https://primis.phmsa.dot.gov/comm/reports/enforce/CaseDetail_cpf_420165030H.html?nocache=7733#_TP_1_tab_1 last accessed 12-5-23.

¹²³ PHMSA Leak Detection Study, at p. 4-8.

The 2016 Sunoco spill underscores both weaknesses of CPM leak detection and Energy Transfer's poor historic performance in particular, but also the importance of including sufficient time in the WCD calculation for the human factors of leak detection, evaluation, and the real conflicting pressures of shutdown decision-making. The Corps however, states Energy Transfer DAPL CPM system is "robust" and only three minutes is needed for detection time in their WCD calculation. We shall see that the Corps in effect bases WCD DAPL shutdown time on the operation of equipment and very little on this key human factor component.

III. The Corps has Grossly Underestimates Lake Oahe DAPL Worst Case Discharge and Spill Risk, Harming Emergency Response and Endangering Responders.

The Worst Case discharge (WCD) volume assessment is required by the pipeline safety PHMSA for emergency response planning but is also directly related to the risk posed by the pipeline's continued operation. The larger the WCD the greater the consequences and higher the risk. WCD is a key element of the risk consequence analysis – what credibly can go wrong and what can be the result. WCD is also critical to other assessments including emergency response, cumulative impacts, harm to wildlife, toxic threats to people, damage to cultural sites and spill modeling.

The Tribe raised the issue about the significantly underestimated Worst Case Discharge into the Missouri River in all of its reports, including the failure to comply with the PHMSA WCD regulations. PHMSA requires a worst case discharge calculation in its pipeline emergency response regulations. The Corps and Energy Transfer's calculation historically has been truncated and deceptively communicated. The Corps continues that conduct into the DEIS.

The PHMSA formula shutdown time requires consideration of detection time, pump shutdown, valve closure, and the effects of adverse weather conditions which was not incorporated into the DAPL calculation, even though legally required. Detection time includes not just CPM software detection but also the human and organizational factors of evaluation and response. The PHMSA formula is depicted as $WCD = [(DT + ST) \times MF] + DD$ where DT=detection time, ST=shutdown time, and MF=maximum flow rate. **PHMSA requires that the worst case**

definition be applied to each element of the calculation. This is a necessary approach because major accidents typically occur when there are multiple SMS failures. The PHMSA regulation addressing Worst Case Discharge 49 CFR 194.105(b)(1) **requires a “maximum” worst case evaluation of each element of the WCD calculation** as follows:

(b) The worst case discharge is the largest volume, in barrels (cubic meters), of the following:

(1) The pipeline's maximum release time in hours, plus the maximum shutdown response time in hours (based on historic discharge data or in the absence of such historic data, the operator's best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest line drainage volume after shutdown of the line section(s) in the response zone expressed in barrels (cubic meters) ...

The DEIS fails to take the “maximum” time or flow rate in their analysis and leaves out required elements. They use a “best case” approach of equipment functioning rather than a worst case examining all the requirements of the regulation. In previous calculations prior to the EIS the Corps only based the WCD calculation on a best case pump shutdown time plus a modeled drain down volume that was not the largest. Detection time including investigation of alarms and instrumentation by the control operator, shutdown decision-making, EFRD valve closure were not considered or included in the calculation (Table 3-4). The WCD was only based upon pump shutdown time, “Given: the pump stations are designed to shut down in 9 minutes.”¹²⁴ The calculation then used the 9-minute shutdown time volume of 3,750 Bbls.: “Therefore in a nine-minute period, $416.6 \times 9 = 3750$ bbls”¹²⁵ (emphasis added). This volume was added to the modeled drain down volume of 8,751 Bbls. to arrive at a WCD of 12,501 Bbls. Energy Transfer and their NEPA litigation declarants provided misleading information that their WCD calculation was based upon 12.9 minutes and stated it took 3.9 minutes it takes to shut the EFRDs, however that additional time was not included in their calculations.

¹²⁴ 7 Dakota Access Pipeline Project, North Dakota, Lake Oahe Crossing, Spill Model Discussion Document, Number DAPL-WGM-GN000-PPL-STY-0019, Wood Group Mustang, May 2016, RAR014985.

¹²⁵ *Ibid.*

	Detection Time Including Evaluation ¹²⁶	Shutdown Decision-making ¹²⁷	Pump Shutdown Time ¹²⁸	EFRD Closure Time ¹²⁹	Total Shutdown Time	Drain Down Volume ¹³⁰	Total WCD Volume Bbls
Corps DEIS 2023 WCD Calculation ¹³¹	3 min.	None given	6 min.	3.9 min. ¹³²	12.9 min. = 9,854 Bbls. ¹³³	7,142 Bbls. ¹³⁴	16,996 Bbls.
Corps EA 2016 WCD Calculation	None in the calculation; 1 min. stated	None given	9 min.	3.9 min. not used	9 min. used = 3,750 Bbls	8,751 Bbls.	12,501 Bbls.

Table XI.4-1. The Corps 2016 WCD Calculation Compared to the 2023 WCD Calculation. The explanatory footnotes apply to this Table and Table XI.4-2.

Without explanation the Corps in the DEIS¹³⁵ reduces the pump shutdown time by three minutes from nine to six (Table XI.4-1). The Corps then adds the same three minutes to detection time without analysis other than to state “while there are many factors that may affect the performance of an LDS (such as human error and technical malfunctions) a FBR will almost

¹²⁶ **Investigation:** Includes CPM functioning and human investigation and evaluation of CPM data and alarms – see API RP 1130 CPM need to differentiate false alarms, etc. “all CPM alarms be evaluated” API 1130 at p. 20.

¹²⁷ **Shutdown decision:** Includes additional verification, addressing communication, and the presence of production pressures (pressure not to shut down a 1.1 million BPD pipeline) and supervisory consultation leading to a leak declaration and making a shutdown decision – see API RP 1130 CPM.

¹²⁸ Pump must ramp down to avoid surge. 9-minutes used per 2016 analysis as no justification for the change

¹²⁹ EFRDs must ramp down to avoid surge. Round up to 4 minutes for total WCD calculations, 12 hours travel time to close in winter conditions.

¹³⁰ Note an unmitigated WCD considers the total volume in the pipeline and does not consider modeling or estimated changes in pipeline elevation restricting draining. Energy Transfer claimed this was their approach to WCD in the PUC hearing in ND.

¹³¹ Note this data was supplied to RPS Group by Energy Transfer, DEIS Appendix G p.13, 2.3, “Dakota Access provided RPS with conservative maximum estimates for various response timings for the different actions that would take place following a release from the pipeline (Table 2.4). “

¹³² A shorter 3 minute time is with faster actuators is stated but the 3.9 min time was used.

¹³³ Not provided but calculated (1,100,000 BPD/24hrs./60 min.=764 Bbls. per minute*12.9 min.= 9,854 Bbls

¹³⁴ Not provided but calculated from subtracting the shutdown time volume from the total WCD volume.

¹³⁵ DEIS, at p. 3-34.

certainly be detected in less than 3 minutes.”¹³⁶ The 3 minute time appears to be based on the functioning of the CPM/SCADA system rather than on control operator evaluation and shutdown decision-making. This statement is contrary to the requirements of API RP 1130 (incorporated by reference into PHMSA regulations) which does not reference human error but the need for the control operator to investigate and evaluate alarms and instrumentation and make a shutdown decision. Detection time includes the functioning of the CPM leak detection system as well as the human decision-making. Energy Transfer took 12 days to evaluate the SCADA “anomalies” in the 2016 Sunoco incident before the 8600 Bbl spill was detected – clearly 3 minutes is not the maximum detection time. The Corps has lowered the time it takes for the 2016 analysis to shut down the EFRD as well as the pumps in the DEIS calculation without explanation. Also, without analysis the drain down volume was lowered by 1,709 Bbls or a 20% reduction. The omissions, lack of analysis and failure to comply with PHMSA minimum compliance regulations in the DEIS WCD calculations are similar to the behavior of the Corps throughout the NEPA process.

The Corps fails to consider the ineffective performance of leak detection and EFRD closure in the PHMSA WCD “maximum” calculation of time to detect a spill or isolate Lake Oahe with the EFRDs. The Corps cannot take credit for the successful CPM/SCADA detection of a spill in 3 minutes with an Energy Transfer CPM/SCADA detection rate of 14% and no performance testing. With EFRDs not subject to full verification of performance (no full valve stroke testing) and a lack of backup power to close the EFRDs during a power failure, the Corps cannot take credit for the functioning of the EFRDs in their WCD calculations. The Corps did not address these issues in the DEIS.

For the nearly doubling of DAPL capacity to 1.1 million BPD a more realistic WCD that the Corps did not review needs to incorporate the maximum total shutdown time rather than the best case of equipment and instrumentation functioning the Corps has employed. **The data used by the Corps in the DEIS WCD calculations was not independently derived or analyzed.** The EIS Appendix G spill model report by RPS acknowledges “The site specific characteristics used in this DAPL release volume modeling included pipe diameter, flow rate, valve location, the elevation profile along the pipeline, and conservative estimates of leak detection, pump shutdown, and valve closure

¹³⁶ *Ibid.*

times **provided by Dakota Access.**” Rather than taking an independent, hard look at the critical WCD calculation, the Corps is employing key data uncritically from Energy Transfer. The information goes to the heart of the risk posed by DAPL and the effectiveness of emergency planning, yet the Corps writes it down without questioning or supporting analysis.

The updated oil spill modeling results continue to focus on the potential effects of a catastrophic failure of the pipeline, like a full bore rupture (FBR). The Corps assumes that this scenario represents the worst case spill for environmental effects. However, there is also potential for a smaller, chronic leak or a spill under the leak detection limit that goes undetected for a long period of time. For example, there could be a weeks- or months-long discharge under the detection limit during ice conditions, or a discharge under the detection limit discovered by an observation flight at its longest interval of 10-days. Another example is the pinhole leak such as Energy Transfer’s own 2015 Sunoco Pipeline incident that released 8600 Bbls. during a 12-day period. The Tribe’s hydrogeological analysis indicates that the oil could be pooling for months or years once the oil enters the subsurface. The Corps did not analyze important WCD scenarios such as smaller leaks under the detection limit that could be pooling under the lakebed before entering the Lake Oahe. This includes the scenario of ice cover in winter conditions where aerial surveillance would be ineffective depending on the ice conditions.

The scenarios examined by the Corps are all full bore release (FBR) examples.¹³⁷ The Corps itself acknowledges “detection times for small releases have historically taken anywhere from minutes to weeks to detect, depending on the pipeline and instrumentation configuration.”¹³⁸ The Corps further states that a flow under the detection limit would be more difficult to detect and more slowly contaminate Lake Oahe.¹³⁹ However the Corps claims without credible analysis that a smaller leak under the detection limit would likely migrate to the HDD sites where it would be detected before entering the Lake. However, in the Tribe’s hydrogeological analysis there is little capacity for the oil to move up the 3” opening of the annulus between the HDD borehole and the pipeline. The force of the oil will be significant even for a pinhole release. Under this pressure, the oil will scour the annulus and penetrate the borehole, migrating into less resistant material and

¹³⁷ DEIS, at p. 3-36,37.

¹³⁸ DEIS, at p. 3-34.

¹³⁹ DEIS, at p. 3-48.

eventually into the lake bottom. The language of the PHMSA WCD provisions do not limit the WCD to a full bore release. In fact, the PHMSA regulatory language uses the wording “largest volume” and does not specify a particular release scenario. The lack of an under the detection limit scenario for a WCD is a serious deficiency in the DEIS.

In the Tribe’s analysis, a leak under the detection limit represents the strongest credible scenario for a worst case discharge at the Lake Oahe undercrossing. The Tribe’s WCD scenarios displayed in Table XI.4-2.¹⁴⁰ challenge the assumptions of the Corps calculation by including credible scenarios with true maximum times and volumes as required by the PHMSA regulation.

	Detection Time Including Evaluation	Shutdown Decision-making	Pump Shutdown Time	EFRD Closure Time	Total Shutdown Time	Drain Down Volume	Total WCD Volume Bbls
Leak UDL (Aerial Surveillance) ULO	Maximum 10 days – aerial surveillance	1 hour	9 minutes	3.9 minutes	Maximum ~10 days Bbls. 220,000 Bbls.	15,695 Bbls.	235,695 Bbls
Leak UDL Winter Ice Cover ULO	Migrating Oil, SRST water intake detection >10 days	1 hour	9 minutes	3.9 minutes	Maximum ~>10 days Bbls. 220,000+	15,695 Bbls.	235,695+ Bbls.

Table XI.4-2 WCD releases from under Lake Oahe (ULO) in Figure x.4-2 address an under the detection limit (UDL) 10-day aerial detection and under ice cover. Explanatory notes are referenced in Table x.4-1.

The Tribe’s WCD releases from under Lake Oahe (ULO) in Figure x.4-2 address an under the detection limit (UDL) of 2% spill with a 10-day aerial detection time and an under ice cover scenario. Given the fact that detection would be measured in days not minutes, only detection time and drain down volume were used to calculate the total volume for exemplary purposes. The calculations used a 2% detection limit given Energy Transfer ineffective leak detection record and the Corps’ 1% detection limit has not been subject to performance verification. The Tribe’s calculations include one hour for both control operator investigation of CPM/SCADA alarms and instrument readings as well as the critical time of shutdown decision making as in these scenarios

¹⁴⁰ The Table XI.4-2 references are the same as from Table XI.4-1. Please refer to footnotes 119-127.

maximum shutdown time is largely driven by the detection time delays related to an UDL release. The Corps states in the DEIS that aerial surveillance flights occur every ten days¹⁴¹ – that time is used in the Tribe’s detection time calculations. For a UDL release in winter ice conditions, the scenario is using a 2-day detect time based upon the Glendive Montana community’s detection of Bakken crude in the town’s water supply in the 2015 Bridger pipeline spill into the Yellowstone River.¹⁴² The scenarios calculated a maximum drain down volume of 15,695 Bbls.¹⁴³ based upon the full pipeline distance between the east and west EFRDs rather than a modeled less than maximum volume.¹⁴⁴

The largest WCD is the UDL leak detected by aerial surveillance of 235,695 Bbls. This WCD is 14x the Corps’ calculation of 16,996 Bbls. A leak of this magnitude would significantly increase the consequence and risk of a Lake Oahe spill. This larger WCD would require a reevaluation of the DAPL risk assessment, integrity management plan, spill modeling, and oil spill emergency response planning for Lake Oahe. For example, the DEIS states that Energy Transfer states “resources are also in place to ensure Dakota Access can respond to a release six times larger than the largest conceivable release.”¹⁴⁵ The UDL spill for 10 days is 2.3x larger than the size of spill that is beyond the planning resources of Energy Transfer’s oil spill response plan.

It is important that the Corps address other WCD scenarios and factors affecting the calculations. Given Energy Transfer’s unreliable leak detection and EFRD closure availability it is necessary for the Corps to review a WCD scenario where the functionality of the CPM system and EFRDs are not credited in the WCD calculations. The Corps has not considered that a leak

¹⁴¹ DEIS, at p. 3-9.

¹⁴² Note that in Bridger the pipeline was shut down after one hour of detecting “anomalies” but a spill was not suspected until the Glendive residents complained of the oily smell of their drinking water over a day later. Glendive was only seven miles downstream from the Bridger spill location. DAPL is estimated to be 75.4 miles downstream from the Fort Yates Municipal Water Intake, DEIS, at p. 3-76.

¹⁴³ **The Drain Down Volume calculation is significantly underestimated.** Bakken Crude has an [API gravity of 40 – 43](#). Using [42 API gravity = 50.76 lbs./cu ft.](#) The volume of a cylinder is $\pi \cdot r^2 \cdot \text{Length}$. For one mile of the 30 in. DAPL pipeline and a density of crude liquid at 50.76, one mile of Bakken crude in a 30” pipeline is 193,875 gals. or 4616 Bbls. The Wood Group calculated the distance of pipe between the West and East EFRDs as 3.4 miles (we do not have as built schematics to affirm or challenge that number). Not accounting for pipe elevation or oil retention the “maximum” drain down volume after the DAPL Lake Oahe EFRDs are closed is 15,695 Bbls.

¹⁴⁴ The Wood Group calculated the distance of pipe between the West and East EFRDs as 3.4 miles and that was used in the Tribe’s calculation. Energy Transfer stated at the ND PSC permit hearing that it used the full length between the EFRDs for drain down volume. However, the company in their calculations modeled the drain down volume and asserted that only 1.8958 miles of pipeline would be capable of release or a DD volume.

¹⁴⁵ DEIS at p. 3-47.

from the West EFRD would have a larger drain down volume if a piping of valve failure impacted the upstream side of the valve where there may be some distance to the next isolation point. The Corps hasn't reviewed the impact of severe weather and a prolonged response time such as 12-hours to manually close the EFRDs due to their failure to fully close or with no electricity to the valve actuator to close the EFRD during a power failure.

IV. A Hydrogeological Analysis Supports the Conclusion that a Bakken Crude Oil Spill 90 to 120 Feet Under the Lakebed Will Reach the Waters of Lake Oahe. The Corps Erroneously Asserts that Non-engineered Remnants of HDD Drilling Mud Will Act as a Barrier to an Oil Release into Lake Oahe.

The Corps' notion that bentonite will form a cement after it has been in place six years is an unsupported assertion lacking any technical analysis. The EIS States: "In addition, considering all the directions oil can travel before raising to the sediment-water interface, the probability of a release actually making it through the now-cemented bentonite encasement around the pipeline and approximately 95 to 126 feet of thick, low permeability rock is low."¹⁴⁶ Bentonite is a thixotropic material, i.e., if subjected to vibrational energy, it will flow, much like a bottle of ketchup can be inverted but won't flow unless shaken.¹⁴⁷ Because the undercrossing is saturated, there is no expectation for the bentonite to dry out and form a cement-like casing. The undercrossing was drilled with a drilling mud made of 4% bentonite and 96% water, which in practice produces a slurry of bentonite and native materials that pass through the sieves used to sort out larger solids.¹⁴⁸

Although bentonite can be used for sealing borings and trenches, the purpose of the bentonite drilling mud mixed for the HDD undercrossing was to facilitate horizontal drilling, and not as a designed sealant to prevent the escape of oil from the undercrossing. Because the

¹⁴⁶ DEIS, at p. 3-9.

¹⁴⁷ This same property of bentonite is leveraged in the construction of slurry cut-off walls and deep excavations below the water table. An excavation trench is held open by a bentonite slurry, which seals the sidewalls and behaves almost like a solid, until disturbed by an excavator boom or drilling equipment, in response to which it flows as a liquid.
<https://www.spk.usace.army.mil/Media/News-Stories/Article/2709726/splitting-a-levee-to-make-it-stronger-installing-cutoff-walls/>

¹⁴⁸ Directional Drill Plan of Procedure, Horizontal Directional Drilling August 16, 2016, Rev-2. HDD Execution Plan, Michels Directional Crossings, Dakota Access Pipeline Project – Spread 6 Missouri River / Lake Oahe Crossing (~7,500' / 30" Steel Pipe)

emplacement of the pipeline did not include design features for sealing the pipeline trench with bentonite, the completeness and effectiveness of an inadvertent bentonite seal was not measured. Accordingly, the Corps cannot know with any certainty whether any manner or a seal was installed. The Corps' conclusory claims in the DEIS are lack site specific evidence and are speculative.

Circumstances that could prevent a complete seal include lenses of geologic materials under excess pore pressure, e.g. artesian aquifer units, which could prevent invasion of pore spaces by bentonite. If flowing sands were encountered in the HDD drilling, these might create a segment of the undercrossing where bentonite was lost and did not form a seal. It is therefore unrealistic and not protective of Lake Oahe to rely on the sealing properties of bentonite as a serendipitous means of providing oil containment within the trench.

The EIS further claims without support that, "*The depth of the HDD provides a barrier between the pipeline and water that would impede the ability of any crude oil from reaching the lakebed. Additionally, the Pierre Shale aquitard, which is a relatively impermeable aquitard, lies between the pipeline and the water.*"¹⁴⁹ This statement is fundamentally flawed, because:

- "Depth" is not a barrier; a geologic stratum may be, if sufficiently impermeable, however no demonstration is made to identify an impermeable stratum. In the absence of a truly impermeable stratum, e.g., where vertically accreted river channel deposits provide a pathway for the flow of oil to the lake, the depth of the undercrossing has no bearing on the inevitable oil pollution of Lake Oahe in the event of a breach of the undercrossing.
- Impeding the flow of oil is not prevention. If a strata slows the flow of oil, it only delays the arrival of oil at the lake bottom, for a sufficiently large or long release from the pipeline.
- The so-called 'Pierre Shale aquitard' does not exist at the undercrossing above the pipeline. While the Pierre Shale can form a horizontal barrier to groundwater flow, this is a regional feature, described as, "*The Pierre Formation, a thick shale that underlies the Fox Hills Formation, is the base of active flow systems. Aquifers*

¹⁴⁹ DEIS, at p. 3-76.

*below the Pierre Formation occur at depths greater than 3,000 feet (900 meters) and contain very saline water .”*¹⁵⁰ The Tribe could find no formal description of the “Pierre Shale Aquitard” in the context of shallow Missouri River deposits or bedrock beneath the river, and there has not been a detailed assessment of the local hydrostratigraphy at the location of the undercrossing.

- Although there is a limited clay occurrence in 3 of the 7 borings, the orientation of the borings is only along Undercrossing. The geologic cross-section provided for the Undercrossing, based on seven borings, indicates that there are locations in which clays and clayey sands are essentially absent (e.g. LO-B-5, which found less than 15 feet of clayey deposits). The same cross-section shows substantial thicknesses of sand with silt (100 feet), sand with silt and gravel (40 feet), sand with 25% gravel (50 feet), and silty sand (90 feet). In contrast, the clay units at the top of the stratigraphic column (i.e., at the lake bottom) are less than 25 feet thick where they occur. The DEIS neither provides nor recommends an assessment of the hydrogeologic conditions north and south of the undercrossing. Relying on only 7 geotechnical borings along the 7,600 feet of the undercrossing (one mile of which is under the river) to conclude that the geologic strata through which the pipeline passes can isolate a Bakken Crude release fails to account for the heterogeneity of Missouri River deposits at depth. The geotechnical data collection may have been sufficient to plan the HDD drilling; however, the spacing of borings is far too wide to allow reliable interpretation of the capacity of geologic units to contain an oil spill at the undercrossing. Moreover, the limited data that was collected show a coarse grained environment between the pipeline and the lake, where clay deposits are the exception.
- To the extent that clay deposits at the undercrossing may confine the upward migration of Bakken Crude leaked from the undercrossing, the oil will eventually encounter a geologic window in the clay, which is not infinitely continuous in both

¹⁵⁰ Ground-Water Resources of Morton County, North Dakota. by D.J. Ackerman, U.S. Geological Survey County Ground-Water Studies 27 — PART II I North Dakota State Water Commission, BULLETIN 72 — PART II I North Dakota Geological Survey

downstream and upstream directions. Consequently, the task of detecting a leak below the threshold of the computational leak detection system, or other leak detection methods, is exacerbated and made considerably more difficult. The reach of the lake and subsurface that would need to be monitored for indicators of a leak is expanded, because oil would migrate beneath the clays through the sands and sandy silts for an unknown but possibly long distance, such that when oil does enter the lake, it may be a considerable distance downstream, or possibly upstream, of the undercrossing.

At Page 3-80, the DEIS again references ‘bentonite cement casing’: “A release beneath the lakebed would require oil to travel through the cemented bentonite encasement around the pipeline and approximately 95 to 126 feet of low-permeability alluvium deposits, reducing oil amounts entering Lake Oahe.¹⁵¹”

The Corps’ analysis fails to account for a leak larger than a pinhole but one still below the leak detection limit, which can entail scouring effects that would erode the bentonite seal and allow oil to escape the pipeline boring. No citation or data is provided to demonstrate how the bentonite clay mud will transform into “cement” over time; apparently the Corps expect readers to simply take this on faith.

The EIS statement listed above assumes that ‘cemented bentonite’ and low permeability alluvium will reduce amounts of oil entering Lake Oahe, without citing a basis for that conclusion. If the analysis conducted to prepare the DEIS has reached this conclusion, the EIS should state where the oil would go, for the full range of volumes associated with leak scenarios under consideration. There are three basic destinations for oil leaked from the DAPL Undercrossing:

- Oil stays within the pipeline boring. The hole bored to construct the pipeline was of limited diameter (36”) to accommodate a 30” pipe.¹⁵² This means that oil escaping from the pipe stays within the 3-inch annulus surrounding the pipeline, which is filled with drilling mud, a relatively impermeable material. Under this scenario, the EIS apparently assumes that

¹⁵¹ DEIS, at p. 3-80.

¹⁵² Directional Drill Plan of Procedure, Horizontal Directional Drilling August 16, 2016, Rev-2. HDD Execution Plan, Michels Directional Crossings, Dakota Access Pipeline Project – Spread 6 Missouri River / Lake Oahe Crossing (~7,500’ / 30” Steel Pipe)

oil stays within the pipeline, because flow through the impermeable bentonite material is not expected. In effect, this scenario expects that oil will stay inside the pipeline, even after a pipeline failure. If the DEIS analysis concludes that oil can escape the pipeline but remain in the pipeline boring, the DEIS should explicitly state where the oil will go, and how it can flow in a 3-inch annulus occupied by bentonite drilling mud. The EIS should present a calculation of the available porosity within the pipeline boring that would favor oil transport rather than oil penetrating the bentonite seal and escaping to the subsurface. For example, a 3-inch annulus with an open porosity of 20% would accommodate about 323 gallons per hundred feet.¹⁵³ Oil escapes the pipeline boring, but remains confined to subsurface geologic strata, without resurfacing in the lake. The DEIS should include an assessment of the distance that the range of calculated leak scenario volumes, from pinhole to worst-case discharge, would migrate in the subsurface, and the fate of that oil emplaced in the Lake Oahe subsurface in the long term. Without a basic analysis of where the oil will go and what happens to it in the long term, the DEIS fails to predict impacts from a pipeline failure at the undercrossing.

- Oil escapes the pipeline boring, migrates into subsurface, and eventually surfaces in Lake Oahe. The DEIS considers the oil-in-water scenarios in the RPS Group 2021 model reports.¹⁵⁴ The summary in Section 3 includes a few statements that warrant closer examination. For example, the DEIS states, “*Though considered toxic in the dissolved state (as a DHC), the majority of benzene will evaporate into the air within hours when oil is on the water’s surface, and from the air within days* (Turner, Mason & Company, 2014; USDHHS, 2007).”

There are two problems with this statement. First, the Turner, Mason & Company report does not mention benzene or its properties as an individual compound. Second, the US DHHS report notes the following aspects of benzene volatility: “*Benzene is considered to be highly volatile with a vapor pressure of 95.2 mm Hg at 25 °C. Benzene is moderately soluble in water, with a solubility*

¹⁵³ 36” diameter boring – 30” pipeline = 3” annular space: 36” diameter = 18” radius = 1.5 feet, and 30” diameter = 15” radius = 1.25 feet. $((1.5 \text{ ft})^2 \times \pi) - ((1.25 \text{ ft})^2 \times \pi) = 2.16 \text{ ft}^2$; $2.16 \text{ ft}^2 \times 20\% \times 100 \text{ ft} = 43.2 \text{ ft}^3$; $43.2 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 = 323 \text{ gallons}$ of void space per 100 feet of annulus. 1 bbl = 42 gallons; 323 gallons = 7.69 bbl void space capacity per 100 feet.

¹⁵⁴ Evaluation of Hydrocarbon Releases Into Lake Oahe Using Oilmapland And Simap Trajectory, Fate, And Effects Modeling for the Dakota Access Pipeline Optimization. DAPL Optimization Assessment – Site-Specific WCD Release Volume.

of 1,780 mg/L at 25 °C, and the Henry's law constant for benzene (0.0055 atm-m³/mole at 25 °C) indicates that benzene partitions readily to the atmosphere from surface water (Mackay and Leinonen 1975). The EIS is concluding that benzene will readily volatilize based on a Henry's Law Constant measured at 25 °C (77 °F). Because solubility and vapor pressure, the two parameters upon which the Henry's Law Constant depends, vary with temperature, Henry's Law constants are also temperature dependent. At lower temperatures, the volatility of benzene is decreased. For the case of a Lake Oahe temperature of 33 °F, the Henry's Law Constant of benzene is 0.00153 atm-m³/mol.¹⁵⁵ This means that in a winter release scenario, the volatility of benzene is 3.6 times lower than the reference cited in the DEIS. In an under-ice scenario, the volatility of benzene will be greatly diminished if not zero, resulting in a far greater proportion of benzene remaining in water as a dissolved hydrocarbon.

The DEIS assumes that benzene will rapidly dissolve into water, which is likely over time. However, the mixing of benzene from Bakken Crude into lake water will not be instantaneous, as the dissolution dynamics will follow Raoult's law, which predicts that the rate of dissolution of an individual compound from a mixture will depend on its mass fraction as well as its aqueous solubility. The rate of dissolution, particularly in slow-moving groundwater, may have bearing on the distribution of dissolved constituents in the Lake Oahe water column. A more detailed review of the fate of Bakken Crude chemical constituents is provided in the modeling review section of this report .

The Water Resources section of the DEIS, 3.3.1.3. Impacts and Mitigation, discusses water quality impacts in the context of compliance with Maximum Contaminant Levels (MCLs), which in North Dakota are identical to federal MCLs. MCLs are the minimum concentration that can be practically and economically adopted that are protective of public health and are intended to prevent increased incidence of cancer and other toxic endpoints. However, the adverse impacts of Bakken Crude in drinking water sources are not limited to toxicity. The aesthetic quality of water is also critically important. While a drinking water source can be replaced by bottled water, malodorous contamination of the water supply will impact the ability of impacted communities to shower or bathe with tap water. For some compounds, the taste or odor threshold can be lower

¹⁵⁵ <https://www3.epa.gov/ccampubl/learn2model/part-two/onsite/esthenry.html>

than the regulatory threshold (MCL). While most of the constituents of Bakken Crude, e.g., BTEX,¹⁵⁶ have odor thresholds higher than the MCL, the EIS should review and confirm both the taste and odor thresholds of the known constituents of the Bakken Crude.

A limitation to the DEIS approach is that for much of the evaluation of potential water quality impacts, Bakken Crude is treated as a bulk substance, rather than as a complex mixture of individual compounds, each with its own toxicity, volatility, biodegradability, etc. In view of the very large scale of the impact of an oil release at the undercrossing, with many miles of shoreline potentially impacted, with the lake potentially impacted by dissolved constituents to a considerable depth for many miles, and the under-lake groundwater resources potentially impacted for an untold number of years, the DEIS must take the water quality impacts analysis to the next level and review the fate and transport of individual compounds. At a minimum, examples for each class of compounds, e.g. aliphatic hydrocarbons, aromatic hydrocarbons, polycyclic aromatic hydrocarbons, etc., must be analyzed for their fate in the subsurface and in Lake Oahe.

The DEIS notes that the light-end hydrocarbons such as benzene are prone to volatilization. However, the DEIS provides no information on the practical implications of the volatilization of these chemicals to communities living on, above, and downwind of Lake Oahe. The DEIS should inform members of the communities on both sides of the lake. A basic question on the minds of many who are concerned about impacts from a release of Bakken Crude at the Undercrossing is, *“if there is a spill, will it smell? If so, for how long?”*. The issue of taste and odor thresholds is potentially complex because the biodegradation or other transformation products of Bakken Crude constituents may potentially have lower taste and odor thresholds than the parent compound. The 2015 Glendive, MT Bridger Pipeline Bakken oil spill into the Yellowstone River provides important context here. The residents of Glendive registered numerous complaints concerning an oily taste to their drinking water long before response crews were able to visually identify the spill in winter ice cover conditions.

While it is reasonable to assume that, under the windy conditions commonly present at Lake Oahe, atmospheric dispersion will quickly attenuate any organoleptic effects of a spill, it is nonetheless an assumption. The DEIS should enumerate the potential for lingering odors to affect

¹⁵⁶ Benzene, toluene, ethylbenzene, xylenes

downwind communities on a calm day. To the extent that there is a potential for inhalation of volatilized constituents by residents of downwind communities, the DEIS should assess the potential health effects of those constituents of Bakken Crude that have low inhalation toxicity thresholds. This issue is equally important for the health and safety of first responders who will deploy oil containment booms on the lake.

V. DAPL Currently Lacks a Feasible Emergency Oil Spill Response Plan - Made Worse by a Low Water Crisis at The Lake Oahe Oil Spill Response Zone.

The Tribe has concluded that a spill of Bakken crude oil is high-risk given the operator's alarming pipeline safety record and that the WCD potential of a spill could be catastrophic – many times larger than stated by the current DAPL Facility Response Plan (FRP). The Corps has failed to evaluate DAPL's lack of timely leak detection capabilities, transparency and emergency response coordination with the Tribe or effective response capability to a pipeline oil spill particularly with the chronic low water conditions in the Lake Oahe oil spill response zone. As a result, the Tribe has taken steps to implement its own safety systems including leak detection and water testing to address this serious threat. Additionally, the Tribe has established a Tribal Emergency Response Committee (TERC) and developed its own Lake Oahe Pipeline Oil Spill Emergency Response Plan (ERP). The Corps has shown a dangerous lack of transparency with safety critical documents that are vital for the Tribe's response planning and the protection of its emergency responders.¹⁵⁷ These documents include the DAPL Facility Response Plan (FRP), the Lake Oahe Geographical Response Plan (GRP) (both in Appendix F) and the RPS Spill Model Reports¹⁵⁸ Moreover, the substantial redactions by the Corps in these documents prevents the Tribe from fully evaluating their contents. These actions by the Corps are a serious environmental injustice to the Standing Rock Sioux Tribe and other Tribal communities that would be seriously impacted by a DAPL spill.

¹⁵⁷ These DEIS documents include the recent versions of the DAPL Facility Response Plan (FRP), the Lake Oahe Geographical Response Plan (GRP) (DEIS Appendix F) and the RPS Spill Model (DEIS Appendix G). These documents are highly redacted. The GRP version is dated and superseded and was provided to the Tribe under the direction of a 2018 decision by Federal District Judge Boasberg.

¹⁵⁸ Three reports including *Evaluation of Hydrocarbon Releases into Lake Oahe Using Oilmapland And Simap Trajectory, Fate, and Effects Modeling for The Dakota Access Pipeline Optimization*, RPS, December 2021.

The Corps fails to effectively evaluate the impact of chronic low water levels in Lake Oahe particularly impacting the DAPL oil spill response zone. The low water conditions have been created by the Corps' operation of the Missouri River system exacerbated by historic severe drought from climate change. Energy Transfer's emergency response plans for low water conditions are superficial and ultimately infeasible. The compelling nature of the safety crisis of low water in Lake Oahe is that it not only impacts river access from unusable boat ramps, but it also seriously impairs necessary movement up and down the river and the deployment of necessary response equipment (Figure x.2).



Figure XI.2. The Satellite Imagery (10-10-22) shows the severe impacts of low water conditions on Lake Oahe from the DAPL Undercrossing (top) above the Cannon Ball River to near the Beaver Bay Area.

The Corps' operation of the Missouri River system severely impacts Lake Oahe water levels. Under the Corps' operation Lake Oahe has functioned as an auxiliary deplete and surge reservoir

for the rest of the Missouri River system impacting the environment and livelihood of the SRST. This operation has also created the low water crisis in Lake Oahe intensified by severe drought particularly in the western headwaters of Missouri and Yellowstone system caused by climate change. A recent study¹⁵⁹ has described these conditions in the Western U.S. as the worst set of dry years since 800 AD resulting in “shrinking snowpacks, parched topsoil and depleted reservoirs.”¹⁶⁰ The study also predicted the changes of the drought conditions as persisting through 2030 as 75%. Low water from Fort Rice (approximately 4 miles north of the DAPL crossing) to Beaver Bay (approximately 10 miles south of the DAPL crossing) has created significant braiding of Lake Oahe water with large areas of exposed river bottom as seen in Figure x.1.

Drought conditions across the country, May 10, 2022

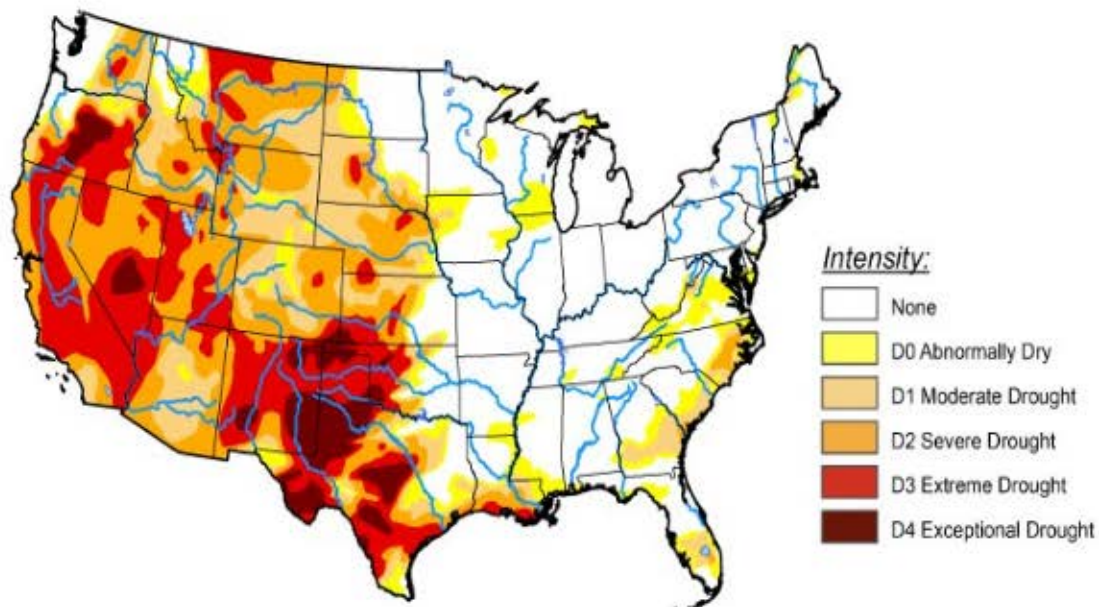


Figure XI.3 Prolonged Drought Conditions Across the US – worst in 12 centuries, High Country News, 5-16-22.

¹⁵⁹ *How Bad Is the Western Drought? Worst in 12 Centuries, Study Finds*, New York Times, 2-14-22, <https://www.nytimes.com/2022/02/14/climate/western-drought-megadrought.html> last accessed 12-6-23.

¹⁶⁰ *Yes, the drought really is that bad*, High Country News, 5-16-22, <https://www.hcn.org/articles/south-drought-yes-the-drought-really-is-that-bad/>, last accessed 12-6-23.

The Control Point 1 (CP-1) area just downstream from the DAPL undercrossing is the most critical for accessing Lake Oahe near the source of a DAPL spill and engaging in spill mitigation before greater volumes of oil can travel downstream and more seriously impact water intakes and the environment. Figure x.3 compares the CP-1 area from satellite imagery to Energy Transfer's GRP¹⁶¹ and the severely braided water in Lake Oahe nearest the DAPL undercrossing. Energy Transfer's GRP requires significant boat and skimmer travel from boat ramps to their identified oil spill Control Points. The upper Control Points areas in Lake Oahe are now in most cases exposed river bottom. Identified locations for vacuum trucks and tanks on the north bank of the Cannon Ball River used for oil clean-up are now distant from the braided water and unusable.

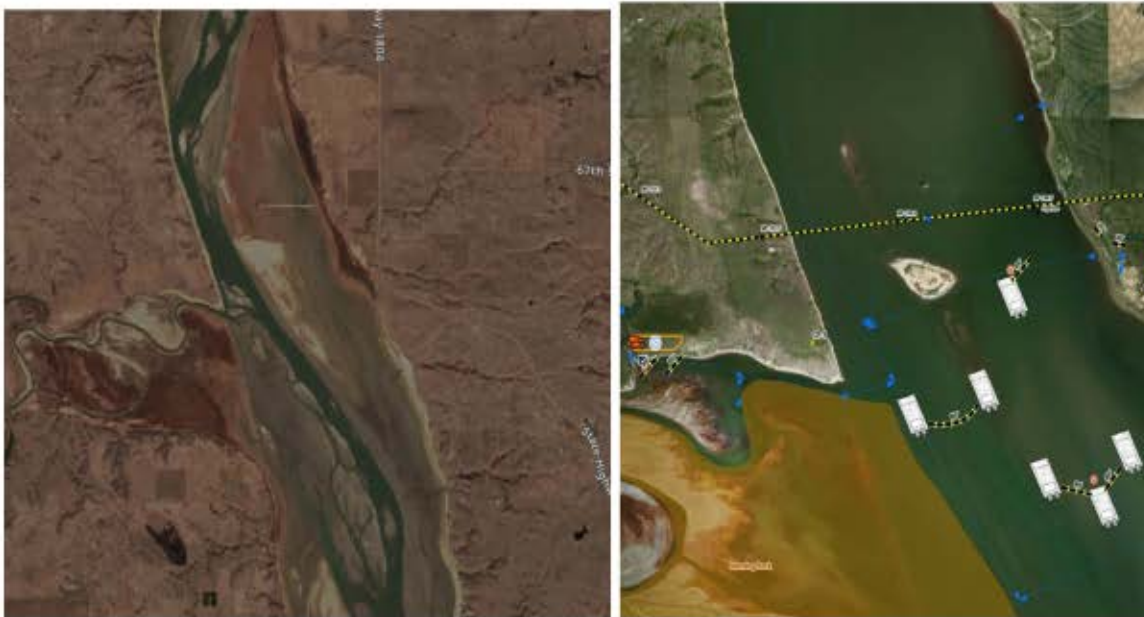


Figure XI.4. Lake Oahe Geographic Response Plan (2018) Control Point #1 Compared to Satellite Imagery (4-8-22).

¹⁶¹ The GRP version is dated and superseded. The GRP was provided to the Tribe under the direction of a 2018 decision by Federal District Judge Boasberg, US District Court for the District of Columbia, Memorandum of Opinion, *Standing Rock Sioux Tribe v. Army Corps of Engineers*, Case 1:16-cv-01534-JEB, Document 304 12/04/17, p. 7. The Court required safety related “interim conditions” including “Instead, the Court will order that the Corps, Dakota Access, and the Tribes coordinate to finalize spill response plans at Lake Oahe, and that the parties file such plans with the Court by April 1, 2018. During that court-ordered process, the Tribe received a less redacted copy of the GRP.”

The Corps has responded to these issues with unsupported assertions of feasibility and claims of equipment availability not in the company owned inventory of staged emergency response equipment. The low water listed equipment is labeled as external with no location provided implying the equipment will need to be procured in the event of a spill. Lake Oahe boat ramps in the vicinity of the response control points during the low water crisis have largely unavailable (Figure x.4).

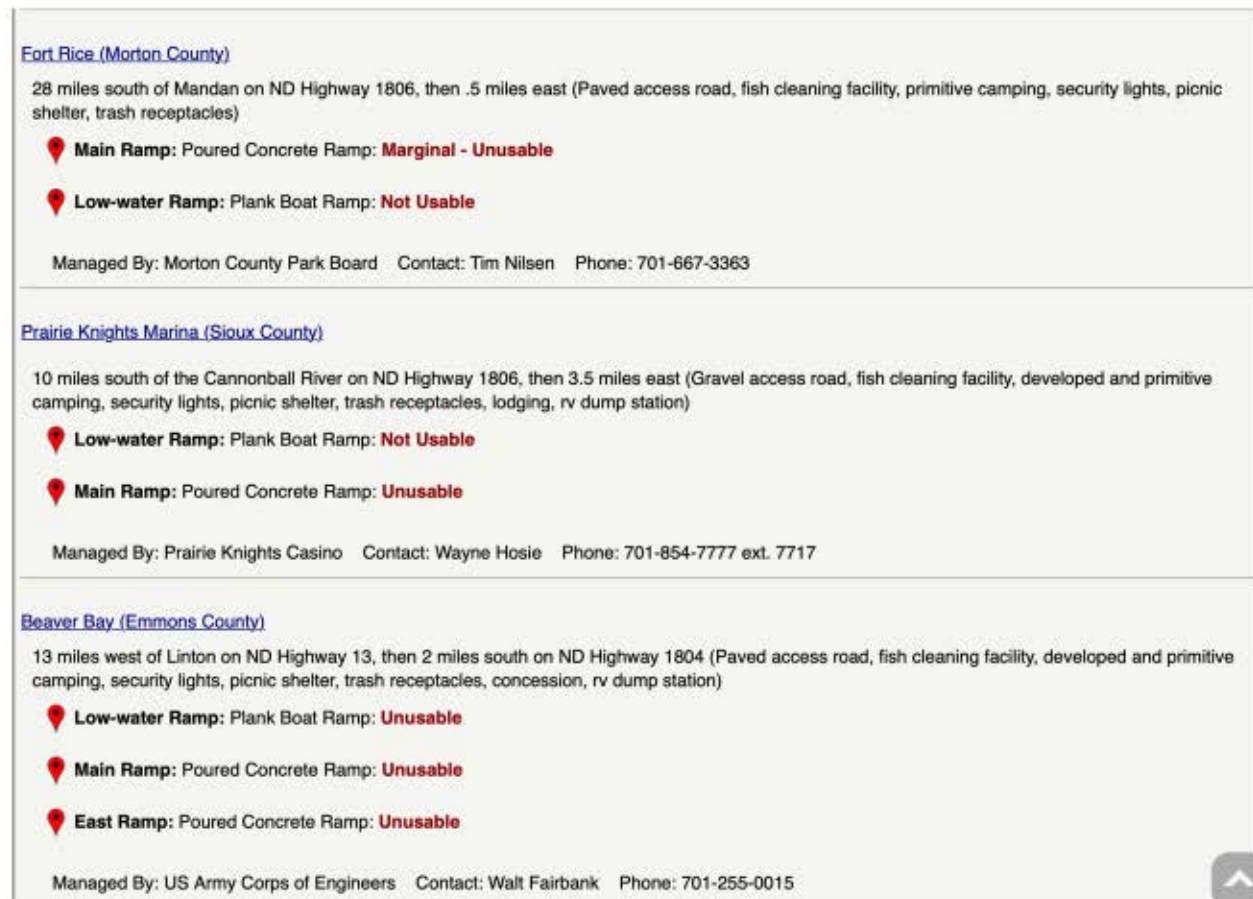


Figure XI.5. The Lake Oahe boat ramps designated for access to response Control Points such as Fort Rice and Beaver Bay have been unusable during severe low water. North Dakota Game and Fish, Boat Ramp Access, Lake Oahe, Website captured 2022.

The Corps baldly declares “improved boat ramps on Lake Oahe should be capable of allowing access even in conditions matching the lowest known water levels at Lake Oahe. In the event that water levels decrease to the point whether improved boat ramps are inaccessible, the inaccessibility of the boat ramps will not inhibit the viability and timeliness of emergency response

efforts.”¹⁶² Where existing boat ramps have been modified for example at the Prairie Knights Marina, boat access has not improved. The OSROs extended boat ramps, or the use of cranes are not a solution when exposed river bottom and unnavigable low water extend hundreds of yards from the historic “multipurpose” (MP) water level shoreline for most of the typical year. From April 2022 to May 2023 the Lake Oahe water level below the Cannon Ball River largest braid was (9 out of 12 months) more than halfway across the Lake (500-1000 yards) towards the eastern shore leaving vast areas of exposed river bottom on the western side.

The use of cranes to place boats, skimmers, etc. in Lake Oahe would be difficult, seriously delay response activity, and ultimately be ineffective. In severe low water the distance from the placement of the crane to navigable water would likely be hundreds of feet. The boom length of a portable crane would be likely unable to reach navigable water. Cranes require stable, level locations to be sited. Many of the possible locations to position a crane for a boat lift are accessed on rural dirt roads with unstable soil near the waters edge and rocky terrain that is not level. Moreover, cranes are not itemized in the Energy Transfer’s company owned response equipment listed as on hand. Cranes are often leased in advance and can be hard to obtain with no notice. The same can be said of claim of the use and availability of airboats. The Corps use of cranes is similar to many of its low water response statements which are replete with unsupported claims and pronouncements.

River navigation for the SRST in low draft boats has been impossible for much of the year from the DAPL undercrossing area to below the town of Cannon Ball. The SRST is very knowledgeable with this section of Lake Oahe within its reservation and has a deep connection with the landscape. Boats need to be pulled over sand bars and cannot navigate other areas with less than one to two feet of water. In several locations boat travel was blocked by extremely low water. The extreme fluctuations in water level make it difficult to create a stable alternative for river access and cleanup activities.

The braided river creates vast areas of exposed river bottom and more shoreline geography where increased oil deposition can occur. In a worst case discharge, lower water leads to a greater concentration of toxins that are already elevated in Bakken crude. The worst of the low water

¹⁶² DEIS, Appendix F, GRP, at p. 33-34.

impacts are most harmful where timely and effective oil spill response is most critical to mitigate downstream harm – near the Cannon Ball River (CBR) where a spill could likely first enter Lake Oahe. In fact the area of the DAPL crossing is the worst location for emergency response access in low water, for many miles up and down Lake Oahe. These issues are not addressed by the Corps.

For higher Lake Oahe “multipurpose” (MP) water levels, Energy Transfer’s Geographic Response Plan (GRP) has specific identified locations on maps for boat ramp usage, Control Points, boats, skimmers, booms, vacuum trucks, and oil storage tanks. With low water, there are no identified locations for that equipment or feasible plan of where it would be sited. This will result in an unplanned and chaotic oil spill response. Unplanned actions to move heavy equipment to new and unidentified water and land locations, if undertaken, will irreparably damage the environment, cultural and grave sites, and seriously delay mitigation activities. While the Corps grossly inflates the environmental impact of removing the DAPL pipeline, it completely fails to describe the serious damage to sacred cultural sites, graves, and sensitive environmental areas that are abundant in the vicinity of the mouth of the Cannon Ball River (see report from SRST expert Dakota Goodhouse).

Timely response to Lake Oahe oil spill is important for an effective response. The Corps states in the DEIS that Energy Transfer has “sufficient resources and personnel in place to respond to any incident along the pipeline within 6 hours.”¹⁶³ It should be noted that 6 hours is the PHMSA minimum compliance for a Lake Oahe spill response in a high volume area.¹⁶⁴ However, Energy Transfer has noted in earlier drafts of its GRP that water intakes could be impacted within 6.7 hours.¹⁶⁵ This leaves little time to respond and effectively deploy personnel and equipment to prevent Bakken crude from reaching water intakes. The Corps fails to critically assess Energy Transfer’s claims that it can undertake additional safety critical activities and deploy response equipment not immediately available to mitigate a DAPL spill with cranes and airboats that are not listed in any company or contractor inventory. The DEIS does not address the impact of any additional travel time to access more remote boat ramps, longer or impaired travel on the river to

¹⁶³ DEIS, at p. 3-9.

¹⁶⁴ 49 C.F.R. § 194.115 Response resources

¹⁶⁵ Dakota Access Pipeline Geographical Response Plan, April 2017, p. 4. “Based on the current Spill Model, the first oil from an unabated release of this volume would take an estimated 6.7 hours to travel downstream before reaching Intake 1.”

reach CPs that are not near the boat access. The DEIS also does not address the longer set up time it may take for unplanned or non-established Lake Oahe access including new travel routes, creating roadways for heavy equipment on unstable, rocky, or muddy soil such as exposed river bottom.

The winter scenarios in the FRP modeling report assumed 100% ice cover and three ice Control Points (CPs). In calm and windy conditions, the response simulations assumed that three skimmers would be used at CPs 1-4, two skimmers would be used at CP 5, and one skimmer would be used at CPs 6-8.¹⁶⁶ This amounts to a total of 17 skimmers. However, in Section 3.3 of the FRP, skimmers are not included in the list of company-owned response equipment and are not pre-positioned at any of the staging locations.¹⁶⁷ Since skimmers would need to come from external sources, fails to address how long it would take for the 17 skimmers to be mobilized and on site, and whether this information is consistent with the assumptions used in the FRP oil spill modeling report.

The Corps' analysis and Energy Transfer's emergency response plans have serious deficiencies in other areas:

- The Corps does not adequately address deficiencies with Energy Transfer's response to spills in winter conditions. For example, the DEIS GRP states that the limit for acceptable work on is on ice 4" and greater. The GRP does not provide any emergency response plan guidance of what to do for mitigation with a spill occurs with less than 4" of ice on Lake Oahe. The plan fails to provide other needed safety guidance for spills on ice such as the use of non-sparking tools or intrinsically safe equipment for cutting slots in ice with highly flammable Bakken crude or to conduct initial air sampling for toxins such as benzene. The Corps also did not address lessons learned from the 2015 Bridger pipeline Yellowstone River spill under ice. The harsh winter conditions made crude oil recovery very difficult and the ice slotting using plywood to direct the spill was highly ineffective. The EPA reported oil from the spill was detected as far as 60 miles downstream as far as

¹⁶⁶ Table 4-14, Page 90.

¹⁶⁷ DEIS, Appendix F, FRP, at p.23-24.

Williston ND. The after action review noted that “ice cover on the Yellowstone River appears to have contributed to the crude oil’s effects on the drinking water supply,” the ice cover was described as having prevented the volatile components from evaporating and provided the right conditions for benzene and other VOCs to dissolve into the water. The Glendive MT water supply was shut down when the drinking water exceeded safe levels for benzene. The town’s water supply was again contaminated in the March ice breakup when additional crude oil entered the river that was coating the ice. None of these issues were addressed by the Corps or Energy Transfer’s GRP.

- The Corps’ again fails to address the serious elevated hazards of Bakken crude oil detailed in the Tribe’s previous reports putting the emergency responders, tribal members, and the environment at risk. The Corps merely repeats superficial information concerning Bakken crude hazards¹⁶⁸ that the Tribe critiqued in previous reports. For example, in the FRP’s Table 7.2 the listing of crude oil is slightly hazardous for toxic hazards even though the Health Hazard Warning Statement acknowledged crude oil contains carcinogenic benzene and toxic H2S.¹⁶⁹
- The Corps’ does not address the concern that DAPL’s procedures for operations, maintenance, and emergencies as required by PHMSA¹⁷⁰ are specific to DAPL. The Tribe noted that Energy Transfer, however, did not have a DAPL specific, PHMSA compliant set of operation, maintenance and emergency procedures prepared at the time the pipeline was put into service or during the NEPA litigation. Such procedures would include DAPL specific emergency response requirements for employees and contractors in the event of a Lake Oahe spill.
- The Corps does not examine contingencies that a DAPL spill may be caused by or occur during another emergency such as power failure, flooding, landslide, or earthquake.

¹⁶⁸ DEI, at p.3-5.

¹⁶⁹ FRP (Appendix F) at p. 51.

¹⁷⁰ 49 C.F.R. 195. 402(a), Procedural Manual for Operations, Maintenance and Emergencies.

- The Corps failed to address adequate notice and communication with impacted Tribal populations on the SRST Reservation including the planning for shelter-in-place or evacuation notices. The GRP “Initial Response Checklist” does not identify the need to conduct air sampling for benzene, a highly toxic component of Bakken crude oil.¹⁷¹
- The Corps does not evaluate nor does Energy Transfer’s FRP or GRP plan for access approval or protection of sensitive SRST cultural and environmental receptors. The Tribe has identified the vicinity of the waters, tributaries, estuaries, and banks of Lake Oahe Lake all as sensitive environmental, ecological, cultural resources and burial sites, and human receptors. Significant receptors are found at the Lake Oahe water’s edge. All these areas are of vital importance to the SRST and its culture. Energy Transfer falsely claims, and the Corps did not address the GRP statement “multiple requests for the identification and location of Tribal significant environmental receptors were made to the Standing Rock Sioux Tribe, and Cheyenne River Sioux Tribe, but no information was provided.” The Corps also falsely claims of outreach efforts to meet concerning Lake Oahe emergency response planning.
- The Corps has only superficially addressed the Tribe’s comments on issues such as spill modeling and analysis of the Lake Oahe hydrogeology. ET’s Lake Oahe Geographic Response Plan (GRP) solely focuses on a cleanup of floating crude oil utilizing booms, skimming devices and vacuum trucks. However, ET’s own oil spill modeling for a possible release of Bakken crude oil in Lake Oahe projects that the oil will be on the water surface only hours and will primarily be entrained in the Lake’s water column (submerged oil). Oil spills entrained in the water column are much more difficult to remediate and require different prototype clean-up methodologies than oil on the surface. The Department of Homeland Security has evaluated methodologies for the challenge of remediation of oil in the water column.¹⁷² DHS found that mitigation of submerged oil was complex and difficult

¹⁷¹ Energy Transfer GRP, Appendix F, Table 4.1, pp. 8-9.

¹⁷² Department of Homeland Security, *Mitigation of Oil in the Water Column: Mitigation Prototype Tests*,

with “no well-established technology, technique, or strategy to prevent the detected submerged oil from having further adverse impacts on the environment or manmade structures.”¹⁷³ However, the Corps in the DEIS fails to address the difficulty of recovering subsurface oil that is entrained within the water column. Based on the mass balance results listed in Tables 6-2 and 6-3 of the oil spill modeling report, at the end of the 10-day simulations, a substantial percentage of the total volume spilled remains entrained in the water column (30.8 to 57.3 percent for the Lake Oahe crossing, and 18.4 to 44.1 percent for the ND-380 valve site). Since the oil degradation rates used in the model simulations were likely too high for winter conditions in Lake Oahe (as acknowledged in the oil spill modeling report), these percentages of entrained oil in the water column are likely underestimated. If the model simulations were extended beyond 10 days, this entrained oil would continue to move downstream and degrade and could resurface during periods of reduced winds and/or currents. Entrained oil droplets are extremely difficult to detect and track in real-time and cannot be recovered by typical spill response measures such as the placement of surface booms, skimming, or other types surface recovery. The U.S. Coast Guard Research and Development Center (RDC) have sought to identify and develop methods of mitigating the impacts of entrained oil through containment, diversion, or removal.¹⁷⁴ The prototype systems evaluated by the RDC have shown some promise for mitigation of entrained oil but need further development. Mitigation technologies that could be used for entrained oil droplets include deep draft booms, silt curtains, sorbents, and pneumatic barriers (bubblers), but these methods are not without limitations and literature about the application of these technologies to real-life spills is lacking. The DEIS does not consider any of these technologies.

June 2017, pp. 2-3. “Responding to oil spills on the water surface is often a difficult task with recovery rates generally averaging about 20 percent or less of the oil spilled. Responding to spills of submerged oil is far more complex due to the problems associated with operating in an underwater environment where oil is constantly spreading and dispersing in three-dimensions visibility is limited, and deploying divers is dangerous. Recovery equipment must be far more robust and complex than that used on the surface.”

¹⁷³ *Ibid.*

¹⁷⁴ U.S. Coast Guard Research and Development Center. 2017. Mitigation of Oil in Water Column: Mitigation Prototype Tests.

- The discussion in Section 3.1.6.3 of the DEIS assumes that entrained oil can be cleaned up by relying on calm conditions to allow oil to resurface, using berms to create a calm, deep area of water, or deflecting oil to calm areas where oil can naturally separate from the water column.¹⁷⁵ The DEIS does not discuss the feasibility of these approaches for Lake Oahe which at higher water levels is a sizeable body of water. Using berms for containment is further described in the FRP¹⁷⁶ and is intended for small to medium size streams (fast flowing creeks). Just downstream of the pipeline crossing, where surface oiling amounts would likely be greatest, Lake Oahe is not a small or medium stream at higher water levels, and this methodology would not be feasible. In fact, the FRP¹⁷⁷ states that “The containment techniques differ considerably on large streams and rivers. First, the smooth calm area of water necessary for oil-water separation must be found along the stream or river rather than creating one, as with small streams.” It is not clear where and during which flow conditions/seasons these calm areas would be expected to exist downstream of the Lake Oahe crossing (if they are expected to be present at all). It is unlikely that a large proportion of entrained oil would be recovered using the methods described in the DEIS, unless conditions at the time of a spill happened to be ideal. The DEIS also fails to analyze the potential serious impacts to the environment, graves, sacred plants, and cultural sites from using heavy equipment to create described berms. The DEIS should fully address the implications of the spill modeling results for spill response planning. This should include discussion of the difficulty of responding to spills with a short duration of surface oiling and spills with a high proportion of oil entrained in the water column.

¹⁷⁵ DEIS, at p. 3-31.

¹⁷⁶ Page 34.

¹⁷⁷ Page 36.

VI. The Oil Spill Modeling Reports in Appendix G are all Highly Redacted Severely Restricting Important Information. The narrative that is Available for Review Contains Inaccurate and Incomplete Responses to Issues Relating to Oil Spill Modeling and Recovery Claims.

The FRP oil spill simulations overestimate the amount of oil that would be recovered from a Lake Oahe spill. One of the outputs of the FRP oil spill simulations is an estimate of the percent of oil potentially recovered by cleanup activities in the event of a spill. There are two metrics of particular interest, the percentage of the spilled oil that is removed, and the percentage of recoverable oil that is removed. “Recoverable” oil refers to the amount of the spill that is available for removal, as a substantial portion of the oil is lost to evaporation, dispersion, and dissolution. For example, say there is a hypothetical spill of 100 bbl of oil, and 60 bbl of the spilled oil evaporates, degrades, and entrains in the water column. This means that the amount of recoverable oil would be 40 bbl. If a response effort removes 10 bbl of the oil, the recovery would be 10% of the spilled oil, and 25% of the recoverable oil. Using that same example, if most of the oil entrains in the water column and only 10 bbl of oil is recoverable (and then subsequently removed), the recovery would be 10% of the spilled oil, but 100% of the recoverable oil. Using the percent of recoverable oil removed as the metric to evaluate response activities can make a response effort appear much more successful than it really is.

The model simulations predicted recovery of 22-30% of the total amount of spilled oil in ice-free conditions (43-56% of the recoverable oil) and 26-51% in ice covered conditions (42-80% of the recoverable oil) during the 10-day simulation. However, Table 3.1.6-3 in the DEIS¹⁷⁸ lists the “amount of recoverable oil anticipated to be removed upon completion of response activities” to be greater than 99%. This is apparently based on the assumption that response efforts would continue beyond the 10-day simulation period until all recoverable oil is removed. In addition, Section 3.1.6.3 of the DEIS refers to a “rapid and complete recovery of the release.”¹⁷⁹ This is misleading and unrealistic. In fact, in the FRP modeling report, almost no oil collection was predicted after 1 to 2.5 days in calm and windy conditions because the oil had already evaporated,

¹⁷⁸ DEIS, at p. 3-45, 3-46.

¹⁷⁹ DEIS, Section 3.1.6.3, page 3-30.

entrained in the water column, or stranded on the shoreline.¹⁸⁰ The assumption that all recoverable oil would be successfully removed contradicts historical oil spill recovery experience. Also, if the amount of recoverable oil was a small fraction of the total oil spilled, even a >99% recovery would only remove a small amount of oil from the environment.

For oil spills in offshore environments, the typical “rule of thumb” used by oil spill response planners is that 10-30% of the total spilled oil can be recovered by mechanical means (e.g., booms, skimmers).^{181,182} However, in a recent review of 30 historical offshore oil spills, mechanical recovery methods removed only 2 to 6% of the spilled oil.¹⁸³ In riverine environments, the recoverability of oil is highly dependent on the environmental and physical characteristics of the river, so it is much more difficult to make generalizations about the amount of oil that could be recovered in the event of a spill. In calm conditions, where oil can easily be boomed and retained in a particular area, recovery rates could be relatively high. In areas of swift currents, the recovery rates would be much lower.

The first known occurrence of a large release of Bakken crude into a navigable waterway occurred in February 2014, when a boat-barge collision resulted in a spill of 750-800 barrels from the barge E2MS 303. The spill response effort lasted for 8 days, and the total amount of oil recovered was estimated to be 95 gallons or 2.3 bbl (0.3 percent of the total oil spilled).¹⁸⁴ NOAA stated that recoverable oil only persisted for 4 to 8 hours because it spread and evaporated rapidly. Similarly, in the oil spill modeling report, the duration of surface oiling is very short for the worst case surface oil exposure scenario at the Lake Oahe crossing. In less than approximately 8 hours, virtually all of the surface oil is predicted to either become entrained in the water column, evaporated, or deposited on shore.¹⁸⁵ For the worst case shoreline exposure scenario at the Lake Oahe crossing, the duration of surface oiling is longer, but the surface oil is still virtually gone by

¹⁸⁰ DEIS, Appendix G, FRP Modeling Report, at p. xii.

¹⁸¹ US Congress Office of Technology Assessment. 1990. *Coping With an Oiled Sea: An Analysis of Oil Spill Response Technologies*. OTA BP-O-63. US Government Printing Office, Washington, DC. 74 pp.

¹⁸² Bureau of Ocean Energy Management. 2019. *Oil Spill Preparedness, Prevention, and Response on the Alaska OCS*. OCS Report BOEM 2019-006. Anchorage, AK: USDO, BOEM. 41 pp.

¹⁸³ Etkin, D.S. and T.J. Nedwed. 2021. Effectiveness of mechanical recovery for large offshore oil spills. *Marine Pollution Bulletin* 163(2021): 111848.

¹⁸⁴ Doelling, P., A. Davis, K. Jellison, and S. Miles. 2014. *Bakken Crude Oil Spill Barge E2MS 303, Lower Mississippi River, February 2014 Spill*. National Oceanic and Atmospheric Administration. PowerPoint presentation.

¹⁸⁵ Page 91, Figure 6-7.

about 36 hours after the spill.¹⁸⁶ As time progresses in the simulations, there are resurfacings of small amounts of surface oil, but these are less than about 2-5% of the spilled volume. This short duration of surface oiling would make it challenging to mitigate a release of oil with surface booms, skimmers, or other response methods focused on surface oil collection and removal.

In the winter model scenarios, ice cover prevents oil from reaching the surface, so the majority of the oil is entrained in the water column and subject to degradation. Despite this, the FRP modeling report predicted a high rate of recovery (26-51% of the spilled oil, 42-80% of the recoverable oil) for the winter simulations. In a real winter spill scenario, the recoverability of oil could be much lower. For example, in January 2015, approximately 758 bbl of Bakken crude was spilled from Bridger Pipeline's Poplar Pipeline into the Yellowstone River. At the time of the spill, winter conditions were harsh, and the presence of thick ice greatly hampered cleanup efforts. Because of the conditions and the fact that most of the oil became entrained in the water column, crews were able to recover only 65 bbl from the river.¹⁸⁷ This equates to about 8% of the total volume spilled, but the actual percentage is likely much less because the 65 bbl recovered consisted of an oily, watery mix.

In the FRP oil spill modeling report, the modeled spill response efforts were not applied to the worst case simulations (which had very short durations of surface oiling). Instead, they used model simulations that were considered to be representative of calm conditions, windy conditions, and winter conditions. As a result, the calm and windy scenarios that were modeled had longer durations of surface oiling (and therefore much more recoverable oil) than the worst case simulations. This is an important detail because the mitigated scenarios in the FRP oil spill modeling report present a more successful spill response than what could occur in the event of an actual spill. The winter scenarios also appear to greatly overestimate the potential recovery of oil. Given these limitations and considering real-world examples of Bakken crude spills into waterways, the amounts of oil recovered in the event of a DAPL spill into Lake Oahe could be substantially lower than estimated in the FRP modeling report.

¹⁸⁶ Page 102, Figure 6-18.

¹⁸⁷ Bridger Pipeline LLC Administrative Order On Consent. Docket No. WQ-15-12.
<https://deq.mt.gov/files/DEQAdmin/DIR/Documents/Bridger%20Consent%20Order/Final%20Bridger%20Consent%20Order.pdf?ver=2017-02-09-121902-843>

Energy Transfer's oil spill modeling is incomplete which is not addressed by the Corps. All of the model simulations in the three oil spill modeling reports track the movement of oil for 10 days following the hypothetical spill. Additionally, the study boundary for the model simulations is terminated at 74.67 miles downstream of the Lake Oahe crossing. This is just before the SRST drinking water intake (intake #14, at 75.41 miles downstream). Given the SRST's high level of concern surrounding possible contamination at the SRST drinking water intake, the intake should have been included in the model domain. Despite not being included in the model domain, the DEIS concludes in Section 3.3.1.3¹⁸⁸ that the SRST intake "was not predicted to be impacted within the 10-day period under any modeled scenario."

In the oil spill modeling report, time series of subsurface oil concentrations show substantial concentrations of oil at intake 13 at the end of the 10-day model simulation. For example, see Figure A-13 of the report, reproduced below, which shows the subsurface concentration of total hydrocarbons peaking just before the end of the simulation. The oil spill modeling report also concludes that it may take 10 days for contaminants to initially reach intake 11 (one of the three downstream intakes where subsurface concentrations were analyzed in more detail).¹⁸⁹ A longer simulation duration would have provided more details about the ultimate fate and transport of the spilled oil, impacts on downstream receptors, as well as areas where resurfacing of entrained oil would be more likely.

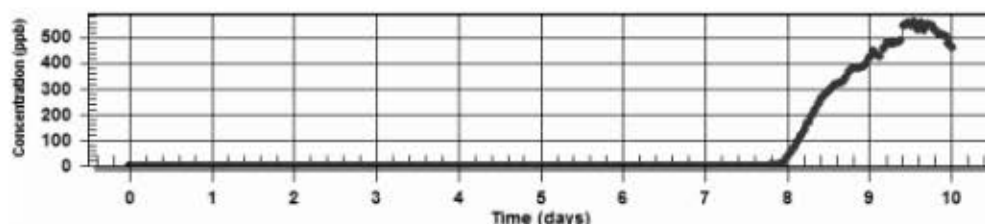


Figure A-13. Time history of total hydrocarbon concentration for the 95th percentile unmitigated FBR scenario for surface oil exposure at the Lake Oahe pipeline crossing location, drinking water intake 13.

Section 3.1.6.3 of the DEIS¹⁹⁰ argues that the 10-day simulation duration is conservative since spill response activities would begin within 6 hours and further downstream movement of

¹⁸⁸ DEIS, at p.3-83.

¹⁸⁹ DEIS, Appendix G, *DAPL Optimization Assessment – Site-Specific WCD Release Volume*, at p. x.

¹⁹⁰ Page 3-32.

oil would be restricted. This is unrealistic, and contradicts the FRP oil spill modeling report, which showed that even with spill response, only a fraction of the oil is recovered, and oil will continue to move downstream.

Standing Rock Sioux Tribe

**Call for the Shutdown of the
Dakota Access Pipeline
and
Comments on the Army Corps of Engineers'
Draft Environmental Impact Statement**

December 13, 2023



Prepared under the direction of

Janet Alkire, Chairwoman
and the Economics Committee of the
Standing Rock Sioux Tribe

Part 3 of 3

Appendix A

SRST correspondence to Michael L.
Connor, U.S. Department of Army,
Assistant Secretary - Civil Works

Re: On-going lack of genuine
consultation, transparency, and honesty
by the Corps of Engineers in the NEPA
process for DAPL

SRST Chairwoman Janet Alkire
May 3, 2023

TRIBAL COUNCIL
(AT LARGE)

Sola Taken Alive

Charles Walker

Avis Little Eagle

Kory McLaughlin

Warren Hawk

Jesse McLaughlin

Janet Alkire

Chairwoman

Frank Jamerson
Vice Chairman



Susan Agard
Secretary

John Pretty Bear
Cannonball District

Sid Bailey, Jr.
Long Soldier District

Jeff Cadotte, Sr.
Wakpala District

Delray Demery
Kenel District

Joe White Mountain
Jr.
Bear Soldier District

Paul Archambault
Rock Creek District

Jessica R. Porras
Running Antelope District

Wilberta Red
Tomahawk
Porcupine District

Truth  Compassion

Remember Who We Are

May 8, 2023

Honorable Michael L. Connor
U.S. Department of the Army
Assistant Secretary - Civil Works
108 Army Pentagon
Washington D.C. 20310-0108

**RE: On-going lack of genuine consultation, transparency and honesty
by the Corps of Engineers in the NEPA process for DAPL**

Dear Assistant Secretary Connor,

Thank you for agreeing to visit the Standing Rock Reservation on May 11, 2023. We look forward to field visits so you may observe the devastating impact that the Corps of Engineers' mismanagement of Missouri River stream flows is inflicting on our land, water and infrastructure, as well as undermining the emergency plans to clean up an oil spill from the Dakota Access Pipeline.

We must also address the of lack genuine consultation, transparency and honesty exhibited by the Corps of Engineers in its dealings with the Standing Rock Sioux Tribe. In your letter to me dated February 17, 2022, you stated that "I have requested that the Omaha District pause the scheduled release of the draft EIS in the Federal Register in order to... discuss your concerns." Over one year later, none of Standing Rock's concerns have been addressed in the least.

We have received none of the information requested about emergency plans to address an oil spill, the modeling of oil spill impacts on our Reservation, or other documents related to safety of the pipeline. Virtually none of the issues raised in the 110-page Scoping Report submitted to the Corps of Engineers on November 24, 2020 are addressed in the Administrative Draft Environmental Impact Statement that has been circulated. Meanwhile, the Corps of Engineers has drained the Oahe Reservoir, causing our drinking water system to impose shortages,

damaging our irrigation intakes, destroying fish and wildlife habitat, damaging the homes and properties of Tribal members, and rendering oil clean-up to be virtually impossible, if there were to be an oil spill today.

On-going Dishonesty on Consultation

I am especially concerned that representations that you have made to me personally have proven to be false. For example, during your previous visit to Standing Rock on March 2, 2022, you stated that you were recently-confirmed as Assistant Secretary and were new on the job, and still learning the issues. You explained that you were not yet in a position to engage in substantive dialogue on DAPL. You agreed that in light of the fact that your mission was to listen but not engage in substantive dialogue, the Army would not characterize the meeting as a government-to-government consultation.

Nevertheless, the Administrative Draft EIS lists the March 2nd meeting as “government-to-government consultation” on page 1-29. The Administrative Draft states the opposite of what you said during your prior visit to Standing Rock. This is important, because the Omaha District routinely mischaracterizes interactions with our Tribe to make it look as if it works cooperatively with Standing Rock, when it does not.

The point is not insignificant, because our Tribe has made specific requests for consultation that have been completely ignored by the Corps of Engineers. For example, on November 24, 2020, the Tribe requested consultation on the procurement by the Corps of any consultants retained for the EIS, out of concern that the Corps would contract with a biased oil industry consultant. We were not consulted, and in fact the Omaha District hired Environmental Resources Management (ERM), a member of the American Petroleum Industry, which filed a legal brief against our Tribe and in support of DAPL in *Standing Rock Sioux Tribe v. U.S. Army Corps of Engr's*, 440 F. Supp.3d 1 (D.D.C. 2020).

Failure to Engage in Early Consultation and Selection of Consultant with Conflict of Interest

Our concern that there was a need for pre-decisional consultation on the issue of the Corps’ consultants for the DAPL EIS were well-founded. Yet the Omaha District ignored our consultation request, in violation of Executive Order 13175, the DoD Native American Policy and President Biden’s *Memorandum on Tribal Consultation on Strengthening Nation-to-Nation Relationships* (January 26, 2021).

I met with Omaha District Commander Mark Himes on July 25, 2022, and requested that the Corps discontinue the ERM contract and re-do its work. ERM has a conflict of interest and is biased in favor of the oil industry, of which it is a member. It should have no role in the evaluation of DAPL’s environmental impacts at Standing Rock. Nevertheless, Col. Himes refused my request outright, without any discussion or negotiation.

Having been stonewalled by the Omaha District, I authorized a Freedom of Information request relating to ERM’s conflict disclosures. We received a highly redacted Conflict of Interest Declaration submitted by ERM. The document indicates that ERM has contracted with at least five separate companies with an ownership interest in DAPL. The Declaration states, “[T]he corporation has worked for, or is currently working for Multiple Entities on the following projects and capacities... [totally redacted].

All of the information relevant to ERM’s conflict of interest has been redacted. The identity of the companies that ERM serves, the work they performed, the frequency of their conflicting work, and the financial benefits are all concealed by the Corps of Engineers. The secrecy surrounding ERM’s conflict of interest reflects the Corps’ total lack of transparency in the NEPA process.

Total Lack of Transparency in the NEPA Process

We are deeply disturbed by the secrecy and overall lack of transparency in the NEPA process for DAPL. The Tribe's 2020 Scoping Report requested disclosure of numerous documents and data sets, to enable our Tribe to critically review the Corps' findings on DAPL's environmental impacts on the Standing Rock Reservation. I personally requested this information from you on March 2, and April 28, 2022. On March 2, you said you would look into it. We met again on April 28, at which time you suggested that the Tribe should ask the state of North Dakota, or file a request under the Freedom of Information Act.

We are a Tribal Nation and signatory to the 1868 Fort Laramie Treaty and 1851 Fort Laramie Treaty with the United States. We have a Nation-to-Nation relationship with your government. You should have more respect for our Tribe.

We are also an environmental justice community. The EPA defines environmental justice as "the *fair treatment and meaningful involvement* of all people, regardless of race, color, national origin or income, with respect to the... implementation and enforcement of environmental laws." www.epa.gov/environmental/justice. In correspondence with your office and the Omaha District, and in meetings with you and with Col. Himes, Standing Rock has made it clear that we cannot have "meaningful involvement" in the NEPA process for DAPL without access to the information relied upon for the findings in the EIS. The secrecy surrounding the data used for the DAPL EIS clearly violates environmental justice.

An accurate assessment of environmental risk is also essential for environmental justice. Accordingly, in our Scoping Report, Standing Rock requested that the Corps dispense with the index method of risk assessment used in the 2016 Environmental Assessment. That request was ignored, and the Corps uses the outdated index - the very analytical tool that is clearly inapplicable to environmental justice communities - on page 3-4 of the Administrative Draft EIS. The document brazenly fails to include the requisite risk analysis necessary to achieve environmental justice.

The Corps is also violating the applicable Council on Environmental Quality regulations. The regulations provide that:

NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and actions are taken. The information must be of high quality... public scrutiny (is) essential to implementing NEPA. 40 CFR §1500.1(b) (2019).

Standing Rock has asked for nothing more than "environmental information," the disclosure of which is required under the regulations. The refusal to disclose the worst case discharge and unreacted Facility Response and Geographic Response Plans puts the lives of Tribal first responders at risk during an oil spill response. It is important to note that the Omaha District publicly disclosed the worst case discharge for a different pipeline, the Sacagawea Pipeline in North Dakota, in 2016, at virtually the same time it refused to release this information for DAPL. The 2016 Amended Environmental Assessment Addendum for the Sacagawea Pipeline states on page 59 that the Sacagawea worst case discharge was 500,000 barrels.

<https://usace.contentdm.oclc.org/digital/api/collection/p16021coll7/id/2672/download>. This very same information was redacted in the 2016 EA for DAPL, and remains hidden by the Corps.

More effective communication and transparency with Tribal responders is required by the EPA in recent guidance implementing Executive Order 13650 on *Improving Chemical Facility Safety and Security*. The EPA guidance emphasizes the need *enhance* information-sharing with Tribal Emergency Response Commissions, such as the

Standing Rock TERC. The report identifies the need to disclose incident data, hazard analysis, risk minimization with Tribes. The Corps of Engineers ignores all of this in the Administrative Draft EIS.

The Corps (and PHMSA) have failed to consult with the Standing Rock Sioux Tribe on emergency planning for DAPL. Vital information remains withheld. There has been no communication or cooperation with the Standing Rock Tribal Emergency Response Commission (TERC) on issues such as emergency notifications, response planning, joint exercises, available resources for emergency response and additional needs. The lack of transparency and coordination with emergency planning jeopardizes the Tribe and the Reservation environment.

Access to the updated DAPL spill model and environmental receptor reports are also essential, because they will demonstrate the unmitigated impacts of a worst case discharge (however underestimated that may be). An evaluation of the spill model is especially important with Oahe Reservoir levels approaching historical low levels, to determine if low water scenarios in the model resemble the real-world conditions at Oahe.

Other documents that we have requested, such as the Integrity Management Plan for the Lake Oahe crossing, and the Operations, Maintenance and Emergency Procedures Manual for DAPL, directly relate to the environmental risk facing our Reservation. The requested Management of Change documentation is required by industry safety standards - API RP 1160 (2019) and RP 1173 (2015). The documentation should identify critical safety upgrades for doubling DAPL's capacity to 1.1 million barrels per day. Yet these documents remain secret, and we do not know if they even exist at all.

Under the regulations, the Corps must demonstrate that the information relied upon in the DAPL EIS is "of high quality," and be subject to "public scrutiny." The veil of secrecy imposed by the Corps in the NEPA process for DAPL prevents any evaluation of whether the information is high quality and it completely circumvents public scrutiny.

The Corps Ignores Energy Transfer's Horrendous Safety Record and Criminal Convictions

Significantly, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a Notice of Violation to Energy Transfer dated July 22, 2021, for failure to install adequate pressure control in violation of PHMSA pipeline safety regulations at 49 CFR §195.406; as well as the failure to produce an Integrity Management Plan in violation of 49 CFR §195.401(b)(1) and an Operations Manual compliant with 49 CFR §195.402. Thus, during the time period in which the Corps of Engineers has been preparing the EIS for DAPL, and hiding important documents from our Tribe and the public, PHMSA cited ET because the requisite plans and manuals *did not even exist*.

Overall, Energy Transfer has a horrendous safety record. It is among the worst violators in PHMSA's recent data base. From 2016 (when DAPL was constructed) to 2020, Energy Transfer pipelines experienced 125 hazardous liquid spills. Over the four-year period, the company averaged 2.4 spills per month. Forty-three of these incidents (one out of every three) are categorized by PHMSA as significant spills. During this period, ET pipelines released over 1,000,000 gallons of oil (25,597 barrels), leading to nearly \$35 million in property damage. At least 21 oil spills affected environmentally-sensitive High Consequence Areas, such as the DAPL Lake Oahe crossing at Standing Rock.

From 2016 to the present, PHMSA has initiated 37 enforcement actions and collected over \$3.3 million in penalties. The recent PHMSA enforcement actions suggest that Energy Transfer's safety performance is getting worse over time.

In the Administrative Draft EIS, the Corps of Engineers downplays Energy Transfer's terrible safety record. In evaluating the potential for an oil spill at Standing Rock, the Corps refuses to consider Energy Transfer's own record, and instead relies on industry-wide data. The Administrative Draft EIS states on page 3-14, "using only Dakota Access or Energy Transfer owned pipelines would result in limited data and is therefore less appropriate than using generic data provided by PHMSA."

The Corps continues to rely on an outdated risk management approach. Recent pipeline risk management standards adopted in response to major accidents and federal recommendations emphasize the safety record of the individual pipeline operator. Industry standards require a continuous assessment and improvement approach called "Plan-Do-Check-Act." This approach focuses on the real-world pipeline safety risk based upon the operator's performance history, not by generic incident data. The risk assessment analysis contained in the Administrative Draft EIS is outdated, self-serving and fails to properly identify DAPL's risk to the Reservation environment at Standing Rock.

Moreover, not all PHMSA-regulated companies are convicted criminals. On August 5, 2022, Energy Transfer-related companies pled no contest to 23 criminal violations of Pennsylvania's Clean Water Act. As a result of Energy Transfer's criminal convictions, the EPA Office of Inspector General has proposed debarring the company and its subsidiaries from government contracts or financial assistance agreements pursuant to 2 CFR Parts 189 and 1532. This is evidenced by the Form 10-K Annual Report filed by Energy Transfer with the U.S. Security and Exchange Commission on February 17, 2023. Energy Transfer LLP is a criminal enterprise with the worst pipeline safety record in the United States. In the Administrative Draft EIS, the Corps of Engineers ignores this and proposes to evaluate DAPL's risk to Standing Rock based on the safety record of other pipeline companies regulated by PHMSA.

As an environmental justice community, Standing Rock is entitled to "fair treatment" in the environmental review of DAPL. It is manifestly unfair to the Standing Rock Sioux Tribe for the Corps of Engineers to ignore Energy Transfer's criminal history and government-wide debarment and downplay its terrible safety record.

Under Article I of the 1868 Fort Laramie Treaty, the United States is required to keep "bad men" - criminals amongst the non-Indians - out of our Treaty territory. Energy Transfer is barred from our Reservation under the 1868 Treaty. This has implications for the operation of the pipeline and the clean-up of an oil spill.

The DAPL Facility Response Plan Violates the Clean Water Act and Tribal Law

As explained in the Tribe's 2020 Scoping Report, oil spill clean-up from DAPL on the Standing Rock Reservation must be conducted pursuant to Tribal law. The Standing Rock Department of Emergency Management, in consultation with EPA's Federal On-Scene Coordinator, will supervise oil spill remediation on the Reservation, as it does for any release of hazardous material. Consequently, it is absolutely imperative for the Corps of Engineers to disclose complete and unredacted copies of DAPL's worst case discharge and Facility and Geographic Response Plans.

We are concerned that the Corps of Engineers has accepted facility response and geographic response plans that fail to comply with the requirements of the Clean Water Act and the Standing Rock Emergency Response and Community Right-to-Know Code. Under the federal Clean Water Act, Energy Transfer must prepare a facility response plan "for responding, to the maximum extent practicable, to a worst case discharge." 33 U.S.C. §1321(j)(5)(A)(1).

The worst case discharge estimate fails to comply with the requirements for the calculation in the PHMSA regulations. With reservoir levels in the low 1590's, the boats, booms, vacuums and other heavy equipment

identified in the plan cannot be mobilized in the braided river. Thus, the plan fails to include response provisions for the oil spill clean-up “to the maximum extent practicable” as required by the statute.

The facility response plan fails to address the specific chemical hazards of Bakken crude, which is information needed by Tribal first responders during an oil spill. Energy Transfer’s spill mitigation plan appears to be contracted by its own spill model. There is no accurate hydrogeologic analysis at the DAPL Missouri River crossing. Ultimately, the plan fails to apply modern pipeline safety standards and community involvement requirements.

The Corps’ Stream Management of Missouri River Streamflows Causes Severe, Adverse Impacts at Standing Rock

The Corps of Engineers itself has rendered the Facility and Geographic Response plans unworkable, by draining Oahe Reservoir in order to maintain navigation service on the lower Missouri River. The Corps has admitted that navigation traffic on the lower river is minimal, yet the Corps’ operations degrade our Reservation water supplies in order service a small number of barges on the lower Missouri. These misplaced operational priorities at Oahe Dam conflict with the need to maintain minimum reservoir levels for implementation of the DAPL Facility and Geographical Response Plans.

The 2023 Annual Operating Plan for the Missouri River Main Stem Reservoirs will make things worse. The plan states on page 10, “a full length navigation season would be provided for median runoff and above, with the two upper runoff scenarios including a 10-day extension of the navigation season.” That is outrageous.

We have repeatedly articulated all of the problems caused at Standing Rock from the failure of the Corps to engage in adaptive management at Oahe Dam during the current drought. By developing a 2023 plan calling for *increasing* water releases to the lower basin, the Corps is exacerbating the erosion of our land and culture sites, damage to our Reservation infrastructure, and degradation of our water and the habitat for fish and wildlife. Moreover, the plan will further undermine the ability of first responders to clean up an oil spill from DAPL. The Corps must amend the 2023 AOP immediately, dispense with the proposal to increase navigation releases in 2023, and instead decrease navigation flows in order to maintain adequate reservoir levels at Oahe Reservoir.

Misleading and Erroneous Information Provided to Sen. Merkley

You addressed the issue of low water in your April 25, 2023 letter to Senator Jeffrey Merkley. Your response was disconcerting:

[W]e have taken steps to investigate this matter with Energy Transfer. The company asserts that there is no impact to its spill response capabilities presented by these conditions.

Your agency possesses a trust responsibility to our Tribe that is supposed to meet “the most exacting fiduciary standards.” *Seminole Nation v. United States*, 316 U.S. 297 (1942). Neither the Corps nor your office has addressed our Tribe’s concerns with DAPL consistent with the “exacting fiduciary standards” to which we are entitled as an Indian Nation, nor do you confer the “fair treatment” to which we are entitled as an environmental justice community. In the Administrative Draft EIS, the Corps merely amplifies oil industry speaking points. Notwithstanding the fact that all of the boat ramps identified in the FRP were inoperative in 2022 (and some of the purported access points are not even ramps), in your letter to Sen. Merkley, you tout the assurances of a convicted criminal.

The letter is replete with falsehoods and distractions. You state, "I understand the need for Tribal participation in this EIS process," but *none* of our Tribe's concerns are getting addressed by the Corps, or your office. Simple things, like the proper identification of Tribal agricultural intakes on the Missouri River, are not accurately identified in the Administrative Draft EIS. We raised that issue in the Scoping Report, emphasizing the need for genuine consultation with our Tribe but the Corps continues to ignore our input, including the need to properly identify our water intakes. In spite of our best efforts, there has been no substantive dialogue whatsoever.

You state that, "The Corps has discussed our limitations on releasing the documents in full with (Standing Rock)." There has been no discussion, or attempt at collaboration. As stated above, on March 2, 2022 you said "I'll look into it," and on April 28 you said "ask North Dakota." On July 25, Col. Himes said "ask PHMSA."

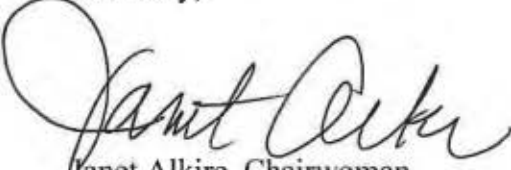
The EIS for DAPL is being prepared by the Corps of Engineers, not PHMSA. The Corps is obligated to comply with the CEQ regulations and the Executive Order and Administration directives on Environmental Justice in this NEPA process. You shouldn't pass the buck.

You wrote to Sen. Merkley, "I... have ensured that the Corps is providing the Standing Rock Sioux Tribe and all Tribal Nations the greatest degree of transparency... available under law." As stated above, the Corps refuses to release the worst case discharge or an unreacted copy of the DAPL facility response plans. Section 6 of the Pipeline Safety, Regulatory Certainty and Job Creation Act of 2011 allows for disclosure of this information. The statute provides that "the Secretary... may provide, upon a written request... the most recent response plan, which may exclude... worst case discharges." 49 U.S.C. §60138(a).

Redactions are discretionary, not mandatory. The authority to release this information to our Tribe is clear. The language in your April 25th letter to Senator Merkley implying that the law prohibits disclosure of this information to Standing Rock is misleading and should be clarified.

Standing Rock has been trying to have a substantive discussion of our concerns with DAPL with the Department of the Army for nearly 10 years. We have been living with an unsafe pipeline operated by criminals for almost 6 years. Justice for Standing Rock is long overdue. Our May 11th meeting provides the Army with such an opportunity. I look forward to meeting with you.

Sincerely,



Janet Alkire, Chairwoman
Standing Rock Sioux Tribe

Enclosures: ASCW Connor Letter to Sen. Merkley, April 25, 2023
Sen. Merkley Letter to ASCW Connor, March 14, 2023

Appendix B

THE CANNONBALL RIVER
OCCUPATIONS AND EVENTS
FOR THE NEPA PROCESS BY THE
CORPS OF ENGINEERS
FOR THE ENVIRONMENTAL REVIEW
OF THE DAKOTA ACCESS PIPELINE

Vol. 1/1 Report

Dakota W. Goodhouse, M.A.

November 1, 2023

THE CANNONBALL RIVER OCCUPATIONS AND EVENTS
FOR THE NEPA PROCESS BY THE CORPS OF ENGINEERS
FOR THE ENVIRONMENTAL REVIEW
OF THE DAKOTA ACCESS PIPELINE

VOL. 1/1: REPORT

Prepared by

Dakota W. Goodhouse, M.A.

An enrolled member of the federally recognized Standing Rock Sioux Tribe,
and private citizen of the state of North Dakota

Under Contract With

The Standing Rock Sioux Tribe
PO Box D
1 Standing Rock Avenue
Fort Yates, ND 58538

Prepared for Commentary regarding the
Environmental Impact Statement (EIS) on the Dakota Access Pipeline
Including the Occupations and Events omitted by Energy Transfer's Class III Survey

November 1, 2023
Updated: December 1, 2023

The Cannonball River Occupations and Events, KOCOAA Report

KOCOAA encapsulates the analysis of: **Key Terrain/Decisive Terrain**; **Observation** and Fields of Fire; **Concealment** and Cover; **Obstacles**; and **Avenues** of Approach/Withdrawal.

The Cannonball-Missouri Confluence area: the Cannonball Historic Ranch, Gayton's Crossing, Big River Village, Horse Head Bottom, Dead Horse Dead Point, Cantopeta Creek, Fort Rice State Historic Site, Badger Creek Bottom, Cannonball, Beaver Creek Bottom
Emmons County, Morton County, Sioux County, North Dakota

Occupations and Events:

- Ochéti Shakówin (the Great Sioux Nation) and the Late Woodlands Period (circa 500-1000 CE)
- The Mandan Indians and Cannonball River Phase (circa 1200-1450 CE)
- Cheyenne (circa 1700-1803 CE)
- The Cheyenne-Lakhota Conflict of 1762-1763
- Fort Jupiter, an English Trade Post (est. circa 1798)
- The Upper Missouri River intertribal conflicts of the 1790s
- The Corps of Discovery (Oct. 1804)
- The historic spring flood of 1825
- The Arikara-Lakhota Conflict of 1835-1836
- The 1837 Epidemic of Smallpox
- The Assiniboine-Lakhota Conflict of 1862-1863
- The historic Cannonball Ranch which operated from 1864 through 1913
- The 1864 Punitive Campaign led by General Alfred Sully
- The 1866-1867 winter camp of the Hunkpapa Lakhota

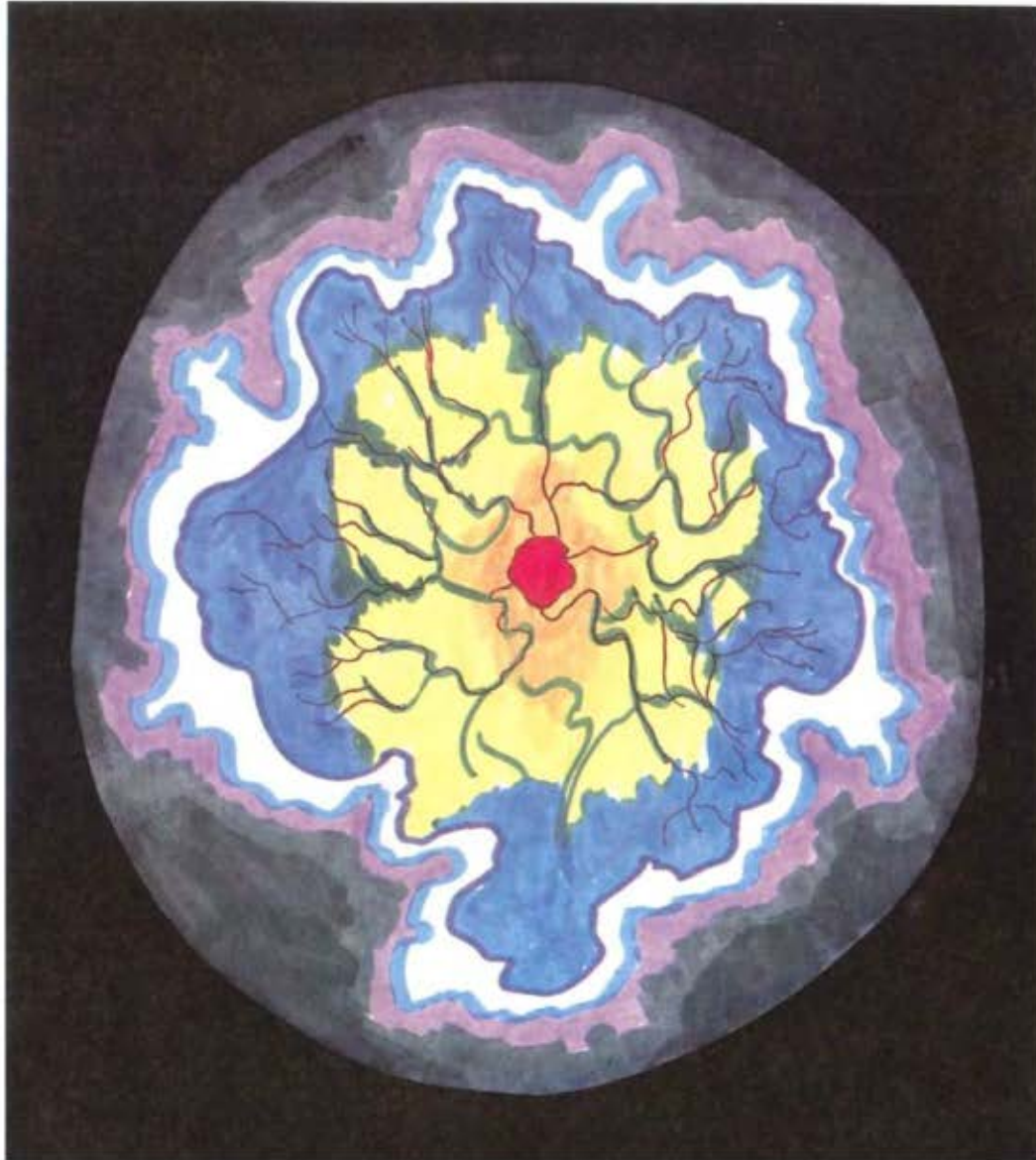


Figure 1. *Íňyan possessed all powers then and the powers were in his blood, and his blood was blue*, by Thomas Simms, from *Otokahekaġapi (First Beginnings): Sioux Creation Story* (1987). According to the creation narrative recalled by Ben Black Bear, Jr., “Íňyan kaŋ ki iyúha glugxán chá txá wé ki hinápxe na txá wówash’ake ki hinápe wé ki ogxéya na makxá ihánke ki kagxé. Txawé ki mní ki é eyásh tawówash’ake ki mní etán ihxéyab okáx iyáyin na Makxá ki itxá’okashaŋ ich’ichagxe Niyán iyéchel. (Íňyan [Stone] opened all of his veins and his blood left him and Íňyan saw that all his powers went from him in his blood and formed the edge of Makxá [the World]. His blood became the waters but the powers flowed outward from the waters and formed around Makxá as the spirit).” The Ochéti Shakówiŋ (the Seven Council Fires, or “Great Sioux Nation”) spoken term for *Water is Life* is Mní Wichóni. Water has a long association with the creation narrative as the source of life according to the Ochéti Shakówiŋ.

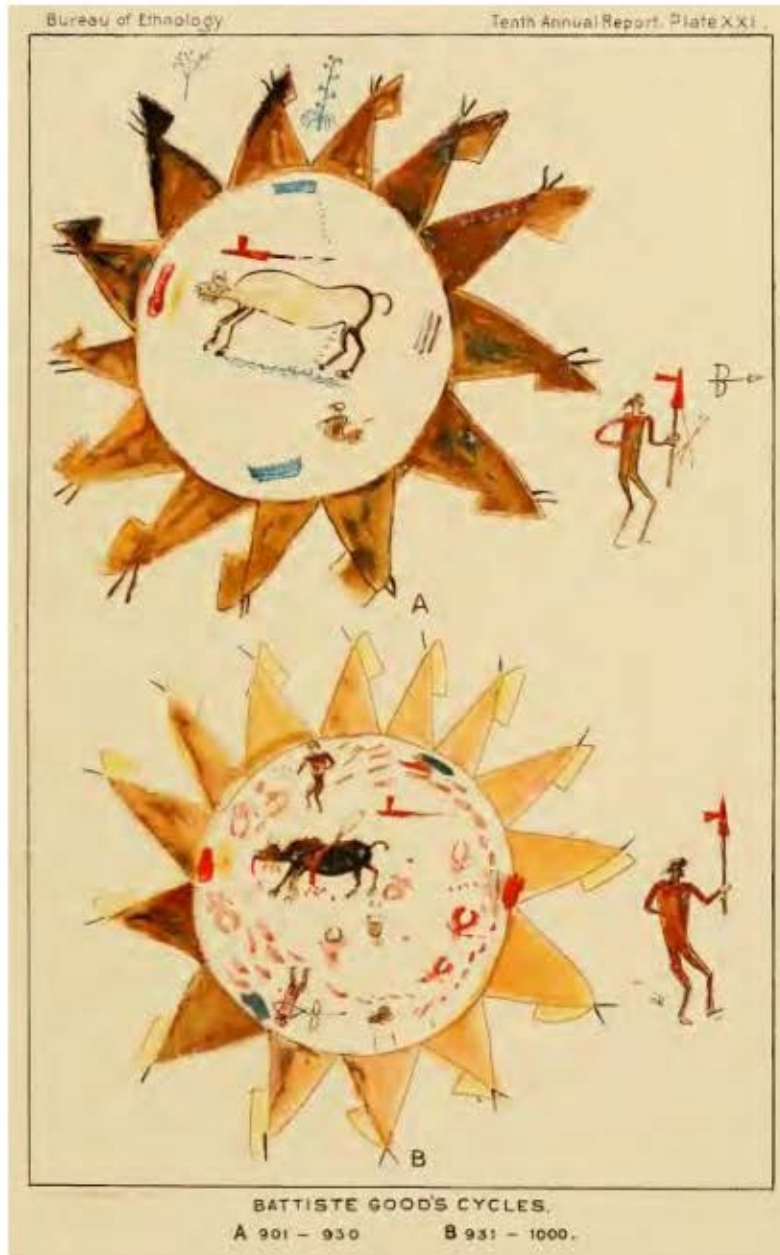


Figure 2. The image above is taken from Garrick Mallory's *Tenth Annual Report of the Bureau of Ethnology* (1894), plate no. XXI. Pictograph labeled "A" in this image recalls the cycle of time from circa 901 CE to circa 930 CE recorded by the traditional Lakshota historian Battiste Good, also known as High Hawk. This pictograph recalls the earliest record of time when White Buffalo Calf Woman brought the Gift of the Sacred Pipe to the Ochéti Shakówinj people.

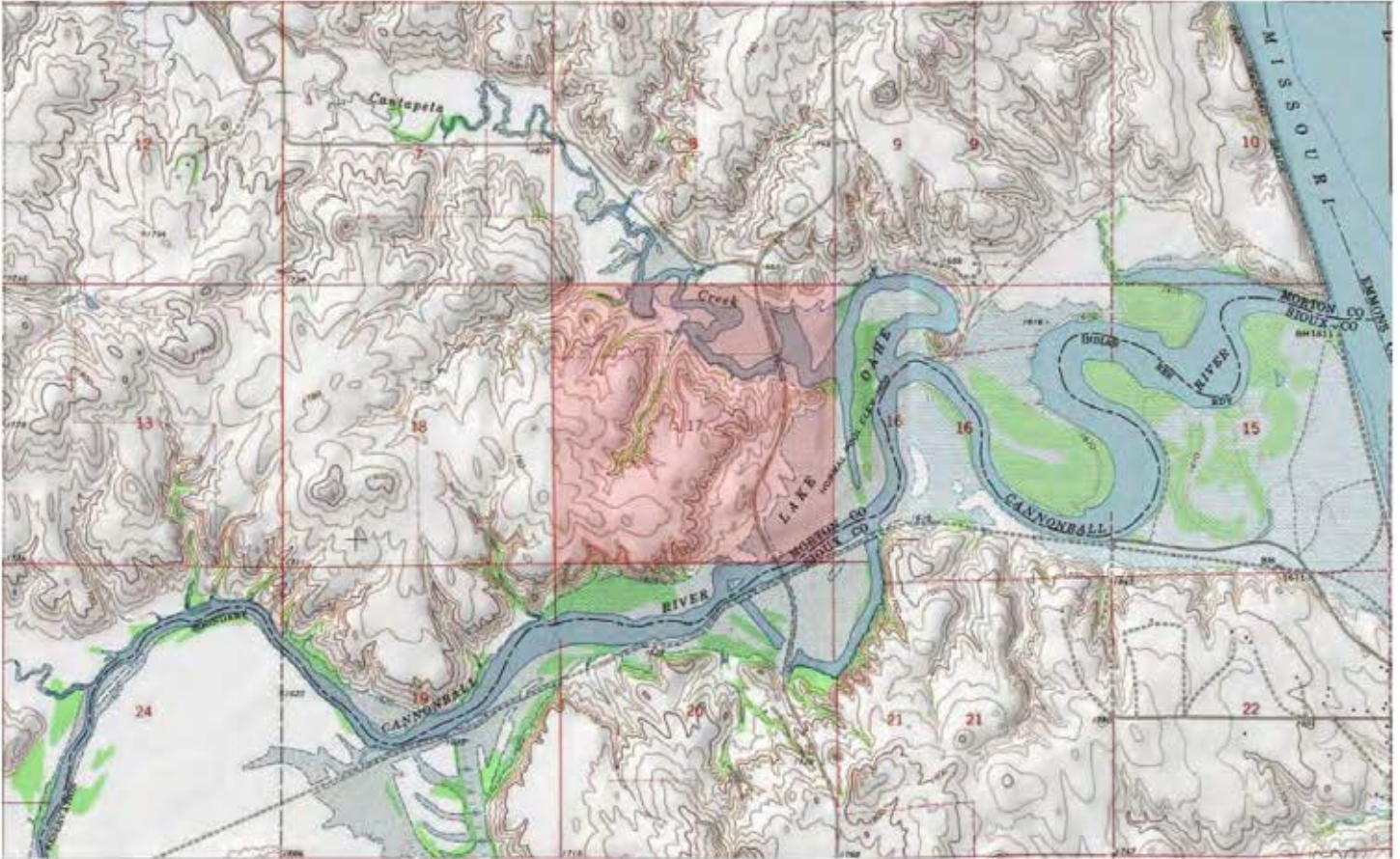


Figure 3. On the bluff located near the center of section 17 of this map is the stone feature *Íŋyaŋ Chaŋgléshka Wakxáŋ Shakówiŋ*, or the “Seven Medicine Stone Circles.” According to Tim Mentz, Sr., former THPO for the Standing Rock Sioux Tribe, the ancestral *Ochéti Shakówiŋ* came together in communal prayer within the stone circles. Further, the Seven Medicine Stone Circles are a physical record of the kind of prayer, the *Haŋbléchéyapi*, or “Vision Quest,” that was held from four to seven days before the sundance held on the floodplain in sections 16 and 15. The Mandan Indians held their annual sundance in this same vicinity when they lived in their Big River Village in the Late Woodland period, or Cannonball River Phase circa 1200 CE. The Cheyenne Who came to live on the north bank of the Cannonball River at the turn of 1700 held their annual sundance here until they moved west at the turn of 1800. See figure 16.

The Seven Medicine Stone Circles also represent the seven sacred rites of the *Ochéti Shakówiŋ*.



Figure 4. Sitting Rabbit's Map (1905). The Nu'Eta (Mandan) term for the Cannonball River is Aashihdia, or "Big River." The Mandan occupation on the south bank of the Cannonball River is labeled as Aashihdiatis, or "Big River Village." This unfortified south bank village had as many as forty-five rectangular earthlodges in an area of about seventeen acres and was occupied from between circa 1200-1450. The Cannonball River Village on the north bank is part of the Huff Phase in which the Mandan constructed palisades and fortification ditches around their villages. According to Dr. Elizabeth Fenn, the Cannonball River villages mark the earliest times when the Mandan practiced the Okipa ceremony as it was practiced in late historic times. State Historical Society of North Dakota. OCLC number 958911859.



Figure 5. Title [Map of Missouri River and vicinity from Saint Charles, Missouri, to Mandan villages of North Dakota: used by Meriwether Lewis and William Clark in their 1804 expedition up Missouri River] (1798). John Evans recorded the Cannonball River as the “Bomb River” on his map of the Missouri River. Evans operated a trading post on the north bank of the Cannonball River in the 1790s. Library of Congress Geography and Map Division Washington, D.C. 20540-4650 USA dcu. Call number G4127.M5 1798 .F5.

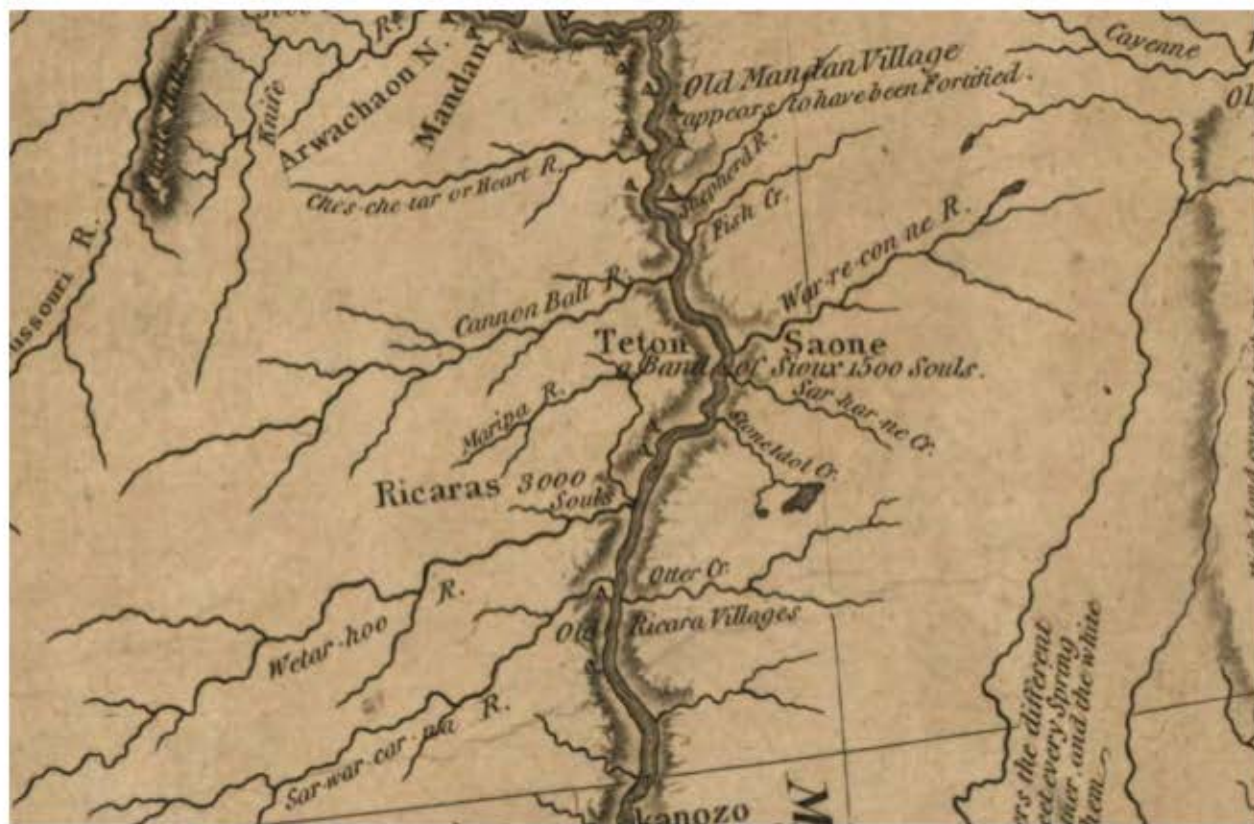


Figure 6. Title [A map of Lewis and Clark's track, across the western portion of North America from the Mississippi to the Pacific Ocean : by order of the executive of the United States in 1804, 5 & 6] (1814). The Corps of Discovery recorded the Cannonball River on their map. On Oct. 18, 1804, Meriwether Lewis ordered his men to take a cannonball concretion to use as an anchor for their keelboat. Note the historical occupation of the Teton (Lakota speaking "Sioux" Indians) in the vicinity of the Cannonball River; the "Saone," or *Saun*, was the historic and cultural term for the northern divisions of Teton known today as Hunkpapa; the Teton Saun occupied both sides on this stretch of the Missouri River. Library of Congress Geography and Map Division Washington, D.C. 20540-4650 USA dcu. Call number G4126.S12 1814 .L4.



Figure 7. The Pictographic Bison Robe, at the Peabody Museum of Archaeology and Ethnology at Harvard University, MA, details the intertribal conflicts amongst the Arikara, Mandan, Hidatsa, Hunkpapa Lakota, and Yanktonai Dakota in the Heart River and Cannonball River area along the Missouri River during the 1790s. This same robe details one of many conflicts between the tribes of the Upper Missouri River which concluded in the 1803 Battle of Heart River, which saw the expansion of the Hunkpapa territory. This conflict is remembered in the Drifting Goose Winter Count (aka John K. Bear Winter Count) as Ta Chante Wakpa ed okichize, or "There was a battle at Heart River." The expansion of Hunkpapa territory is significant. This territorial boundary is recognized in the 1868 Fort Laramie Treaty. Peabody Museum of Archaeology and Ethnology, Harvard, MA. Call number PM 99-12-10/53121.

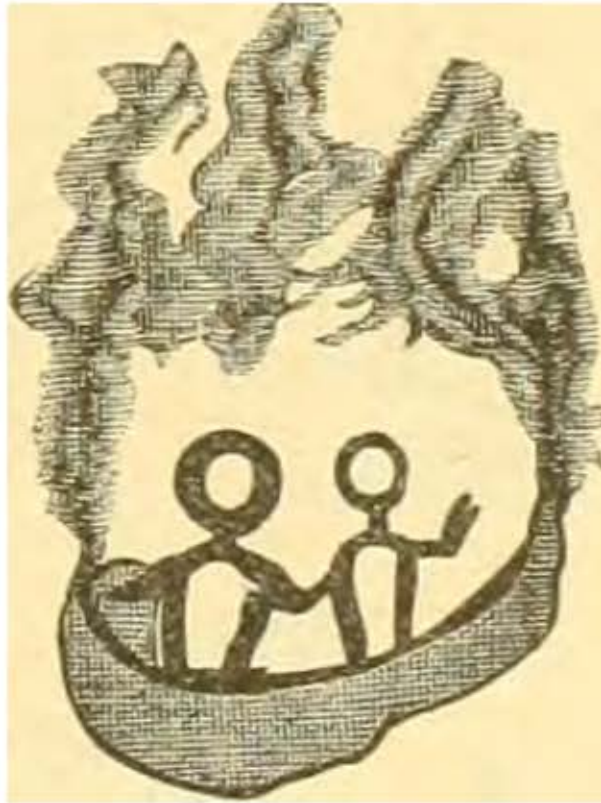


Figure 8. This image represents the intertribal conflict between the Teton Lakota and the Cheyenne in the winter of 1762-1763. That year a band of Lakota fought the Cheyenne at the mouth of the Cannonball River. The Cheyenne were living on the north bank of the Cannonball River, occupying the same bank and site that the Mandan had previously lived on. The Cheyenne retaliated and set fire to the prairie grass. The Lakota sought to outrun the prairie fire and fled up the Long Lake Creek, present-day Badger Creek, located in Emmons County, ND. The fire caught up to the Lakota and burned them about their legs, the survivors jumped into Long Lake. When they emerged they became known as Sicangu, or “Burnt Thighs.” The late Albert White Hat Sr. (Rosebud; Sicangu), recalled the oral tradition of the Sicangu as taking place in the Bismarck region. The conflict which resulted in the formation of the Sicangu began at the mouth of the Cannonball River. The identity of one of the tribes of the Ocheti Sakowin (The Seven Council Fires; “The Great Sioux Nation”) tied to this location is significant. Annual report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution (1880), page 692.



Figure 9. The third entry of the Medicine Bear Winter Count (top row, third from left; #3) recalls 1825 as *Mni wichate*, or “They drowned.” The Hunkpapa Lakota were camped on the bottomland known as “Gayton’s Crossing,” opposite the mouth of Cannonball River. During the night the ice jam broke and the bottomlands suddenly flooded. They lost about thirty lodges, or about 150 people, and many of their horses to this flood. This event is recorded in other Hunkpapa and Yanktonai winter counts such as Blue Thunder, Long Soldier, High Dog, No Two Horns, and the Chandler-Porht at the same location. Hood Museum of Art, Dartmouth College, Concord, NH. Call number 2009.65.

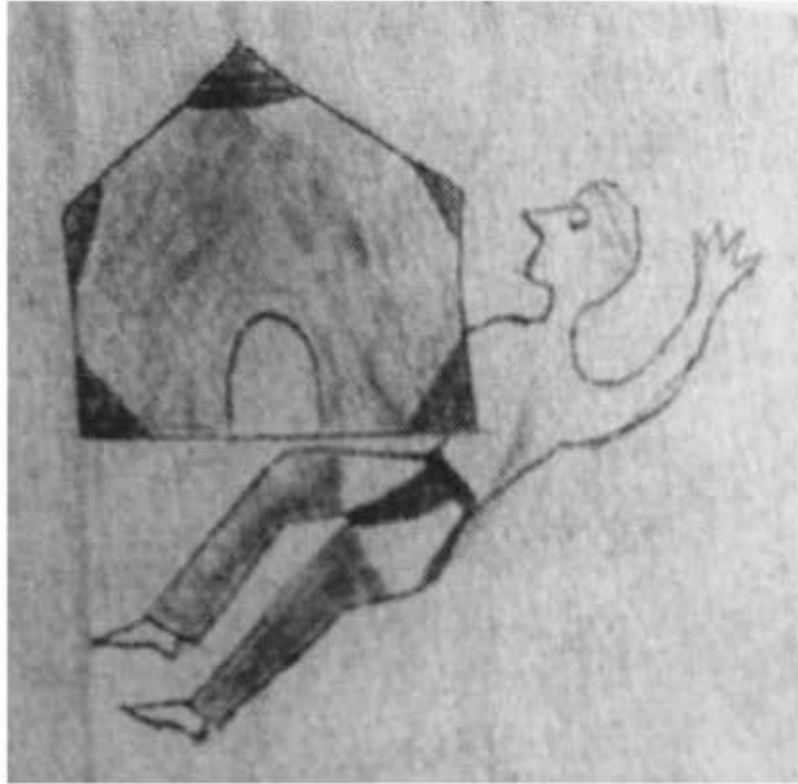


Figure 10. The thirty-fifth entry on the Long Soldier Winter Count recalls the winter of 1835-1836 when the Arikara made camp on the Cannonball River. The Lakota went to trade with them for corn, and the Arikara killed six of the Lakota. The lodge in this image represents the immovable camp of the Arikara at the approach of the Lakota. National Museum of the American Indian, Smithsonian Institution. Call number 11/6720.



Figure 11. An entry from the Medicine Bear Winter Count which recalls the 1837 smallpox epidemic that swept the Northern Great Plains. Several winter counts recall this year, all with similar depictions of a figure covered in marks like this image above.

The High Dog Winter Count, Blue Thunder Winter Count, and the Long Soldier Winter Count, an interview by Mamie Wade (daughter of pioneer rancher William Wade) of Lakota elder Annie Sky, and the first-hand story remembered by Annie Sky's granddaughter Dr. Harriet Sky, the Hunkpapa were camped on the bottomland at the Cannonball-Missouri Confluence when smallpox struck.

The High Dog Winter Count and Blue Thunder Winter Count are in the collections at the State Historical Society of North Dakota. The Medicine Bear Winter Count is in the collections at Dartmouth College in New Hampshire. A copy of the Long Soldier Winter Count is available for viewing at the Sitting Bull College Library. Mamie Wade's interview is available to read in the book *Paha Sapa Tawoyake: Wade's Stories* by William Wade.

The ND Studies website identifies the steamboat St. Peters, a trading vessel, that brought the historic 1837 smallpox epidemic to the Northern Great Plains.¹

¹ "Section 3: Smallpox Epidemic of 1837," North Dakota Studies Grade 4 Curriculum, accessed December 6, 2023, <https://www.ndstudies.gov/gr8/content/unit-ii-time-transformation-1201-1860/lesson-4-alliances-and-conflicts/topic-1-smallpox-epidemics-1781-1837-1851/section-3-smallpox-epidemic-1837>.



Figure 12. An entry from the Long Soldier Winter Count which recalls the winter of 1862-1863 as the year when twenty Assiniboine came on the warpath, there was a battle at the Cannonball River, and the Assiniboine hid behind the cannonball concretions. The circle tells us that the Assiniboine were surrounded and fired upon. The fox image which overlays the Assiniboine tells us they fought with guile. National Museum of the American Indian, Smithsonian Institution. Call number 11/6720.



Figure 13. On July 29, 1864, after spending two weeks hastily constructing Fort Rice, General Sully took his command of 2200 soldiers, which included a detachment of Winnebago Indian scouts, and ascended the Cannonball River on the south bank, his punitive campaign on the Isanyathi Dakota anew. Known or unknown, Sully also marched against the Teton Lakota (Hunkpapa, Itazipcho, Sihasapa, and Mnikowozhu), and Ihankthunwanna Dakota (Yanktonai), two Siouan groups who had nothing to do with the 1862 Minnesota Dakota Conflict. Sully received a dispatch from Fort Rice at midnight on July 22 that the Dakhóta were on the Knife River. The next day Sully's command crossed the Cannonball River near present-day communities of Porcupine and Shields, ND. Capt. Seth Eastman, *Fort Rice* (1864).

<https://history.army.mil/html/artphoto/pripos/eastman.html>

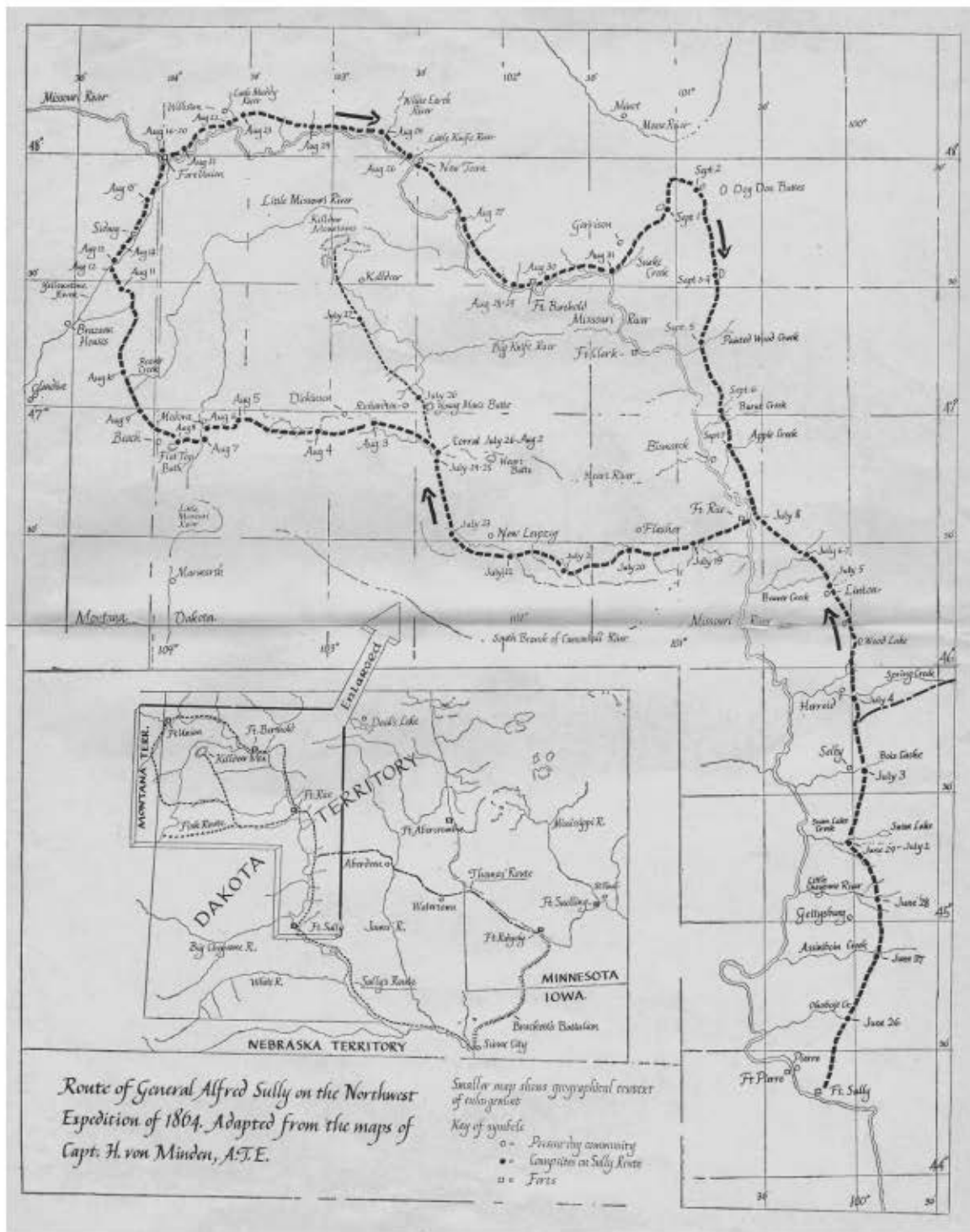


Figure 14. Map of General Alfred Sully's 1864 punitive campaign in Dakota Territory. Rev. Louis Pfaller, O.S.B., from Capt. H. von Mindon of Sully's Northwest Expedition. *Sully's Expedition of 1864 featuring the Battles of Killdeer Mountain and the Badlands Battles.* <https://www.history.nd.gov/pdf/Sully%201864%20by%20Pfaller1.pdf>. Pages 24 & 25.

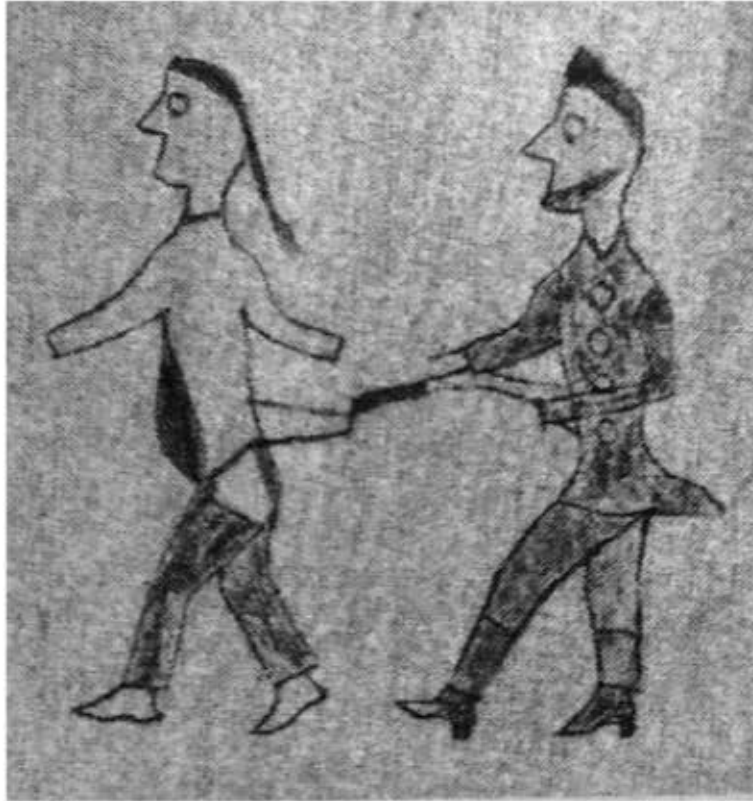


Figure 15. An entry from the Long Soldier Winter Count indicates that the Hunkpapa were camped at the Cannonball River in 1866-67. Gall was taken by soldiers that winter to Fort Berthold where they stabbed him. Gall was left for dead and the camp moved on. What makes this tale remarkable is that Gall walked to the Hunkpapa camp at the Cannonball River and recovered. National Museum of the American Indian, Smithsonian Institution. Call number 11/6720.



Figure 16. In 1999, the Cannonball Ranch was inducted into the North Dakota Cowboy Hall of Fame. It's one of the oldest ranches in North Dakota. According to the ND Cowboy of Fame, the ranch served as a gathering point as early as 1865. The ranch included a hotel, a general store, a ferry crossing, a steamboat landing and fueling station, a military telegraph station for Fort Rice, and a stage line to the Black Hills in the 1870's and 1880s. The ranch also included two houses, a barn, a blacksmith shop, a bunk-house, an ice house, a laundry, and tennis court.

The North Dakota Cowboy Hall of Fame's strict criteria for eligibility to be recognized is that a ranch must have been "instrumental in creating or developing the ranching business, traditions, and lifestyles of North Dakota's western heritage and livestock industry."

State Historical Society of North Dakota (1952-00057). Frank B. Fiske Photograph Collection 1952. Call number 958906935.



Figure 17. An aerial perspective of the north bank of the Cannonball River looking southwest. The Mandan Indian village (circa 1250 to 1400) is visible. The DAPL drill pad and earthen fort was erected on this site in 2016. According to the late Dr. Ray Wood, a world-renowned Missouri River archaeologist, John Evans trade post also occupied this locale. Evan referred to this site as “Jupiter’s Fort.” *Prologue to Lewis and Clark: The MacKay and Evans Expeditions*, University of Oklahoma Press; Norman, OK. 2003. Page 111. Photo by Ray Wood (1955), State Historical Society of North Dakota.

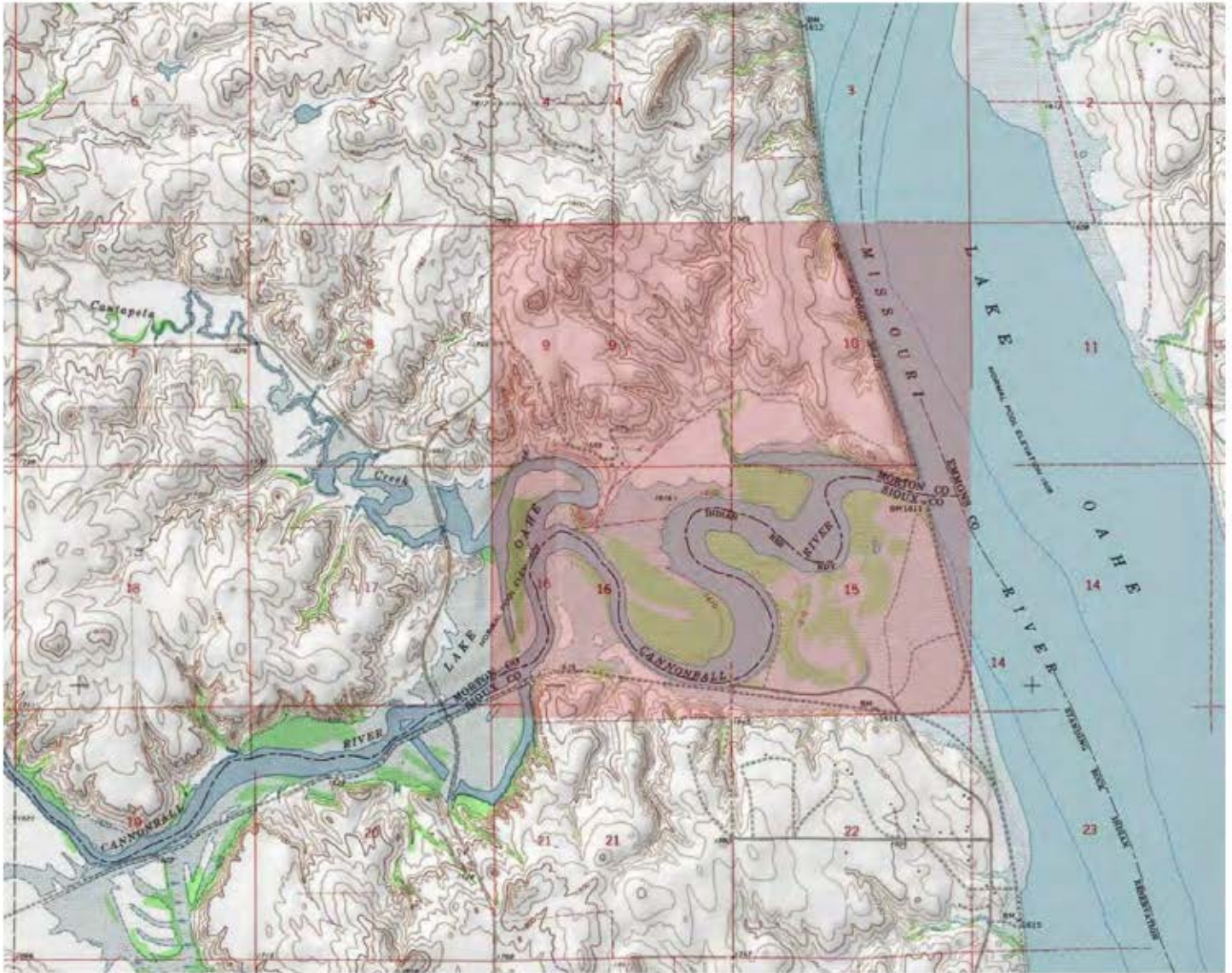


Figure 18. The bluff in section 10 of this map is the location of the Mandan Indian village. Section 9 is the location of the historic Cannonball Ranch. Section 15 & 16 is the location of the winter camp of the Hunkpapa Lakota people; it was the location some summers where they had sundance. This floodplain is where the Hunkpapa buried an estimated 150 people who drowned in the spring flood of 1825.

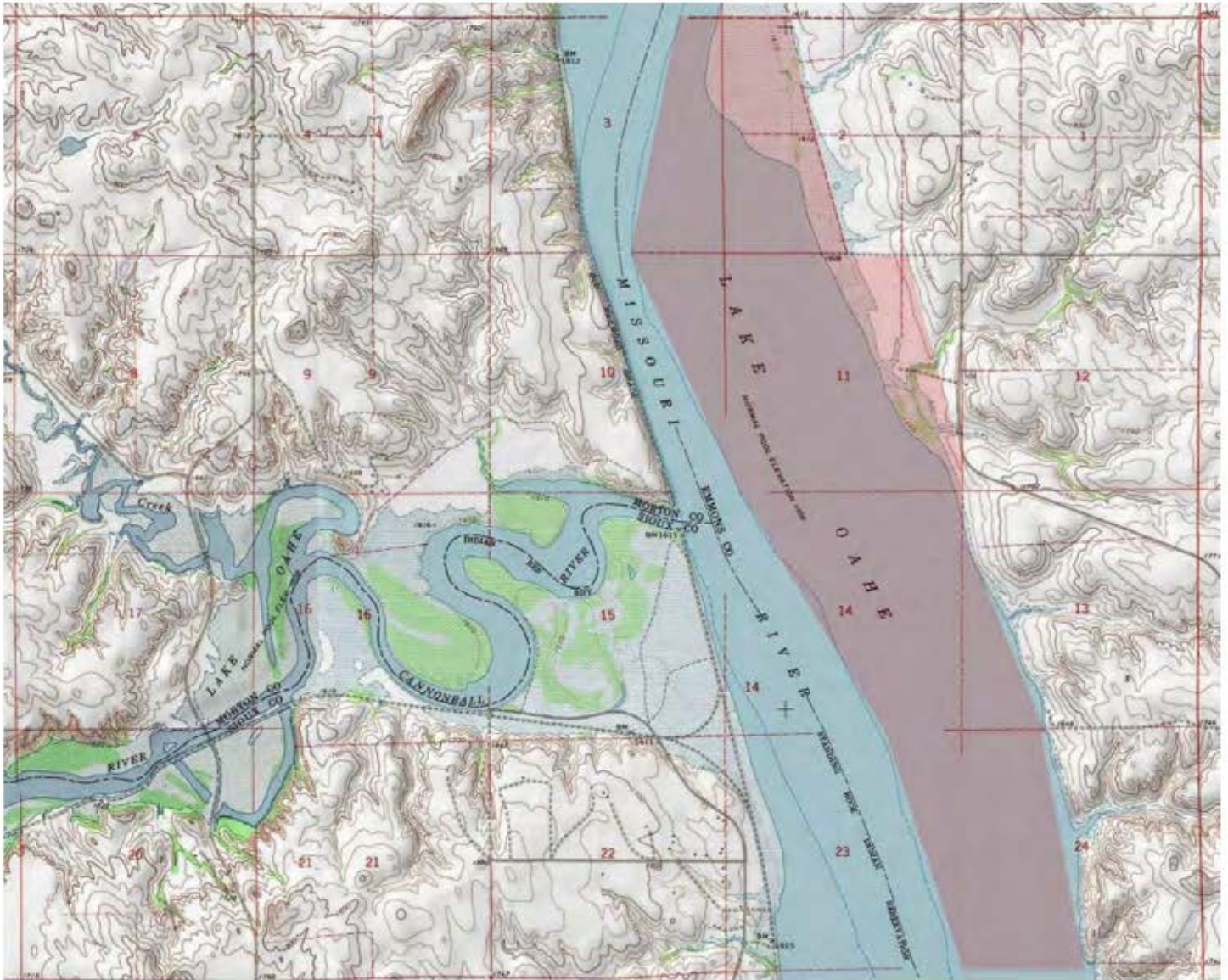


Figure 19. The highlighted area on the eastern floodplain of the historic Missouri River is where the Yanktonai camped in the winter of 1824-1825. In 1878, the Hunkpapa chief, Ishta Sapa ("Black Eye/s"), met with William Wade, a cattle rancher on the Cannonball River, and shared this about the terrible 1825 flood: "...we camped on this bottom land just below here...it was the Wolf Month [February] and it had been warm for a long time. One night the water started coming in over the ground from the river and before we could get to higher ground we were surrounded by water and ice chunks. Our only chance was to get to high ground before we would all be covered up with water. We tried to carry our tepees and supplies but finally had to leave them and many of the women were drowned trying to save their children. Most all our old people drowned and many others. Most all our horses went under and you can still see their heads (skulls) laying [sic] along at the foot of the hills after so many, many years. Two Bears (Mato

Nunpa) a Yankton chief [sic], saved the lives of several women and children by carrying them from camp to the higher ground.”

The people were buried where they drowned. The line of horses were buried in a line where they were picketed. The area that Two Bears refers to is known to locals now as *Etu Pha Sung T'a*, or “Dead Horse Head Point.” The northeast quarter of section 22 is called “The Point,” where locals once gathered on the bank overlooking the place where their relatives and horses were laid to rest.

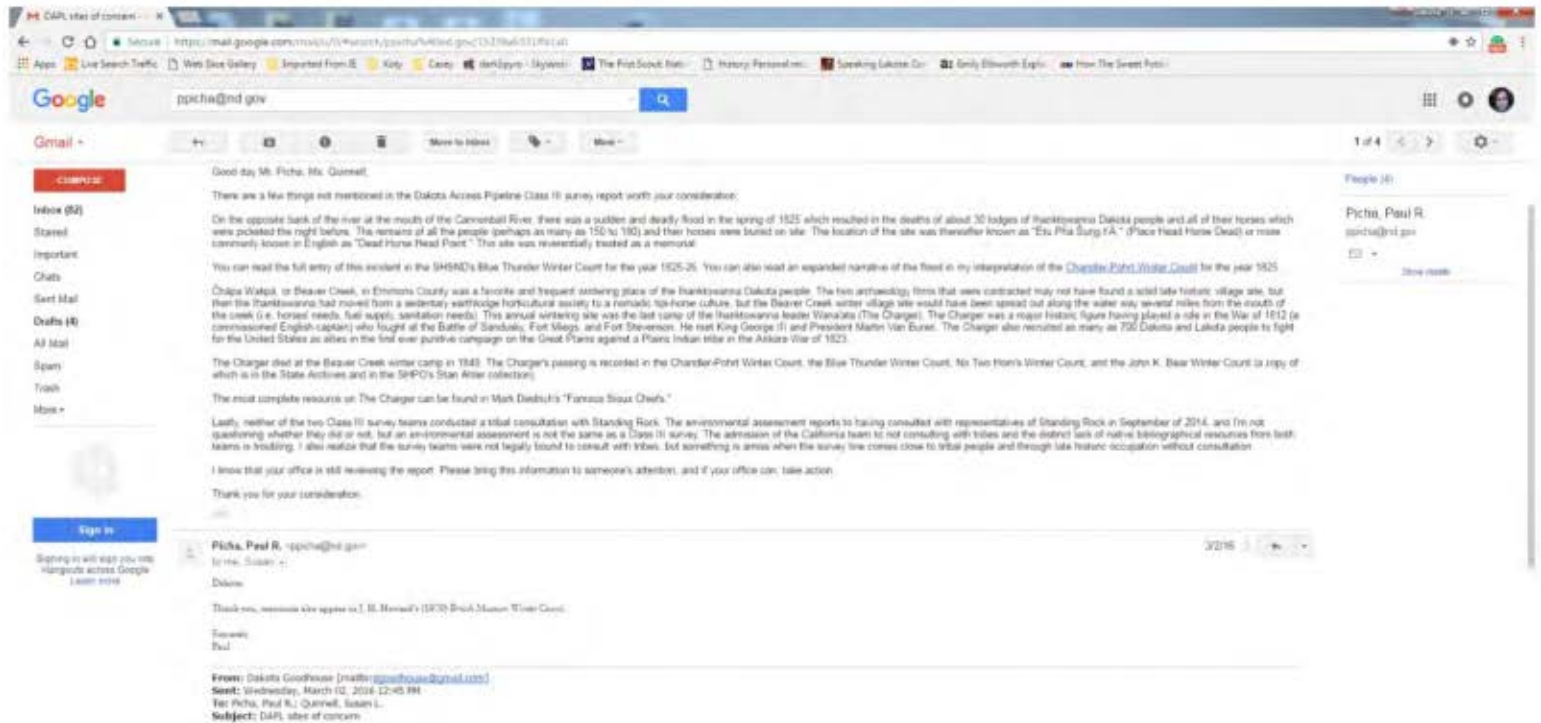


Figure 20. A screen capture of an email sent to then ND State Archaeologist Mr. Paul Picha regarding missing information in the DAPL Class III survey. Mr. Picha not only confirmed the missing information but included another source regarding the 1825 spring flood. The narrative that Mr. Picha pushed that there is nothing there is false. Picha is aware of people and horses buried at this location following this flood.



Figure 21. On March 16, 1875, President Grant extended the boundary of the Standing Rock Sioux Indian Reservation east of the Missouri River along Beaver Creek to the fork of South Beaver Creek then a straight line south to the Ihanktuwanna reservation. The Ihanktuwanna reservation was established by President Grant's executive order the same day Standing Rock was extended. U.S. General Land Office, Dakota Territory, 1876.

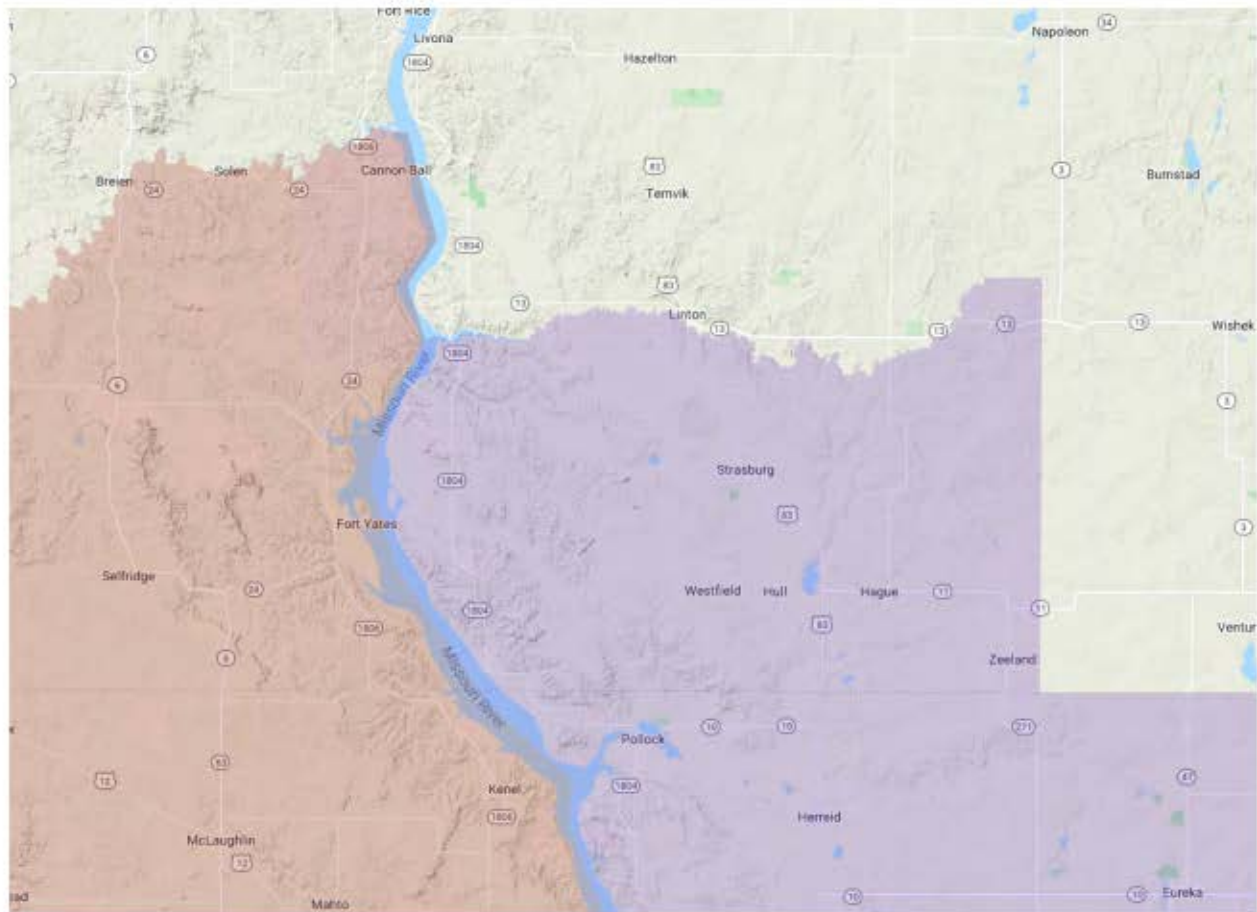


Figure 22. The Standing Rock Sioux Indian Reservation in Sioux County and Emmons County, North Dakota. This map is based on the 1876 General Land Office Map with President Grant's executive order. About 628 square miles were added to the Standing Rock Agency. According to Mr. Robert Taken Alive, the Standing Rock extension on the east side of the Missouri River was known as the "Three Star Reservation," recollection of a personal interview with "Old Man Stretches," Aug. 1991. The term "Three Star" may be a reference to Major General George Crook. Map by author.

The land east of the Missouri was never ceded nor a treaty signed. President Cleveland signed the 1889 Indian Appropriations Act into law and opened "unassigned" lands for sale to settlers under tenants of the 1863 Homestead Act.



Figure 23. Jesuit missionary Fr. Pierre-Jean De Smet, who served as a translator at the 1851 Fort Laramie Treaty, drew a map by hand demarcating the boundaries of the Titunwan Lakota which extended to the Heart River. Map of the upper Great Plains and Rocky Mountains region, 1851. <http://hdl.loc.gov/loc.gmd/g4050.ct000883>. Call number 2005630226.

Site Summary

The creation narrative of the Ochéti Shakówiŋ recalls the origin of water. Deacon Ben Black Bear, Jr., translating for Thomas Simms in the book *Otókahekagxapi (First Beginnings): Sioux Creation Story* (1987), recalls that in the beginning Íŋyaŋ (the Stone) was alone in the eternal dark. He had all the powers of creation and life in his blood, which was blue. He longed for another, but he knew that in order for there to be another, he'd have to take from himself. He opened his veins and his blood covered the world, becoming the water.

The headwaters of rivers and streams are vitally important to the Ochéti Shakówiŋ people, especially to the Títxúŋwaŋ (They Who Dwell on the Plains; or “Teton”) who moved from headwater to headwater across the vast open plains. Confluences are places where the Títxúŋwaŋ would trade. Confluences are also special sacred sites where a stream “died” and its water or “life” became part of a bigger stream.

The ancestral stone features, Íŋyaŋ Chaŋglésheska (Stone Medicine Wheels), carefully constructed on summits to be closer to the creator, recall one of the prayer traditions of the Ochéti Shakówiŋ when one or more went to pray within a the boundary of a stone circle. This kind of prayer is called Haŋblécheŋyapi, more commonly known as a “Vision Quest.” The quest is a kind of pilgrimage where one or more people went to pray for a prescribed number of days from at least four days to as many as seven days. The quest itself was generally held before the Wiwáŋyaŋg Wachípi, or “Sundance.” The sundance was held at the time of the full moon following the summer solstice, and still is.

The summer solstice was naturally observed in the position of the four main carriers of the Wicháŋpi Shakówiŋ Wicháŋpi Optáŋe, or the “Seven Star Constellation,” more commonly known as The Big Dipper.

In section 17 of figure 2 there are Íŋyaŋ Chaŋglésheska Wakxáŋ Shakówiŋ, or “Seven Medicine Stone Circles.” The appearance of stone medicine circles is not surprising. The deliberate placement of seven stone circles together is significant. The Seven Medicine Stone Circles represent a number of great and sacred things including: commemorating the summer solstice, communal prayer, the kind of prayer before the arrival of the sacred pipe, the establishment and commemoration of the Ochéti Shakówiŋ (Seven Council Fires), the observation of the winter solstice and equinoxes too.

The Seven Medicine Stone Circles recall the Gift of the Sacred Pipe. According to the earliest record of the Ochéti Shakówiŋ, the Battiste Good Winter Count, Ptehíŋchalaŋ Wí (the White Buffalo Calf Woman) brought the pipe to the people circa 901 CE. The White Buffalo Calf Woman is a major figure in the history and culture of the Ochéti Shakówiŋ. She brought law,

peace, enlightenment, and medicine. Black Elk, one of the most renowned Lakota holy men in recent history, recalled that in addition to the Gift of the Sacred Pipe, the White Buffalo Calf Woman gave the people a sphere of pipestone with seven circles carved upon its surface, representing the seven sacred rites. The Seven Medicine Stone Circles also represent the seven sacred rites, all of which have been practiced in the vicinity of the Cannonball-Missouri confluence area.

The seven sacred rites of the Ochéti Shakówiŋ include:

- Inikagxapi, the Purification Ceremony
- Haŋbléchéyapi, the Vision Quest
- Wiwáŋyaŋ Wachípi, the Sundance
- Huŋkálowaŋpi, the Making of Relatives Ceremony
- Wanágxi Yuhápi, the Keeping of the Soul, a ceremony of mourning and loss
- Išnáthi Awíchalowaŋpi, the Young Women's Coming of Age Ceremony
- Thápa Waŋkáyeyapi, the Throwing of the Ball Ceremony

The seven sacred rites are recalled in great detail in Joseph Epes Brown's *The Sacred Pipe, Black Elk's Account of the Seven Rites of the Oglala Sioux* (1953).

The north and south banks of the Cannonball River are rife with physical evidence of historic and cultural occupations of people who are still here. This physical evidence of village remains and midden mounds are complemented by surviving oral tradition; there are various mentions in historic journals from English resources (i.e. John Evans) to American resources (i.e. Manuel Lisa, Corps of Discovery, etc.). As to whether or not the historic occupations of the Arikara, Cheyenne, and Mandan Indians ever interred their deceased in the vicinity of the Cannonball River mouth, it is absolutely preposterous to say that there are no burial grounds nearby – to say so would be to suggest that no one ever died in any of the cultural occupations. Alfred Bowers' Mandan informants told him that their ancestors buried their deceased “in earlier times.”

The Sitting Rabbit map of the Missouri River, from the North Dakota-South Dakota border to the North Dakota-Montana border, was commissioned by Orin Libby in 1906. At the time, Libby was the Secretary of the State Historical Society of North Dakota (SHSND). Libby sought out Sitting Rabbit, a Mandan Indian man, to capture the geography of the Missouri River as they knew it. Sitting Rabbit didn't disappoint in his efforts. In fact, the Mandan Indian villages at the mouth of the Cannonball River, both the north and south bank villages, are called the Big River Villages. The Mandan Indian name of the Cannonball River is the Big River. This precious map is still in the collections of the SHSND. The SHSND has graciously uploaded this map for public viewing on their ND Studies website.

According to Col. A.B. Welch's "Seven Fires," Sometime around 1750, the Šahíyela (Red Talkers; Cheyenne) were compelled by the Lakhóta to cross the Missouri River at the mouth of the Cannonball River. The Šahíyela were hard pressed to make peace with the Lakhóta or be exterminated, so they embraced their old foe and became allies. A great inter-tribal adoption, cemented by marriages, was arranged. But not all the Lakhóta were keen to make an ally of a former enemy.

The Brown Hat Winter Count (aka Baptiste Good Winter Count; Sičánġu, "Brulé") in the winter count collections at the National Museum of The American Indian in Washington DC, has been made available in its entirety online. This winter count recalls 1762-1763 as the "people were burnt winter." The entry details a great prairie fire that caught up to their village. Many people and horses were killed in this fire. Survivors themselves were burnt about their legs and made it through this trial by jumping into Long Lake. This band of Lakhóta had fought the Cheyenne in the Cannonball area. The Cheyenne had retaliated by crossing the Missouri River at the mouth of the Cannonball River and tracking the Lakhóta along Long Lake Creek, where they set fire to the plains. The late Albert White Hat Sr. (Rosebud; Sičánġu), recalled the oral tradition of the Sičánġu as taking place in the Bismarck region. The conflict which resulted in the formation of the Sičánġu began at the mouth of the Cannonball River. The identity of one of the tribes of the Očhéthi Šakówiŋ (The Seven Council Fires; "The Great Sioux Nation") tied to this location is significant.

The Beinecke Library Map, at Yale, CT, the only evidence of John Evans travels (his journals may have been destroyed or lost) provides the only testimony of his journey on the Upper Missouri River. This map was referenced and annotated by the Corps of Discovery. Evans recorded on his map a series of streams, many unknown to him by name; one of the outstanding streams he recorded was the "Bomb River," or the Cannonball River.

The Corps of Discovery mentioned the Cannonball River as "La Bullet" on October 18, 1804. Referencing Evans' map, Captain William Clark walked that evening in search of the remarkable places mentioned by Evans, but couldn't find them, though by then, the Corps' campsite was north of the mouth of the Cannonball River. Co-Captain Meriwether Lewis noted on this same date that the cannonball concretions were "of excellent grit for Grindstones," and had his men select one to "answer for an anker."

The Pictographic Bison Robe, at the Peabody Museum of Archaeology and Ethnology at Harvard University, MA, details the intertribal conflicts amongst the Arikara, Mandan, Hidtsa, Hunkpapa Lakota, and Yanktonai Dakota in the Heart River and Cannonball River area along the Missouri River during the 1790s. This same robe details one of many conflicts between the tribes of the Upper Missouri River which concluded in the 1803 Battle of Heart River, which saw the

expansion of the Hunkphap̄ha territory. This conflict is remembered in the Drifting Goose Winter Count (aka John K. Bear Winter Count) as T̄ha Čh̄ante Wakp̄a ed okičhize, or “There was a battle at Heart River.” The expansion of Hunkphap̄ha territory is significant. This territorial boundary is recognized in the 1868 Fort Laramie Treaty.

Ensign Nathaniel Pryor, a sergeant of the Corps of Discovery during the expedition, recorded on September 9, 1807, that the Arikara and Mandan were at war. The Mandan had killed two Arikara at the mouth of the Cannonball River. Testimony of the conflict at Cannonball River was delivered to Pryor at the Grand River by the Lak̄hóta. Pryor’s previous experience with the Arikara and Lak̄hóta made him aware that the best policy was to place every confidence in their word; they had no reason to lie.

Manuel Lisa, a fur trader of the American Fur Company, recorded that tensions were high on the Northern Plains among tribes who were pro-English trade, those who were pro-American trade, and American Fur Company trappers in the fall of 1812. The Crow and Lak̄hóta had killed American trappers, the Hidatsa had stolen American Fur Company horses, the Arikara had indiscriminately killed trappers be they English or American, and the Cheyenne had robbed and whipped American Fur Company trappers on the Cannonball River.

Botanist John Bradbury made a journey to the Cannonball River in 1811. Bradbury noted late in the day on June 20, the “valley of Cannon-ball River, bounded on each side by a range of small hills, visible as far as the eye can reach; and as they appear to diminish regularly, in the proportion of their distance, they produce a singular and pleasing effect. The Cannon-ball River was muddy at this time; but whether it is constantly so or not, I could not learn. It is about one hundred and sixty yards wide, but so shallow that we crossed it without swimming. We camped on a very fine prairie, near the river, affording grass in abundance, nearly a yard high. The alluvion of the river is about a mile in breadth from bluff to bluff, and is very beautiful, being prairie, interspersed with groves of trees, and ornamented with beautiful plants, now in flower.” Among Bradbury’s findings was a species of flax he identified as *linum perenne*. The Lak̄hóta know the native blue flax as Čhañhlógañ Nabláğa (“Hollow-Stem To-Blossom-From-Within”) and employ the seed in their food stock.

Bradbury returned again to the Cannonball River on July 7, 1819, for the express purpose of procuring additional botany specimens.

The Blue Thunder Winter Count, the No Two Horns Winter Count, and the High Dog Winter Count, all of which are in the collections at the State Historical Society of North Dakota - the High Dog Winter Count is on display in the Early Peoples Gallery - all recall a devastating flood in the spring of 1825. The High Dog Winter Count remembers the flood as Mní wičhát’tÁ, or “Many died by drowning.” The Blue Thunder Winter Count remembers the flood as Mní

wičhát'té, or "Many died by drowning." According to the High Dog Winter Count, this fatal winter camp was opposite of the mouth of the Cannonball River, and the site is remembered as Étu Pǎ Šung t'Á, or "Dead Horse Head Point." The Steamboat/Thin Elk Winter Count, in the collections of the Buechel Museum at the St. Francis Indian School on the Rosebud Indian Reservation in South Dakota, records that it was thirty lodges of Iháŋkthūŋwaŋna Dakḥóta who drowned in the Horsehead Bottom flood. This flood story and location is also remembered in the Medicine Bear Winter Count at the Hood Museum at Dartmouth College, Hanover, NH. This information is repeated for the same year in the Chandler-Pohrt Winter Count which is located at the Detroit Museum of Arts, Detroit, MI.

Prince Maximilian von Wied-Neuwied traveled into the interior of North America during the summer of 1833. Wied-Neuwied has written probably the most about the Cannonball River than any previous visitor. An excerpt is shared here: "On the north side of the mouth, there was a steep, yellow clay wall; and on the southern, a flat, covered with poplars and willows. This river has its name from the singular regular sand-stone balls which are found in its banks, and in those of the Missouri in its vicinity. They are of various sizes, from that of a musket ball to that of a large bomb, and lie irregularly on the bank, or in the strata, from which they often project to half their thickness when the river has washed away the earth; they fall down, and are found in great numbers on the bank. Many of them are rather elliptical, others are more flattened, and others flat on one side, and rather convex on the other. Of the perfectly spherical balls, I observed some two feet in diameter."

The Long Soldier Winter Count entry for 1835-36 recorded an Arikara camp on the Cannonball River. The Húnkphapḥa Lakḥóta went to the Arikara camp to trade for wadmíza (corn). The Arikara, not wanting the Lakḥóta around, perhaps owing to the part the Lakḥóta played in the Arikara War of 1823, killed six of the Lakḥóta.

In 1837, the historic smallpox epidemic that swept the Northern Great Plains and nearly wiped out the Mandan Indians at Fort Clark also struck the Hunkpapa Lakota who were camped on the bottomland at the Cannonball-Missouri Confluence. This epidemic is remembered in several winter counts such as the Blue Thunder Winter Count, High Dog Winter Count, Long Soldier Winter Count, and the Medicine Bear Winter Count. William Wade's daughter, Mamie, met her share of pre-reservation Dakḥóta and Lakḥóta people. Among them was Annie Skye. Skye relayed to the younger Wade that smallpox struck the Lakḥóta in 1837. They were camped at the mouth of the Cannonball River when "out of a clear blue sky smallpox hit them. After the death of several of their number, who were put to rest up on platforms suspended in trees, they decided to move away from this infested locality," from William Wade's *Paha Sapa Tawoyake: Wade's Stories* (2012).

In June, 1837, the steamboat St. Peters, bound for trade at Fort Clark and Fort Union, reported crew infected with smallpox aboard ship, but continued to stop and trade. The North Dakota Studies website features an article *Smallpox Epidemic of 1837* written in stunning and lengthy detail informing readers of the origins and spread of this historic disease.

John James Audubon visited the Cannonball River on June 5, 1843, and wrote of "the very remarkable bluffs." According to Audubon, the Cannonball River was formerly a good place for beaver. He saw *Iğúgaothila* (Rock Wren) on the bluffs, a prairie fire, and noted that the water tasted good.

In September of 1863, General Alfred Sully lead an assault on the Siouan encampment at Whitestone Hill as part of the punitive campaigns organized by General Pope to make Americans feel safe following the 1862 Minnesota Dakota Conflict, and to open the frontier for settlement - in particular, to open the frontier for veterans returning from the Civil War. Sully's command killed as many as 200 (mostly women and children) and took 256 prisoners (mostly women and children). Survivors, those who escaped, turned west and crossed the Missouri River at the Cannonball confluence.

A second entry on the Long Soldier Winter Count cites a conflict at the Cannonball River between the Lakǵóta and Hóhe (Assiniboine) in 1862-63. Twenty Assiniboine came on the warpath, there was a battle there, and they hid behind the cannonball concretions. The circle tells us that the Assiniboine were surrounded and fired upon. The fox image which overlays the Assiniboine tells us they fought with guile.

On July 29, 1864, after spending two weeks hastily constructing Fort Rice, General Sully took his command of 2200 soldiers, which included a detachment of Winnebago Indian scouts, and ascended the Cannonball River on the south bank, his punitive campaign on the Isányathi Dakǵóta anew. Known or unknown, Sully also marched against the Thíthunwan Lakǵóta (Húnkpapǵa, Itázipcho, Sihásapa, and Mnikǵóžu), and Ihánktǵunwanǵa Dakǵóta, two Siouan groups who had nothing to do with the 1862 Minnesota Dakota Conflict. Sully received a dispatch from Fort Rice at midnight on July 22 that the Dakǵóta were on the Knife River. The next day Sully's command crossed the Cannonball River near present-day communities of Porcupine and Shields, ND.

A third entry from the Long Soldier Winter Count indicates that the Húnkpapǵa were camped at the Cannonball River in 1866-67. Gall was taken by soldiers that winter to Fort Berthold where they stabbed him. Gall was left for dead and the camp moved on. What makes this tale remarkable is that Gall walked to the Húnkpapǵa camp at the Cannonball River and recovered.

In 1878, the Hunjphápha chief, Ištá SápA (“Black Eye/s”), met with William Wade, a cattle rancher on the Cannonball River, and shared this about the terrible 1825 flood: “...we camped on this bottom land just below here...it was the Wolf Month [February] and it had been warm for a long time. One night the water started coming in over the ground from the river and before we could get to higher ground we were surrounded by water and ice chunks. Our only chance was to get to high ground before we would all be covered up with water. We tried to carry our tepees and supplies but finally had to leave them and many of the women were drowned trying to save their children. Most all our old people drowned and many others. Most all our horses went under and you can still see their heads (skulls) laying [sic] along at the foot of the hills after so many, many years. Two Bears (Mato Nopa) a Yankton chief [sic], saved the lives of several women and children by carrying them from camp to the higher ground.”

William Wade’s daughter, Mamie, met her share of pre-reservation Dakhóta and Lakhóta people. Among them was Annie Skye. Skye relayed to the younger Wade that smallpox struck the Lakhóta in 1837. They were camped at the mouth of the Cannonball River when “out of a clear blue sky smallpox hit them. After the death of several of their number, who were put to rest up on platforms suspended in trees, they decided to move away from this infested locality.”

Dr. Harriett Skye, Annie Skye’s granddaughter, offers a contemporary perspective on current events near the Cannonball River: “I believe that as long as they remain peaceful and unarmed, and each day they are there, is a win. This kind of action confuses those who would come in with their guns and armor because their intent is to kill. They arrested people who were praying, but the powers that be know that the world is watching, but more importantly, know that our Ancestors are watching because they fought and died so we could be here. This struggle is everyone’s struggle to maintain our clean water. Water is life.” Dr. Skye was inducted into the North Dakota Heritage Center’s Native American Hall of Honor in September, 2016.

Dr. Elizabeth Fenn, Pulitzer Prize winning author of “Encounters at The Heart of The World: A History of The Mandan People,” writes that the Huff phase - located between the Cannonball River and Heart River in a time frame from about circa 1300 to about 1450 - was when and where the Mandan became the Mandan. They developed the Okipa ceremony in this location during this time. The South Cannonball site was unprotected, that is, there were no palisade walls, nor defensive moats surrounding their village there. The fortifications at the North Cannonball site may well represent a key transformation in plains village life, as drought caused strife in the Missouri River valley. This may have been cause for the Mandan to move closer together - and build fortifications - for safety. But we need archaeological study to sort these things out.

By the time Mandans moved north from the Cannonball area to Huff and the Heart River, they had embraced the key trait that made them Mandan: the Okipa ceremony, with its multi-day reenactment of their own rich history. The Cannonball area, according to Fenn, represents “the oldest Mandan cultural horizon.”

The late Vine Deloria Jr. essayed that for many Americans, “the first and most familiar kind of sacred lands are places to which we attribute sanctity because the location is a site where, within our own history, something of great importance has taken place. Unfortunately, many of these places are related to instances of human violence. Every society needs these kinds of sacred places because they help to instill a sense of social cohesion in the people and remind them of the passage of generations that have brought them to the present. A society that cannot remember and honor its past is in peril of losing its soul. Indians, because of our considerably longer tenure on this continent, have many more sacred places than do non-Indians.”

“A second category of sacred lands has a deeper, more profound sense of the sacred. It can be illustrated in...[when] Joshua led the Hebrews across the River Jordan into the Holy Land. After crossing, Joshua selected one man from each of the Twelve tribes and told him to find a large stone. The twelve stones were then placed together in a monument to mark the spot where the people had camped after having crossed the river successfully. In the crossing of the River Jordan, the sacred or higher powers have appeared in the lives of human beings...the essence of the event is that the sacred has become a part of our existence.”

“It is not likely that non-Indians have had many of these kinds of religious experiences, particularly because most churches and synagogues have special rituals that are designed to cleanse the buildings so that their services can be held there untainted by the natural world. Non-Indians simply have not been on this continent very long; their families have rarely settled in one place for any period of time so that no profound relationship with the environment has been possible.”

Deloria concluded: “The third kind of sacred lands are places of overwhelming holiness where the Higher Powers, on their own initiative, have revealed Themselves to human beings. We can illustrate this point in the Old Testament narrative. Moses spent time herding sheep on Mount Horeb. One day to his amazement [he] saw a bush burning with fire but not being consumed by it. Approaching this spot, Moses was startled when the Lord spoke to him. ‘Put off thy shoes, for the place where thou standest is holy ground.’ This tradition tells us that there are places of unquestionable, inherent sacredness on this earth, sites that are holy in and of themselves. These holy places are locations where people have always gone to communicate and commune with higher powers.”

Dr. Ray Wood, renowned expert in Plains Indian cultural and archaeological sites on the Upper Missouri River and whose first-hand field experience goes back before the dams of the 1950s, interprets the data from John Evans 1796 map in regard to the Cannonball River locality that what Evans recorded as “Jupiter’s Fort” is without a doubt a prehistoric Mandan village. According to Wood’s findings regarding the North Cannonball site, “Not only was it a defensive setting, but the village was also fortified by a curving ditch that isolated a level upland spur from the adjoining upland. The village today is badly disturbed by plowing, but from the air one can clearly see the fortification ditch and the numerous bastions protruding from it. Little wonder that Evans referred to it as a fort...” In his “Prologue To Lewis & Clark: The Mackay And Evans Expeditions,” Dr. Wood essays the number of remarkable Indian village sites north of the Cannonball River. Remarkable. Extraordinary. Outstanding. Significant.

The ND SHPO conducted a follow-up survey west of HWY 1806 and found that no significant sites were destroyed. The physical evidence, or lack thereof, cannot be disputed. According to the chief archaeologist’s published note, he and his associates were looking west of HWY 1806, perhaps because Mr. Tim Mentz conducted his own survey and called attention there with his findings. The North Cannonball site, and the mouth of the Cannonball River, the confluence of history and culture, is east of HWY 1806.

In 1999, the Cannonball Ranch was inducted into the North Dakota Cowboy Hall of Fame. It’s one of the oldest ranches in North Dakota. According to the ND Cowboy of Fame, the ranch served as a gathering point as early as 1865. The ranch included a hotel, a general store, a ferry crossing, a steamboat landing and fueling station, a military telegraph station for Fort Rice, and a stage line to the Black Hills in the 1870’s and 1880s. The ranch also included two houses, a barn, a blacksmith shop, a bunk-house, an ice house, a laundry, and tennis court.

The North Dakota Cowboy Hall of Fame’s strict criteria for eligibility to be recognized is that a ranch must have been “instrumental in creating or developing the ranching business, traditions, and lifestyles of North Dakota’s western heritage and livestock industry.”

In 2010, Walmart planned to construct a supercenter near Wilderness Battlefield (a Civil War battle ground) and people invested in the history of that site grew concerned. Eventually, enough people held that ground as sacred and historical that plans for the supercenter were dropped in January 2011. Coincidentally, Walmart and state officials had argued that nothing significant occurred on that site.

The sum of the north bank of the Cannonball River with a million years of geological history, 700 years of continual occupation, inter-tribal conflict, smallpox, botany, trade, steamboat traffic, US military history, and early ranching, have made that location significant.

Spiritual pilgrimages were conducted on the plateaus of the “Hummit.” There would be little to no traces of these vision quests, and there shouldn’t be. People went to pray, not to leave evidence. In September of 2016, the Presiding Bishop of the American Episcopal Church, Rt. Rev. Curry made a pilgrimage of his own to the Cannonball.

The Cannonball River, and specifically the North Cannonball site, and its importance to the first nations, to North Dakota, must take into account its religious or spiritual significance, its role in inter-tribal conflicts, its role in the 1837 smallpox epidemic which struck the Húŋkpapha, its role as the starting point in Gen. Sully’s 1864 punitive campaign, and the historic Cannonball Ranch.

Battles

The Cannonball River is the site of several occupations reaching back to circa 1200. It is a site known for intertribal conflict between the Mandan vs. Dakota-Lakota, the Cheyenne vs. Dakota-Lakota, the Assiniboine vs. Dakota-Lakota, the Cheyenne vs. American Fur Company, and the Arikara vs. Dakota-Lakota.

In addition to intertribal conflicts, the Missouri-Cannonball confluence is where General Alfred Sully began his 1864 punitive campaign against the Dakota. His campaign is widely known and studied. His command of 2200 soldiers began their march in a one-mile square across the prairie steppe guided by a detachment of Winnebago Indian scouts. The State Historical Society of North Dakota recognizes Sully’s 1864 campaign as part of the Civil War. Indeed, it can be argued that the very same scorched earth campaign of General Sherman’s March to the Sea began with Sully’s campaign (destruction of food resources, destruction of homes and property, and the treatment of non-combatants as able-bodied fighters).

These conflicts are already touched on in the summary above.

Landscape

The Missouri River valley is characterized by rolling hills and bluffs on either side. The Missouri River was neither channeled nor dammed at that time. The color of the water was brown. The Lakota call the Missouri River: Mnisose, which translates as “The Water-Astir,” and was known to swirl where tributaries converged.

The Missouri River is known by many names:

Cheyenne	Eometa (Fat Foam River)
Dakota-Lakota	Mnisose (The Water-Astir)
Mandan	Matah (The River)
Hidatsa	Amati
Arikara	Tawaaruxti

Lake Oahe flooded the valley with the construction of the Oahe Dam in 1959. The lake reaches from Pierre, S.D. to the floodplain below present-day University of Mary in Bismarck, N.D. The term “Oahe” translates as “Something To Stand On,” in reference to the destruction of homes and buildings on the floodplain as the water rose.

The Cannonball River valley is characterized by rolling hills and bluffs on either side. The floodplain and bluffs were once renowned for thousands of cannonball concretions ranging in size from marbles to a meter or more across. The concretions formed millions of years ago as minerals solidified into various shapes resembling mushrooms, footballs, and spheroids. The river rises in the Badlands north of Amidon, N.D.

The Cannonball River is known by many names:

Cheyenne	Eometa’a’et
Dakota	Inyan Iya Wakpa (Talking Stone River)
Lakota	Inyanwakagxapi Wakpa (Sacred Stone River)
Mandan	Pasahxte
Hidatsa	Aashihdia
Arikara	Nishkusu

Significant Features

- Oeti Inyanwakagxapi Wakpa (The Stone Maker River Camp), the plain at the fork of the Missouri-Cannonball confluence.
- Etu Pxa Shung T’a (Dead Horse Head Point)
- Oiyugxe Inyanwakagxapi (Stone Maker Crossing), Oiyugxe Shunkakxan Pxa Ota (Many Horse Head Crossing), or Gayton’s Crossing. This crossing point on the Missouri River was located just north of the Missouri-Cannonball confluence. Steamboats frequently stopped at this point to pick up cords of wood.
- Big River Village site, a Mandan village located on the north bank at the mouth of the Cannonball River.
- Historic Cannonball River Ranch.
- Chekpa Paha (Twin Buttes), located on the south bank near the mouth of the Cannonball River.
- Mnishoshe (The Water-Astir), or the Missouri River.
- Inyanwakagxapi Wakpa (Stone Maker River), Inyan Iya Wakpa (Talking Stone River), or Cannonball River.
- Chantopxeta Wakpala (Fireheart Creek), or Cantopeta Creek.
- Bde Hanska Wakpana (Long Lake Creek), or Badger Creek.
- Pxa Shung Wakpana (Horse Head Creek), or Horsehead Creek.
- Chapa Wakpana (Beaver Creek), or Beaver Creek.

- The “Hummit,” a grassy plateau located about one-mile north of the historic Cannonball Ranch.

Significance of Battle/s

The Mandan people in the Huff Village Phase (circa 1200 to ~1350) who transitioned from an open village on the south bank of the Cannonball River to a defended one on the north bank marks a significant change in tribal warfare on the northern plains. The Mandan people began to build palisades and fortification ditches around their villages in response to an uptick in aggressive prolonged campaigns by nomadic peoples.

The Cheyenne lived on the north bank of the Cannonball from circa 1700 to ~1803. Sometime around the winter of 1762-1763 (see figure 5) a band of Titunwan Lakota fought the Cheyenne. The Cheyenne retaliated by crossing the Missouri River and setting fire to the prairie grass. The fire caught the Lakota who withdrew and followed Long Lake Creek (present-day Badger Creek) to its source Long Lake. The Lakota jumped into Long Lake to survive the prairie fire. The survivors were burned about their legs and thighs and thereafter referred to as Sicangu, or “Burnt Thighs,” whom the French called “Brule.” This event is significant because it is the origin story of one of the seven major divisions of the Teton or Lakota-speaking Sioux. The Sicangu, or Brule, are recognized in the 1851 and 1868 Fort Laramie Treaties.

The intertribal fighting between the Mandan, Hidatsa, Assiniboiné, Hunkpapa Lakota, and Yanktonai Dakota in the late 1790s on the northern plains is recalled in the Pictographic Bison Robe, at the Peabody Museum of Archaeology and Ethnology at Harvard University, MA (see figure 4). The violence culminated in the Battle of Heart River which saw the boundaries of the Titunwan Lakota expanded north to the Heart River. This boundary is recognized in the 1851 De Smet map for the 1851 Fort Laramie Treaty. (See figure 19.)

Ensign Nathaniel Pryor, a sergeant of the Corps of Discovery during the expedition, recorded on September 9, 1807, that the Arikara and Mandan were at war. The Mandan had killed two Arikara at the mouth of the Cannonball River. Testimony of the conflict at Cannonball River was delivered to Pryor at the Grand River by the Lakǰóta. Pryor’s previous experience with the Arikara and Lakǰóta made him aware that the best policy was to place every confidence in their word; they had no reason to lie.

Manuel Lisa, a fur trader of the American Fur Company, recorded that tensions were high on the Northern Plains among tribes who were pro-English trade, those who were pro-American trade,

and American Fur Company trappers in the fall of 1812. The Crow and Lakḥóta had killed American trappers, the Hidatsa had stolen American Fur Company horses, the Arikara had indiscriminately killed trappers be they English or American, and the Cheyenne had robbed and whipped American Fur Company trappers on the Cannonball River.

The Long Soldier Winter Count entry for 1835-36 recorded an Arikara camp on the Cannonball River. The Húnkpapḥa Lakḥóta went to the Arikara camp to trade for wagmíza (corn). The Arikara, not wanting the Lakḥóta around, perhaps owing to the part the Lakḥóta played in the Arikara War of 1823, killed six of the Lakḥóta. The Arikara War was the first punitive American military campaign against a Plains Indian tribe; it happened at the confluence of the Missouri and Grand River in South Dakota.

A second entry on the Long Soldier Winter Count cites a conflict at the Cannonball River between the Lakḥóta and Hóhe (Assiniboine) in 1862-63. Twenty Assiniboine came on the warpath, there was a battle there, and they hid behind the cannonball concretions. The circle tells us that the Assiniboine were surrounded and fired upon. The fox image which overlays the Assiniboine tells us they fought with guile.

On July 29, 1864, after spending two weeks hastily constructing Fort Rice, General Sully took his command of 2200 soldiers, which included a detachment of Winnebago Indian scouts, and ascended the Cannonball River on the south bank, his punitive campaign on the Isányathi Dakḥóta anew. Known or unknown, Sully also marched against the Thíthunḡwan Lakḥóta (Húnkpapḥa, Itázipḥo, Sihásapa, and Mnikḥóžu), and Ihánkthunḡwana Dakḥóta, two Siouan groups who had nothing to do with the 1862 Minnesota Dakota Conflict. Sully received a dispatch from Fort Rice at midnight on July 22 that the Dakḥóta were on the Knife River. The next day Sully's command crossed the Cannonball River near present-day communities of Porcupine and Shields, ND.

KOCHO Analysis

Key Terrain

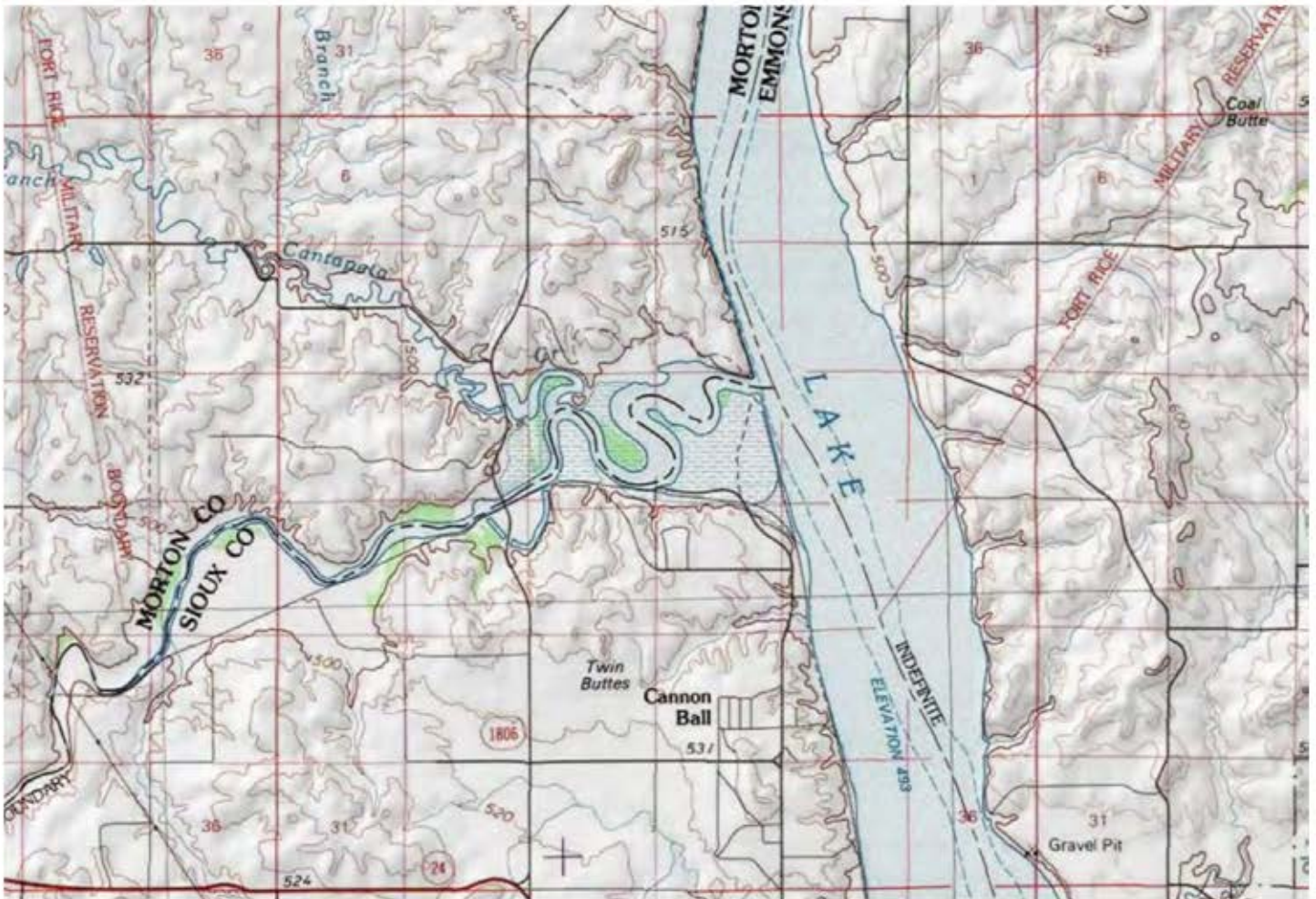
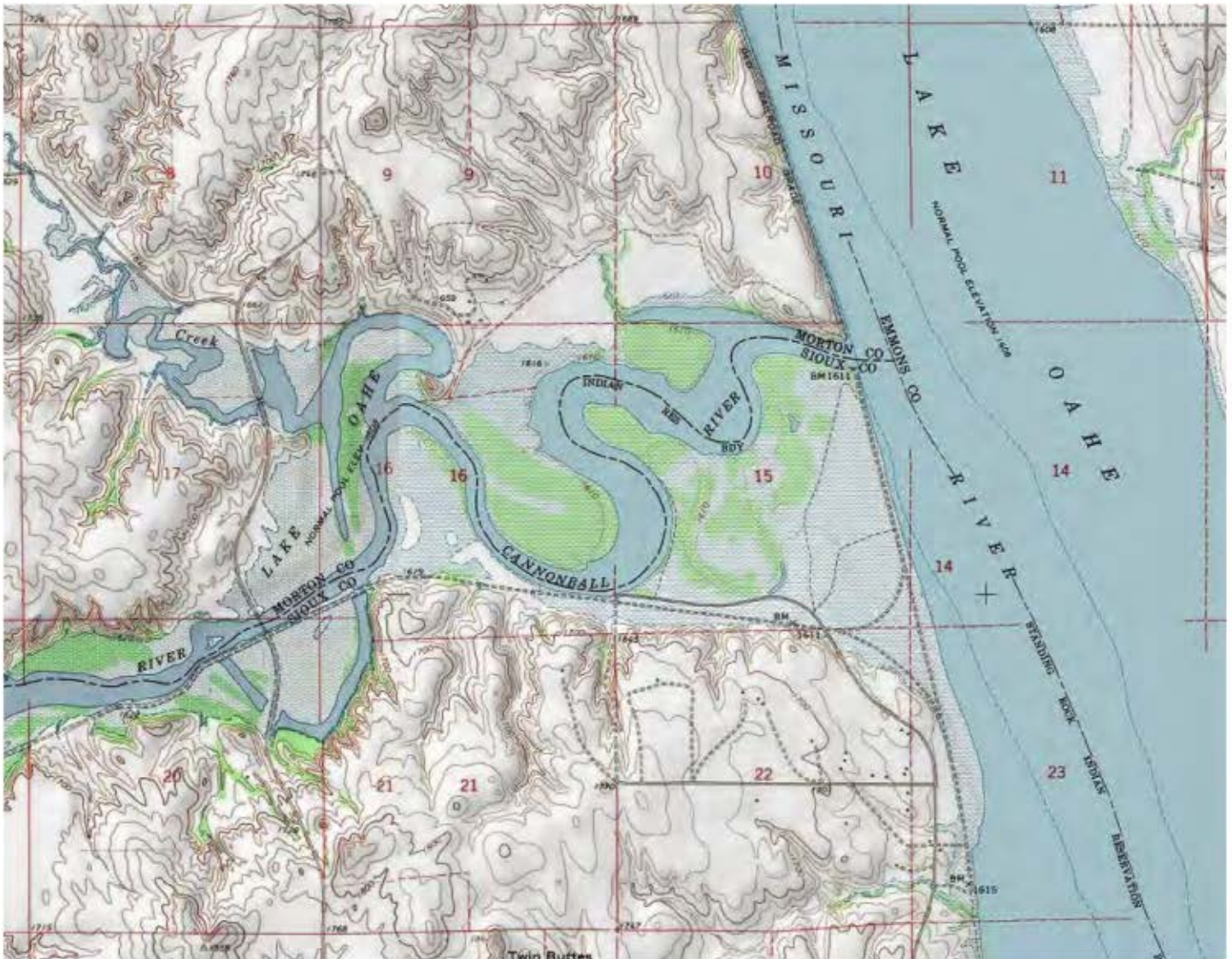


Figure 20. A topographical map of the Missouri-Cannonball confluence. Cantopeta Creek, the Big River Village sites on the north and south banks of the confluence. The bluffs on either side rise from 90'-150' above the floodplain at the confluence. Cannonball River Topo Map in Sioux County ND, downloaded from www.topozone.com.

Observation and Fields of Fire



The earliest fortified Mandan Indian village can be found in section 10 of this map. The Missouri River served as a barrier on the east side of the village; the Cannonball River served as a barrier on the south side of the village.

The floodplain in sections 15 and 16 at the Cannonball-Missouri confluence was ideal for encampments, trade, and ceremony.

The historic Inyanwaxangxapi Oiyugxe (Stonemaker Crossing) was located in section 14. This crossing became known later as Gayton's Crossing. Gayton's Crossing where steamboats picked up cords of wood in their travel up and down the Missouri River. Because of its location, Gayton's Crossing was also a regular trade site in the last days of the fur trade era. The

steamboat St. Peter stopped here and spread smallpox. The Hunkpapa who were camped on the floodplain of the Cannonball-Missouri confluence lost approximately 150 to this epidemic.

There are stone features and effigies on the bluff in section 17 overlooking the confluence. There are petroglyphs in the sandstone on the Twin Buttes in section 21.

Cover and Concealment

This floodplain was where the Lakota fought the Assiniboine among the cannonball concretions in 1835-1836. The concretions of varying sizes and shapes, and once numbering in the thousands, have virtually disappeared from the confluence.

Obstacles

The Mandan, Cheyenne, and Arikara employed the Missouri River and the Cannonball Rivers as the main natural obstacles to their settlements. The cutbank on the north side of the Cannonball served as another natural obstacle.

This floodplain was once a scene of thousands of cannonball concretions. These concretions certainly served as cover and concealment for traditional Plains Indians when they engaged in conflict on the floodplain. When General Sully began his advance up the Cannonball River in 1864 the number of concretions were considerably less and did not stop nor hinder his campaign.

Avenues of Approach

In prehistoric times when the Mandan lived in their earthlodge settlement on the north bank of the Cannonball River they constructed a palisade wall on the west end of their community. The Mandan strengthened the defenses with the addition of a fortification ditch on the outside of the palisade wall. The main avenue of approach to the Mandan community was from the west. This defense was repeated in the later occupations of the Cheyenne and Arikara. This methodology of defense was the first of its kind employed in the late prehistoric period of the Plains Indians. Mandan descendants recall that their fortifications were necessary to the defense of their way of life from their aggressors, the Ocheti Shakowin.

In recent historic times, General Sully began his 1864 punitive campaign against the Dakota he believed were sheltering amongst the Lakota west of the Missouri River. Sully's advance began at the mouth of the Cannonball River after receiving an update from the Department of War via telegram received at the now historic Cannonball Ranch. Sully's campaign began at the Cannonball River, crossed the river near present-day Porcupine, ND and proceeded to Killdeer Mountain (located near present-day Killdeer, ND). This advance was a continuation of the

previous year’s punitive campaign against the Dakota as a result of the outcome of the 1862 Minnesota-Dakota Conflict.

National Register Considerations

(To be completed by the Standing Rock Tribal Historic Preservation Office.)

The site is determined to be . . . for the National Register of Historic Places. . . .

Key Elements for National Register Consideration	
Element	Integrity

National Register Significance

There are far more overlapping prehistoric and historic occupations, events, and figures that qualify the area of the Cannonball-Missouri Confluence, the north bank of the Cannonball River at the mouth of the Cannonball River, and the floodplain in the vicinity of the confluence that qualify this site for nomination to the National Register of Historic Places than many other sites currently in the register.

In 1999, the Cannonball Ranch was inducted into the North Dakota Cowboy Hall of Fame. It’s one of the oldest ranches in North Dakota. According to the ND Cowboy of Fame, the ranch served as a gathering point as early as 1865. The ranch included a hotel, a general store, a ferry crossing, a steamboat landing and fueling station, a military telegraph station for Fort Rice, and a stage line to the Black Hills in the 1870’s and 1880s. The ranch also included two houses, a barn, a blacksmith shop, a bunk-house, an ice house, a laundry, and tennis court.

The North Dakota Cowboy Hall of Fame’s strict criteria for eligibility to be recognized is that a ranch must have been “instrumental in creating or developing the ranching business, traditions, and lifestyles of North Dakota’s western heritage and livestock industry.”

The major recognition of just one historic occupation more than meets the threshold of the strict criteria for nomination into the National Register of Historic Places.

National Register Integrity

Just as roads, bridges, museums/visitor centers, and modern development around major historic sites like Gettysburg National Military Park, Antietam National Battlefield, Valley Forge National Historical Park, and the Little Bighorn National Battlefield, the integrity of the north bank of the Cannonball River, the Cannonball-Missouri Confluence, the historic Cannonball Ranch, has been disturbed by all but construction of a museum/visitor center.

The Class III Archaeological Survey teams contracted by Energy Transfer minimized and omitted the many prehistoric and historic occupations, events, and figures. That document would suggest to readers that there is nothing there. It is unfortunate, and frankly, un-American to ignore-erase the impact of a place that had a significant part in the early western fur trade, the Corps of Discovery expedition, and the 1864 Sully Punitive Campaign.

Appendix C
Energy Transfer Mid-Valley Pipeline
PHMSA Notice of Proposed Safety Order
October 13, 2023



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

8701 S. Gessner, Suite 630
Houston, TX 77074

VIA ELECTRONIC MAIL TO: tom.long@energytransfer.com

October 13, 2023

Mr. Thomas E. Long
Chief Executive Officer
Energy Transfer, LP
8111 Westchester Drive
Dallas, Texas 75225

CPF 4-2023-056-NOPSO

Dear Mr. Long:

Enclosed is a Notice of Proposed Safety Order (Notice) issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the above-referenced case. The Notice proposes that Energy Transfer, LP, take certain measures to ensure facility safety with respect to the Mid-Valley Pipeline system that includes over 1,000 miles of crude oil pipeline originating in Longview, Texas, and terminating in Samaria, Michigan. Your options for responding are set forth in the Notice. Service of this Notice by electronic mail is deemed effective upon the date of transmission, or as otherwise provided under 49 C.F.R. § 190.5.

We look forward to a successful resolution to improve the safety and integrity of the Mid-Valley Pipeline system. Please direct any questions on this matter to me at (713) 773-7215.

Sincerely,

Bryan Lethcoe
Director, Southwest Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Notice of Proposed Safety Order*

cc: Mr. Alan K. Mayberry, Associate Administrator for Pipeline Safety, OPS, PHMSA
Ms. Linda Daugherty, Deputy Associate Administrator for Field Operations, OPS,
PHMSA
Mr. Greg McIlwain, Executive Vice President of Operations, Energy Transfer, LP,
gregory.mcilwain@energytransfer.com

Mr. Eric Amundsen, Senior Vice President of Operations, Energy Transfer, LP,
eric.amundsen@energytransfer.com
Mr. Todd Stamm, Senior Vice President of Operations, Energy Transfer, LP,
todd.stamm@energytransfer.com
Ms. Jennifer Street, Senior Vice President of Operations Services, Energy Transfer, LP,
jennifer.street@energytransfer.com
Ms. Heidi Murchison, Chief Counsel, Energy Transfer, LP,
heidi.murchison@energytransfer.com
Mr. Leif Jensen, Vice President of Tech Services, Energy Transfer, LP,
leif.jensen@energytransfer.com
Mr. Todd Nardoizzi, Director, Regulatory Compliance, Energy Transfer, LP,
todd.nardoizzi@energytransfer.com
Ms. Susie Sjulín, Director, Regulatory Compliance, Energy Transfer, LP,
susie.sjulin@energytransfer.com

**DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
SOUTHWEST REGION
HOUSTON, TX 77074**

In the Matter of

Mid-Valley Pipeline Company, LLC,
a subsidiary of Energy Transfer, LP,

Respondent.

CPF No. 4-2023-056-NOPSO

NOTICE OF PROPOSED SAFETY ORDER

Background and Purpose:

This Notice of Proposed Safety Order (NOPSO or Notice) is being issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), under the authority of 49 U.S.C. § 60117. Pursuant to § 60117, PHMSA initiated an investigation of the safety of Energy Transfer's Mid-Valley Pipeline following a series of recent failures, including the following:

- On July 14, 2023, Energy Transfer experienced a pipeline failure at its terminal facility near Oregon, Ohio, resulting in the initial reported release of approximately 6 barrels of crude oil. This was later updated to 28 barrels of crude oil and 42 barrels of an oil/water mixture. The release was spotted on the ground by facility personnel during a routine walk-around during the day. PHMSA requested additional information related to the cause of the failure, the repair plans prior to placing the facility back in service, and the inspections performed at the facility to ensure that similar conditions that could lead to a failure did not exist elsewhere in the facility. On July 16, 2023, Energy Transfer indicated the apparent cause was internal corrosion, identified other at-risk locations within the facility but did not provide any inspection results prior to placing the facility back in service. Energy Transfer indicated that the failed segment would be cut out and replaced but did not specify if the pipe would be sent for metallurgical evaluation to confirm the cause of failure. Energy Transfer did not indicate it made any improvements to its internal corrosion program or altered its periodic inspections of terminal piping.
- On July 11, 2023, Energy Transfer experienced a failure at its terminal facility near Longview, Texas, which resulted in the release of crude oil and a fire. Energy Transfer reported the release to be 2 gallons of crude oil into the secondary containment, which

subsequently caught fire and was extinguished by the fire suppression system in the facility. The apparent cause was determined by Energy Transfer to be misalignment between the pump unit and motor which resulted in excessive vibration and failure of the pump seals. The pump unit failed to shut down due to the high vibration condition as it was intended.

- On July 5, 2023, Energy Transfer experienced a failure near Cygnet, Ohio, resulting in the initial reported release of approximately 1,000 barrels of crude oil. The release quantity was later revised by the Energy Transfer to less than 5 barrels. Energy Transfer stated the initial reported release amount was incorrect due to a miscommunication between the control center and a regulatory compliance representative. Energy Transfer initially determined the original imbalance alarm, set at 200 barrels, was caused by a measurement error, and restarted the pipeline. Subsequently, their aerial patrol reported evidence of a release on the Mid-Valley right-of-way before the pipeline was shut down and the oil spill contractor dispatched to the site. The release was initially reported to have been caused by a “linear” defect. Energy Transfer did not perform a cutout of the failed pipe segment so that it could be sent for metallurgical evaluation. Energy Transfer stated in a meeting on July 6, 2023, that performing a cutout would disrupt deliveries to a refinery in the upper Midwest and likely result in shortages of gasoline. Energy Transfer installed a bolt-on sleeve and returned the pipeline to service and stated the cutout would be performed at a later, unspecified date. The property damage was approximately \$411,205.
- On March 3, 2023, Energy Transfer experienced a failure at the Karnak Pump Station on the Longview to Mayersville 20-inch pipeline segment, which resulted in the release of approximately 0.3 barrels (12 gallons) of crude oil. The release was contained on property controlled by Energy Transfer. The apparent cause was determined by Energy Transfer to be failure of the pump seals. However, the automation detected the loss of pressure and closed the suction and discharge valves on the pump station. The pump unit continued to run causing an overpressure condition and had to be shut down manually by a technician that tripped the station breaker. The property damage was approximately \$12,530.
- On January 25, 2023, Energy Transfer experienced a failure at the Mayersville Pump Station that resulted in the release of approximately 3 barrels of crude oil, which was contained on the property controlled by Energy Transfer. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion. The property damage was approximately \$43,726.
- On December 23, 2022, Energy Transfer experienced a failure at the Cygnet Pump Station that resulted in the release of approximately 1,974 barrels of crude oil, a portion which migrated off property controlled by Energy Transfer. A highway adjacent to the pump station was closed by local law enforcement due to the threat to public safety. The cause of the failure was determined by metallurgical evaluation to be a hydrogen crack in a branch weld that increased to a critical size so that it could no longer contain the pipeline pressure. Energy Transfer stated that it performed visual inspections of other branch welds at the Cygnet Pump Station. Energy Transfer did not conduct any non-destructive

examinations to determine if defects existed on similar welds. The property damage was approximately \$2,306,948.

In addition to the above, the following failures have occurred on the Mid-Valley Pipeline system since 2014:

- On June 29, 2022, Energy Transfer experienced a failure on the Abbeville to Denver 22-inch segment near Henderson, TN, which resulted in the release of approximately 4,345 barrels of crude oil. The release occurred when a mowing contractor struck an exposed segment of pipeline resulting in a gouge and release of crude oil. Energy Transfer indicated that the segment had 42-inches of cover; however, the same report stated that the pipeline was exposed due to loss of cover. The release affected soil, vegetation, wildlife, and water. Energy Transfer estimated that approximately 3,300 barrels of the 4,345 barrels of crude oil released affected Horse Creek. Energy Transfer applied a bolt-on clamp and restarted the pipeline. Energy Transfer did not mention taking any additional preventative and mitigation measures. The property damage was approximately \$4,651,397.
- On June 1, 2022, Energy Transfer experienced a failure on the Haynesville to Magnolia 8-inch pipeline segment that resulted in the release of approximately 8 barrels of crude oil. The release occurred at a road crossing and was reported by a member of the public. The apparent cause of the failure was determined by Energy Transfer to be third-party damage from excavation work that occurred while a third party was performing maintenance work on a ditch adjacent to the pipeline. The pipe damage included an inward dent approximately 6-inches in length and 4-inches wide with a 1-inch puncture through the pipeline wall. The property damage was approximately \$42,565.
- On December 28, 2021, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 5 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion. A bolt-on sleeve was installed, and the pipeline was placed back in service. The property damage was approximately \$40,860.
- On November 19, 2021, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 1 barrel of crude oil from a 30-inch breakout tank pipeline. The release was discovered on the ground by operator personnel during a routine check of the station and was contained on property controlled by Energy Transfer. The apparent cause of the failure was determined by Energy Transfer to be failure of a bolt-on sleeve that had been installed as a previous repair for an internal corrosion release. The property damage was approximately \$23,380.

- On September 20, 2021, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 0.3 barrels of crude oil. The release was discovered by local personnel during a routine check of the station. The apparent cause was determined by Energy Transfer to be the release of crude oil from a previously abandoned pipeline that had not been purged. The property damage was approximately \$47,050.
- On June 10, 2021, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 17 barrels of crude oil. The release was discovered by a contractor while mowing at the station. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion of a breakout tank pipeline. The property damage was approximately \$79,229.
- On March 16, 2021, Energy Transfer experienced a failure at the Longview Station that resulted in the release of approximately 0.8 barrels of crude oil from a breakout tank. The apparent cause of the failure was determined by Energy Transfer to be operator error due to overfilling the tank, resulting in a release of crude oil from the top of the tank after exceeding the maximum liquid level height. The property damage was approximately \$5,376.
- On February 22, 2021, Energy Transfer experienced a failure at the Abbeville Pump Station that resulted in the release of approximately 15 barrels of crude oil. The release was discovered on the ground near a 12-inch relief pipeline by operator personnel. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion. Energy Transfer bypassed the station and continued operation of the pipeline. The failed pipe segment at the station was cut out and replaced. The property damage was approximately \$81,512.
- On December 28, 2020, Energy Transfer experienced a failure at the Samaria Station that resulted in the release of approximately 3 barrels of crude oil. The release was discovered on the ground by operator personnel performing a routine station check. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion of a 12-inch pipeline flange weld. The weld was cut out and replaced. The property damage was approximately \$48,782.
- On May 29, 2019, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 0.2 barrels of crude oil. Energy Transfer stated the apparent cause of the release was residual product on the inside of the tank shell mixed with water on the floating roof that was released when the external floating roof drains were opened. The property damage was approximately \$7,052.

- On March 22, 2019, Energy Transfer experienced a failure at Hebron Station, KY, (located in a High Consequence Area) which resulted in the release of 0.24 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be operator error when a valve was left partially open during a pigging operation. The property damage was approximately \$1,030.
- On March 18, 2019, Energy Transfer experienced a failure at Longview Station (located in a High Consequence Area) that resulted in the release of approximately 10 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be a pinhole leak in a breakout tank pipeline cause by internal corrosion. The failed pipe segment at the station was cut out and replaced. The property damage was approximately \$15,719.
- On February 1, 2017, Energy Transfer experienced a failure at Mayersville Pump Station that resulted in the release of approximately 0.24 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be a faulty liquid level switch that led to crude oil backing up into the scraper trap containment basin. The property damage was approximately \$1,000.
- On January 11, 2017, Energy Transfer experienced a failure at Lima Pump Station (located in a High Consequence Area) that resulted in the release of approximately 2 barrels of crude oil. The release was discovered on the ground near a pump unit by operator personnel. The apparent cause of the failure was determined by Energy Transfer to be failure of a bolt on the pump shaft. The bolt had been replaced during previous maintenance with one that did not meet the manufacturer's specifications. The property damage was approximately \$45,000.
- On December 19, 2016, Energy Transfer experienced a failure at Spearsville Pump Station that resulted in the release of approximately 0.12 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be the unexpected start of a pump unit with the intake and discharge valves closed. The pump unit overheated the seals leading to a release of commodity. Energy Transfer noted that the fire suppression system activated, meaning the released commodity had ignited. The property damage was approximately \$328,857.
- On August 9, 2016, Energy Transfer experienced a failure at Lima Pump Station (located in a High Consequence Area) that resulted in the release of approximately 2 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion on a 16-inch breakout tank pipeline. Energy Transfer installed a bolt-on sleeve and returned the pipeline to service. The property damage was approximately \$29,040.

- On June 1, 2016, Energy Transfer experienced a failure at Cygnet Pump Station (located in a High Consequence Area) that resulted in the release of approximately 2 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be operator error. The liquid level in Tank 83 was lowered so that the floating roof contacted the tank mixer impeller and caused the mixer seal to fail resulting in the release. The tank mixer was removed, and a blind manway cover installed. The property damage was approximately \$4,200.
- On February 3, 2016, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 1.2 barrels (50 gallons) of crude oil. The apparent cause of the failure was determined by Energy Transfer to be a leak in the valve stem packing on a partially buried 16-inch valve that isolated dead-leg piping. The property damage was approximately \$15,000.
- On January 8, 2016, Energy Transfer experienced a failure at Hebron Station (located in a High Consequence Area) that resulted in the release of approximately 10 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be internal corrosion in the sump pump piping. The property damage was approximately \$43,800.
- On January 9, 2015, Energy Transfer experienced a failure at Lima Station (located in a High Consequence Area) that resulted in the release of approximately 100 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be a cracked fitting on the pump discharge valve. The property damage was approximately \$45,946.
- On October 13, 2014, Energy Transfer experienced a pipeline failure near Mooringsport, LA, which resulted in the release of approximately 4,509 barrels of crude oil in a High Consequence Area that affected soil, vegetation, and surface water. The apparent cause of the failure was determined by Energy Transfer to be stress corrosion cracking. The property damage was approximately \$11,702,787.
- On April 18, 2014, Energy Transfer experienced a failure at Longview Station (located in a High Consequence Area) that resulted in the release of approximately 3 barrels of crude oil. The apparent cause of the failure was determined by Energy Transfer to be a failed pump seal. The property damage was approximately \$4,501.
- On April 4, 2014, Energy Transfer experienced a failure at Longview Station (located in a High Consequence Area) that resulted in the release of approximately 1 barrel of crude oil. The apparent cause of the failure was determined by Energy Transfer to be a failed tank mixer seal. The property damage was approximately \$20,798.
- On March 22, 2014, Energy Transfer experienced a failure of the Mid-Valley Pipeline at Denver Station (located in a High Consequence Area) that resulted in the release of approximately 2 barrels of crude oil. The release was reported by the local fire department. The apparent cause was not identified by Energy Transfer, but the release was from a breakout tank pipeline. Energy Transfer drained the pipeline and installed a bolt-on clamp. The property damage was approximately \$25,000. An NRC report was filed.

- On March 17, 2014, Energy Transfer experienced a failure of the Mid-Valley Pipeline Hebron to Lima 20-inch segment near Colerain Township that resulted in the release of approximately 450 barrels of crude oil. The release was reported by local emergency responders. Metallurgical evaluation determined the cause to be near neutral stress corrosion cracking on the body of the pipe. The release was in a High Consequence Area and affected soil, vegetation, wildlife, and water. The property damage was estimated to be approximately \$7,174,939.
- On February 24, 2014, Energy Transfer experienced a failure of the Mid-Valley Pipeline at Clarksville Station that resulted in the release of approximately 1 barrel of crude oil. The release was discovered by local operating personnel. The apparent cause was not identified by Energy Transfer, but the release was from a breakout tank pipeline. Energy Transfer installed a bolt-on clamp and returned the pipeline to service. The property damage was approximately \$48,200.
- On February 20, 2014, Energy Transfer experienced a failure of the Mid-Valley Pipeline at Samaria Station that resulted in the release of approximately 1 barrel of crude oil. Energy Transfer reported that ice in the pig trap drain line prevented commodity from draining into the sump and subsequent heavy rain caused crude oil to float out of the containment basin. The property damage was approximately \$1,720.
- On February 17, 2014, Energy Transfer experienced a failure of the Mid-Valley Pipeline at Lima Station (located in a High Consequence Area) that resulted in the release of less than 1 barrel of crude oil. The release was discovered by local operating personnel. The apparent cause of the failure was determined to Energy Transfer to be a crack in a fitting on the small diameter piping around the pump discharge valve. Energy Transfer replaced the cracked fitting but provided no additional information as to the cause. The property damage was approximately \$5,136.

Additionally, there have been recent public complaints expressing concerns about the safety of the Mid-Valley Pipeline. PHMSA's investigation of these complaints have determined the following:

- An encroachment involving a temporary building was found on the Mid-Valley Pipeline right-of-way in Cecelia, KY. Energy Transfer stated that an agreement had been made with the landowner to allow the building to remain on the pipeline right-of-way. PHMSA asked to review this agreement to verify that there were restrictions on what could be stored in the building and that Energy Transfer could move or demolish the building should it be required for maintenance or emergency response. Energy Transfer declined to provide the agreement.

- An exposed pipe in a stream crossing was found near Collinsville, OH, with large stumps and tree limbs present in the channel. PHMSA issued an Advisory Bulletin on April 9, 2015, (ADB-2015-01, 80 Fed. Reg. 19114), which provided notification to pipeline operators about the need for operators to take actions to ensure the integrity of pipelines in the event of flooding, river scour, and river channel migration that may result in additional stresses imposed on the pipe by undermining the underlying support soils, exposing the pipeline to lateral water forces, and impact from waterborne debris. This pipeline appears to be at risk for these threats. The pipeline coating also appears to be in poor condition resulting in diminished protection from atmospheric corrosion. No apparent actions have been taken by Energy Transfer to mitigate the threats presented by the exposed pipe.
- The condition of the right-of-way (ROW) near the Collinsville, OH, stream crossing exposure obscured the ROW in a manner that would limit the effectiveness of patrolling and potentially obscure a release. There was a notable absence of pipeline markers to identify the location of the pipeline. The pipeline also crosses under railroad tracks in the same area with no casing vents present that could be used to detect leaks in the carrier pipe. In response to PHMSA questions about this crossing, Energy Transfer confirmed that the casing is shorted which does not meet the requirements of 49 C.F.R. § 195.575 for electrical isolation.

As a result of numerous failures, existing integrity concerns, and PHMSA's preliminary investigation, it appears that conditions exist on the Mid-Valley Pipeline that pose a pipeline integrity risk to public safety, property, or the environment. Pursuant to 49 U.S.C. § 60117(m), PHMSA issues this Notice of Proposed Safety Order, notifying you of the preliminary findings of the investigation, and proposing that you take measures to ensure that the public, property, and the environment are protected from the potential risks.

Preliminary Findings:

The preliminary findings of PHMSA's ongoing investigation are as follows:

- The Mid-Valley Pipeline consists of approximately 1,048 miles of primarily 20- and 22-inch mainline pipeline that originates near Longview, TX, and terminates near Samaria, MI. The pipeline system includes 14 pump stations and 41 breakout tanks. It was constructed in the 1950s and is designed to deliver approximately 240,000 barrels of crude oil per day to refineries in the upper Midwest.
- The pipeline traverses near or through several high population areas, other populated areas, unusually sensitive areas, lakes, and crosses several rivers and streams, highways, roads, and railroads. Many of the pump stations and terminals are located in High Consequence Areas.
- The Mid-Valley Pipeline has experienced at least 34 failures since 2014 from various causes, including internal corrosion, pump failures, third-party damage, faulty equipment, hydrogen cracking, stress corrosion cracking, pipeline exposures, failed repairs, operator errors, and unidentified causes. Some of these failures do not appear to have had a

complete investigation as to the causes and contributing factors and it is unclear to PHMSA the actions taken by the Energy Transfer to determine if similar integrity threats may exist elsewhere on the Mid-Valley Pipeline system.

- After the July 5, 2023, failure, PHMSA requested Energy Transfer remove the failed section of pipe and send it to a metallurgical laboratory for evaluation and determination of the cause of the failure. Instead, Energy Transfer installed a temporary bolt-on sleeve and stated that the cutout and permanent repair would be scheduled at a later date. Consequently, there was no investigation of the cause of the failure and no determination by Energy Transfer of the causes and contributing factors.
- The apparent cause of several failures was determined by Energy Transfer to be internal corrosion. Energy Transfer stated it has an internal corrosion monitoring program and, in some cases, injects chemicals to inhibit internal corrosion. However, multiple failures related to internal corrosion have sometimes occurred at the same locations. PHMSA was unable to determine if the failures were thoroughly investigated, the specific causes determined, and preventative and mitigative measures implemented.
- For several failures (August 9, 2016; December 28, 2021; June 29, 2022; July 5, 2023), Energy Transfer installed temporary bolt-on sleeves. Energy Transfer did not immediately cut out the failed sections and conduct metallurgical analyses on each of the failures to determine or confirm the cause of the failure.
- After the July 14, 2023, failure at the Mid-Valley terminal near Oregon, OH, PHMSA requested that Energy Transfer perform additional inspections to determine if similar integrity threats existed elsewhere in the terminal. Based on the Energy Transfer's response, PHMSA was unable to determine if Energy Transfer conducted inspections to determine if additional similar integrity threats existed at the terminal or took measures to prevent additional failures.
- Lima Station, a pump station located in a High Consequence Area, experienced at least eight (8) failures since 2014. Three of the failures were apparently caused by internal corrosion, while other failures were caused by equipment failure, failure to purge an abandoned pipeline, and a failed temporary repair.
- Energy Transfer has an exposed pipe in a stream crossing near Collinsville, OH, with large stumps and tree limbs present in the channel. There appears to be a threat to the exposed pipeline segment due to debris carried by the stream, particularly during high water. The need to evaluate these types of threats was the subject of a PHMSA Advisory Bulletin (ADB-2015-01, 80 Fed. Reg. 19114) reminding pipeline operators about the need to evaluate these threats and take the appropriate preventative and mitigative measures as required by the underlying regulations. PHMSA also observed damage to the coating on the exposed pipeline segment that could result in additional issues related to atmospheric corrosion.

- There were multiple instances of malfunction of control equipment such as an un-commanded pump station start, a pump starts with the suction and discharge valves closed, and a pump that would not shut down on command. In one instance, it was necessary for the technician to use the main station breaker to finally shut the pump unit down. These issues led to releases due to secondary effects such as pump seal failure. On at least one occasion, the released commodity ignited and activated the pump station fire suppression system. There were apparent flaws in the control equipment that were not fully investigated and corrected.
- There were instances of equipment failure that resulted in releases, such as a faulty liquid level switch that resulted in a sump overflow, an incorrect bolt being used on a pump shaft repair which subsequently failed, a valve packing leak, a cracked fitting, misalignment of a pump unit that resulted in vibration and failure of the seals, and a failed pump mixer seal.
- There have been releases caused by operator error such as overfilling a breakout tank, allowing water to accumulate on the roof of a breakout tank allowing commodity to mix with the water which was released when the roof drains were opened, and lowering the liquid level in a tank to the point where the roof contacted the tank mixer and caused the seals to fail.
- There have been releases due to time dependent threats such as external corrosion, internal corrosion, stress corrosion cracking, and hydrogen cracking. It is unclear what preventative and mitigative measures the Energy Transfer has taken to prevent additional similar failures.
- Numerous failures have been discovered by members of the public and or contractors. Other failures were discovered by Energy Transfer personnel during routine movements around its facilities, and not through Energy Transfer's instrumentation and control system. These trends indicate Energy Transfer's inability to self-monitor and detect failures.
- The Mid-Valley Pipeline accident history indicates there are unmitigated threats associated with internal corrosion, time dependent threats, third party damage, equipment failure, and operator error.
- During the investigation of the July 5, 2023, failure near Cygnet, OH, PHMSA noted an interrupted cathodic protection pipe-to-soil measurement that was higher than the energized measurement. This may be an indication of cathodic protection interference. Energy Transfer shares the right-of-way with Buckeye Pipeline but stated no CIS or interference studies had been performed on this pipeline segment to determine if the requirement of electrical isolation required by § 195.575 has been met. In addition, Energy Transfer has stated that the cased crossing under the railroad tracks near the Collinsville, OH stream crossing was shorted, another instance where the requirements for electrical isolation have not been met.

Proposed Issuance of Safety Order:

Section 60117(m) of Title 49, United States Code, provides for the issuance of a Safety Order, after reasonable notice and the opportunity for a hearing, requiring corrective measures, which may include physical inspection, testing, repair, or other actions, as appropriate. The basis for making the determination that a pipeline facility has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment is set forth both in the above-referenced statute and 49 C.F.R. § 190.239, a copy of which is enclosed.

After evaluating the foregoing preliminary findings of fact and considering the hazardous nature of the product, the proximity of the area in which the hazardous liquid pipeline facility is located to environmentally sensitive areas, the population density and population and growth patterns of the area in which the pipeline facility is located (HCAs), the number of failures that have occurred (many with similar and/or related causes) within the past decade, the inadequate or limited failure investigations, the absence of preventative and mitigative measures or corrective actions taken to mitigate underlying issues and improve the failure trend, the temporary repairs (bolt-on sleeves) made with no apparent investigations, the likelihood that these conditions are present or may develop in other segments of the pipeline, multiple equipment and material failures, multiple releases caused by operator error, and identified integrity issues, the continued operation of the Mid-Valley Pipeline without corrective measures poses a threat to public safety, property, and the environment.

Accordingly, PHMSA issues this Notice to notify Energy Transfer of the proposed issuance of a safety order and to propose that Energy Transfer take measures specified herein to address the potential risks identified in the Preliminary Findings and other risks that may be determined as a result of the proposed corrective measures.

Proposed Corrective Measures:

Pursuant to 49 U.S.C. § 60117(m) and 49 C.F.R. § 190.239, PHMSA proposes to issue to Energy Transfer, LP, a safety order incorporating the following remedial requirements with respect to the Mid-Valley Pipeline:

1. Within 60 days of issuance of the Order, the Energy Transfer must complete a review of all accidents, unintentional releases, and other reportable failures on the Mid-Valley Pipeline since 2014, determine root causes of each event, and make assessments about program deficiencies that cause or contribute to integrity risks. At a minimum, the review must include all the accidents and other integrity issues identified by this Order. A detailed written report of the program deficiencies that resulted in the releases and other integrity threatening conditions must be submitted to the Director, Southwest Region (Director) within 60 days of issuance of the Order.
2. Energy Transfer must complete a full review of its written Mid-Valley Pipeline Operating and Maintenance Procedures, Integrity Management Program, and Operator Qualification Program to identify deficiencies or inadequacies that cause or contribute to integrity risks and corresponding programmatic changes or actions to

aimed at eliminating integrity risks. Within 120 days of issuance of the Order, Energy Transfer must submit a written report detailing the review and findings. This review must include, but is not limited to, the following:

- a. A review of all Operating and Maintenance Procedures and associated training requirements to reduce accidents resulting from maintenance issues and operator errors. In addition, Energy Transfer must perform a complete review of Energy Transfer Qualification Program including procedures, covered tasks, training requirements, qualification and re-qualification requirements, span of control, and Abnormal Operating Conditions. Energy Transfer must complete modifications to the Mid-Valley Operating and Maintenance Procedures and Operator Qualification Program and submit a redlined version of the revised procedures showing the changes to the Director for review and approval within 120 days of issuance of the Order.
- b. A review of the Integrity Management plan, threat identification, risk determination, and preventative and mitigative measures needed to reduce the failures on the Mid-Valley Pipeline system. This review must include all accidents, specifically including but not limited to those related to depth of cover and pipeline exposures, third party damage, and corrosion. A redlined version of the revised Integrity Management Plan must be submitted to the Director for review and approval within 120 days of issuance of the Order.
- c. Inspection of all branch welds at pump stations and terminals using a combination of visual examination and at least one other form of Non-destructive Examination to determine if there are additional cracks that may result in failures similar to the Cygnet Station failure that occurred on December 23, 2022. The Inspection Plan must be submitted to the Director for review and approval within 90 days of issuance of the Order and prior to commencing the inspections. The results of the inspections including the specific locations within each pump station and terminal where the inspections were conducted must be submitted to the Director within 180 days of approval of the Inspection Plan.
- d. Visual inspection of all above ground piping and fittings to identify defects such as cracks, corrosion, and mechanical damage that require repair or replacement. A written report detailing the specific locations of the inspections and inspection results must be submitted to the Director within 120 days of issuance of the Order.
- e. A review of the pump station control logic at each pump station to determine that no unordered startups will occur, the valves are in the proper positions for the stations to start, and station shutdowns will occur properly based on certain alarm conditions. The failures at Longview, Karnak, and Spears Stations must be fully investigated to ensure that the units will properly shut down or not start without the valves in correct positions. The control logic at all stations must be

reviewed and corrected, if necessary. A detailed written report on this review, the findings, and the revisions to the control logic or circuits must be submitted to the Director within 120 days of issuance of the Order.

- f. A review of the internal corrosion program must be conducted. This includes but is not limited to the following:
 - i. Investigate and determine the specific causes of the internal corrosion failures listed above.
 - ii. Revise the internal corrosion program to include appropriate periodic inspections of piping and facilities for internal corrosion.
 - iii. Define and implement preventative measures to detect corrosion and take corresponding action.
 - iv. Implement a comprehensive monitoring program using coupons and testing of the commodity for residuals of injected chemicals to ensure the appropriate injection points and concentrations.
 - v. Implement performance measures to evaluate the effectiveness of the internal corrosion program.
 - vi. Make modifications to the internal corrosion program such as the types and locations chemical injections, number and frequency of cleaning pig runs, frequency of in-line inspections, inspections of non-piggable pipelines, and inspection of breakout tanks, sumps, and other facilities that may be subject to internal corrosion.
 - vii. Identify and eliminate dead legs where possible, and periodically operating bypass lines, lines with low flow rates, and lines with infrequent or no flow.
 - viii. Define continual improvement measures to ensure the ongoing effectiveness of the program.
 - ix. Develop a written report that at a minimum includes items (i) through (viii) of the specific causes of the internal corrosion, the written program changes, and changes made in the field locations to make the program more effective. This report must be submitted to the Director for review within 120 days of issuance of the Order.
 - x. Every 6 months, beginning 90 days from of issuance of the Order, submit reports to the Director that includes the coupon locations, coupon measurements, chemical injection sites, types, quantities, and concentrations of injected chemicals, tests, and locations for determining residual concentrations of injected chemicals. The report must include the methods, locations and results of all inspections made to determine the effects of internal corrosion, and the timing of remediation actions required to prevent failures due to internal corrosion.

- g. A review of the external corrosion program must be performed that includes the following:
 - i. Assess whether the minimum required annual survey cathodic protection potentials required by Part 195 are being met along the continuous length of the Mid-Valley Pipeline by conducting an interrupted close-interval survey. Determination of the adequacy of the cathodic protection potentials must include consideration of IR drop. The detailed results of this survey must be submitted to the Director for review within 150 days of issuance of the Order.
 - ii. Energy Transfer must assess and document the condition of the coating and identify any areas of disbondment. The detailed results of this assessment must be submitted to the Director for review within 150 days of issuance of the Order.
 - iii. Energy Transfer must identify the locations any galvanic anodes on the Mid-Valley Pipeline and must ensure the anodes are capable of being interrupted so that true polarized potentials can be measured.
 - iv. Energy Transfer must perform surveys to determine if there are areas of cathodic protection interference anywhere on the Mid-Valley Pipeline system and implement measures to mitigate the interference. Energy Transfer must identify any areas on the Mid-Valley Pipeline that do not meet the minimum spacing requirements required by Part 195 regulations. A report of these areas of interference, areas where the pipeline spacing does not meet the minimum requirements, and the work plan to mitigate the interference must be submitted to the Director for review within 150 days of issuance of the Order.
 - v. Within 150 days of issuance of the Order, Energy Transfer must submit a detailed written report of the work performed pursuant to Item 2.g. that includes the locations of the cathodic protection test stations, the energized and polarized (instant off) cathodic protection potentials, the locations of the rectifiers, the rectifier tap setting before and after any adjustments, the procedures used to determine the polarized potentials, the coating surveys, the locations of the galvanic anodes, the results of the interference study, and the work plan to remedy deficiencies.
- 3. Energy Transfer must identify the locations of all exposed pipeline segments, segments of pipeline that currently have less than 30 inches of cover, and whether these segments are in High Consequence Areas. For any segments in High Consequence Areas and could affect HCA areas, Energy Transfer must identify the current land usage for each of these areas, the risk of damage to the pipeline Energy Transfer has assigned to these segments in its Integrity Management plan, the justification for the risk assigned, and the current preventative and mitigative measures that have been implemented. Energy Transfer must also provide records showing the results of the two most recent atmospheric corrosion inspections performed for each of these exposures. This information must be submitted to the Director within 90 days of issuance of the Order.

4. For all exposed Mid-Valley Pipeline segments in or near stream crossings, Energy Transfer must identify the location of these segments, the length of the exposure, and indicate if any actions were taken to mitigate the risk of the exposed segments. Energy Transfer must also provide the threat identification and risk assessments for these stream exposures in the current Integrity Management Plan and the preventative and mitigative measures that have been implemented. This information must be submitted to the Director within 120 days of issuance of the Order.
5. Energy Transfer must identify the location, date of discovery, and details of all encroachments on the Mid-Valley Pipeline rights-of-way that includes but is not limited to buildings, poles, junk or debris, or any other items that may obscure the pipeline from patrolling activities or limit access to the pipeline during emergency response or routine maintenance activities. Energy Transfer must provide a detailed written report that includes the location and details of these encroachments, the patrolling records immediately prior to and after the encroachments were discovered, and a description of actions taken to address each encroachment within 150 days of issuance of the Order.
6. Within 120 days of issuance of the Order, Energy Transfer must provide a detailed description of its right-of-way maintenance program, the criteria used to evaluate the condition of the right-of-way, how the determination is made when right-of-way maintenance is required, the frequency of right-of-way maintenance, and a report that details the complete right-of-way maintenance schedule and when each segment was last mowed or cleared, and an explanation of the alternative patrolling measures employed when the overgrowth of vegetation on the right-of-way obscures the ground.
7. Within 120 days of issuance of the Order, Energy Transfer must provide a detailed description of its right-of-way pipeline marker program, including the placement, locations, and spacing of the pipeline markers. Energy Transfer must also provide a description of its ongoing pipeline marker inspection program to identify damaged and missing pipeline markers, and the required timing for replacement of damaged or missing pipeline markers.
8. Within 150 days of issuance of the Order, Energy Transfer must complete an inspection of the adequacy and placement of pipeline markers on the Mid-Valley Pipeline system. Areas with missing or damaged markers and areas requiring additional pipeline markers must be identified. This information, including the locations of missing or damaged pipeline markers and locations requiring additional pipeline markers needed to meet the requirements of Part 195 must be provided in writing within 150 days of issuance of the Order.
9. Energy Transfer must provide a detailed written description of the aerial patrolling performed to meet Part 195 requirements. This must include the frequency of patrolling, the actions taken when spotting activity or equipment on the Mid-Valley right-of-way, encroachments, releases, right-of-way conditions that may obscure releases or limit the effectiveness, or any other threats. Include a complete

description of how the pilot identifies the specific locations on the Mid-Valley right-of-way for the reported conditions. Also provide a description of any areas where alternative patrolling, such as foot patrolling, is used and why foot patrolling is necessary. Include a description of the inspections and maintenance of pipeline milepost markers if they are used to report the location of issues identified by patrolling. This information must be provided to the Director within 120 days of issuance of the Order.

10. Energy Transfer must complete a review of all maintenance activities performed at pump stations and terminals over the past three years to determine that the work and materials used were consistent with the manufacturer's specifications and procedures. A detailed written report of this review must be submitted to the Director within 120 days of issuance of the Order.
11. Many of the Mid-Valley releases were discovered by members of the public or Mid-Valley operating personnel during routine activities at pump stations and terminals when released commodity was visible on the ground. Energy Transfer must provide a complete written description of the routine inspections performed at these locations that are intended to identify and address issues prior to failure and why these have been ineffective in identifying preventative maintenance. This must be provided to the Director within 120 days of issuance of the Order.
12. Energy Transfer must submit a written description of the training provided to pump station and terminal operations personnel to the Director within 120 days of issuance of the Order.
13. The corrective measures may be amended by the Director to ensure public safety as required from the responses provided and results produced by Energy Transfer.
14. The Director may grant an extension of time for compliance with any of the terms of the Safety Order upon a written request timely submitted demonstrating good cause for an extension.
15. It is requested (not mandated) that Energy Transfer maintain documentation of the safety improvement costs associated with fulfilling this Safety Order and submit the total to Mr. Bryan Lethcoe, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies, and analyses, and 2) total cost associated with replacements, additions, and other changes to pipeline infrastructure.

The actions proposed by this Notice of Proposed Safety Order are in addition to and do not waive any requirements that apply to Energy Transfer's pipeline system under 49 C.F.R. Parts 190 through 199, under any other order issued to Energy Transfer under authority of 49 U.S.C. § 60101 *et seq.*, or under any other provision of Federal or state law.

After receiving and analyzing additional data in the course of this proceeding, PHMSA may identify other safety measures that need to be taken. In that event, Energy Transfer will be notified of any proposed additional measures and, if necessary, amendments to the Safety Order.

Response to this Notice:

In accordance with § 190.239, you have 30 days following receipt of this Notice to submit a written response to the Director. If you do not respond within 30 days, this constitutes a waiver of your right to contest this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Safety Order. In your response, you may notify that official that you intend to comply with the terms of the Notice as proposed, or you may request that an informal consultation be scheduled (you will also have the opportunity to request an administrative hearing before a safety order is issued). Informal consultation provides you with the opportunity to explain the circumstances associated with the risk conditions alleged in the Notice and, as appropriate, to present a proposal for a work plan or other remedial measures, without prejudice to your position in any subsequent hearing.

If you and PHMSA agree within 30 days of the informal consultation on a plan and schedule for you to address each identified risk condition, the parties may enter into a written consent agreement, in which case PHMSA would then issue an administrative Consent Order incorporating the terms of the agreement. If a consent agreement is not reached, or if you have elected not to request informal consultation, you may request an administrative hearing in writing within 30 days following receipt of the Notice or within 10 days following the conclusion of an informal consultation that did not result in a consent agreement, as applicable. Following a hearing, if the Associate Administrator finds the Mid-Valley Pipeline system has a condition or conditions that pose a pipeline integrity risk to the public, property, or the environment in accordance with § 190.239, the Associate Administrator may issue a final Safety Order

Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. § 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. § 552(b).

In your correspondence on this matter, please refer to **CPF 4-2023-056-NOPSO** and for each document you submit, please provide a copy in electronic format whenever possible.

Bryan Lethcoe
Director, Southwest Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

October 13, 2023
Date Issued

Appendix D
Energy Transfer Mariner 2 East Pipeline
Pennsylvania Attorney General
Signed Criminal Plea Agreement
August 5, 2022

COMMONWEALTH OF PENNSYLVANIA : IN THE COURT OF COMMON PLEAS
v. : DAUPHIN COUNTY, PENNSYLVANIA
: --- CRIMINAL DIVISION ---
:
SUNOCO PIPELINE L.P. : NO. CP-22-CR-0002685-2022A

INFORMATION

The Attorney General of the Commonwealth of Pennsylvania, by this Information, hereby charges the above-named Defendant did commit the following offenses in Lebanon, Allegheny, Washington, Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lancaster, Berks, Chester, and Delaware Counties, Pennsylvania, on or about February 13, 2017 through August 5, 2021:

**COUNT 1: UNLAWFUL CONDUCT
35 P.S. §691.611 (M2)**

The defendant, Sunoco Pipeline L.P., did fail to comply with any rule or regulation of the department or fail to comply with any order or permit or license of the department, violated any of the provisions of this act or rules and regulations adopted hereunder, or any order or permit or license of the department, caused air or water pollution, or hindered, obstructed, prevented or interfered with the department or its personnel in the performance of any duty hereunder or violated the provisions of 18 Pa.C.S. section 4903 or 4904. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did knowingly hinder the department by failing to report environmental incidents on numerous occasions between February 13, 2017, and May 28, 2021. Said offenses occurred at the Piney Creek HDD in Woodbury Township, Blair County and/or Reservoir Road/Everett RR HDD in Blair Township, Blair County and/or Joanna Road HDD in Caernarvon Township, Berks County and/or William Penn Avenue HDD and/or Goldfinch Lane HDD in Jackson Township, Cambria County and/or Spinner Road HDD in Munster Township, Cambria County and/or I-81 HDD in Middlesex

Township, Cumberland County and/or Marsh Creek Lake HDD in Upper Uwchlan Township, Chester County and/or Lisa Drive HDD in West Whiteland Township, Chester County and/or Glen Riddle HDD in Middletown Township, Delaware County and/or Raystown Lake HDD in Penn Township, Huntingdon County and/or Blacklog Creek HDD in Shirley Township, Huntingdon County and/or Buff-Pitt Highway HDD in Burrell Township, Indiana County and/or Linden Creek Road HDD and/or Linden Road HDD in North Strabane Township, Washington County and/or SR88/Wheeling & Lake Erie Railroad HDD in Union Township, Washington County and/or Old William Penn Highway HDD in Murrysville, Westmoreland County and/or I-76 HDD in Hempfield Township, Westmoreland County and/or Norfolk Southern Railroad HDD in Jeanette, Westmoreland County and/or Loyalhanna Lake HDD in Loyalhanna Township, Westmoreland County and/or Snitz Creek/Zinns Mill Road HDD in West Cornwall Township, Lebanon County.

COUNT 2: UNLAWFUL CONDUCT
35 P.S. §691.611 (M2)

The defendant, Sunoco Pipeline L.P., did fail to comply with any rule or regulation of the department or fail to comply with any order or permit or license of the department, violated any of the provisions of this act or rules and regulations adopted hereunder, or any order or permit or license of the department, caused air or water pollution, or hindered, obstructed, prevented or interfered with the department or its personnel in the performance of any duty hereunder or violated the provisions of 18 Pa.C.S. section 4903 or 4904. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently violate Pennsylvania rules and regulations, including Title 25, § 78a.68a (f), by using unapproved drilling fluid additives on multiple occasions between February 13, 2017, and May 28, 2021. Said offense occurred at the North Zinns Mill Road HDD, located in West Cornwall Township, Lebanon County and/or one or more of the following locations: Allegheny, Washington,

Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lancaster, Berks, Chester, and/or Delaware Counties.

**COUNT 3: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Piney Creek HDD in Woodbury Township and/or Reservoir Road/Everett RR HDD in Blair Township, Blair County.

**COUNT 4: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Joanna Road HDD in Caernarvon Township, Berks County.

**COUNT 5: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the William Penn Avenue HDD and/or the Goldfinch Lane HDD in Jackson Township and/or Spinner Road HDD in Munster Township, Cambria County.

**COUNT 6: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the I-81 HDD in Middlesex Township, Cumberland County.

**COUNT 7: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the

Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Marsh Creek Lake HDD in Upper Uwchlan Township, and/or Lisa Drive HDD and/or a guided auger bore in West Whiteland Township, Chester County.

**COUNT 8: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Glen Riddle HDD in Middletown Township, Delaware County.

**COUNT 9: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste,

into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Raystown Lake HDD in Penn Township and/or Blacklog Creek HDD in Shirley Township, Huntingdon County.

**COUNT 10: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Buff-Pitt Highway HDD in Burrell Township, Indiana County.

**COUNT 11: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Linden Creek Road HDD and/or Linden Road HDD in North Strabane Township and/or SR88/Wheeling & Lake Erie Railroad HDD in Union Township, Washington County.

**COUNT 12: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Old William Penn Highway HDD in Murrysville and/or I-76 HDD in Hempfield Township and/or Norfolk Southern Railroad HDD in Jeanette and/or Loyalhanna Lake HDD in Loyalhanna Township, Westmoreland County.

**COUNT 13: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Snitz Creek/Zinns Mill Road HDD in West Cornwall Township, Lebanon County.

**COUNT 14: PROHIBITIONS AGAINST DISCHARGE OF INDUSTRIAL WASTES
35 P.S. §691.301 (M2)**

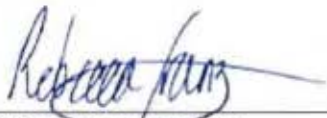
The defendant, Sunoco Pipeline L.P., did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the

Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Sunoco Pipeline L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into private water supplies on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred in one or more of the following locations: Allegheny, Washington, Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lebanon, Lancaster, Berks, Chester and/or Delaware Counties.

ALL OF WHICH is against the Act of Assembly and the peace and dignity of the Commonwealth of Pennsylvania.

JOSH SHAPIRO
Attorney General

By:



REBECCA FRANZ
Chief Deputy Attorney General
Environmental Crimes Section



COMMONWEALTH OF PENNSYLVANIA
OFFICE OF ATTORNEY GENERAL
HARRISBURG, PA 17120

JOSHUA D. SHAPIRO
ATTORNEY GENERAL

16TH FLOOR
STRAWBERRY SQUARE
HARRISBURG, PA 17120
(717) 767-3391

October 15, 2018

Rebecca S. Franz
Chief Deputy Attorney General
Environmental Crimes Section
Office of Attorney General
16th Floor, Strawberry Square
Harrisburg, PA 17120

Dear Ms. Franz:

Pursuant to Sections 201(c) and 205(d) of the Commonwealth Attorneys Act, 71 P.S. §§ 732-201(c) and 732-205(d), and Section 8931(i) of the Judicial Code, 42 Pa. C.S. § 8931(i), you are hereby designated to act for the Attorney General of Pennsylvania and authorized to sign criminal informations on behalf of the Attorney General in all cases within the prosecutorial jurisdiction of the Attorney General.

A copy of this authorization should be filed with the appropriate Clerk of Court prior to the filing of informations.

Very truly yours,

A handwritten signature in black ink, appearing to read "Josh Shapiro".

Josh Shapiro
Attorney General

Defendant, being advised of the offense(s) charged in the within Information and of his rights, hereby in open court enters a plea of no contest.

WAIVER OF JURY TRIAL

Defendant, being advised of the offense(s) charged in the within Information and of his rights, hereby in open court pleads not guilty and with the consent of his attorney and the approval of the judge, waives a jury trial and elects to be tried by a judge without a jury.

Aug 5, 2022
Date

[Signature]
Defendant

[Signature]
Attorney for Defendant

[Signature]
Deputy Attorney General

APPROVED: _____
Judge

WAIVER OF ARRAIGNMENT

Defendant, being advised of the offense(s) charged in the within Information and of his rights, hereby in open court consents to proceed on the Information charged by the Commonwealth's attorney and hereby waives formal arraignment, as is provided by the Pennsylvania Rules of Criminal Procedure.

Aug 5, 2022
Date

[Signature]
Defendant

[Signature]
Attorney for Defendant

CHANGE OF PLEA

Defendant, being advised of the offense(s) charged in the within Information and of his rights, hereby in open court changes his plea to No Contest on Counts 1-14.

Aug 5, 2022
Date

[Signature]
Defendant

[Signature]
Attorney for Defendant

CERTIFICATE OF COMPLIANCE

I certify that this filing complies with the provisions of the *Public Access Policy of the Unified Judicial System of Pennsylvania: Case Records of the Appellate and trial Courts* that require filing of confidential information and documents differently than non-confidential information and documents.

A handwritten signature in blue ink, appearing to read "Rebecca Franz", is written over a horizontal line.

Rebecca S. Franz, Esq.
Attorney ID # 93365
Office of the Attorney General
16th Floor Strawberry Square
Harrisburg, Pa. 17120
(717) 787-6346

Date: July 18, 2022

**COURT OF COMMON PLEAS OF DAUPHIN COUNTY
COMMONWEALTH OF PENNSYLVANIA**

COMMONWEALTH OF PENNSYLVANIA

vs.

NO. CP-22-CR-2685-2022 A

SUNOCO PIPELINE L.P.

NOLO CONTENDERE PLEA AGREEMENT AND COLLOQUY OF DEFENDANT

1. I ASSERT THAT I, Sankar R. Devarpiran, HAVE AUTHORITY TO ENTER THIS PLEA ON BEHALF OF THE DEFENDANT, SUNOCO PIPELINE L.P. (hereinafter "Defendant") Attached to this Plea Agreement and Colloquy is a certificate from the Secretary of the Board authorizing me to enter a nolo contendere plea on behalf of Sunoco Pipeline L.P. (Exhibit A)
2. Defendant INTENDS TO PLEAD NOLO CONTENDERE to the following criminal offense(s):

Ct	Offense	Gr	OGS	Mit	Stand	Agg
1	Unlawful Conduct 35 PS §691.611—Failure to Notify DEP	M2	1	RS	RS	3
2	Unlawful Conduct 35 PS §691.611—Use of unapproved additives	M2	1	RS	RS	3
3	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Blair Co	M2	1	RS	RS	3
4	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Berks Co	M2	1	RS	RS	3
5	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Cambria Co	M2	1	RS	RS	3
6	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Cumberland Co	M2	1	RS	RS	3
7	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Chester Co	M2	1	RS	RS	3
8	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Delaware Co	M2	1	RS	RS	3
9	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Huntingdon Co	M2	1	RS	RS	3
10	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Indiana Co	M2	1	RS	RS	3
11	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Washington Co	M2	1	RS	RS	3

12	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Westmoreland Co	M2	1	RS	RS	3
13	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—Inadvertent returns in Lebanon Co	M2	1	RS	RS	3
14	Prohibition Against Discharge of Industrial Wastes 35 PS §691.301—contamination of private drinking water supplies	M2	1	RS	RS	3

*Sentence ranges based on PRS of 0

3. THE MAXIMUM PENALTIES FOR THE ASSOCIATED ENVIRONMENTAL CRIMES ARE AS FOLLOWS:

Offense	Gr	Max. Jail	Max. Fine
Clean Streams Law violations	M2	TWO (2) YRS	\$25,000.00

4. FACTUAL BASIS FOR NOLO CONTENDERE PLEA. Defendant understands all of the elements of each offense listed above and does not contest that the Commonwealth can prove the following at trial:

The Mariner East 2 Pipeline project crosses 17 counties in the southern tier of Pennsylvania. Sunoco Pipeline L.P. received permits for this project in February, 2017. The permits included approvals for multiple locations of the pipeline to be installed by horizontal directional drilling as the construction method.

Once work began, Sunoco Pipeline L.P. experienced repeated losses of returns of drilling mud, an industrial waste, to the subsurface. The project also resulted in numerous inadvertent returns of drilling mud that surfaced in fields, backyards, streams, lakes and wetlands. Sunoco Pipeline L.P. failed to report certain losses of return of drilling fluid to the Pennsylvania Department of Environmental Protection at certain times, as required by the PADEP permits and associated plans. Said failure hindered the Department in the performance of its duties. At certain locations the horizontal directional drilling process also impacted certain drinking water wells located in proximity to the pipeline construction workspace.

There were multiple locations, along the construction project where the drilling fluid that was used contained unapproved additives, in violation of the regulations governing such activity. PADEP sought civil enforcement for some of this conduct previously.

The above-described conduct occurred in the following counties: Blair, Berks, Cambria, Chester, Cumberland, Delaware, Huntingdon, Indiana, Washington, Westmoreland and Lebanon.

5. TERMS OF THIS NOLO CONTENDERE PLEA AGREEMENT. The Commonwealth and the Defendant agree that all the terms and conditions in consideration of this nolo contendere plea are set forth below:

The Defendant will pay a fine of \$35,000.00 to the Clean Water Fund at the Pennsylvania Department of Environmental Protection.
The Defendant (as part of this case and the ETC Northeast Pipeline, LLC case at 2684-2022) will establish a fund and set aside \$442,500.00 to create and operate a Homeowner Well Water Supply Grievance Program.
The Defendant (as part of this case and the ETC Northeast Pipeline, LLC case at 2684-2022) will pay \$10 million to support water quality improvement projects along the pipeline route.
The Defendant will agree to adhere to the parameters of the Grievance Program, which is attached to this plea agreement as Exhibit B.

6. THE MAXIMUM POSSIBLE SENTENCE.

The maximum sentence for a corporate entity would be a fine of \$350,000.00.

7. THE MANDATORY MINIMUM SENTENCE. Defendant realizes that the following mandatory minimum sentence applies in this case:

A fine of not less than \$35,000.00.

8. THINGS THAT COULD AUTOMATICALLY INCREASE DEFENDANT'S SENTENCE. Defendant realizes that there may be increases to Defendant's sentence because a weapon was possessed or used, or because of the age of the victim, or the location of Defendant's crime as follows:

Not applicable

9. THE SENTENCING COURT IS NOT BOUND BY ANY TERM AS TO SENTENCE CONTAINED IN THIS AGREEMENT. Defendant acknowledges that any terms related to a sentence set forth in paragraph 4 above are not binding on the Court and Defendant has not been guaranteed a specific sentence in exchange for this plea. The Court retains the power to decide Defendant's sentence.

10. THE RIGHTS DEFENDANT GIVES UP BY ENTERING A PLEA OF NOLO CONTENDERE. Defendant understands that the law presumes it innocent and requires proof beyond a reasonable doubt to convict it of any crime. Defendant understands that by entering a nolo contendere plea, the company will be convicted of the charges and will be presumed guilty of those charges beyond a reasonable doubt. Furthermore, Defendant acknowledges the additional rights it possesses which are listed below, and give them up as part of Defendant's plea.


- To have a trial by jury of 12 people from the community, or by a judge alone.
 - To participate in the selection of a jury, and to challenge any juror for cause, and exercise any peremptory challenges that Defendant is entitled to.
 - To require the Commonwealth to prove Defendant's guilt beyond a reasonable doubt as to each and every element of the offenses charged. To cross-examine Commonwealth witnesses, to compel any witness to testify on Defendant's behalf, to justify itself or choose to remain silent at trial. If Defendant remains silent, the judge would tell the jury they cannot infer guilt because of it.
 - To have Defendant's attorney file and litigate pre-trial motions as necessary, including those challenging illegal evidence, or seeking dismissal of the case on legal grounds, or to challenge anything that may have been improper in the investigation and prosecution of Defendant's case by the Commonwealth.
11. **OTHER IMPORTANT CONSEQUENCES OF DEFENDANT'S NOLO CONTENDERE PLEA.** Defendant understands that by pleading nolo contendere Defendant will be convicted of crime(s) and there may be some collateral consequences of this criminal conviction. Collateral consequences include the ability of the prosecution to hold this conviction against Defendant in the future if Defendant is charged with other crimes. The consequences also include but are not limited to the loss or restriction of a professional license and ineligibility for public funds. Lawmakers may in the future add further collateral consequences to criminal conviction that we have no way to predict now.
12. **DEFENDANT KNOWS WHAT IT IS DOING AND IT IS VOLUNTARY.** Defendant is not mentally disabled or under the influence of any drugs or alcohol. Defendant is not suffering from any disability which affects its own free will, and is free of duress. Defendant is giving up its rights knowingly, voluntarily and intelligently.
13. **DEFENDANT'S APPEAL RIGHTS ARE LIMITED AFTER A PLEA.** Defendant retains the right to contest only the following things on appeal after Defendant is sentenced:
- a. Jurisdiction of the Court;
 - b. Legality of the sentence; and/or
 - c. Validity of this plea, including claims involving my constitutional right to effective counsel.
14. **DEFENDANT HAS CONFERRED WITH ITS ATTORNEY BEFORE THIS PLEA.** Defendant has had an opportunity to discuss this plea agreement with its attorney, with whom it is satisfied.
15. **THE COURT CAN REFUSE TO ACCEPT THE PROPOSED PLEA.** Defendant understands that the Court is not required to accept this plea agreement. If it does not, then the proposed plea does not become final and Defendant retains its rights to a trial.

NOLO CONTENDERE PLEA

DEFENDANT SWEARS AND AFFIRMS THAT IT HAS READ THIS DOCUMENT IN ITS ENTIRETY OR HAD IT EXPLAINED TO DEFENDANT, UNDERSTANDS IT COMPLETELY, AND BELIEVES THIS PLEA IS IN DEFENDANT'S BEST INTEREST.

BY SIGNATURE BELOW DEFENDANT ENTERS A NOLO CONTENDERE PLEA TO THE OFFENSE(S) SPECIFIED IN PARAGRAPH 1 OF THIS PLEA COLLOQUY FORM, WHICH IS FINAL WHEN ACCEPTED BY THE COURT.

Defendant's Signature



Date

08/05/22

DEFENSE ATTORNEY CERTIFICATION. I certify with this Defendant that: (1) I have explained this plea agreement and the Defendant's rights to the Defendant; (2) he/she wishes to plead nolo contendere; (3) I have discussed the facts and the law of this case with the Defendant; and (4) I believe the Defendant understands the consequences of pleading nolo contendere.

Attorney for Defendant:



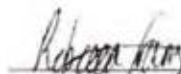
Mark Rush
K & L Gates LLP

Date

08/05/22

Approved by: JENNIFER SELBER
Executive Deputy Attorney General
Criminal Division
Commonwealth of Pennsylvania

BY:



REBECCA S. FRANZ
Chief Deputy Attorney General

Date July 27, 2022

EXHIBIT A

SECRETARY'S CERTIFICATE

The undersigned, in his capacity as the Associate General Counsel and Secretary of each of Energy Transfer Operations GP LLC, a Delaware limited liability company (the "**General Partner**"), the general partner of Sunoco Pipeline, L.P., a Texas limited partnership ("**Sunoco Pipeline**"), and Energy Transfer LP, a Delaware limited partnership (the "**Parent**"), hereby certifies that:

1. Sunoco Pipeline is duly formed, validly existing and in good standing under the laws of the State of Texas, and the General Partner is duly formed, validly existing and in good standing under the laws of the State of Delaware.

2. Parent is the indirect owner of 100% of the membership interests in the General Partner and of 100% of the partnership interests in Sunoco Pipeline.

3. Sankar R. Devarpiran, is the duly qualified and acting Senior Vice President – Engineering & Special Projects, of the General Partner and of the Parent, and he continues to occupy such offices as of the date hereof and the signature set forth below is the true and genuine signature of said person.

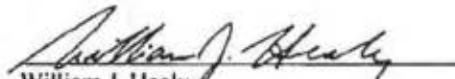


Sankar R. Devarpiran – Senior Vice President – Engineering & Special Projects

4. Marshall S. McCrea, III, Co-Chief Executive Officer of the General Partner and of the Parent, by authority granted to him in the Parent's Delegation of Authority, approved by written consent by the Audit Committee of the Board of Directors of the Parent, is duly authorized and empowered on behalf of the General Partner, in its capacity as the general partner of Sunoco Pipeline, to execute, deliver and bind Sunoco Pipeline with respect to legal settlements and expenses in amounts up to \$15 million, and that authority has not been repealed or rescinded and is in full force and effect as of the date hereof.

5. Marshall S. McCrea, III, as the Co-Chief Executive Officer of the General Partner and of the Parent, has delegated such authority to execute, deliver and bind Sunoco Pipeline with respect to legal settlements and expenses in amounts up to \$15 million, to Sankar R. Devarpiran, Senior Vice President – Engineering & Special Projects, and such delegation of authority has not been repealed or rescinded and is in full force and effect as of the date hereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of July, 2022.



William J. Healy
Associate General Counsel and Secretary

SECRETARY'S CERTIFICATE

The undersigned, in his capacity as the Associate General Counsel and Secretary of each of ETC Northeast Pipeline, LLC, a Delaware limited liability company (the "*Company*"), and Energy Transfer LP, a Delaware limited partnership (the "*Parent*"), hereby certifies that:

1. The Company is duly formed, validly existing and in good standing under the laws of the State of Delaware, and the Parent is the indirect owner of 100% of the membership interests in the Company.

2. Sankar R. Devarpiran, is the duly qualified and acting Senior Vice President – Engineering & Special Projects, of the Company and of the Parent, and he continues to occupy such offices as of the date hereof and the signature set forth below is the true and genuine signature of said person.

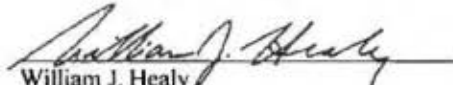


Sankar R. Devarpiran – Senior Vice President – Engineering & Special Projects

3. Marshall S. McCrea, III, Co-Chief Executive Officer of the Company and of the Parent, by authority granted to him in the Parent's Delegation of Authority, approved by written consent by the Audit Committee of the Board of Directors of the Parent, is duly authorized and empowered on behalf of the Company to execute, deliver and bind the Company with respect to legal settlements and expenses in amounts up to \$15 million, and that authority has not been repealed or rescinded and is in full force and effect as of the date hereof.



4. Marshall S. McCrea, III, as the Co-Chief Executive Officer of the Company and of the Parent, has delegated such authority to execute, deliver and bind the Company with respect to legal settlements and expenses in amounts up to \$15 million, to Sankar R. Devarpiran, Senior Vice President – Engineering & Special Projects, and such delegation of authority has not been repealed or rescinded and is in full force and effect as of the date hereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of July, 2022.



William J. Healy
Associate General Counsel and Secretary

DELEGATION OF APPROVAL AUTHORITY FORM

	Name (Last, First)/Job Title	Signature
Grantor:	McCrea, Marshall S. Co-Chief Executive Officer	
Grantee:	Devarpiran, Sankar R. Senior Vice President – Engineering & Special Projects	
Company(ies)	ETC Northeast Pipeline LLC and Energy Transfer Operations GP LLC, and their subsidiaries including Sunoco Pipeline, L.P.	
Authorized Transactions (see below)	Legal settlement agreements up to \$15 million and/or any agreements or instruments related thereto	
Effective Date:	July 17, 2022	
Ending Date:	August 18, 2022	

Grantor: Person delegating approval authority.

Grantee: The employee being delegated authority.

Job Title: Job title of Grantee

Company: Specify the Company or Companies for which the delegate may act or approve transactions. (Example: ETC, Transwestern, HPL, ALL)

Authorized Transaction: Specify the Transaction(s) for which approval authority is being delegated. Please be as detailed as necessary. Include dollar amount for limit and transaction category. Do not include vendor specific delegations.

Authorized Limit: The maximum dollar amount that can be approved for the specified Authorized Transaction. The dollar amount being delegated cannot be greater than the maximum amount established for the Grantor or the delegation will not be completed

Effective Date: The date on which the Grantor delegates approval authority to Grantee.

Ending Date: All delegations will automatically expire on May 1 and November 1 of every year. Renewal of delegations will have to be submitted at that time in order to continue the desired delegation. *Example:* Delegations submitted February will still expire May 1 and renewals will need to be submitted at that time.

The original copy of the delegation of authority form goes to the Grantee. A copy of the delegation of authority form goes to Supervisor – Accounts Payable ([NAME]).

The Grantor is responsible for the actions of the Grantee.

EXHIBIT B

Mariner East and Revolution Fund and Fines

Establishment of Fund

Sunoco Pipeline LP (Sunoco) shall pay \$442,500 to establish a fund directly for the creation and operation of a Homeowner Well Water Supply Grievance Program¹ (the “Grievance Program”).

Fines

In addition to the fund, Sunoco shall pay a fine of \$57,500 to the Clean Water Fund pursuant to the Clean Streams Law. The \$57,500 shall consist of the payment of \$2,500 for each of the 14 counts related to Mariner and 9 counts related to Revolution as set forth in the plea agreement.

Homeowner Well Water Supply Grievance Program

The Office of the Attorney General (OAG) shall establish a Homeowner Well Water Supply Grievance Program. Procedures for the program are outlined below.

Purpose and Scope of Grievance Program

The purpose of the Grievance Program shall be to provide Qualified Homeowners (defined below) or Additional Homeowner Complainants (defined below) the services of a Designated Professional Geologist (PG) in order to evaluate potential water quality impacts from the construction of the Mariner East 2 pipeline (ME2) and offer approved mechanisms for restoring or replacing the impacted private water supply. The PG will determine whether Sunoco’s construction of ME2 impacted the homeowner’s water supply which shall mean an adverse impact to the quality or quantity of the water supply in the water supply well. If an impact has occurred, the PG will issue a report with approved mechanisms to restore or replace the impacted private water supply. The PG report shall be issued to the Qualified Homeowner or Additional Homeowner Complainant as applicable, the OAG, Sunoco and to the Pennsylvania Department of Environmental Protection (DEP). Appeals processes for both the homeowner and Sunoco are defined below.

Qualified Homeowners

Qualified Homeowners are those who assert that their water supply has been impacted by the construction of the Mariner East 2 Pipeline² in response to receipt of the Grievance Program Notification Letter (Notification Letter) from the OAG and have submitted a complaint to the OAG no later than two (2) weeks following Sunoco’s nolo contendere plea and sentencing, which will occur on the same day. Qualified Homeowners shall not include any homeowner who previously settled with Sunoco, is in litigation with Sunoco or has retained counsel and is currently and actively negotiating a claim with Sunoco.

¹ Should the fund need additional monies to cover all complaint investigations, the Office of Attorney General may, at its discretion, utilize money from the separate fund that will be instituted to support water quality improvement projects.

² The designated Professional Geologists will serve as the arbiter of whether any homeowner’s complaint falls within the appropriate criteria to warrant further analysis.

Designated Professional Geologist

The OAG and Sunoco will agree to three (3) professional geologists who will serve as Designated Professional Geologists (PG). The PG's will have the requisite professional skills and experience to perform the evaluations and render the Report on whether Sunoco's construction of ME2 has impacted the homeowner's water supply and what mechanisms are approved to restore or replace the impacted private water supply.

Grievance Procedure for Qualified Homeowners

1. The OAG will send the Notification Letter to every owner of a private water supply on the list previously provided³. If the homeowner asserts that its private well has been impacted by construction of ME2, the homeowner must submit a complaint to the OAG with their name, address, and basis for a complaint related to the construction of the Mariner East 2 pipeline no later than two (2) weeks following Sunoco's nolo contendere plea and sentencing, which will occur on the same day. The homeowner may also provide copies of complaints previously made to DEP and include any prior correspondence with DEP and/or Sunoco regarding the claim. Sunoco will cooperate and provide any reasonable information regarding construction activities in the vicinity of the homeowner to the PG.
2. The PG shall review all complaints to determine if additional testing and analysis is needed in order to render a decision on the complaint. If the PG determines that no additional testing is needed, Sunoco will have no further obligations to that Qualified Homeowner under this agreement. The costs incurred by the PG to make this initial determination, as negotiated by the OAG, shall be paid for by the established fund.
3. If further testing is recommended by the PG, the Qualified Homeowner may select, in their sole discretion, one of the other two (2) Designated Professional Geologists to analyze their water supply and issue a Report (Report) as to whether the construction of ME2 impacted the Qualified Homeowner's water supply and what mechanisms are approved to restore or replace the impacted private water supply. The costs incurred by the PG, as negotiated by the OAG, shall be paid for by the established fund.
4. Upon issuance of the Report by the PG, if the Qualified Homeowner or Sunoco disagrees with the conclusion of the Report, the Qualified Homeowner or Sunoco can appeal that decision to the remaining PG. That PG shall review the Report and either confirm or reverse the conclusion in the Report. The costs incurred by the PG, as negotiated by the OAG, shall be paid by the established fund. The decision of the second PG shall be final and binding on all parties within the scope of the Grievance procedure, solely on the issue of whether Sunoco's construction of ME-2 impacted the private water supply, but is not binding with respect to the PG's approved mechanisms for restoring or

³ See the ME2 Well Line List Tracker.

replacing the impacted water supply. The PG's final decision regarding approved mechanisms for restoring or replacing the impacted private water supply will be handled pursuant to the procedures set forth in paragraph 6 below.

5. If the final decision is that there was no impact due to construction of the Mariner East 2 pipeline, Sunoco shall have no further obligations to that Qualified Homeowner under this agreement.
6. If the final decision is that an impact attributable to Sunoco occurred, that final binding decision and the PG's non-binding recommendation for approved mechanisms to restore private water supply will be sent to DEP. Sunoco is obligated to restore or replace the impacted private water supply in quantity and quality for the purposes served by the supply pursuant to applicable laws and regulations and Sunoco's Chapter 105 permits for ME-2. The cost of restoration or replacement of the impacted water supply will be solely borne by Sunoco and will not be withdrawn from the \$442,500 fund. The mechanism to restore or replace the water supply will be submitted to DEP for approval. DEP's approval or denial of the mechanism to restore or replace the water supply may be appealed by the Qualified Homeowner or Sunoco to the Pennsylvania Environmental Hearing Board (EHB). All parties retain all rights and defenses during this process. Nothing in this Grievance Procedure prevents a Qualified Homeowner and Sunoco from agreeing to the mechanism for restoring or replacing the impacted private water supply prior to DEP rendering a final decision or during an appeal to the EHB.

Grievance Procedures for Additional Homeowner Complainants

1. The Grievance Procedure above applies only to Qualified Homeowners.
2. In the event a homeowner who is not a Qualified Homeowner ("Additional Homeowner Complainants") makes a claim to the OAG that their private water supply has been impacted by Sunoco's construction of ME-2 no later than two (2) weeks following Sunoco's nolo contendere plea and sentencing, which will occur on the same day, the OAG can use the Designated Professional Geologists to evaluate these claims. Additional Homeowner Complainants must provide the OAG with the same information regarding their claim that is required of Qualified Homeowner's in paragraph 1 above. The costs incurred by the PG, as negotiated by the OAG, shall be paid for by the established fund.
3. Sunoco shall not be bound by any decision by the Designated Professional Geologist regarding a claim made by Additional Homeowner Complainants, and Sunoco reserves all rights to challenge any such decision, including but not limited to in an appeal before the EHB.

Scope Limitation

The Grievance Program shall not establish any rights, procedures, causes of action against Sunoco beyond the limited procedures established herein. Further, Qualified Homeowner's cannot use Sunoco's agreement herein to restore or replace the impacted water supply as evidence in any subsequent proceeding.

Termination

The Homeowner Well Water Supply Grievance Program will terminate once payment is made to the Clean Water Fund and all reports have been issued. At that time, any remaining balance of the fund can be used for water quality improvement projects in watersheds where the Mariner East 2 pipeline construction occurred.

Appendix E
Energy Transfer Mariner 2 East Pipeline
Pennsylvania Attorney General
Signed Criminal Complaint
October 5, 2021

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF: DAUPHIN

Magisterial District Number: 12-2-02
MDJ: Hon. Kenneth A. Lenker
Address: 102 Agnes Street
Harrisburg, PA 17104

Telephone: (717)939-6996



POLICE CRIMINAL COMPLAINT
COMMONWEALTH OF PENNSYLVANIA

VS.

DEFENDANT:

(NAME and ADDRESS):

ENERGY

TRANSFER

L.P.

First Name

Middle Name

Last Name

535 Fritztown Road,
Sinking Spring, PA 19608

NCIC Extradition Code Type

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> 1-Felony Full | <input type="checkbox"/> 5-Felony Pending Extradition | <input type="checkbox"/> C-Misdemeanor Surrounding States | <input type="checkbox"/> Distance: _____ |
| <input type="checkbox"/> 2-Felony Limited | <input type="checkbox"/> 6-Felony Pending Extradition Determ. | <input type="checkbox"/> D-Misdemeanor No Extradition | |
| <input type="checkbox"/> 3-Felony Surrounding States | <input type="checkbox"/> A-Misdemeanor Full | <input type="checkbox"/> E-Misdemeanor Pending Extradition | |
| <input checked="" type="checkbox"/> 4-Felony No Extradition | <input type="checkbox"/> B-Misdemeanor Limited | <input type="checkbox"/> F-Misdemeanor Pending Extradition | |

DEFENDANT IDENTIFICATION INFORMATION

Docket Number CR-302-2021	Date Filed 10/05/2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237	Request Lab Services? <input type="checkbox"/> YES <input type="checkbox"/> NO
------------------------------	--------------------------	---------------------	--------------------------------------	---

GENDER <input type="checkbox"/> Male <input type="checkbox"/> Female	DOB / /	POB	Add'l DOB / /	Co-Defendant(s) <input type="checkbox"/>
	First Name	Middle Name	Last Name	Gen.
	AKA			

RACE ☐ White ☐ Asian ☐ Black ☐ Native American ☐ Unknown

ETHNICITY ☐ Hispanic ☐ Non-Hispanic ☐ Unknown

Hair Color
☐ GRY (Gray) ☐ RED (Red/Aubn.) ☐ SDY (Sandy) ☐ BLU (Blue) ☐ PLE (Purple) ☐ BRO (Brown)
☐ BLK (Black) ☐ ONG (Orange) ☐ WHI (White) ☐ XXX (Unk./Bald) ☐ GRN (Green) ☐ PNK (Pink)
☐ BLN (Blonde / Strawberry)

Eye Color
☐ BLK (Black) ☐ BLU (Blue) ☐ BRO (Brown) ☐ GRN (Green) ☐ GRY (Gray)
☐ HAZ (Hazel) ☐ MAR (Maroon) ☐ PNK (Pink) ☐ MUL (Multicolored) ☐ XXX (Unknown)

DNA ☐ YES ☐ NO DNA Location WEIGHT (lbs.)

FBI Number MNU Number

Defendant Fingerprinted ☐ YES ☐ NO Ft. HEIGHT In.

Fingerprint Classification:

DEFENDANT VEHICLE INFORMATION

Plate #	State	Haz mat <input type="checkbox"/>	Registration Sticker (MM/YY) /	Comm'l Veh. Ind. <input type="checkbox"/>	School Veh. <input type="checkbox"/>	Oth. NCIC Veh. Code	Reg. same as Def. <input type="checkbox"/>
VIN	Year	Make	Model	Style	Color		

Office of the attorney for the Commonwealth ☒ Approved ☐ Disapproved because: _____

(The attorney for the Commonwealth may require that the complaint, arrest warrant affidavit, or both be approved by the attorney for the Commonwealth prior to filing. See Pa.R.Crim.P. 507).

CDAG REBECCA FRANZ

(Name of the attorney for the Commonwealth)

Rebecca Franz
(Signature of the attorney for the Commonwealth)

10/05/2021

(Date)

I, SSA H. JUSTUS BRAMBLEY, IV

(Name of the Affiant)

528

(PSP/MPOETC -Assigned Affiant ID Number & Badge #

of Pennsylvania Office of Attorney General

(Identify Department or Agency Represented and Political Subdivision)

PA0222400

(Police Agency ORI Number)

do hereby state: (check appropriate box)

1. ☒ I accuse the above named defendant who lives at the address set forth above

☐ I accuse the defendant whose name is unknown to me but who is described as _____

☐ I accuse the defendant whose name and popular designation or nickname are unknown to me and whom I have therefore designated as John Doe or Jane Doe

with violating the penal laws of the Commonwealth of Pennsylvania at [201] Conewago Township
(Subdivision Code) (Place-Political Subdivision)

in DAUPHIN County

[22]

(County Code)

on or about FEBRUARY 13, 2017, THROUGH AUGUST 5, 2021



POLICE CRIMINAL COMPLAINT

Docket Number: CR-302-2021	Date Filed: 10 / 5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

2. I ask that a warrant of arrest or a summons be issued and that the defendant be required to answer the charges I have made.
3. I verify that the facts set forth in this complaint are true and correct to the best of my knowledge or information and belief. This verification is made subject to the penalties of Section 4904 of the Crimes Code (18 Pa.C.S. § 4904) relating to unsworn falsification to authorities.
4. This complaint consists of the preceding page(s) numbered 1 through .
5. I certify that this filing complies with the provisions of the *Case Records Public Access Policy of the Unified Judicial System of Pennsylvania* that require filing confidential information and documents differently than non-confidential information and documents.

The acts committed by the accused, as listed and hereafter, were against the peace and dignity of the Commonwealth of Pennsylvania and were contrary to the Act(s) of the Assembly, or in violation of the statutes cited.

(Before a warrant of arrest can be issued, an affidavit of probable cause must be completed, sworn to before the issuing authority, and attached.)

October 5, 2021
(Date) (Year)

HLA IV
(Signature of Affiant)

AND NOW, on this date October 5, 2021 I certify that the complaint has been properly completed and verified.

An affidavit of probable cause must be completed before a warrant can be issued.

12-2-02
(Magisterial District Court Number)

[Signature]
(Issuing Authority)



**POLICE CRIMINAL COMPLAINT**

Docket Number: CR-302-2021	Date Filed: 10 / 5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

in <u>DAUPHIN</u> County	[22]	on or about FEBRUARY 13, 2017, THROUGH MAY 28, 2021
(County Code)		

The acts committed by the accused are described below with each Act of Assembly or statute allegedly violated, if appropriate. When there is more than one offense, each offense should be numbered chronologically. (Set forth a brief summary of the facts sufficient to advise the defendant of the nature of the offense(s) charged. A citation to the statute(s) allegedly violated, without more, is not sufficient. In a summary case, you must cite the specific section(s) and subsection(s) of the statute(s) or ordinance(s) allegedly violated. The age of the victim at the time of the offense may be included if known. In addition, social security numbers and financial information (e.g. PINs) should not be listed. If the identity of an account must be established, list only the last four digits. 204 PA.Code §§ 213.1 – 213.7.)

Inchoate Offense	<input type="checkbox"/> Attempt 18 901 A	<input type="checkbox"/> Solicitation 18 902 A	<input type="checkbox"/> Conspiracy 18 903	Number of Victims Age 60 or Older _____				
<input checked="" type="checkbox"/>	1	691.611		of the	35	1	F3	
Lead?	Offense #	Section	Subsection	PA Statute (Title)	Counts	Grade	NCIC Offense Code	UCR/NIBRS Code
PennDOT Data (if applicable)	Accident Number			<input type="checkbox"/> Interstate	<input type="checkbox"/> Safety Zone	<input type="checkbox"/> Work Zone		
Statute Description (include the name of statute or ordinance): CLEAN STREAMS LAW, UNLAWFUL CONDUCT, 35 P.S. § 691.611, A FELONY OF THE THIRD DEGREE								
Acts of the accused associated with this Offense: See continuation page								

Inchoate Offense	<input type="checkbox"/> Attempt 18 901 A	<input type="checkbox"/> Solicitation 18 902 A	<input type="checkbox"/> Conspiracy 18 903	Number of Victims Age 60 or Older _____				
<input type="checkbox"/>	2	691.611		of the	35	1	M2	
Lead?	Offense #	Section	Subsection	PA Statute (Title)	Counts	Grade	NCIC Offense Code	UCR/NIBRS Code
PennDOT Data (if applicable)	Accident Number			<input type="checkbox"/> Interstate	<input type="checkbox"/> Safety Zone	<input type="checkbox"/> Work Zone		
Statute Description (include the name of statute or ordinance): CLEAN STREAMS LAW, UNLAWFUL CONDUCT, 35 P.S. § 691.611, A MISDEMEANOR OF THE SECOND DEGREE								
Acts of the accused associated with this Offense: See continuation page								

Inchoate Offense	<input type="checkbox"/> Attempt 18 901 A	<input type="checkbox"/> Solicitation 18 902 A	<input type="checkbox"/> Conspiracy 18 903	Number of Victims Age 60 or Older _____				
<input type="checkbox"/>	3	691.301		of the	35	22	M2	
Lead?	Offense #	Section	Subsection	PA Statute (Title)	Counts	Grade	NCIC Offense Code	UCR/NIBRS Code
PennDOT Data (if applicable)	Accident Number			<input type="checkbox"/> Interstate	<input type="checkbox"/> Safety Zone	<input type="checkbox"/> Work Zone		
Statute Description (include the name of statute or ordinance): CLEAN STREAMS LAW, PROHIBITION AGAINST DISCHARGE OF INDUSTRIAL WASTES, 35 P.S. § 691.301, A MISDEMEANOR OF THE SECOND DEGREE								

**POLICE CRIMINAL COMPLAINT**

Docket Number: CR-302-2021	Date Filed: 10 /5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

Acts of the accused associated with this Offense: See continuation page

Inchoate Offense	<input type="checkbox"/> Attempt 18 901 A	<input type="checkbox"/> Solicitation 18 902 A	<input type="checkbox"/> Conspiracy 18 903	Number of Victims Age 60 or Older _____
------------------	--	---	---	---

<input type="checkbox"/>	4	691.401		of the	35	22	M2		
Lead?	Offense#	Section	Subsection	PA Statute (Title)	Counts	Grade	NCIC Offense Code	UCR/NIBRS Code	
PennDOT Data (if applicable)	Accident Number				<input type="checkbox"/> Interstate	<input type="checkbox"/> Safety Zone	<input type="checkbox"/> Work Zone		

Statute Description (include the name of statute or ordinance): **CLEAN STREAMS LAW, PROHIBITION AGAINST OTHER POLLUTIONS, 35 P.S. § 691.401, A MISDEMEANOR OF THE SECOND DEGREE**

Acts of the accused associated with this Offense: See continuation page

Inchoate Offense	<input type="checkbox"/> Attempt 18 901 A	<input type="checkbox"/> Solicitation 18 902 A	<input type="checkbox"/> Conspiracy 18 903	Number of Victims Age 60 or Older _____
------------------	--	---	---	---

<input type="checkbox"/>	5	691.301		of the	35	1	M2		
Lead?	Offense#	Section	Subsection	PA Statute (Title)	Counts	Grade	NCIC Offense Code	UCR/NIBRS Code	
PennDOT Data (if applicable)	Accident Number				<input type="checkbox"/> Interstate	<input type="checkbox"/> Safety Zone	<input type="checkbox"/> Work Zone		

Statute Description (include the name of statute or ordinance): **CLEAN STREAMS LAW, PROHIBITION AGAINST DISCHARGE OF INDUSTRIAL WASTES, 35 P.S. § 691.301, A MISDEMEANOR OF THE SECOND DEGREE**

Acts of the accused associated with this Offense: See continuation page

Inchoate Offense	<input type="checkbox"/> Attempt 18 901 A	<input type="checkbox"/> Solicitation 18 902 A	<input type="checkbox"/> Conspiracy 18 903	Number of Victims Age 60 or Older _____
------------------	--	---	---	---

<input type="checkbox"/>	6	691.401		of the	35	1	M2		
Lead?	Offense#	Section	Subsection	PA Statute (Title)	Counts	Grade	NCIC Offense Code	UCR/NIBRS Code	
PennDOT Data (if applicable)	Accident Number				<input type="checkbox"/> Interstate	<input type="checkbox"/> Safety Zone	<input type="checkbox"/> Work Zone		

Statute Description (include the name of statute or ordinance): **CLEAN STREAMS LAW, PROHIBITION AGAINST OTHER POLLUTIONS, 35 P.S. § 691.401, A MISDEMEANOR OF THE SECOND DEGREE**

Acts of the accused associated with this Offense: See continuation page



POLICE CRIMINAL COMPLAINT
OFFENSE CONTINUATION PAGE

Docket Number: CR-302-2021	Date Filed: 10 / 5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

OFFENSE DESCRIPTION CONTINUATION

Offense #3: The defendant, Energy Transfer L.P., by its own conduct or the conduct of another, pursuant to 18 Pa C.S.A. § 307, did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Energy Transfer L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid and/or flowable fill, an industrial waste, into waters of the commonwealth on numerous occasions between February 13, 2017, and August 5, 2021. Said offenses occurred at the Piney Creek HDD in Woodbury Township, Blair County; Reservoir Road/Everett RR HDD in Blair Township, Blair County; Joanna Road HDD in Caernarvon Township, Berks County; William Penn Avenue HDD and Goldfinch Lane HDD in Jackson Township, Cambria County; Spinner Road HDD in Munster Township, Cambria County; I-81 HDD in Middlesex Township, Cumberland County; Marsh Creek Lake HDD in Upper Uwchlan Township, Chester County; Lisa Drive HDD in West Whiteland Township, Chester County; Glen Riddle HDD in Middletown Township, Delaware County; Raystown Lake HDD in Penn Township, Huntingdon County; Blacklog Creek HDD in Shirley Township, Huntingdon County; Buff-Pitt Highway HDD in Burrell Township, Indiana County; Linden Creek Road HDD and Linden Road HDD in North Strabane Township, Washington County; SR88/Wheeling & Lake Erie Railroad HDD in Union Township, Washington County; Old William Penn Highway HDD in Murrysville, Westmoreland County; I-76 HDD in Hempfield Township, Westmoreland County; Norfolk Southern Railroad HDD in Jeanette, Westmoreland County; Loyalhanna Lake HDD in Loyalhanna Township, Westmoreland County; Snitz Creek/Zinns Mill Road HDD in West Cornwall Township, Lebanon County; and a guided auger bore in West Whiteland Township, Chester County.

Offense #4: The defendant, Energy Transfer L.P., by its own conduct or the conduct of another, pursuant to 18 Pa C.S.A. § 307, did put or place into any of the waters of the Commonwealth, or allowed or permitted to be discharged from property owned or occupied by such person or municipality into any of the waters of the Commonwealth, any substance of any kind or character resulting in pollution as herein defined. Any such discharge is hereby declared to be a nuisance. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Energy Transfer L.P. did negligently allow or permit the discharge of drilling fluid, a substance resulting in pollution, into waters of the Commonwealth on numerous occasions between February 13, 2017, and May 28, 2021. Said offenses occurred at the Piney Creek HDD in Woodbury Township, Blair County; Reservoir Road/Everett RR HDD in Blair Township, Blair County; Joanna Road HDD in Caernarvon Township, Berks County; William Penn Avenue HDD and Goldfinch Lane HDD in Jackson Township, Cambria County; Spinner Road HDD in Munster Township, Cambria County; I-81 HDD in Middlesex Township, Cumberland County; Marsh Creek Lake HDD in Upper Uwchlan Township, Chester County; Lisa Drive HDD in West Whiteland Township, Chester County; Glen Riddle HDD in Middletown Township, Delaware County; Raystown Lake HDD in Penn Township, Huntingdon County; Blacklog Creek HDD in Shirley Township, Huntingdon County; Buff-Pitt Highway HDD in Burrell Township, Indiana County; Linden Creek Road HDD and Linden Road HDD in North Strabane Township, Washington County; SR88/Wheeling & Lake Erie Railroad HDD in Union Township, Washington County; Old William Penn Highway HDD in Murrysville, Westmoreland County; I-76 HDD in Hempfield Township, Westmoreland County; Norfolk Southern Railroad HDD in Jeanette, Westmoreland County; Loyalhanna Lake HDD in Loyalhanna Township, Westmoreland County; Snitz Creek/Zinns Mill Road HDD in West Cornwall Township, Lebanon County; and a guided auger bore in West Whiteland Township, Chester County.



POLICE CRIMINAL COMPLAINT
OFFENSE CONTINUATION PAGE

Docket Number: CR-302-2021	Date Filed: 10/5/2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

OFFENSE DESCRIPTION CONTINUATION

Offense #1: The defendant, Energy Transfer L.P., by its own conduct or the conduct of another, pursuant to 18 Pa C.S.A. § 307, did fail to comply with any rule or regulation of the department or fail to comply with any order or permit or license of the department, violated any of the provisions of this act or rules and regulations adopted hereunder, or any order or permit or license of the department, caused air or water pollution, or hindered, obstructed, prevented or interfered with the department or its personnel in the performance of any duty hereunder or violated the provisions of 18 Pa.C.S. section 4903 or 4904. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Energy Transfer L.P. did knowingly hinder the department by failing to report environmental incidents on numerous occasions between February 13, 2017, and May 28, 2021. Said offenses occurred at the Piney Creek HDD in Woodbury Township, Blair County and/or Reservoir Road/Everett RR HDD in Blair Township, Blair County and/or Joanna Road HDD in Caernarvon Township, Berks County and/or William Penn Avenue HDD and/or Goldfinch Lane HDD in Jackson Township, Cambria County and/or Spinner Road HDD in Munster Township, Cambria County and/or I-81 HDD in Middlesex Township, Cumberland County and/or Marsh Creek Lake HDD in Upper Uwchlan Township, Chester County and/or Lisa Drive HDD in West Whiteland Township, Chester County and/or Glen Riddle HDD in Middletown Township, Delaware County and/or Raystown Lake HDD in Penn Township, Huntingdon County and/or Blacklog Creek HDD in Shirley Township, Huntingdon County and/or Buff-Pitt Highway HDD in Burrell Township, Indiana County and/or Linden Creek Road HDD and/or Linden Road HDD in North Strabane Township, Washington County and/or SR88/Wheeling & Lake Erie Railroad HDD in Union Township, Washington County and/or Old William Penn Highway HDD in Murrysville, Westmoreland County and/or I-76 HDD in Hempfield Township, Westmoreland County and/or Norfolk Southern Railroad HDD in Jeanette, Westmoreland County and/or Loyalhanna Lake HDD in Loyalhanna Township, Westmoreland County and/or Snitz Creek/Zinns Mill Road HDD in West Cornwall Township, Lebanon County.

Offense #2: The defendant, Energy Transfer L.P., by its own conduct or the conduct of another, pursuant to 18 Pa C.S.A. § 307, did fail to comply with any rule or regulation of the department or fail to comply with any order or permit or license of the department, violated any of the provisions of this act or rules and regulations adopted hereunder, or any order or permit or license of the department, caused air or water pollution, or hindered, obstructed, prevented or interfered with the department or its personnel in the performance of any duty hereunder or violated the provisions of 18 Pa.C.S. section 4903 or 4904. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Energy Transfer L.P. did negligently violate Pennsylvania rules and regulations, including Title 25, § 78a.68a (f), by using unapproved drilling fluid additives on multiple occasions between February 13, 2017, and May 28, 2021. Said offense occurred at the North Zinns Mill Road HDD, located in West Cornwall Township, Lebanon County and/or one or more of the following locations: Allegheny, Washington, Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lancaster, Berks, Chester, and/or Delaware Counties.



Docket Number: CR-302-2021	Date Filed: 10 / 5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

AFFIDAVIT of PROBABLE CAUSE

Your affiant, H. Justus Brambley, IV, Supervisory Special Agent, Pennsylvania Office of Attorney General (hereinafter: OAG), being duly sworn, deposes and states:

Your affiant has been conducting an investigation into criminal activity associated with the construction of the Mariner East II pipeline conducted by Sunoco Pipeline L.P./Energy Transfer (ET). On May 28, 2021, the 45th Statewide Investigating Grand Jury issued Presentment No. 27 recommending that criminal charges be filed against Sunoco Pipeline L.P./Energy Transfer for violations of the Pennsylvania Clean Streams Law. The aforementioned Presentment was accepted by the Honorable Richard A. Lewis, Supervising Judge of the 45th Statewide Investigating Grand Jury by Order dated May 28, 2021.

Your affiant has reviewed the above cited Presentment and having been present at all proceedings, finds that the factual findings described therein correspond to the OAG Investigative findings. Your affiant is adopting the presentment and incorporating it into this Affidavit of Probable Cause (a copy of the presentment is attached hereto). Your affiant has reviewed the sworn testimony given by the witnesses before the Grand Jury and finds that it is consistent with the information contained within the Presentment. Your affiant has reviewed the evidence presented to the Grand Jury and finds that it comports with the results of the OAG investigative efforts and findings as to the allegations contained in this criminal complaint.

Subsequent to the expiration of the 45th Statewide Investigating Grand Jury, the OAG received a referral from the Department of Environmental Protection (DEP), pursuant to the Commonwealth Attorneys Act, 71 P.S. §732-205(a)(6). Your affiant reviewed referral documents concerning a guided auger bore located at Briar Road in West Whiteland Township, Chester County. According to documents provided by DEP, ET utilized a guided auger bore on dates between April 4, 2021 and September 3, 2021, to drill approximately 350 feet under a wetland and in the area of Valley Creek and several of its tributaries.

According to DEP inspection reports, the guided auger bore at Briar Road caused multiple subsidences along the bore path on July 7, 12, 14, and August 5, 2021. ET excavated approximately 200 square feet of the wetland and 21.5 square feet of Valley Creek in an attempt to investigate the extent of the subsidences. ET then deposited approximately 45 cubic yards of flowable fill (also referred to as grout) directly into voids created by the subsidences, without prior DEP approval.

Your affiant states that based upon the above facts, there is probable cause to believe that the defendant, ET, committed the acts alleged therein, in violation of Pennsylvania law and respectfully requests the issuance of a summons.

10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM 10/5/2021 10:12:21 AM



POLICE CRIMINAL COMPLAINT
OFFENSE CONTINUATION PAGE

Docket Number: CR-302-2021	Date Filed: 10/5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

OFFENSE DESCRIPTION CONTINUATION

Offense #5: The defendant, Energy Transfer L.P., by its own conduct or the conduct of another, pursuant to 18 Pa C.S.A. § 307, did place, or permitted to be placed, or discharged or permitted to flow, or continued to discharge or permit to flow, into any waters of the Commonwealth any industrial wastes. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Energy Transfer L.P. did negligently discharge, permit to flow or continue to discharge or permit to flow, drilling fluid, an industrial waste, into private water supplies, on multiple occasions between February 13, 2017, and May 28, 2021. Said offense occurred in one or more of the following locations: Allegheny, Washington, Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lebanon, Lancaster, Berks, Chester, and/or Delaware Counties.

Offense #6: The defendant, Energy Transfer L.P., by its own conduct or the conduct of another, pursuant to 18 Pa C.S.A. § 307, did put or place into any of the waters of the Commonwealth, or allowed or permitted to be discharged from property owned or occupied by such person or municipality into any of the waters of the Commonwealth, any substance of any kind or character resulting in pollution as herein defined. Any such discharge is hereby declared to be a nuisance. To wit: During the construction of the Mariner East 2 pipeline, the defendant, Energy Transfer L.P. did negligently allow or permit the discharge of drilling fluid, a substance resulting in pollution, into private water supplies, on multiple occasions between February 13, 2017, and May 28, 2021. Said offense occurred in one or more of the following locations: Allegheny, Washington, Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lebanon, Lancaster, Berks, Chester, and/or Delaware Counties.



POLICE CRIMINAL COMPLAINT

Docket Number: CR-302-2021	Date Filed: 10 / 5 / 2021	OTN/LiveScan Number	Complaint/Incident Number 49-1237
Defendant Name:	First: ENERGY	Middle: TRANSFER	Last: L.P.

I, SSA H. JUSTUS BRAMBLEY, IV, BEING DULY SWORN ACCORDING TO THE LAW, DEPOSE AND SAY THAT THE FACTS SET FORTH IN THE FOREGOING AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

I CERTIFY THAT THIS FILING COMPLIES WITH THE PROVISIONS OF THE CASE RECORDS PUBLIC ACCESS POLICY OF THE UNIFIED JUDICIAL SYSTEM OF PENNSYLVANIA THAT REQUIRE FILING CONFIDENTIAL INFORMATION AND DOCUMENTS DIFFERENTLY THAN NON-CONFIDENTIAL INFORMATION AND DOCUMENTS.


(Signature of Affiant)

Sworn to me and subscribed before me this 5TH day of OCTOBER 2021

10/05/2021 Date , Magisterial District Judge

My commission expires first Monday of January, 2022



Appendix F
Energy Transfer Mariner 2 East Pipeline
Forty-Fifth Statewide Investigating
Grand Jury
Presentment to the Court
May 28, 2021

IN THE COURT OF COMMON PLEAS
DAUPHIN COUNTY, PENNSYLVANIA

IN RE: : SUPREME COURT OF PENNSYLVANIA
: 13 M.D. MISC. DKT. 2019
THE FORTY-FIFTH STATEWIDE :
: DAUPHIN COUNTY COMMON PLEAS
INVESTIGATING GRAND JURY : CP-22-MD-607-2019
:
: NOTICE NO. 56

ORDER SEALING PRESENTMENT NO. 27

The Court has accepted Presentment No. 27. This Presentment shall be sealed and no person shall disclose a return of the Presentment except when necessary for issuance and execution of process, or as otherwise directed or permitted by order of the Supervising Judge.

SO ORDERED this 28th day of May, 2021

BY THE COURT:



The Honorable Richard A. Lewis
Supervising Judge
The Forty-Fifth Statewide Investigating Grand Jury

IN THE COURT OF COMMON PLEAS
DAUPHIN COUNTY, PENNSYLVANIA

IN RE: : SUPREME COURT OF PENNSYLVANIA
: 13 M.D. MISC. DKT. 2019
THE FORTY-FIFTH STATEWIDE :
: DAUPHIN COUNTY COMMON PLEAS
INVESTIGATING GRAND JURY : CP-22-MD-607-2019
:
: NOTICE NO. 56

ORDER ACCEPTING PRESENTMENT NO. 27

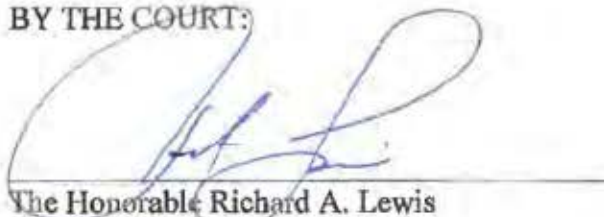
1. The Court finds Presentment No. 27 of the Forty-Fifth Statewide Investigating Grand Jury is within the authority of said Grand Jury and is in accordance with the provisions of the Investigating Grand Jury Act, 42 Pa.C.S. §§ 4541 *et seq.* Accordingly, this Presentment is accepted by the Court.

2. The County for conducting the trial of all charges pursuant to this Presentment shall be Dauphin County.

3. It is hereby recommended that the Attorney General of the Commonwealth of Pennsylvania, or his designee, institute appropriate criminal proceedings in the aforesaid county.

SO ORDERED this 28th day of May, 2021.

BY THE COURT:



The Honorable Richard A. Lewis
Supervising Judge


The Forty-Fifth Statewide Investigating Grand Jury

**IN THE COURT OF COMMON PLEAS
DAUPHIN COUNTY, PENNSYLVANIA**

IN RE:	: SUPREME COURT OF PENNSYLVANIA
	: 13 M.D. MISC. DKT. 2019
THE FORTY-FIFTH STATEWIDE	:
	: DAUPHIN COUNTY COMMON PLEAS
INVESTIGATING GRAND JURY	: CP-22-MD-607-2019
	:
	: NOTICE NO. 56

PRESENTMENT NO. 27

We, the Forty-Fifth Statewide Investigating Grand Jury, duly charged to inquire into offenses against the criminal laws of the Commonwealth, have obtained knowledge of such matters from witnesses sworn by the Court and testifying before us. We find reasonable grounds to believe that various violations of the criminal laws have occurred. So finding with not fewer than twelve concurring, we do hereby make this Presentment to the Court.



Foreperson-
The Forty-Fifth Statewide Investigating Grand Jury

Dated: May 28, _____, 2021

INTRODUCTION

We, the members of the Forty-Fifth Statewide Investigating Grand Jury, having received and reviewed evidence regarding allegations of violations of the Clean Streams Law and related laws, occurring in various counties in Pennsylvania, pursuant to Notice of Submission of Investigation Number 56, do hereby make the following findings of fact, conclusions, and recommendation of charges.

FINDINGS OF FACT

This presentment arises from an investigation of environmental crimes that occurred during the installation of the Mariner East 2 Pipeline in the Commonwealth of Pennsylvania. Sunoco Pipeline L.P. was the permittee for the pipeline project and in turn hired multiple contractors to oversee the construction. Because of the size of the project, it was divided into six “spreads” within Pennsylvania, with each spread spanning a particular geographical region of the project. Each spread had its own prime construction contractor, who was then in charge of finding subcontractors to handle portions of the project.

Spread 1 covered the westernmost portion of the project and included Washington, Allegheny and Westmoreland counties. Spread 2 included Indiana and Cambria counties. Spread 3 covered Blair, Huntingdon, Juniata and Perry counties. Spread 4 included Cumberland, York and Dauphin counties. Spread 5 spanned Lebanon, Lancaster and Berks counties. Finally, spread 6 included Chester and Delaware counties.

Environmental laws exist to hold various industries accountable for activity that causes pollution—whether to the soil or to the water or to the air. These laws exist to ensure that all citizens of Pennsylvania are able to enjoy their constitutional right to clean air and pure water.

The Grand Jury finds that Sunoco criminally failed to properly report and address the environmental hazards created by its operations during the entirety of the pipeline project.

I. A Description of the Company: Sunoco

Sunoco Pipeline, L.P. was originally incorporated in 1902 and is based in Williamsville, New York. The company is a diversified energy company with \$6.2 billion in assets. The focus of the company is divided into five segments: exploration and production, pipeline and storage, gathering, utility, and energy marketing. Sunoco Pipeline is a subsidiary of Sunoco Logistics Partners, L.P. In 2017, Sunoco Logistics merged with Energy Transfer Partners, L.P. Energy Transfer Partners began in 1996 as a small intrastate natural gas pipeline operator in Texas. Over time and through acquisitions, ETP became a leader in various segments of the energy industry. Its current assets include more than 4,800 miles of pipelines with an aggregate transportation capacity of more than 3,000 million barrels per day (MBbls/d). The pipeline assets transport natural gas liquids (NGLs) across Texas, as well as from the Marcellus and Utica Shales, which run through Pennsylvania, to the Marcus Hook Industrial Complex on the Delaware River. At the end of 2020, the company had the capacity to export just over 1 million barrels of NGL per day.

II. A Brief Primer on Pipeline Installation and Horizontal Directional Drilling

Pipelines are utilized across the Commonwealth for a variety of purposes. They are classified by the type of product they are carrying. “Gathering lines” transport unprocessed natural gas from a well pad to a compressor station or other facility to process the gas. “Transmission lines” move the processed gas to various distribution companies. Transmission lines can span thousands of miles and may be pressurized to between 200 and 1,500 pounds per

square inch (psi). Once the natural gas reaches the distribution company, an odorant is introduced and the pressure is reduced to a distribution level, which is between .25 and 200 psi. “Distribution lines” then transport the gas to consumers.

These various pipelines form a complex spiderweb underneath the ground of Pennsylvania. Natural gas companies are often replacing older lines or installing additional pipeline to transport product across the Commonwealth. In order to install new pipeline or replace older sections, a company must employ one of two methods: trenching or tunneling. Trenching involves using earthmoving equipment to dig out a ditch. Once the trench has been dug, the pipe can be laid inside and covered with earth. The tunneling method is usually used in more heavily populated areas, as it can cross a road or a waterway underground without disturbing the surface. The tunnels are constructed by drilling underground in a horizontal direction, which is most commonly accomplished by a process known as horizontal directional drilling (HDD).

Horizontal directional drilling employs high pressure fluids that help to cut through the rock. The drill follows a path underground that must be carefully surveyed in advance. Various instruments can be utilized to ensure that the drill is following the correct path as it is steered underground. The drilling fluid is often composed of water and bentonite clay as well as other additives that the drilling company determines are necessary. According to one driller who testified before the Grand Jury, the drilling fluid is “the blood or the life line of the drill.” The fluid helps to lubricate the drill bit, but it can also harden and aid in keeping the hole open. The drilling fluid also assists in carrying the drill cuttings out of the hole, because the fluid flows back up and out of the tunnel along with the cuttings made by the drill bit. The fluid is then treated to remove the solids so that it can be injected back down into the drill path.

HDD is the chosen technique to reduce or avoid environmental impacts on the surface of the land. However, when the drilling does not go according to plan, environmental impacts do occur. A professional geologist explained that drillers must pay very close attention to the pressure of the drilling fluid. He explained that the pressures used are so high that they can fracture rock, and therefore must be closely monitored. Fluid can enter a small fracture and “blow that fracture open and continue to follow that fracture for as long as it can, sort of like a pressure relief valve.” The result is a “loss of returns” or “loss of circulation.” Instead of returning to the hole’s entrance to be treated and reused, the fluid disappears into the formation through fractures or voids in the rock that are naturally occurring or the result of prior mining activity. The fluid can also travel through underground water and ultimately end up in drinking supplies. In addition, drilling fluid can also spill out onto the surface. Because of the potential impacts to lands and waters of the Commonwealth, these incidents have to be reported to the Pennsylvania Department of Environmental Protection pursuant to general regulations and the specific permits that authorize the drilling project.

A drilling company can try to prevent such leaks and spills by increasing the viscosity of the drilling fluid. However, this is not foolproof. As a witness testified, “if there is enough water present in the ground, it is going to thin out our drilling fluid,” which then allows it to flow into smaller fractures and travel through the aquifer.

When drilling fluid fails to return to the mouth of the tunnel, the drilling company will send men to walk along the drill path to see if they can find the leak. Regardless of whether fluid comes to the surface, however, it can create significant environmental impact. The Grand Jury heard testimony from Steven Brokenshire, an Environmental Group Manager for DEP’s Bureau of Program Planning and Management, who oversees the Mineral Resource Program Specialists.

He stated that often, the fluid that gets lost below the surface can find its way into private water wells. He noted that the majority of Pennsylvanians get their water supply from private water wells that are drilled into a groundwater source. Ideally, the fluid that is forced into the borehole will remain in the hole, pick up rock cuttings, and travel back up the borehole and into the drilling pit. But the fluid will take the path of least resistance. If that path is a fracture outside of the borehole, the fluid will follow it. Brokenshire explained that a water well is sometimes that least resistant pathway.

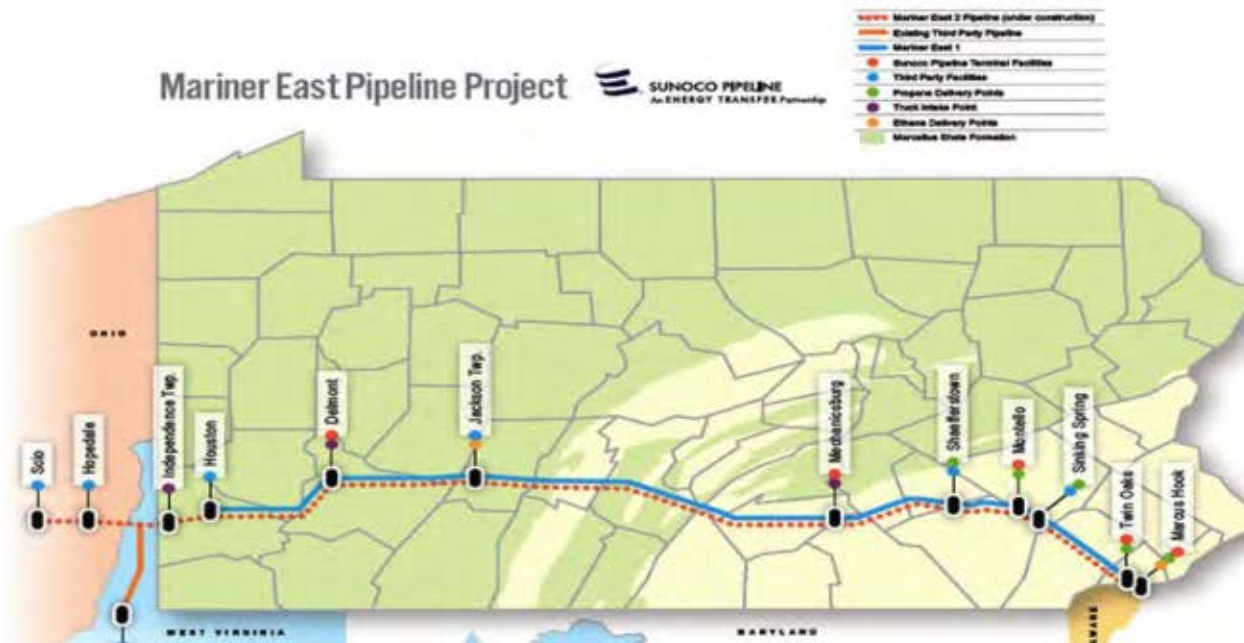
A loss of returning fluid can also be a sign of an “inadvertent return” – industry nomenclature for drilling fluid that does not remain underground, but makes its way to the surface. Fluid can surface in wetlands or in bodies of water, or even in more elevated “uplands.”

The impact of an inadvertent return or a loss of circulation can be compounded by the type of additives used during the drilling process. The Grand Jury learned that additives approved by DEP for use during the HDD process are also used in the drilling of water wells, which presumably makes them safe for consumption if they should happen to get into a drinking supply. The industry certification for products approved for use in the drilling of water wells is called NSF/ANSI 60. The bentonite that is used in drilling fluid for HDD projects is NSF/ANSI 60 certified. Some of the additives used by drillers during this pipeline project, however, were not on DEP’s approved list of additives. In addition, some of these uncertified additives were considered “proprietary,” meaning that drillers are not required to divulge the nature of the chemicals being injected into the ground, and potentially into wells, lands, and bodies of water.

III. The Mariner East 2 Pipeline Project

Sunoco sought approval to construct a new pipeline to transport natural gas liquids from Ohio and the Pittsburgh area to the Marcus Hook facility in Delaware County. The proposal was

for the new pipeline to run generally along the same location as an existing pipeline, Mariner East 1. The new pipeline would traverse 17 counties in the southern tier of Pennsylvania. Along much of the route, the project would actually include two new pipelines, a 16-inch line and a 20-inch line. The route spanned more than 300 miles.



The project proposed that most of Spread 1 (Allegheny, Washington and part of Westmoreland Counties), would include only installation of a 20-inch pipeline. Over the remainder of the Spreads (part of Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lebanon, Lancaster, Berks, Chester and Delaware Counties), the project would include installation of the 20-inch line followed by the 16-inch line.

In order to move forward on this project, various permits were required. Sunoco sought three kinds of permits: Water Obstruction and Encroachment Permits under Chapter 105 of DEP's regulations, which are specific to each county that the project would traverse; an Erosion and Sediment Control Permit under Chapter 102 of the regulations, for each DEP region through

which the pipeline traveled; and a general permit for discharges from hydrostatic testing of tanks and pipelines under the National Pollutant Discharge Elimination System. Additionally, Sunoco submitted requests for approvals for modifications to and additions of pump stations, and for other activities, that are subject to federal and state air regulations.

The Chapter 102 and Chapter 105 permit applications were originally submitted to DEP in the summer of 2015. Thus began a time-intensive review process. DEP deemed the applications “administratively complete” by June 2016. At that time, DEP opened up the applications to a public comment period which included five public hearings held across the Commonwealth. The comment period ran from June 25, 2016 through August 24, 2016. After additional back-and-forth between the Department and Sunoco, the final permits were issued on February 13, 2017.

As a condition of the final permit, DEP required Sunoco to station licensed professional geologists at each HDD site. Witnesses from DEP testified that the reason for this additional layer of oversight was to ensure that issues at these drills could be addressed before they resulted in environmental harm. That precaution, however, did not function as intended. The Grand Jury learned that, although these geologists completed daily reports of their observations, the reports were not turned over to DEP. Desiree Henning Dudley, the Environmental Group Manager for the Waterways and Wetlands Program of DEP’s South Eastern Regional Office, testified that her program could have used a full time geologist just to review these daily reports, which were full of information about losses of circulation and inadvertent returns. She stated that “[i]n my mind, that expertise would have been key in having on my team in order to oversee these types of records for these kinds of activities.”

DEP, however, was not provided the resources to employ such additional expertise – nor did it fully respond to that reality. Mariner East 2 was a massive construction project that literally

spanned the state. It was thus beyond the scope of previous oversight efforts. The lack of geologists to review records from HDD locations was just one manifestation of the difficulty. DEP was also in need of other personnel, such as inspectors to patrol the spreads to oversee the actual construction process. The various regions made up for this by “borrowing” employees from other programs within DEP, and from County Conservation Districts. Yet no special training was provided to this borrowed staff, or to agency employees who had limited institutional knowledge of the HDD process itself. As a result, DEP could not be everywhere it needed to be on a project of this unprecedented magnitude.

IV. Work Begins on the Mariner East 2 Project

Once all the permits had been acquired, work across the various spreads of the project began. Sunoco dispatched prime contractors to each spread to begin the work of preparing the ground for the placement of the pipeline. Each prime contractor in turn hired subcontractors to complete the portions of the project that required horizontal directional drilling. Evidence before the Grand Jury established, however, that Pennsylvania lacked a sufficient number of HDD contractors for the job. A DEP witness testified to

Sunoco's desire to get under construction quickly. And given the number of HDDs that they planned for on this project, they were searching high and low for any HDD driller across the country who could come and work on the pipeline in order to get it done as quickly as possible.

As a result, Sunoco and its prime contractors hired HDD subcontractors from across the country who were unfamiliar with Pennsylvania geology and water features as well as the regulatory landscape that existed in the state. The subcontractors applied their standard practices to an unusual environment, which resulted in environmental impacts.

V. And Problems Follow Almost Immediately

Before the project began in late winter/early spring of 2017, Sunoco representatives had assured DEP that the horizontal directional drilling process it planned to employ would avoid the environmental impacts of conventional pipeline construction because the work would all be in underground rocks. A former Sunoco employee, however, testified before the Grand jury that such an assurance never should have been made, as the geology in Pennsylvania includes fractured rock that can lead to environmental impacts from the HDD process. In addition to the problematic geology, this former Sunoco employee indicated that the people hired to do the work were young and with limited actual experience. Leaks and spills of drilling fluid began to occur almost immediately.

VI. Problems at Specific Locations

The Grand Jury reviewed professional geologist logs, drill logs and other documentation related to 21 specific locations along the pipeline project. The Grand Jury also heard testimony from two Professional Geologists employed by ARM Group, LLC, a science and engineering firm. ARM Group, LLC was retained to review the professional geologist and drilling logs related to these specific locations in order to give an accounting as to the breadth and depth of the environmental incidents that took place.

a. Raystown Lake

Raystown Lake is a large recreational lake in Huntingdon County that was first constructed between 1907 and 1912 for hydroelectric power, and was later expanded with the construction of a second dam in 1973. A section of the pipeline was to be routed directly underneath the lake for a distance of 2,100 feet.

Construction on the 20-inch pipe began in March 2017 with Laney Directional Drilling as the subcontractor. In May, however, the drilling equipment broke, and Laney began cleaning up the site to prepare for shutdown over the summer recreation season. During the roughly two months that Laney was on site, the contractor lost circulation—meaning drilling fluid and its additives flowed outside of the drilling path—eight separate times. None of these incidents were reported to DEP, as required. The volume of fluids lost during these eight incidents totaled roughly 780,000 gallons.

Once the recreational season ended and drilling could recommence, work was taken over by a new subcontractor, Michels Directional Drilling. This time drilling was completed, and the 20-inch pipe was installed by the end of October. During this period, Sunoco reported one loss of circulation to DEP on October 12, 2017, but did not report the amount of fluid lost. Work began on the parallel 16-inch line on November 16, 2017. Sunoco reported another loss of circulation on December 11, 2017, a loss of 2,000 gallons. Work continued until December 20, 2017. This time, drilling fluid flowed directly into the lake. The drill was shut down so that DEP could investigate. DEP issued a “Notice of Violation” on December 22, 2017 for the leak, *i.e.*, “inadvertent return.”

Investigation revealed that Michels had lost drilling fluid 22 different times during the drilling of the 20-inch line and another nine times during work on the 16-inch line. The contractor reported these losses to Sunoco, but Sunoco only reported two of them to DEP. The volume of fluid lost totaled close to 3 million gallons.

In an April 24, 2019 letter to DEP, Sunoco claimed that, due to inadvertent miscommunication, its management never learned of the losses of fluid.

Evidence before the Grand Jury indicates that this claim was false. The project manager for Michels, the HDD subcontractor, stated that if something was not reported on this drill, it is not because people were not there to see it. The Construction Manager for the spread testified that it is “preposterous” for someone to imply that Sunoco’s environmental team was unaware.

DEP directed Sunoco to investigate the lake bottom to determine whether or not any of the lost fluids were present. Divers collected samples to analyze for the presence of bentonite, the main additive in drilling fluid. Out of 576 samples collected from the lake bottom, 168 confirmed the presence of bentonite. The total area of the lake bottom on which the bentonite lay was estimated to be approximately 3.67 acres. Subsequent imaging showed that in some areas the bentonite was almost 2 feet deep.

After a hiatus of more than two years, drilling recommenced on January 29, 2020. The pipeline was installed in April 2020, this time without further leaks. ARM Group LLC reviewed the logs and found thirty one instances of losses of circulation on these drills and one inadvertent return. Many of the losses of circulation were not reported to DEP.

b. Loyalhanna Lake

Loyalhanna Lake is a large recreational lake in Westmoreland County. A section of the project was designed to cross below the lake with both 16- and 20-inch pipelines. Lone Star Drilling began work on the 20-inch pipeline in May

2017. The drill experienced a loss of circulation at 9:40 a.m. the very next day. But drilling continued, and within two hours an inadvertent return was observed. Multiple leaks were then discovered at various locations along the eastern side of the lake. In spite of these leaks, drilling continued, and the following day fluid spilled into the lake itself. Drilling still did not stop. On subsequent days, more fluid losses occurred, and more fluid was observed within the lake. Lone Star began using a more viscous drilling fluid, but still lost circulation, and leaks were detected throughout the park area. The problems continued until a relief well was drilled in June 2017 in the hope that some of the lost fluid would flow into the hole, but the fluid overflowed, and there were additional spills into the lake in July, when the 20-inch pipe was finally installed. DEP issued a Notice of Violation for eight different inadvertent returns.

Sunoco was permitted to begin work on the parallel 16-inch pipeline in March 2020, using subcontractor Michels. Losses of circulation occurred on March 16 (1,000 gallons), March 17 (2,000 gallons), and March 19 (650 gallons), April 3 and April 7 before the work was finally completed on April 11, 2020. ARM Group, LLC reviewed the logs and found twenty four instances of losses of circulation on these drills and twenty three inadvertent returns. Most of these losses of circulation were not reported to DEP.

c. Marsh Creek Lake

Marsh Creek Lake in Chester County is another of Pennsylvania's large recreational lakes with fishing and boat rentals offered for visitors. A section of the project was designed to install 20- and 16-inch pipeline underneath Milford,

Little Conestoga and Highview Road as well as an unnamed tributary that flowed to Marsh Creek and some wetlands in the area. The tunneling would run through a residential area, and very close to Marsh Creek Lake.

Drilling began in May 2017, with Mears Group, Inc. as the HDD subcontractor. On June 19, 2017, fluid was lost and the borehole partially collapsed. The following day, 22,113 gallons escaped. Losses continued. A geologist reported at the time that “approximately 42,000 gal of [drilling fluid] mud have been added to the borehole with no returns,” meaning that all the fluid escaped. The next day the report concludes: “Consistent mud loss. No estimate available.”



Photo taken by Lieschen Fish, PG with GES, Inc.

At the same time, fluid emerged from the ground and spilled out into a wetland, resulting in an estimated loss of 200 gallons. This inadvertent return contaminated both the wetland and an unnamed tributary of Marsh Creek Lake. Another leak occurred in August. DEP issued a Notice of Violation for that leak, but two weeks later there was another leak in the same spot. Installation of the 16-inch pipe was completed in November.

Drilling for the 20-inch pipeline began in February 2020, with Michels as the HDD subcontractor. In March, 500 gallons of fluid escaped, and a week later it happened again.

After a work stoppage for COVID-19, drilling resumed in May, but by June fluid was again escaping, eventually totaling approximately 4,600 gallons in a single day. Fluid losses occurred for the next four days: 4,784 gallons; then 6,400 gallons; then 2,250 gallons; then 2,000 gallons.

Drilling continued until August 2020 when fluid emerged from the ground and spilled into Park Cove and nearby wetlands with the estimated loss of approximately 7,712 gallons of drilling fluid. Sunoco estimated approximately 400 gallons escaped into Marsh Creek Lake, but a DEP engineer calculated the loss to actually be between 21,000 and 28,000 gallons. The location was almost exactly the spot where a leak had occurred three years earlier. Aerial photographs show the spread of the drilling fluid plume outward from Park Cove after the fluid was carried into the lake by the water flowing through the unnamed tributary.



Shortly thereafter, drilling was suspended; it took 100 to 150 people to contain and clean up the spread of the fluid. Drilling at the site remains in limbo at the present. ARM Group, LLC reviewed the logs and found eighteen instances of losses of circulation on these drills and five inadvertent returns. Many of these losses of circulation were not reported to DEP.

d. Lisa Drive

Drilling at this location in Chester County was designed to travel underneath the Exton Bypass, Norfolk Railroad, Amtrak Railway, and in close proximity to a wetland and a neighborhood. Drilling began in April 2017 with Oz Directional Drilling as the HDD subcontractor, but the borehole soon began to fill with groundwater. Work was temporarily halted, but started again in late June; by

July, operators realized that drilling fluid was escaping. Drillers decided to give up on the tunnel and start a new one, but fluid escaped there too. In October, drilling fluid emerged from the ground at 479 Lisa Drive.



In November there was another leak, causing approximately 500 gallons of drilling fluid to flow downhill toward 475 Lisa Drive. At the same time, a three-foot wide, two-foot deep sinkhole also opened up at 479 Lisa Drive.



DEP issued a Notice of Violation for the leaks, spills, and subsidences. While drilling was paused, the subsidence at 479 Lisa Drive expanded to nine feet wide by 9.5 feet long and 3.75 feet deep. Drilling resumed in February 2018, and a 16-inch pipe was pulled into place. But in March, another sinkhole developed, at 491 Lisa Drive, down the road from the initial sinkhole. DEP approved Sunoco's request to forego the HDD process for the installation of the 20-inch pipeline and to instead utilize open trench and direct bore technologies. ARM Group, LLC reviewed the logs and found twelve instances of losses of circulation on these drills and three inadvertent returns. Most of these losses of circulation were not reported to DEP.

e. Glen Riddle

The Mariner East Pipeline cuts through the common parking areas of Tunbridge Apartments and Glen Riddle Station Apartments. These two apartment complexes are situated less than a quarter mile from each other on opposite sides of Glen Riddle Road in Middletown Township, Delaware County. A wetland, leading to Chester Creek, flanks Tunbridge Apartments on the south. About a tenth of a mile north of Glen Riddle Apartments, the pipeline runs beneath the SEPTA railroad tracks.

The original design required HDD installation of a 16-inch and 20-inch pipeline in this densely populated location. The driller subcontractor, Oz, began drilling a 16-inch pipeline in June 2017. A little over one month later, Sunoco reported the first inadvertent return after discharging 1,500 gallons of drilling solution into a nearby stream. During 2017, Sunoco reported a number of inadvertent returns that emerged

either into the surrounding waterways or onto the ground, totaling approximately 1,800 gallons. DEP issued three Notices of Violation to Sunoco in 2017. In requesting permission to restart drilling, Sunoco acknowledged that the recurring inadvertent returns likely resulted from the impact of the HDD on the underlying fractured geology at the site.

After drilling resumed in April 2018, so did the inadvertent returns, beginning with 150 gallons emerging on land at the Tunbridge Apartments. The next day, a third party informed DEP of another inadvertent return, totaling 8,000 gallons. During the next five days, Sunoco notified DEP of three additional inadvertent returns that emerged on the grounds at Tunbridge Apartments. When drilling hit the water table, DEP shut down the drill site and issued a Notice of Violation for the inadvertent returns; for failing to file timely reports, and for failing to notify the Department of the 8,000-gallon inadvertent return. DEP then recommended new geophysical surveys “to ensure the safety of residences, utilities, and waterways.”

Drilling resumed in May 2018, immediately triggering inadvertent returns into a stream and onto the landscaping of Tunbridge Apartments. Four days later, another inadvertent return emerged, discharging 50 gallons of drilling fluid into the landscaping of Tunbridge Apartments. When drilling resumed four days later, so did the inadvertent returns, both into a Chester Creek tributary and onto the grounds of Tunbridge Apartments. Notwithstanding the ongoing inadvertent returns, Sunoco finally completed the pilot hole drilling on May 24, 2018. Reaming, the next phase of drilling, began on June 1, 2018; Sunoco continued to manage the ongoing inadvertent returns that originally surfaced during the pilot hole drilling. In July, four inadvertent returns occurred, discharging about 200 gallons of drilling fluid into the adjacent

wetland. In the weeks that followed, Sunoco's HDD activities resulted in 16 inadvertent returns, totaling approximately 900 gallons of discharged drilling fluid into the adjacent wetland, surrounding streams, and onto land.



In August 2018, a twelve-foot-deep, four-foot-wide hole appeared in the wetland and another similar hole of unknown depth appeared in the middle of the Tunbridge Apartments parking lot the following day. On October 3, 2018, DEP approved Sunoco's requested change in methodology to complete a shortened HDD installation of a segment of the 16-inch pipeline, which triggered additional inadvertent returns.

During a little over a year of drilling at the site, Sunoco's retrospective analysis revealed inadvertent returns totaling approximately 11,000 gallons of drilling fluid impacting the wetland, nearby waterways, and the Tunbridge grounds. It took eight months of work to clean up and restore the impacted areas around Tunbridge Apartments.

Sunoco thereafter agreed to abandon its HDD methodology entirely at this site and instead to employ a variety of other pipeline construction methodologies, including conventional open trench, conventional auger bore, and direct bore to complete the installation of the 16-inch and 20-inch pipelines through the Tunbridge and Glen Riddle Station Apartment complexes. Construction is ongoing. ARM Group, LLC reviewed the logs and found thirty four instances of losses of circulation on these drills and thirty nine inadvertent returns. Most of these losses of circulation were not reported to DEP.



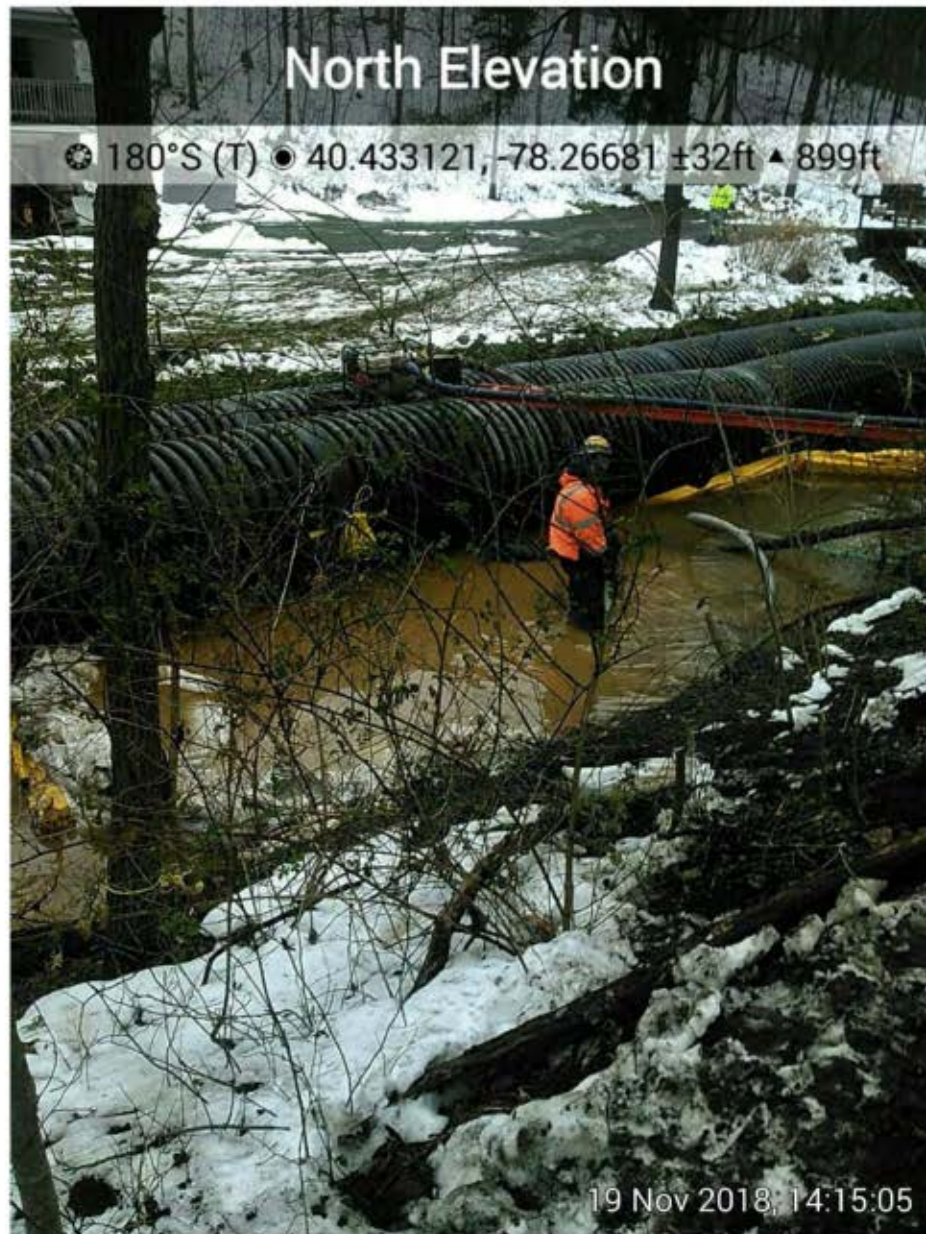
f. Piney Creek

This drilling site is located in Woodbury Township, Blair County and was designed to travel under a wetland, a road and a portion of Piney Creek. Drilling at this location was conducted by Blacklick Drilling and commenced in May 2017. Within two weeks, approximately 6,000 gallons of drilling fluid was lost. Higher viscosity bentonite was injected into the borehole in an attempt to seal off any pathways through which the fluid was leaking, but tens of thousands of gallons continued to escape.

Drilling halted for two months, and a different subcontractor, Michels, was brought in as the driller. By October 2018, however, drilling fluid was observed in two springs, one of which flowed directly into Piney Creek. DEP issued a Notice of Violation.

Drilling continued, but so did the inadvertent returns into Piney Creek. DEP issued another Notice of Violation, but the cycle repeated, with more fluid flowing into waterways, over and over for several weeks.

Sunoco began installing pipes in Piney Creek in order to divert all of the water out of the stream and around the areas where the fluid was surfacing within the stream.



But leaks continued in the creek bed and in areas nearby on an almost daily basis.

A 20-inch pipe was ultimately pulled into place in December 2018.



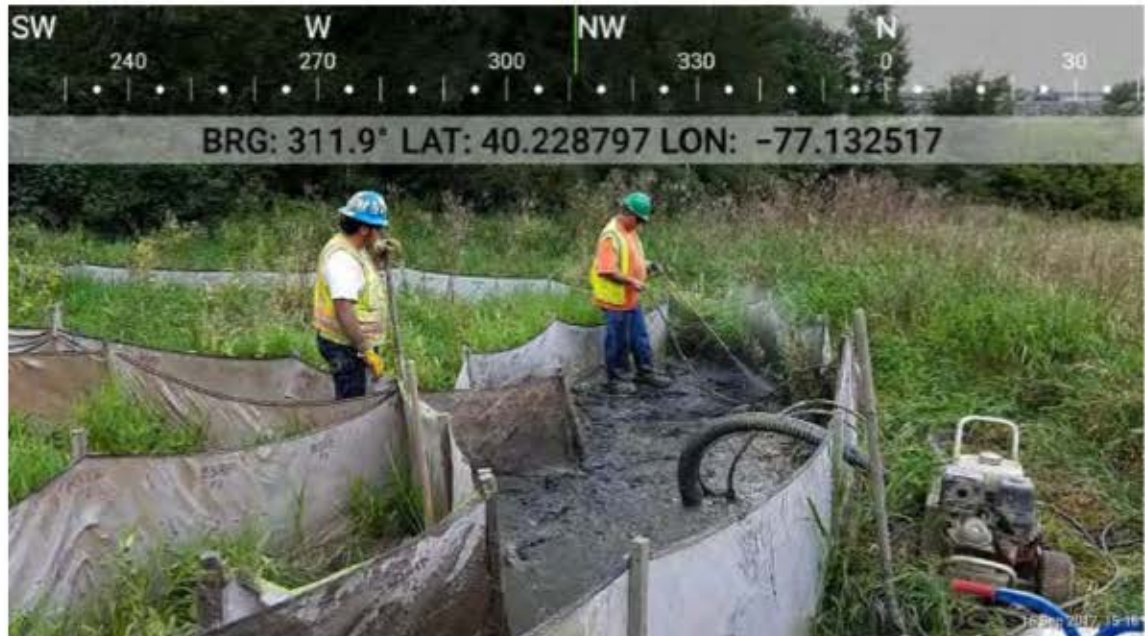
Photo taken by an anonymous source

To complete this segment, Sunoco was ultimately forced to change the route and install the majority of the pipeline through open trenching and then a conventional auger bore under Piney Creek Road/High Street. ARM Group, LLC reviewed the logs and found thirty one instances of losses of circulation on these drills and twenty four inadvertent returns. Almost all of the losses of circulation went unreported to DEP.

g. I-81

This segment of the Mariner project is located in Middlesex Township, Cumberland County and was planned to cross underneath a portion of I-81. Drilling for the installation of a 20-inch pipe began in April 2017 with Pretec

Directional Drilling as the subcontractor. Fluid began escaping within a week. The escaped fluid then surfaced, and DEP issued a Notice of Violation. There were more leaks of drilling fluid in the following weeks, including one that impacted a wetland, and more fluid losses as drilling continued over the following months.



The 20-inch pipe was pulled into place in November 2017.

Drilling for a 16-inch pipe began in February 2020 with Pretec continuing as the subcontractor. One loss of drilling fluid was reported to DEP, but later losses were not. Fluid surfaced into the stream bed of a tributary to LeTort Spring Run and other inadvertent returns followed until drilling was suspended in March due to the coronavirus pandemic. In May 2020 there was a 200-gallon inadvertent return that impacted a wetland. DEP issued another Notice of Violation. ARM Group, LLC reviewed the logs and found twenty three instances

of losses of circulation on these drills and twenty two inadvertent returns. Many of these losses of circulation were not reported to DEP.

h. Blacklog Creek

Yet another segment of the project is located in Shirley Township, Huntingdon County and was planned to cross two wetlands, a road and Blacklog Creek. This drill began in October 2017 with Michels as the HDD subcontractor. Fluid escaped almost immediately, and within days there was an inadvertent return of 7,000 gallons into a wetland. DEP issued a Notice of Violation.



Photo by Sean Sherlock, PG for GES, Inc.

Drilling stopped until the following March, when there was a small release of drilling fluid into a wetland. A 20-inch pipe was installed in June 2018.

Construction on the 16-inch line began in February 2020, with Petra Pipeline Services as the HDD subcontractor. Thousands of gallons of drilling fluid escaped and the hole was abandoned. After approval of a new, longer and deeper drilling profile and moving equipment around to accomplish this, a new pilot hole began to be drilled in March 2020, until the site was shut down due to COVID-19. ARM Group, LLC reviewed the logs and found thirteen instances of losses of circulation on these drills and four inadvertent returns. Many of the losses of circulation were not reported to DEP.

i. Joanna Rd.

Another drilling site was located near Joanna Road in Caernarvon Township, Berks County. The drilling company working at the site was United Piping Inc. Drilling fluid was discovered in an unnamed tributary to Hay Creek in November 2017. DEP issued a Notice of Violation. Work resumed in March 2018, but was delayed by mechanical difficulties. In June a small leak occurred into the [East Branch] Conestoga River and DEP issued a Notice of Violation.

In August a drill pit overflowed, and an estimated 10,000 gallons of drilling fluid spilled into an adjacent stream.



In September the drill pit once again overflowed and drilling fluid again discharged into a stream. Then there was a leak of drilling fluid into a wetland, and another into a wooded area. Containment efforts and notifications were made. The total release was estimated at 30,000 gallons. DEP issued a Notice of Violation and drilling was suspended.



A new subcontractor, Michels, ultimately succeeded in installing a 20-inch pipe in November 2018. ARM Group, LLC reviewed the logs and found one loss of circulation on these drills and six inadvertent returns.

j. Old William Penn Highway

A section of the project in Westmoreland County was designed to route the pipeline underneath William Penn Highway and Turtle Creek. The subcontractor, MAXX HDD, began drilling in July 2017. After unreported leaks of small or undetermined size, in August there was a loss of 65,000 gallons of drilling fluid. Even this loss of fluid went unreported to DEP. Within days, 5,000 to 10,000 gallons of drilling fluid had flowed into Turtle Creek and wetlands nearby.



Photo by Matthew Cousino, PG for GES, Inc.

On September 5, 2017, a fairly large “void” or sinkhole appeared in close proximity, and then another void the day after. Drilling was placed on hold until March 2018, but as soon as it restarted, another 5,400 gallons of fluid surfaced in the same location as before. Losses of drilling fluid continued to occur throughout the month of April, in amounts up to 104,400 gallons. The pipe was successfully installed, but yet another sinkhole, twenty feet in length, opened up along the bore path. ARM Group, LLC reviewed the logs and found twenty four instances of losses of circulation, resulting in the loss of approximately 461,745 gallons of drilling fluid on this drill. ARM Group, LLC also noted six inadvertent returns during the HDD. Most of the losses of circulation went unreported to DEP.

k. Norfolk Southern Railroad

Another site in Westmoreland County was designed to carry pipeline underneath the Norfolk Southern Railroad and a portion of the city of Jeanette. MAXX HDD was again the subcontractor, and began drilling June 2017, but was shut down due to mechanical difficulties until April 2018. After drilling resumed, thousands of gallons of drilling fluid escaped into the ground. Shortly thereafter, 12,000 gallons of drilling fluid surfaced in the town of Jeanette. Drilling was suspended until cleanup could occur.



photos taken by Roman Kyshakevych, GES, Inc. on 4.30.18

But the drilling started up again, and over the following days almost 80,000 gallons of fluid were lost, sometimes without notification to DEP. During efforts to remove some of the fluid, over 1,000 gallons spilled onto a road and into storm drains. A 20-inch pipe was finally pulled into place in June 2018. ARM Group, LLC reviewed the logs and found fifteen instances of losses of circulation on these drills and three inadvertent returns. Most of these losses of circulation went unreported to DEP.

I. Everett Railroad

In Blair County, horizontal drilling was planned in the area of Reservoir Road and Everett Railroad. The drill was designed to bore underneath the railroad as well as the Frankstown Branch of the Juniata River. The contractor, Blacklick Drilling, began work on a 20-inch pipeline in June 2017. There was a loss of circulation and an inadvertent return on the very first day of the drill. The next day resulted in another surfacing of drilling fluid. A different driller, Michels, was soon brought in. After delays until April 2018, drilling fluid again surfaced and entered a wetland nearby. In June, the wetland was again contaminated. The drilling route was then modified, but thousands of gallons of fluid were lost through September, mostly unreported to the DEP, when the pipe was finally inserted.

More drilling began in October 2018 and fluid soon leaked into the wetland. DEP issued a Notice of Violation, and several more the following month after several new leaks.

Work on the parallel 16-inch line began in February 2020, and resulted in another leak affecting the wetland, and another Notice of Violation. ARM Group, LLC reviewed the logs and found nine instances of losses of circulation on these drills and eleven inadvertent returns. Many of these losses of circulation went unreported to DEP.

m. Linden Road

A horizontal drilling site in Washington County was designed to travel underneath Linden Road. Construction began in June 2017 with inadvertent returns occurring on the second day of the drill. In spite of the installation of containment to prevent the drilling fluid from entering a nearby creek, at least 1,000 gallons of fluid surfaced outside of the containment area and affected the creek.



Photo by Josh Hickman, PG with GES, Inc. on June 24, 2017

DEP issued a notice of violation, but in July drilling fluid was observed to be running into the creek once again. Drilling was put on hold until August. In

September, after drilling had ended for the day, approximately 3,000 to 6,000 gallons of drilling fluid overwhelmed containment walls and entered the creek.



Photo taken by Joseph Maule, PG for GES, Inc. on 9/9/17

Drilling resumed in September and a 20 inch pipe was pulled into place later in the month. ARM Group, LLC reviewed the logs and found nineteen instances of losses of circulation on this drill and seventeen inadvertent returns. Most of these losses of circulation went unreported to DEP.

n. Linden Creek Road

Another section of horizontal drilling in Washington County was designed to travel underneath Linden Creek Road and Little Chartiers Creek. Construction of a 20-inch line began in October 2017 with United Piping, Inc. as the subcontractor. Two weeks later, there was a loss of circulation and an inadvertent return totaling 2,000 gallons of drilling fluid. The drill was shut down and didn't restart until May 2018. A week after the restart, another leak, of 1,000 gallons, surfaced just outside the containment area.



Photo by Brian Lipinski, PG for GES, Inc. on May 18, 2018

Drilling was suspended for another month, but then resumed. The pipe was installed in August 2018, but not before five additional inadvertent returns

occurred. ARM Group, LLC reviewed the logs and found one instance of loss of circulation on these drills and nine inadvertent returns. Most of these losses of circulation were not reported to DEP.

o. Buff-Pitt Highway

In Indiana County, a section of pipeline was designed to travel below the Buffalo/Pittsburgh Highway as well as a wetland in the same area. Construction began on a 20-inch line in June 2017. The drilling was completed without incident and the pipe was pulled into place in July.

Construction of a 16-inch line began that month. In September, however, drilling fluid was lost on several occasions, and drilling was shut down when a homeowner reported seeing mud in a nearby stream. Fluid flowed downstream and into Blacklick Creek.

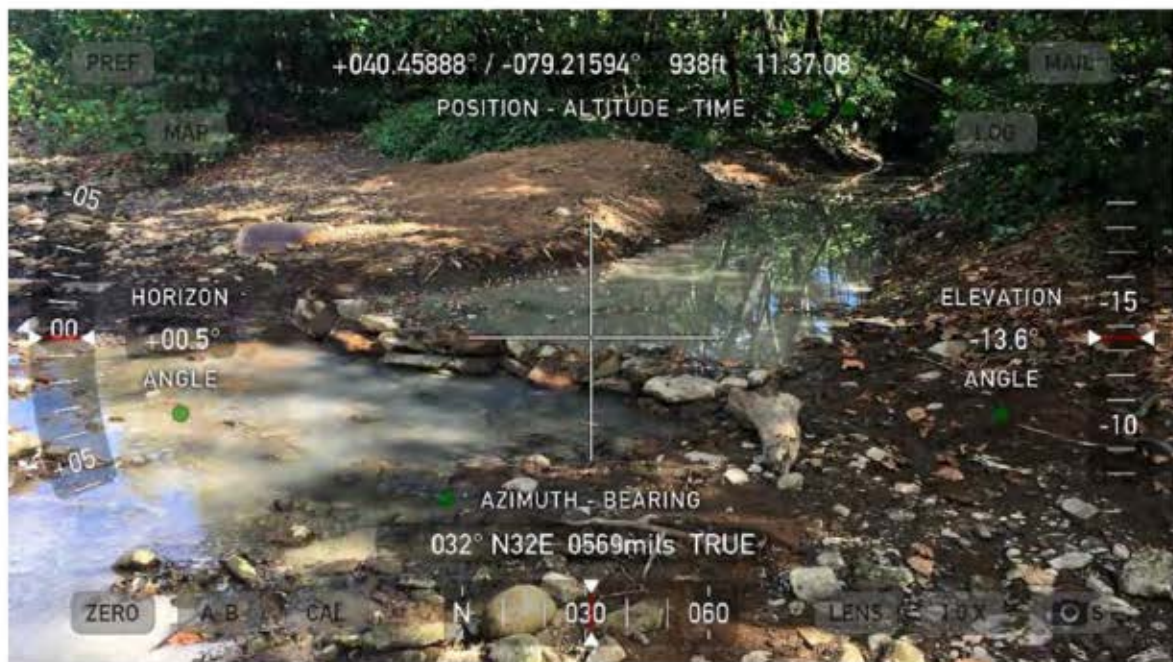


Photo by Matt Fry, PG with GES, Inc. on September 28, 2017

DEP issued a Notice of Violation, and drilling was placed on hold. The work resumed in February 2019. The second day of drilling, there was a loss of circulation reported to the utility inspector and to the professional geologist on site. This was not communicated to DEP. Drilling continued and the pipe was installed. ARM Group, LLC reviewed the logs and found five instances of losses of circulation on these drills and one inadvertent return. Most of these losses of circulation went unreported to DEP.

p. North Zinns Mill Road

A section of the pipeline in Lebanon County was designed to travel underneath North Cornwall Road, Snitz Creek, and Route 72. Horizontal drilling for a 20-inch pipeline began in August with Laney Directional Drilling as the subcontractor. Two days later, drilling fluid emerged from the ground and flowed into Snitz Creek. Drilling stopped, resumed in September, and fluid again surfaced in the creek. DEP issued a Notice of Violation and drilling stopped until March 2018, when there was more fluid flowing into the creek, resulting in another Notice of Violation. The same thing happened in April, in May, and in June, and again in August when the pipe was finally inserted.



Photo taken by PG with GES, Inc. on June 27, 2018

Drilling for a 16-inch line began in May 2020 with Michels as the subcontractor. Between May and August, the drill lost circulation of fluid totaling approximately 100,000 gallons. These losses were not reported to DEP. From August through September, drilling fluid flowed into Snitz Creek five different times, resulting in five more Notices of Violation from DEP.

On October 19, 2020, there were 20 separate inadvertent returns found within and along Snitz Creek that totaled approximately 200 gallons of drilling fluid. Without the required approval from DEP, Sunoco decided to block off the creek entirely with a dam and flume. DEP issued a Notice of Violation. Because of the egregious nature of Sunoco's unilateral act, however, the company was also

the subject of a rarely-employed enforcement proceeding under the Clean Streams Law. The 16 inch pipeline was thereafter pulled into place. ARM Group, LLC reviewed the logs and found thirty eight instances of losses of circulation on these drills and sixteen inadvertent returns. Most of these losses of circulation were not reported to DEP.

q. Goldfinch Lane

Horizontal drilling was employed in Cambria County to carry pipeline under two wetlands and Goldfinch Lane. Drilling for a 20-inch pipe began in May 2018, with Lonestar as the subcontractor. The very next day, drilling fluid surfaced in an upland area. Days later, drilling fluid was observed in the unnamed tributary to Hinckston Run. Drilling was suspended and DEP issued a Notice of Violation. The driller tried to stanch the leaks with loss control materials, but the result was contamination of a nearby spring. After a temporary halt, drilling resumed in June but thousands of gallons of fluid escaped throughout the following weeks. Drilling mud then surfaced on a homeowner's lawn, and 3,500 gallons impacted a nearby wetland. DEP issued another Notice of Violation.

After another halt, drilling started again, in July, and again resulted in fluid coming up from the ground, in a pasture that flowed to an unnamed tributary. At this time, drilling was suspended.

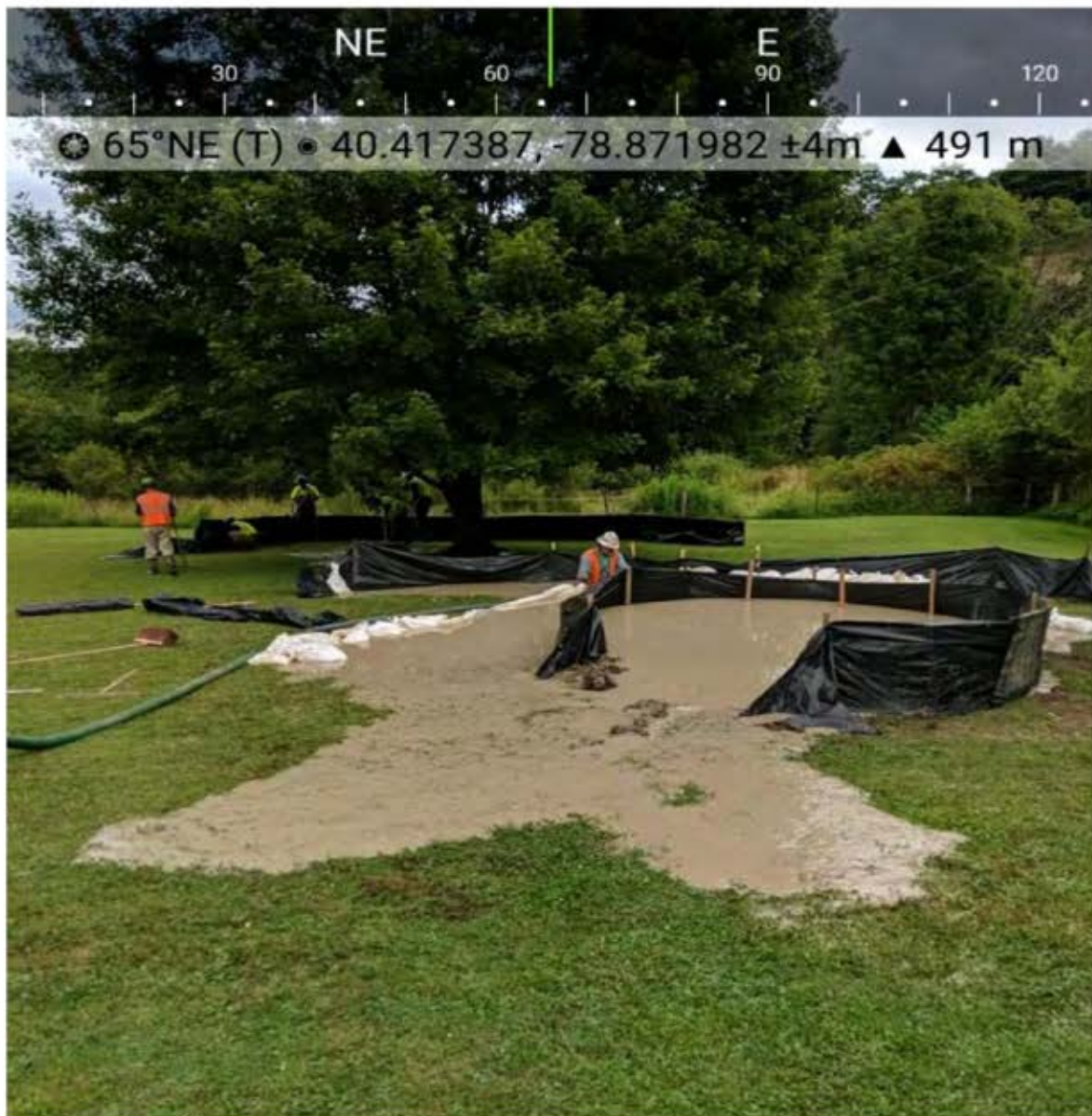


Photo by Mark Klonicke, PG with GES, Inc. on July 22, 2018

In August, once drilling resumed, more fluid was lost, and in September there was another leak outside the containment area.



Photo by Craig B. Clemmens, PG for GES, Inc. on September 15, 2018

The pipe was finally installed in October 2018. Because of the many problems with installation of the 20-inch pipeline, Sunoco abandoned its horizontal directional drilling plan for a nearby area and applied to use an open trench and a conventional bore instead. ARM Group, LLC reviewed the logs and found twelve instances of losses of circulation on this drill and nine inadvertent returns. Many of these losses of circulation went unreported to DEP.

r. William Penn Ave.

Another horizontal drilling site in Cambria County was located proximate to William Penn Avenue in Jackson Township (Johnstown). In June 2018, escaping drilling fluid flowed into a wetland, and into Hinckston Run. The estimated amount of fluid was 1,500 gallons. DEP issued a Notice of Violation.



Photo by Joseph Maule, PG for GES, Inc. on June 21, 2018



After a month-long suspension, drilling began again in July. The result was another leak of 1,500 gallons. Because this was near the same location as the last leak, equipment was on hand to try to clean it up.

Another leak occurred in August; it was estimated that 300 to 400 gallons of drilling fluid surfaced. The fluid affected the adjacent wetland. DEP issued a Notice of Violation.



Photo by Roman Kyshakevych, PG with GES, Inc. on August 24, 2018

The same thing happened again the next day, releasing 500 gallons of drilling fluid.



Photo by Austin Richardon, EI with Tetra Tech on August 25, 2018

DEP issued a Notice of Violation. Inadvertent returns continued to occur until the pipe was pulled into place in late October, 2018. ARM Group, LLC reviewed the logs and found no losses of circulation on this drill and eight inadvertent returns.

s. Spinner Road

An additional horizontal drill in Cambria County was designed to travel underneath Spinner Road and the North Branch of the Little Conemaugh River. Installation of a 20-inch line began in July 2018 with Lone Star as the

subcontractor. In August, drilling fluid was forced out of the ground and traveled into a stream. DEP issued a Notice of Violation



Photo by Mark Klonicke, PG with GES, Inc. on August 4, 2018

Drilling resumed, but fluid was lost on an almost daily basis in August and September and on numerous occasions in October, until the pipe was finally installed in November.

Drilling for a parallel 16-inch line began in February 2020 with Southeast Directional Drilling as the subcontractor. Thousands of gallons of fluid escaped underground throughout the following month, until the site was shut down because of COVID in March.

Workers returned in May but, in the final stretches of drilling, fluid was observed surfacing onto the ground. The company decided it did not have to report the incident, and the pipeline was installed at the beginning of July. ARM Group, LLC reviewed the logs and found sixty four instances of losses of circulation on these drills and thirteen inadvertent returns. Most of these losses of circulation went unreported to DEP.

t. Wheeling & Lake Erie Railroad

Yet another drill site in Washington County was mapped to travel below State Route 88, the Wheeling & Lake Erie Railroad, and Patterson Road. Construction began in May 2017 with Mears as the subcontractor. Days later, loss of fluid resulted in multiple inadvertent returns onto the ground, including approximately 1,500 gallons to an upland area that entered into an unnamed tributary to Froman Run. Two smaller leaks of fluid followed. DEP issued a Notice of Violation.

Ultimately, the use of horizontal directional drilling at this location was abandoned in favor of open trench construction and conventional drilling. Work began in August 2018, but resulted in bubbling and turbidity in a stream bottom

along Patterson Road. In October, the stream was dammed to allow clean-up of the turbid water.



Photo by Joseph Maule, PG for GES, Inc. on October 13, 2018

Turbid water continued flowing in the dammed portion of the stream for much of the month of October. In November, a subsidence opened up at the edge of Patterson Road, in line with the drill path.



A week later, the dam that had been installed across the stream failed and allowed turbid water to flow downstream. The pipe was ultimately pulled into

place on November 13, 2018. ARM Group, LLC reviewed the logs and found twenty instances of losses of circulation on this drill and eighty inadvertent returns. Most of these losses of circulation were not reported to DEP.

u. I-76

Another dig was undertaken in Westmoreland County, within several hundred yards of mile marker 69 on I-76, near Irwin Borough. United Pipe was the HDD subcontractor. Shortly after drilling began there were losses of circulation that were not reported to DEP. Approximately two weeks later, 20,000 gallons of fluid emerged, flowing into two unnamed streams. DEP issued a Notice of Violation.



Photo by Mark Sakino, PG from GES, Inc. on May 23, 2017

A 20-inch pipe was pulled into place on or about June 22, 2018. ARM Group, LLC reviewed the logs and found three instances of losses of circulation on this drill and one inadvertent return. Most of these losses of circulation were unreported to DEP.

ARM Group, LLC noted a total of 301 inadvertent returns over the twenty one locations that we requested they review. They noted a total of 397 losses of circulation at those same twenty one locations.

We are aware that our in-depth review of these 21 locations is roughly 16% of the total number of HDDs that occurred on this project. From a review of the Consent Order and Agreements that DEP has issued to Sunoco during this project, we know that the issues that were discovered at the 16% of the locations that we reviewed were also occurring at other locations throughout the project. For the time period of May 3, 2017 through April 27, 2019, DEP noted a total of 176 inadvertent returns into waters of the Commonwealth that occurred at all the various HDD sites throughout the project. This number does not account for inadvertent returns that did not impact waters of the Commonwealth or for ones that continued to flow day after day into containment that was set up. It also does not account for inadvertent returns that Sunoco failed to report to DEP.

VII. Violations that Span the Entire Project

a. Failure to Notify DEP

Evidence before the Grand Jury showed numerous occasions in which Sunoco failed to properly notify DEP about various aspects of this project. Early in the project,

there were multiple locations where Sunoco did not have authorization to utilize horizontal directional drilling to cross a stream, wetland or road, but began that process without the appropriate permit modification in hand. This came to light in November 2017, when a Berks County Conservation District employee observed HDD equipment at two unpermitted locations. The same thing happened in at least 22 other locations, in Allegheny, Berks, Blair, Cambria, Chester, Cumberland, Dauphin, Huntingdon, Indiana, Lancaster, Washington, Westmoreland, and York Counties, where pipeline crossings of waters of the Commonwealth were permitted as open cuts but were changed in the field to some type of trenchless construction methodology without notification to DEP and without seeking appropriate permits. This behavior was so egregious that DEP suspended Sunoco's permits, and construction across the entire project came to a halt. In a January 3, 2018 Administrative Order, the Department stated that Sunoco's conduct "demonstrates a lack of ability or intention on the part of Sunoco to comply with the Clean Streams Law, the Dam Safety and Encroachments Act, and the permits issued thereunder."

Although this order, early in the project, should have sent a clear message that DEP would not accept anything less than full disclosure from Sunoco, there were failures to report in other areas as well. DEP official Brokenshire testified about the regulations that relate to horizontal directional drilling. He explained that these regulations, codified at 25 PA Code 78a.68a, went into effect in October 2016, and require immediate notification to DEP anytime the drill experiences a drilling fluid discharge or a loss of drilling fluid.

We also reviewed another regulation, at 25 Pa Code 91.33. This regulation requires immediate notification to the Department of Environmental Protection anytime a

substance that would result in pollution, or create a danger of pollution, of the waters of the Commonwealth is discharged into those waters, or into a place from which it might discharge, flow, be washed to or fall into such waters. Mr. Brokenshire explained that the nature of horizontal directional drilling requires drilling through the freshwater aquifer, which is a water of the Commonwealth. He explained that the moment fluid is lost, it is possibly going off the bore path and into the aquifer, which is, in and of itself, an impact to waters of the Commonwealth and requires immediate notification to the Department.

Nonetheless, review of drilling logs and geologists' daily logs from HDD locations revealed many instances in which drills lost fluid, yet Sunoco did not report the loss to the Department, as they were required to do. In testimony before the Grand Jury, Sunoco representatives did not deny most of these failures to report, instead attempting unsuccessfully to justify them. Christopher Embry, the Environmental Project Manager for the Mariner East 2 Pipeline Project, testified that reporting of lost drilling fluid was done only when the size of the loss was "significant to the drill." The question, however, is not whether the loss was "significant to the drill," but whether it was significant to the environment, and specifically the waters of the Commonwealth. The regulations that require immediate notification to DEP contain no qualifier on the amount of the loss or its significance "to the drill."

Embry further testified about cases in which drilling fluid is lost into the ground, a report is made to DEP, and the drill resumes but continues to lose fluid. Embry testified that Sunoco was not required to report such continuing losses. Nothing in the applicable regulations, however, makes exception for repeated losses. Moreover, DEP explicitly advised Sunoco that its alleged understanding of "continuing loss" reporting obligations

was legally incorrect. After DEP issued a Notice of Violation for Sunoco's failure to report losses of circulation that had occurred on a particular drill, there was a meeting held in which this very subject was discussed. That meeting was held in December, 2017. Subsequent to that meeting, Sunoco sent an email to DEP wherein they stated that it was not necessary to report subsequent losses, but they would do so in order to "enhance communications with the Department". In a Notice of Violation issued on December 21, 2017, the Department stated that it "disagrees with your interpretation of the notification requirements for [a continuing] loss of circulation." The NOV goes on to cite the relevant legal authority that requires notification for all losses of circulation that occur.

Such losses may raise even greater environmental concerns than more isolated losses. At Raystown Lake, for example, the drill experienced partial or full losses of circulation on at least 31 occasions. Embry reported only two of these to DEP. Almost four acres of the lakebed wound up covered in drilling fluid.

Sunoco's failures to report were not the product of insufficient information from the field. Evidence before the Grand Jury demonstrated that Sunoco had an elaborate system of record-keeping in which all of the various daily reports would be submitted for uploading to a sharepoint location where designated employees within the company had full opportunity to review them whenever they needed. In addition to this massive compilation of written records related to the project, Sunoco also conducted daily and weekly calls with inspectors, contractors and Sunoco personnel to discuss each active HDD. One individual who was present for these calls indicated that Sunoco Pipeline/Energy Transfer would go spread by spread for updates on the construction and the HDDs. He testified that if there had been an IR mere minutes before the call,

everyone on the call would already be aware of the incident. We learned that there was another daily call that dealt only with the HDDs that were occurring on the project.

The grand jury heard much testimony from on-site subcontractors all the way up the reporting chain. Drillers reported losses of circulation to the project manager and often to the assistant operations manager as well as the inspection team. Once the field crew made its notification, it would wait to receive word from superiors about whether to resume drilling. The decision to restart or not would come from the operator or from the prime contractor. One of the subcontractor project managers testified before the Grand Jury, and confirmed that he received reports from the field crew and then communicated that information to his boss, the regional manager, as well as to the prime contractor's project manager. The witness explained that the subcontractors had no incentive not to report incidents, because they were paid whether they were standing idle or working.

A Project Manager for one of the prime contractors on the project also gave evidence on this point. He confirmed that he received notifications on a daily basis from subcontractor project managers. He stated that any such notifications regarding loss of fluid circulation or fluid spilling out of the ground were conveyed to the Construction Manager for the Spread. He then waited to hear back from the Construction Manager about whether to proceed with the drill or to halt activity. A Construction Manager testified as well. He corroborated the information provided by the Project Manager for the prime contractor. He would receive updates from the prime contractor and relay that information directly to Sunoco. He would likewise relay any directives from Sunoco back down to the Project Manager for the prime contractor.

Overall, the entire Mariner East 2 Pipeline Project involved 132 horizontal directional drills for 20-inch pipeline and 105 such drills for 16-inch pipeline. According

the records received from the Department of Environmental Protection, Sunoco reported less than 100 losses of circulation to DEP over the entire span of the project. In a review of the Professional Geologist logs associated with just 21 of the 132 horizontal directional drill locations, the Grand Jury heard testimony from ARM Group, LLC that there were a total of 397 losses of circulation that were beyond the amount of fluid expected to lose on those drills. Each of those 397 losses should have been reported to DEP. The fact that the number of instances of losses of circulation on the 21 sites reviewed far surpasses the number of notifications that were received over the entirety of the project indicates the breadth of this problem.

b. Impacts to Private Water Supplies

In addition to its requirement to notify DEP of losses of drilling fluid, Sunoco was also required to notify private well owners in the area, in order to protect these water supplies. Evidence before the Grand Jury, however, demonstrated many cases in which the company's actions caused substantial harm to the water on which families depended.

DEP official Brokenshire explained to the Grand Jury the costs of underground losses of drilling fluid. He testified that, if the loss of fluid continues, it will ultimately express itself somewhere—either on the surface or in someone's drinking water well. He explained that the aquifer is an underground reservoir of water that supplies wells. Drilling fluid injected into the earth will try to find the path of least resistance, which is usually along the bore path. Sometimes, however, that path is through fractures in the bedrock or other subterranean voids. If the drilling fluid flows out of the bore path and into the aquifer, it may find that the easiest place to go is into a drinking water well, because it provides a large opening and may be the path of least resistance.

DEP did require that the permits for this project included provisions to deal with impacts to private or public drinking water supplies due to construction activities. From the perspective of many homeowners, however, those provisions did not prove to be successful.

Mr. Eberts testified that Sunoco Pipeline/Energy Transfer had an obligation to notify DEP once they received a well complaint. They were required to put the information into Oil and Gas' OGRE system. Once the complaint was logged into the system, Sunoco Pipeline/Energy Transfer was required to reach out to the complainant and offer an alternative water supply while the investigation was pending. The next step would be for Sunoco Pipeline/Energy Transfer to submit a report sealed by a professional geologist that would be reviewed by a Department geologist to either concur with the report or to ask for additional information. It was rare that DEP conducted their own sampling. Typically, if there is an impact to a water supply, the permit requires the permittee to implement a plan "to the satisfaction of the public and private water supply owners". In addition to requiring remediation of the water supply, DEP has drawn up Consent Assessment for Civil Penalty documents that have included all regional impacts to water supplies from the construction of the Mariner East 2 Pipeline. Mr. Eberts explained that the impact is because a private water supply draws its water from groundwater, which is a water of the Commonwealth. So if the pollution is in the water table, it is considered pollution to waters of the Commonwealth

The Grand Jury received evidence from many well owners who lived in close proximity to the Mariner East 2 Pipeline construction project. Rosemary Fuller lives in Spread 6, or the easternmost portion of the pipeline. She explained that her water is supplied by a private well that had been in place since her family purchased their house in

2003. She testified that they never had any issues with their water well and that, in addition to performing yearly maintenance, they had the water sampled and analyzed for bacteria every year.

Fuller testified about the easement that she signed with Sunoco. A land agent came to her house and represented that the project would require access to only a small amount of her land. He stated that there would be no risk and she wouldn't even know that they were there since the work would be done underground. The agent also told her that Sunoco was just being a good neighbor by asking for the easement because, as a public utility, the company could just exercise eminent domain and take the land anyway.

Fuller testified that construction began in her area in 2017 and cut through a local park. Because construction is still not completed four years later, neighbors still do not have full use of the park. The area has been plagued with sinkholes and fluid spills.

Below is a photograph of two sinkholes that opened along the construction path:



Fuller testified that she observed changes to her water supply after construction began. There was a drop in water pressure, and strangely colored sediment in all the toilet tanks. As time went on, the sediment destroyed one shower, many of the toilets and the water heater. The washing machine and dishwasher no longer function properly.

She notified DEP of the situation at the end of June 2019. Shortly thereafter, Sunoco came to sample her water. Sunoco's initial sampling and analysis showed the presence of bentonite. A Sunoco representative told her there was nothing wrong with bentonite and she could carry on drinking her water and showering in it because it was not harmful. Several weeks later, however, she received a follow-up email informing her that additional test results indicated her water had tested high for e-coli and fecal coliform. In the intervening time period, her daughter drank the water and was hospitalized.

As of the time that she testified in March, 2021, her water issues still remained—she had not been hooked up to public water and was still using the water from her well for showering and washing clothes and dishes.

Another resident, Karen Katz, lives in Glen Mills. Her water wellhead was more than 450 feet from the dig, so her well water was not tested before the start of work in her area. In 2019, during installation of the pipeline, the drill pierced an aquifer in the area of Meadow Lane and Shepherd Lane, causing her to lose water pressure. She recalled seeing a large amount of water flowing onto Shepherd's Lane. She stated that to this day her water pressure is low. Katz stated that Sunoco has declined to test her water so she and her family drink bottled water.

Edward and Alice Mioduski live in New Alexandria, near Loyalhanna Lake. The Mioduski's own a 26-acre farm. Their wellhead is 450 feet from the pipeline right of way. Drilling started on their property in May 2017. About two weeks later, their well water turned a "...cloudy gray. You couldn't even see through it." The water supply has not been remediated. Instead, Sunoco sent a "water buffalo" – a large outdoor water tank – and a Culligan brand bottled water cooler, now located in the couple's kitchen.

Patrick Robinson lives in New Florence. He stated that Sunoco asserted eminent domain against many of his neighbors, so he attempted to negotiate with them to minimize impacts to his property. Robinson's well is also 450 feet from the pipeline project. Robinson stated that, on the day Sunoco began digging at a nearby creek, the water level in his well fell 120 feet. The water turned "...like brown coffee with sediment," and the well soon ran dry. Sunoco offered to provide a "water buffalo," if he signed a release absolving it of any responsibility, but he declined. Robinson stated that Sunoco told him that, because there was no pre-construction water sampling or testing, the company is not responsible for any damage.

Joanne Snyder lives in Hollidaysburg, adjacent to the Everett Railroad horizontal drilling project. Ms. Snyder stated that, before the project, her well water was pristine. The construction right of way is only six feet from her well. After numerous incidents, Snyder was provided a water buffalo. Sunoco attempted to take it back in the fall of 2020, but Snyder would not agree to its removal, because she had received notice of another recent spill. Snyder stated that an agent of the company "told me to settle with them and go build another house. He told me if I didn't settle, they would just come and take my house."

John and Valerie McCarthy live in Jeanette. The pipeline passes on a hill which is above the level of the McCarthy's drinking water source. Valerie McCarthy stated that when samples of their water were taken prior to drilling, it was found to be completely pure. John McCarthy stated that after construction started, however, he began receiving letters advising them not to drink the water anymore, because it contained volcanic ash used in the drilling mud. McCarthy also noticed an oily sheen on the water in his artesian spring, and in the stream coming from it. Sunoco agents verbally promised to connect his home to a municipal water supply, but never executed the agreement once construction in his area was complete.

Mark and Kathy Daugherty live in Johnstown, near the William Penn Avenue horizontal drilling site. Their daughter and her husband live in an adjacent home. The pipeline right of way is approximately 300-400 feet away. Mark Daugherty stated that wells serving both homes were affected by the construction. The water in his daughter's well became gritty and dirty. His own well subsided and the submersible pump failed. Sunoco supplied temporary water for a year, but then stopped. The company claimed that the impacts did not result from its drilling.

Daniel Trantham lives on Goldfinch Lane in Johnstown near the site of another horizontal drilling project. Sunoco offered him an undisclosed amount of money for the use of the property, and informed him they would use eminent domain if he did not sign. They also offered a supplementary water supply even before they started drilling under a wetland that was adjacent to the spring that supplied his house with water. After drilling commenced, late one evening workers approached the house and told Trantham they were losing mud. The workers searched the property for the drilling fluid and

located three areas where it was emerging from the ground. The following day the workers returned and told Trantham not to use his water. Sunoco started supplying bottled water to the house. Ultimately, the company paid the construction costs to connect his home to a public water supply.

The Grand Jury reviewed a spreadsheet the DEP has maintained of all water supply complaints that they were made aware of related to the Mariner East 2 Pipeline Project. Their list contains one hundred eighty three (183) names. We reviewed a similar internal list maintained by Sunoco. That list only included one hundred eighty two (182) names. The possibility exists that the number of families that have had their only water supply impacted by this project is larger than is known. Many of the agreements that Sunoco entered into with homeowners who were affected by pipeline construction included non-disclosure provisions. Some of these prohibit a homeowner from speaking even with DEP or other governmental entities at the township, borough, county, state or federal level.

c. Use of Unapproved Additives

Evidence before the Grand Jury established that, in some geological formations, the normal fluid used for horizontal directional drilling – a mix of water and bentonite – will be insufficient to seal holes or fractures in the rock. In these circumstances, drillers may wish to add other products to the fluid that are better able to plug fractures. These additives, however, must be approved for use by the Department of Environmental Protection.

DEP official Brokenshire testified that the Department began implementing this requirement when horizontal directional drilling was still a new process. Under the Department's regulations, officially adopted in 2016, drillers may only use additives that are "NSF approved." The National Sanitation Foundation has developed a certification, NSF/ANSI/CAN 60, that addresses the human health effects of drinking water treatment chemicals. These additives, as DEP later clarified, must also be function specific. That is, an approved additive may be used in drilling fluid only if its intended use is for drilling, as opposed to some other water treatment function.

DEP maintains a list of approved additives that is available on its website. Because the list changes, a drilling company must check it in a timely fashion to ensure that any intended additive is approved by DEP. If an additive is not NSF/ANSI/CAN 60 certified, it must be submitted to DEP for review along with the safety data sheet for the product.

The Grand Jury learned of multiple incidents throughout the project when products were used that were not on the NSF/ANSI/CAN 60 list of approved drilling fluid additives. Sometimes subcontractors used these unapproved additives without giving advance notice to Sunoco. However, once the product had been used, Sunoco generally found out, since it received regular reports about such matters. Even after it learned of the use of unapproved additives, however, Sunoco did not direct drillers to stop, nor did it alert DEP.

Documentation regarding the Zinns Mill Road/Snitz Creek drill provides an example. An April 2018 report submitted to Sunoco's Environmental Project Manager, Christopher Embry, indicated that the driller had utilized Baroid MagmaFiber and Baroid Fuse-It as additives – the day before a drilling fluid spill into Snitz Creek. Neither

additive was NSF/ANSI/CAN 60 approved. But Sunoco never reported the problem, even after Embry was explicitly advised that Baroid MagmaFiber was inappropriate for use because it is an unapproved additive.

Review of records revealed numerous instances of use of unapproved additives at locations throughout the project. Many of these were used even after DEP's clarification specifying that approved additives must be function specific for use in drilling fluid. But some of the additives used have never been on the NSF/ANSI/CAN60 list for any product function. Additives used without approval included Baroid Magma Fiber, vegetable oil, Platinum PAC, Drill Seal, Dynacell, Diamond Seal, and PolySwell.

Another unapproved additive was Fuse-It, which was used at several different locations on the Mariner East 2 Project. Fuse-It's safety data sheet states that 10-30% of the product consists of hydrotreated light petroleum distillate. The document states that the product may cause skin and eye irritation and may have toxicity to fish. Fuse-It was used at many locations where drilling fluid spilled into the environment, affecting aquatic life in any creeks, streams or rivers it entered. The product was also used near locations where drilling affected aquifers that fed home drinking water supplies.

In general, unapproved additives were most often used in the riskiest situations, in an effort to stop the escape of drilling fluid into the environment. Because these efforts in many cases failed to stop the fluid loss, the unapproved additives themselves undoubtedly escaped into the environment as well.

VIII. Applicable Environmental Statutes

The Grand Jury learned that the relevant portions of the Clean Streams Law define “industrial waste” as any liquid or solid resulting from manufacturing or industry whether or not generally characterized as waste. “Pollution” is any contamination of waters of the Commonwealth that is likely to render those waters harmful, detrimental, or injurious to public health, safety or welfare, or to legitimate beneficial use. “Waters of the Commonwealth” includes any rivers, streams, rivulets, lakes or springs containing surface or underground water.

Within the Clean Streams Law, Section 691.301 makes it a crime to discharge industrial waste into the waters of the Commonwealth. Section 691.401 prohibits the discharge of any substance resulting in pollution into any of the waters of the Commonwealth. Section 691.611 makes it a crime to fail to comply with any order or permit or license of the Department of Environmental Protection, or to hinder, obstruct, prevent or interfere with the Department or its personnel in the performance of any duty.

Finally, we reviewed a Certification of Records from DEP and heard testimony to confirm that Sunoco never applied for or was granted a permit or an exemption to a permit pursuant to the Clean Streams Law to discharge any waste from any source, except water discharged from hydrostatic testing, at or near the Mariner East 2 Pipeline Project located in Allegheny, Washington, Westmoreland, Indiana, Cambria, Blair, Huntingdon, Juniata, Perry, Cumberland, York, Dauphin, Lebanon, Lancaster, Berks, Chester and Delaware Counties, or to discharge any waste from that project into any waters of the Commonwealth.

IX. Recommendation of Charges

We find that, in constructing the Mariner East 2 Pipeline, Sunoco repeatedly permitted industrial waste or other contaminating substances to escape into the environment; failed to

report incidents as required; used additives that lacked required approval; and caused impact to a multitude of waters of the Commonwealth, to include streams, lakes, rivers and groundwater. These activities have resulted in contamination of many private water supplies, some of which have been restored and some of which continue to be polluted to this day.

Based upon the evidence that we have obtained and considered, which establishes a *prima facie* case, we, the members of the Forty-Fifth Statewide Investigating Grand Jury, recommend that the Attorney General, or his designee, institute criminal proceedings against the entity listed below and charge them with the following offenses:

SUNOCO PIPELINE L.P./ENERGY TRANSFER

SUNOCO PIPELINE L.P./ENERGY TRANSFER

For Inadvertent Returns at Raystown Lake (S2-0150):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Piney Creek (S2-0142):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Marsh Creek (S3-0290):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Linden Road (S1-0080):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Linden Creek Road (S1-0050):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Buff-Pitt Highway (S2-0050):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Goldfinch Lane (S2-0069):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at William Penn Avenue (S2-0070):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Spinner Road (S2-0080):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Glen Riddle/Tunbridge Apartments (S3-0620):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Exton Bypass/Lisa Drive (S3-0400):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at SR 88 & Wheeling/Lake Erie RR (S1-0120):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Joanna Road (S3-0250):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at I-76 (S1-0230):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Loyalhanna Lake (S2-0010):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Norfolk Southern RR (S1-0250):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Old William Penn Highway (S1-0270):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Reservoir Road/Everett RR (S2-0121):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at I-81 (S2-0220):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at SR 2017/Blacklog Creek (S2-0154):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For Inadvertent Returns at Snitz Creek/Zinn's Mill Road (S3-0101):

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

For failure to report environmental incidents to DEP:

- Unlawful Conduct under the Clean Streams Law – 35 P.S. § 691.611

For use of unapproved additives along the pipeline project:

- Unlawful Conduct under the Clean Streams Law – 35 P.S. § 691.611

For impact to private drinking water supplies:

- Prohibition of Discharge of Industrial Waste under the Clean Streams Law — 35 P.S. 691.301
- Prohibition Against Other Pollutions under the Clean Streams Law – 35 P.S. § 691.401

Appendix G
Energy Transfer Rover Pipeline
FERC Order to Show Cause and
Proposed Penalty
December 16, 2021

177 FERC ¶ 61,182
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Richard Glick, Chairman;
James P. Danly, Allison Clements, and
Mark C. Christie.

Rover Pipeline, LLC, and
Energy Transfer Partners, L.P.

Docket No. IN17-4-000

ORDER TO SHOW CAUSE AND NOTICE OF PROPOSED PENALTY

(Issued December 16, 2021)

1. Pursuant to Rule 209(a)(2) of the Commission's Rules of Practice and Procedure,¹ the Commission's Revised Policy Statement on Enforcement,² and the Commission's Statement of Administrative Policy Regarding the Process for Assessing Civil Penalties,³ the Commission directs Energy Transfer Partners, L.P. (Energy Transfer)⁴ and its subsidiary Rover Pipeline, LLC (jointly, Respondent or Rover) to show cause why it should not be found to have violated Section 7(e) of the Natural Gas Act (NGA), 15 U.S.C. § 717f; the Commission's Regulations, 18 C.F.R. § 157.20 (2021); and the Commission's Order Issuing Certificates (Certificate Order),⁵ by: (1) intentionally including diesel fuel and other toxic substances and unapproved additives in the drilling mud during its horizontal directional drilling (HDD) operations under the Tuscarawas River in Stark County, Ohio, (2) failing to adequately monitor the right-of-way at the site of the Tuscarawas River HDD operation, and (3) improperly disposing of inadvertently released drilling mud that was contaminated with diesel fuel and hydraulic oil. The Commission also directs Rover to show cause why it should not be assessed a civil penalty in the amount of \$40,000,000.

¹ 18 C.F.R. § 385.209(a)(2) (2021).

² Enforcement of Statutes, Regulations and Orders, 123 FERC ¶ 61,156, at PP 35-36 (2008) (Revised Policy Statement on Enforcement).

³ Process for Assessing Civil Penalties, 117 FERC ¶ 61,317, at P 6 (2006).

⁴ Energy Transfer Partners, L.P. is now Energy Transfer L.P.

⁵ Rover Pipeline LLC, 158 FERC ¶ 61,109 (2017), order on clarification & reh'g, 161 FERC ¶ 61,244 (2017), Petition for Rev., Rover Pipeline LLC v. FERC, No. 18-1032 (D.C. Cir. Jan. 29, 2018) (Certificate or Certificate Order).

2. Respondent may seek a modification to the penalty amount as warranted.⁶ Pursuant to Rule 213(a) of the Commission's Rules of Practice and Procedure,⁷ the Commission directs Respondent to file an answer with the Commission within 30 days of the date of this order. Office of Enforcement staff (Enforcement Staff) may reply to Respondent's answer within 30 days of the filing of the answer. The Commission will consider these pleadings as part of its review of this proceeding.

3. This case presents allegations by Enforcement Staff that Respondent violated the NGA, Commission regulations, and the Certificate Order during construction of Rover's \$6.7 billion Rover Pipeline Project (or Project), an approximately 711 mile long interstate natural gas pipeline designed to transport gas from the Marcellus and Utica shale supply areas through West Virginia, Pennsylvania, Ohio, and Michigan to outlets in the Midwest and elsewhere.⁸ In April 2017, shortly after Rover began its HDD operation under the Tuscarawas River, a large inadvertent release (IR) of 2 million gallons of drilling mud reached the ground surface and flowed into a nearby protected wetland. Testing of the IR contents conducted by the Ohio Environmental Protection Agency revealed the presence of petroleum hydrocarbons consistent with diesel fuel. Enforcement Staff's allegations arise out of an investigation into the IR and are further described in the Enforcement Staff Report and Recommendation (Enforcement Staff Report).⁹ Issuance of this order does not indicate Commission adoption or endorsement of the Enforcement Staff Report.

4. Enforcement Staff alleges that from April 2 through April 13, 2017, multiple HDD crew members employed by Rover's contractors intentionally added toxic diesel fuel, hydraulic oil, contaminated containment fluids, and non-toxic but unapproved lubricants to combat drilling difficulties and keep up with drilling progress demands. Witnesses testified that at least seven Rover contractor HDD crew members added diesel fuel to the

⁶ See 18 C.F.R. § 385.209(b).

⁷ 18 C.F.R. § 385.213(a) (2021).

⁸ Rover Pipeline LLC, Application of Rover Pipeline LLC for a Certificate of Public Convenience and Necessity, Docket No. CP15-93-000, at 1, 6, and 10 (filed Feb. 20, 2015) (Rover Application or Application).

⁹ The Enforcement Staff Report is attached to this order as Appendix A. The Enforcement Staff Report describes the background of Enforcement Staff's investigation, findings and analysis, and recommended sanctions.

drilling mud¹⁰ at the site of the Tuscarawas River HDD operation, and that this was done intentionally and routinely. Witnesses also testified that at least four Rover contractor HDD crew members added unapproved additives to lubricate the drill and speed up drilling progress, and that this was also done intentionally and routinely. Additionally, one witness admitted to adding hydraulic fluid to the drilling mud on at least one occasion, and contaminated water from containments on more than one occasion. Enforcement Staff further alleges that these violations were the product of a corporate culture that favored speed and construction progress over regulatory compliance, that Rover pressed upon its contractors, and that its contractors in turn imposed on its subcontractors and HDD crews.

5. Based on the allegations contained in the Enforcement Staff Report, the Commission directs Respondent to respond to this order as set forth above.¹¹ This order is also the notice of proposed penalty required by the NGA.¹² In the answer to this order, Respondent has the option to pay the proposed assessment or contest the order. If Respondent chooses to contest the order or the proposed assessment, the Commission will issue a further order.¹³ If the record is sufficient, the Commission may assess a civil penalty. If a hearing is needed, the Commission will issue a hearing order and indicate whether the Commission will conduct a paper hearing or a hearing before an Administrative Law Judge (ALJ). If the Commission chooses to conduct a paper hearing, it will issue an order on the paper hearing record. If the matter is set for hearing before an ALJ, the ALJ will conduct a hearing under Part 385 of the Commission's regulations, and, unless otherwise directed in a hearing order, the ALJ will issue an Initial Decision

¹⁰ For the Rover Pipeline Project, drilling mud was defined as "a slurry of naturally occurring, non-toxic bentonite clay and water." See FERC, Final Environmental Impact Statement for Rover Pipeline, Docket No. CP15-93-000, at app G-1 at G1-6 (issued July 29, 2016) (Final EIS).

¹¹ Under 18 C.F.R. § 385.213(c), Respondent must file an answer that provides a clear and concise statement regarding any disputed factual issues and any law upon which it relies. Respondent must also, to the extent practicable, admit or deny, specifically and in detail, each material allegation contained in the Enforcement Staff Report and set forth every defense relied upon. Failure to answer an order to show cause will be treated as a general denial and may be a basis for summary disposition under Rule 217. 18 C.F.R. § 385.213(e)(2).

¹² 15 U.S.C. § 717t-1(b); Process for Assessing Civil Penalties, 117 FERC ¶ 61,317 at PP 6-7.

¹³ Process for Assessing Civil Penalties, 117 FERC ¶ 61,317 at PP 6-7.

and determine whether a violation or violations occurred. The ALJ also will make factual findings on the statutory factors relevant to a civil penalty and on the factors set forth in the Commission's Revised Policy Statement on Enforcement.¹⁴ The Commission will then consider the Initial Decision of the ALJ and any exceptions filed. If the Commission determines that there is a violation, the Commission will issue an order and may assess any appropriate penalty. In accordance with NGA Section 19(a) and Rule 713 of the Commission's Rules of Practice and Procedure,¹⁵ Respondent may request a rehearing no later than 30 days after the issuance of the order assessing the penalty. Respondent can appeal a final Commission order to a United States Court of Appeals within the appropriate time for review of a Commission order. If the Commission finds a violation and assesses a penalty, if such penalty is not paid within 60 days of assessment, the Commission will institute a collection action in an appropriate United States District Court.¹⁶

6. The Commission authorizes Enforcement Staff to disclose information obtained during the course of the investigation as necessary to advance this matter.

The Commission orders:

(A) Within 30 days of the date of this order, Respondent must file an answer in accordance with Rule 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213, showing cause why Rover should not be found to have violated Section 7(e) of the NGA, 15 U.S.C. § 717f; the Commission's Regulations, 18 C.F.R. § 157.20; and the Commission's Certificate Order with respect to its conduct during construction of the Rover Pipeline Project.

(B) Within 30 days of the date of this order, Respondent must file an answer in accordance with Rule 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213, showing cause why the alleged violations should not warrant the assessment of a civil penalty in the amount of \$40,000,000, or a modification to that amount as warranted.

¹⁴ See 15 U.S.C. § 717t-1(c); Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156 at PP 55-71.

¹⁵ See 15 U.S.C. § 717r; 18 C.F.R. § 385.713 (2021).

¹⁶ Process for Assessing Civil Penalties, 117 FERC ¶ 61,317 at P 7.

(C) In the answer, Respondent should address any matter, legal, factual, or procedural, that it would urge the Commission to consider in this matter. To the extent that Respondent cites any material not cited in the Enforcement Staff Report, Respondent is directed to file non-publicly one copy of such material on CD-ROM or DVD in the captioned docket and to serve a copy of same on Enforcement Staff.

(D) Within 30 days of the filing of the answer by Respondent, Enforcement Staff may file a reply with the Commission.

By the Commission. Commissioner Phillips is not participating.

(S E A L)

Kimberly D. Bose,
Secretary.

APPENDIX A



FEDERAL ENERGY REGULATORY COMMISSION

**Rover Pipeline, LLC
Energy Transfer Partners, L.P.**

Docket No. IN17-4-000

Enforcement Staff Report and Recommendation

Tuscarawas River Investigation

Office of Enforcement

TABLE OF CONTENTS

I.	Executive Summary.....	- 3 -
II.	Factual Background.....	- 5 -
A.	The Horizontal Directional Drilling Process.....	- 5 -
B.	In February 2015, Rover Submits Its Initial Application Filings to Construct the Rover Pipeline.....	- 7 -
C.	In July 2016, the Office of Energy Projects Issues Its Final Environmental Impact Statement for the Proposed Rover Pipeline	- 8 -
D.	In August 2016, Rover States that Its Project is Operating Under a “Necessity to Race to Market,” and Three Months Later Executes a \$1.5 Billion Contract with a Prime Contractor	- 9 -
E.	Commission Issues a Certificate Order in February 2017, and the Order is Subject to Rover’s Compliance with Express Environmental Conditions- 11 -	
F.	The Commission Issues a Notice to Proceed with Construction in March 2017, at Which Time Rover Plans to Construct Over 500 Miles of Pipeline in Approximately Four Months.....	- 13 -
G.	Rover HDD Crews Are Pressed to Begin Drilling, and the Pressure Continues Even as They Encounter Delays Due to Environmental Compliance Issues	- 14 -
H.	Rover HDD Crews Begin Using Toxic Diesel Fuel and Other Unlawful Substances and Unapproved Additives to Speed Up Drilling Progress. - 19 -	
1.	Night Crew Foreman	- 19 -
2.	Night Crew Mud Technician.....	- 20 -
3.	Night Crew Laborer # 1	- 22 -
4.	Night Crew Driller.....	- 22 -
5.	Night Crew Laborer # 2	- 22 -
6.	Night Crew Operator	- 23 -
7.	Day Crew Laborer # 1.....	- 24 -
8.	Vacuum Truck Driver	- 24 -
9.	Day Crew Driller	- 25 -
10.	Day Crew Foreman	- 25 -

I.	Large Inadvertent Release and Discovery of Diesel Fuel in Drilling Mud....	- 25 -
III.	Enforcement's Investigation.....	- 26 -
IV.	Legal Framework.....	- 30 -
A.	Natural Gas Act	- 30 -
1.	Natural Gas Act Section 22(a).....	- 30 -
2.	Natural Gas Act Section 7(e).....	- 31 -
B.	Commission Regulations, 18 C.F.R. § 157.20	- 31 -
C.	Commission's Certificate Order.....	- 31 -
V.	Analysis and Findings	- 32 -
A.	Rover Violated the NGA, the Commission's Regulations, and the Commission's Certificate Order.....	- 32 -
1.	Rover HDD Crews Intentionally Used Diesel Fuel and Other Toxic Substances and Unapproved Additives in the Drilling Mud.....	- 32 -
2.	Rover HDD Crews Failed to Monitor the Right-of-Way	- 33 -
3.	Rover HDD Crews Failed to Properly Dispose of IR Mud Contaminated with Diesel Fuel and Hydraulic Oil	- 34 -
B.	Rover's Weak Environmental Compliance Program and Focus on Construction Speed Created an Environment Ripe for the Violations ..	- 35 -
VI.	Rover's Anticipated Defense Is Unavailing.....	- 36 -
A.	Rover is Solely Responsible for Ensuring Compliance with the Certificate Order.....	- 37 -
B.	Rover Cannot Sever Its Regulatory Obligations By Pointing the Finger at the Contractors It Hired.....	- 37 -
VII.	Recommended Remedies and Sanctions.....	- 38 -
VIII.	Conclusion.....	- 41 -

The Office of Enforcement (Enforcement or Enforcement Staff) submits this report to the Federal Energy Regulatory Commission (Commission or FERC) setting forth its findings of fact and conclusions of law regarding the investigation of Energy Transfer Partners, L.P. (Energy Transfer)¹ and its subsidiary Rover Pipeline, LLC (jointly Rover). Enforcement's investigation relates to the presence of diesel fuel and petroleum hydrocarbons in the drilling mud² in Stark County, Ohio, at the site of the horizontal directional drilling (or HDD)³ project described in Rover's Application for a Certificate of Public Convenience and Necessity and attendant filings.⁴ Based upon the evidence obtained during its investigation, Enforcement has concluded that Rover violated: Section 7(e) of the Natural Gas Act (NGA), 15 U.S.C. § 717f (2018); the Commission's Regulations, 18 C.F.R. § 157.20; and the Commission's Order Issuing Certificates (Certificate Order),⁵ by intentionally including diesel fuel and other toxic substances and unapproved additives in the drilling mud while drilling under the Tuscarawas River in Stark County, Ohio. In addition, Enforcement concluded that Rover failed to adequately monitor the right-of-way at the site of the Tuscarawas River HDD operation, and that it improperly disposed of inadvertently released drilling mud that was contaminated with diesel fuel and hydraulic oil.

I. Executive Summary

This matter involves Rover's project to construct the \$6.7 billion⁶ Rover Pipeline Project (or Project), an approximately 711 mile long interstate natural gas pipeline

¹ Energy Transfer Partners, L.P. is now Energy Transfer L.P.

² For a discussion of what constitutes "drilling mud," see *infra* at Part II.C.

³ HDD is a trenchless method of installing underground pipelines and is described more fully in Part II.A.

⁴ Rover, Application of Rover Pipeline LLC for a Certificate of Public Convenience and Necessity, Docket No. CP15-93-000 (filed Feb. 20, 2015) (Rover Application or Application). The initial application filing Rover made was on February 20, 2015, with pertinent attendant documents filed in the subsequent days and months. Enforcement Staff refers to the documents collectively as the Application or Application filings.

⁵ The Commission issued a Certificate Order to Rover on February 2, 2017, though it denied Rover's request for a blanket certificate under 18 C.F.R. § 157.203, in part because of the conduct at issue in another investigation related to this project. Rover Pipeline LLC, 158 FERC ¶ 61,109 (2017), order on clarification & reh'g, 161 FERC ¶ 61,244 (2017), Petition for Rev., Rover Pipeline LLC v. FERC, No. 18-1032 (D.C. Cir. Jan. 29, 2018) (Certificate or Certificate Order).

⁶ On May 2, 2019, Rover filed its Cost Comparison Statement, as required by 18 C.F.R. § 157.20(c), averring that Rover's final cost was then projected to be \$6.7 billion. Rover, Cost Comparison Statement, Docket No. CP15-93-000 (filed May 2, 2019). Rover initially estimated the project would cost \$4.22 billion in its Application filings. Application at 6.

designed to transport gas from the Marcellus and Utica shale supply areas through West Virginia, Pennsylvania, Ohio, and Michigan to outlets in the Midwest and elsewhere.⁷ In April 2017, shortly after Rover began horizontal directional drilling under the Tuscarawas River in Stark County, Ohio, a large inadvertent release (IR) of 2 million gallons of drilling mud reached the ground surface and flowed into a nearby protected wetland. Testing of the IR contents conducted shortly thereafter by the Ohio Environmental Protection Agency (Ohio EPA) revealed the presence of petroleum hydrocarbons consistent with diesel fuel.

As described in this report, Enforcement Staff investigated Rover's conduct and the circumstances leading to the IR and found that Rover: (1) intentionally added diesel fuel and other toxic substances and unapproved additives to the drilling mud while drilling under the Tuscarawas River, (2) failed to adequately monitor the Project's right-of-way, and (3) improperly disposed of IR mud that was contaminated with diesel fuel and hydraulic oil. Enforcement Staff concluded that this conduct violated Section 7(e) of the NGA, the Commission's regulations, and the Commission's Certificate Order.

Contemporaneous evidence demonstrates that these violations were the product of a corporate culture—one that equally infected the executives managing the Tuscarawas River HDD and the onsite HDD crew—that favored speed and construction progress over regulatory compliance. This culture was fueled by Rover's execution of a \$1.5 billion "time is of the essence" contract with a prime construction contractor—which constituted 35% of Rover's initial cost estimate for the Project.⁸ It was also fueled by Rover's self-imposed four-month schedule to complete over 500 miles of the pipeline construction.⁹ In addition to the contract requirements, Rover's Executive Vice President of Engineering and Construction, Yousif (Joey) Mahmoud, continually applied direct pressure on the Vice President of its prime contractor, Bobby Poteete, to speed up construction, which funneled down to its subcontractor and HDD crews onsite.¹⁰ For instance, when drilling difficulties arose in the initial days of drilling at the Tuscarawas River and the Project began to experience delays, these delays and work stoppages by the crew due to safety and environmental issues were viewed by the head executive of Rover's subcontractor, Bill Colson, as a failure to understand the urgency of progressing with drilling.¹¹ It was in this strained work environment that HDD crew members began adding toxic diesel fuel and other toxic substances, as well as non-toxic but unapproved

⁷ Application at 1, 6, and 10.

⁸ See *infra* Part II.D.

⁹ See *infra* Part II.F.

¹⁰ See *infra* Part II.G.

¹¹ *Id.*

lubricants like “soap sticks” and “burritos,”¹² to the drilling mud to lubricate the drill and increase drilling speed. As detailed throughout this report, Rover HDD crew members have admitted under oath to doing so, and have provided numerous corroborating accounts of what occurred and how the conduct was openly discussed among onsite personnel.

Enforcement Staff recommends that the Commission issue an Order to Show Cause and Notice of Proposed Penalty to Rover, requiring it to show cause why (i) it did not violate Section 7(e) of the NGA, 15 U.S.C. § 717f; (ii) did not violate 18 C.F.R. § 157.20 of the Commission’s regulations; (iii) did not violate the Commission’s Certificate Order; and (iv) it should not pay a civil penalty of \$40,000,000.

This Enforcement Staff report begins in Part II by relating the facts chronologically, primarily through citation to Rover’s Application filings and related agreements, contemporaneous emails and documents gathered as part of this investigation, as well as to the testimony taken from witnesses during the investigation. The cited materials will be filed separately with the Commission as a non-public appendix, with a copy sent to counsel for Rover. Part III briefly outlines Enforcement’s investigation. Part IV sets forth the legal framework established by the NGA and the Commission’s Certificate Order. Part V details Enforcement Staff’s analysis and findings, while Part VI addresses Rover’s anticipated defense. Part VII articulates the relevant penalty considerations. Part VIII summarizes Enforcement’s conclusions.

II. Factual Background

A. The Horizontal Directional Drilling Process

Horizontal directional drilling is a technique frequently used by natural gas pipelines to drill a horizontal hole beneath obstacles, and thereafter pull the pipe through the hole.¹³ There are three main steps: drilling the pilot hole, reaming (enlarging the pilot hole to the full intended size), and pulling the pipe into and through the reamed hole.¹⁴ To complete an HDD pipe installation, specialized construction contractors attach

¹² “Soap sticks” and “burritos” refer to drilling industry standard lubricants that, had Rover gone through the required approval process with the Commission, would likely have been approved for Rover’s use. See, e.g., Testimony of Day Crew Foreman, Vol. I, at 128-29 (Aug. 15, 2017) (Day Crew Foreman Test. Vol. I); Testimony of Night Crew Mud Technician, at 76-77 (Nov. 1, 2017) (Night Crew Mud Technician Test.). However, these lubricants, while non-toxic, do not constitute drilling mud or form part of the drilling mud mixture approved by the Commission in its Certificate Order.

¹³ Pipelines: A Crucial Piece of Modern Infrastructure, Am. Petroleum Inst. Energy, at 2 (last visited Oct. 4, 2021), <https://www.api.org/-/media/APIWebsite/oil-and-natural-gas/primers/Horizontal%20Directional%20Drilling%20HDD%20Operations%20White%20Paper.pdf?la=en&hash=87ECB03D2D25B28DE401D6A23DA1C74D387339A7>.

¹⁴ *Id.* at 3.

steerable drill bits, reamers, tracking monitoring devices, and other tools to the end of a drill pipe string, then slowly drill a hole underneath an obstacle from one side to the other along a determined path.¹⁵ Subsurface obstacles can be avoided by steering the drill bit horizontally and vertically while drilling the initial small-diameter pilot hole and reaching a precise exit point.¹⁶ To help the drill bit cut through soil and rock, drilling fluid is pumped through the drill pipe string.¹⁷ The drilling fluid exits the drill string through jet nozzles in the drill bit, lubricating and cooling the drill bit.¹⁸ The drilling fluid also suspends and, under normal circumstances, carries the soil and rock cuttings from the hole back to the surface through the space between the drill pipe string and the wall of the hole (i.e., the annulus).¹⁹ The pilot hole is enlarged by reaming it out with progressively larger diameter cutting tools.²⁰ During the reaming process, drilling fluid is again circulated through the hole.²¹ Finally, the pipe is pulled into the enlarged hole.²²

Normally, during the pilot hole and reaming stages of drilling, the drilling fluid that was added to the hole makes its way back to containment pits at the entry or exit points, where it then passes through a cleaning system to remove cuttings before being recirculated back into the hole.²³ In some instances, drilling fluid can escape the HDD hole and leak into the surrounding earth.²⁴ In extreme cases, drilling fluid can emerge at the ground surface or in any other undesired location such as wetlands or water bodies, which is known as an inadvertent release (or inadvertent return or IR).²⁵ IRs sometimes result from hydraulic fractures that occur when the drilling fluid pressure exceeds the strength of the surrounding material to contain it.²⁶ Irrespective of an IR's cause, an IR has the potential to release relatively large volumes of drilling fluid over a short period of time, particularly if high-pressure drilling fluid pumps are not immediately disengaged.²⁷

The Commission requires natural gas companies to not only develop, but also comply with contingency and mitigation plans for the construction phase, including the

¹⁵ *Id.* at 2.

¹⁶ *Id.*

¹⁷ *Id.* at 3.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.* at 4, 5.

²¹ *Id.* at 4.

²² *Id.* at 5.

²³ *Id.* at 10.

²⁴ *Id.*

²⁵ See *id.* at 10-11.

²⁶ *Id.* at 10.

²⁷ See *id.* at 11.

measures to be taken in the event of an IR.²⁸ Due to the importance of limiting the potential effects of IRs, during construction, Rover personnel were required to periodically walk the HDD right-of-way to monitor for the release of drilling fluid to the surface.²⁹

B. In February 2015, Rover Submits Its Initial Application Filings to Construct the Rover Pipeline

On February 20, 2015, Rover filed its Application for a Certificate of Public Convenience and Necessity to construct the Rover Pipeline Project. The Commission then conducted its standard analysis to determine whether the proposed project was required by the public convenience and necessity. Under this analysis, the Commission determines whether the public benefits of the project outweigh any adverse effects on specific and potentially affected economic interests.³⁰ If the Commission determines that the public benefits outweigh those adverse effects, the Commission then proceeds to its environmental analysis.³¹ Specifically, the Commission takes a “hard look” at potential environmental impacts of the proposed action under the requirements of the National Environmental Policy Act or NEPA.³² As part of the analysis, Commission staff in the Office of Energy Projects (OEP) completes an environmental assessment (EA) or an environmental impact statement (EIS).³³ If the Commission determines that the potential environmental impacts are unacceptable, it will deny authorization.³⁴ By contrast, if the Commission determines, based on the analyses conducted and comments submitted, that

²⁸ See, e.g., 15 U.S.C. § 717f(e) (“The Commission shall have the power to attach to the issuance of the certificate and to the exercise of the rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require.”); 18 C.F.R. § 380.1 et seq. (2020) (regulations implementing the Commission’s procedures under the National Environmental Policy Act of 1969 (NEPA)); Certificate Order, 158 FERC ¶ 61,109 at App. B (requiring Rover to follow the construction procedures and mitigation measures described in its application and supplements, including responses to staff data requests and as identified in the [environmental impact statement]). See also PennEast Pipeline Company, LLC, Order Issuing Certificates, 162 FERC ¶ 61,053, at App. A (2018); Tennessee Gas Pipeline Company, L.L.C., Order Issuing Certificate, 156 FERC ¶ 61,156, at App. B (2016).

²⁹ See FERC, Final Environmental Impact Statement for Rover Pipeline, Docket No. CP15-93-000, at App. G-1 at G1-6 (issued July 29, 2016) (Final EIS).

³⁰ FERC, Commission Statement of Policy on the Certification of New Interstate Natural Gas Pipeline Facilities, 88 FERC ¶ 61,227, at 61,745 (1999) (Certification Policy Statement).

³¹ *Id.*

³² Final EIS at 1-3.

³³ Certification Policy Statement, 88 FERC ¶ 61,227 at 61,745.

³⁴ See *id.* at ¶ 61,750; Final EIS at 1-3.

the proposed project can be constructed and operated in an environmentally acceptable manner, the Commission moves to the final step—issuance of a certificate order.³⁵ The certificate order that is subsequently issued “will contain the environmental conditions the Commission deems necessary and appropriate to ensure acceptable mitigation of potential environmental harms.”³⁶

C. In July 2016, the Office of Energy Projects Issues Its Final Environmental Impact Statement for the Proposed Rover Pipeline

During its review of Rover’s Application, OEP staff issued a Final EIS in July 2016, which assessed the potential environmental effects of the construction and operation of the pipeline in accordance with NEPA.³⁷ One area of focus was the various HDD crossings that were planned by Rover, which were intended to minimize risks to sensitive resources such as wetlands and river crossings.³⁸ OEP Staff concluded that approval of the Project “would have some adverse and significant environmental impacts; however, these impacts would be reduced to acceptable levels with the implementation of Rover’s . . . proposed mitigation and the additional measures recommended by staff in the final EIS.”³⁹

To that end, and relevant here, the Final EIS contained explicit descriptions of the non-hazardous substances to be used in the HDD process. Specifically, in describing trenchless crossing methods to be permitted, the Final EIS stated that “throughout the drilling process, a slurry of naturally occurring, non-toxic bentonite clay and water would be pressurized and pumped through the drilling head to lubricate the drill bit, remove drill cuttings, and hold the hole open.”⁴⁰ Similarly, in describing the water mixture allowed for lubricating the HDDs, the Final EIS stated “[t]hroughout the process of drilling and enlarging the hole, a slurry made of non-toxic/non-hazardous bentonite clay and water, referred to as drilling mud, would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and hold the hole open.”⁴¹

In addition, the Final EIS contained an HDD Contingency Plan that required Rover to “closely and continually” monitor HDD activities and to conduct, as feasible, “visual and pedestrian field inspection along the drill path,” “including monitoring the

³⁵ See Certification Policy Statement, 88 FERC ¶ 61,227 at 61,746; Final EIS at 1-3 and 1-4.

³⁶ Final EIS at 1-3.

³⁷ *Id.* at 1.

³⁸ Application at 38.

³⁹ Final EIS at 1 (emphasis added).

⁴⁰ *Id.* at 2-31 (emphasis added).

⁴¹ *Id.* at 4-88 (emphasis added).

wetlands and waterbodies for evidence of a release.”⁴² Rover was also required to properly dispose of any drilling mud released from an IR.⁴³

D. In August 2016, Rover States that Its Project is Operating Under a “Necessity to Race to Market,” and Three Months Later Executes a \$1.5 Billion Contract with a Prime Contractor

After issuance of the Final EIS in July 2016, while its Application was still pending with the Commission, Rover began to take steps in anticipation of a certificate order. In August of 2016, Rover anticipated that the Commission would issue a certificate order in September or October of 2016, and that a notice to proceed with construction would subsequently be issued in October or November of 2016.⁴⁴ At that time in August of 2016, Yousif (Joey) Mahmoud, ETP and Rover’s Executive Vice President of Engineering and Construction, referred to the Rover Pipeline Project as operating under a “necessity to race to market”⁴⁵ when speaking to prospective customers about the difficult environment Rover faced in terms of the time and expense for getting certain initial legal approvals that would be necessary in order to construct the pipeline.⁴⁶ Three months later, on November 28, 2016, and still without the certificate order that it anticipated receiving in September or October of 2016, Rover executed a \$1.5 billion contract with Precision Pipeline LLC (Precision), a drilling company, to construct the Rover pipeline.⁴⁷

Rover staffed its Project with contract staff and third-party contractors. Precision, Rover’s prime contractor, was the largest contractor on the Project⁴⁸ and was responsible for installing much of the pipeline by open trench installation and through HDDs under highways, railroads, and natural resources.⁴⁹ Precision is a subsidiary of MasTec, Inc., an

⁴² Id. at App. G-1 at G1-6.

⁴³ See, e.g., id. at G1-7.

⁴⁴ Rover Pipeline Customer Meeting, at 5 (2016) Rover-00070525.

⁴⁵ Id. at 16.

⁴⁶ Id. (discussing the “Difficult Right-of-Way Environment”). A pipeline right-of-way is a piece of land, granted to a pipeline company, on top of and on either side of a natural gas pipeline. Also referred to as an easement, it provides certain interests and restrictions to the land that allow the pipeline company to install and maintain the pipeline. See Ohio State University, A Landowner’s Guide to Understanding Recommended Pipeline Standards and Construction Specifications (May 23, 2016).

<https://ohioline.osu.edu/factsheet/anr-29>.

⁴⁷ Master Construction Agreement between Rover Pipeline and Precision Pipeline (Nov. 28, 2016) MASTEC0051598 (MCA).

⁴⁸ Testimony of Yousif Mahmoud, at 47 (Oct. 5, 2017) (Mahmoud Test.).

⁴⁹ Id.; MCA at Ex. A, Scope of Work.

infrastructure engineering and construction company.⁵⁰ Precision was managed by Steve Rooney, its President, and Bobby Poteete, its Vice President.

The Master Construction Agreement (MCA) between Rover and Precision set forth a seven-month schedule for getting “Phase I” of the pipeline in-service (i.e., by June 16, 2017), and an 11-month schedule for getting “Phase II” of the Project in-service (i.e. by November 1, 2017), “with time being of the essence at all times” for both phases.⁵¹ The MCA specified a stringent feet-per-day progression rate and further stated that there would be “no additional time . . . for any slippage in such delivery dates” unless Rover conceded, in writing, that additional time was necessary and specified the extent of this additional time allowance.⁵² The MCA also contained a Target Price Incentive “for timely completing the Work”⁵³ In addition, the MCA provided that any subcontractor used by Precision for the Project must first be approved in writing by Rover.⁵⁴ The MCA also provided that the contractor, Precision, does not “assume any obligations or commitments in the name of” Rover.⁵⁵

Precision, in turn, executed an Intracompany Work Order with Pretec Directional Drilling, LLC (Pretec), an HDD company, to perform work as a subcontractor on the Rover pipeline. Formed by Precision in 2016, Pretec is majority-owned by MasTec, Inc., the parent company of Precision. Pretec was managed by Bill Colson, Pretec’s General Manager, who executed the Intracompany Work Order on behalf of Pretec. Per the terms of the Intracompany Work Order, Pretec was hired to provide all manpower and equipment for the Rover Pipeline Project, and to operate on a six-day, twelve-hour per day shift that would include Sundays as necessary to meet a previously agreed upon schedule.⁵⁶ Pretec would supply a day shift crew and a night shift crew that collectively provided 24-hour, around-the-clock manpower for construction of the pipeline.⁵⁷ The day shift crew would be overseen by Pretec’s Day Crew Foreman for the Tuscarawas River HDD, while the night shift crew would be overseen by Pretec’s Night Crew

⁵⁰ See MasTec Website, <https://www.mastec.com/>.

⁵¹ MCA at 2; id. at Ex. A, Scope of Work, § 2.3.2. Phase I refers to the in-service date for Spread A, Line A, while Phase II refers to the in-service date for Spread A, Line B. See id. Line A covered over 500 miles. See Mahmoud Test. at 29.

⁵² MCA at 2.

⁵³ Id. at 9.

⁵⁴ Id. at 22.

⁵⁵ Id. at 21.

⁵⁶ Precision and Pretec, Intracompany Work Order, at 1 (executed Mar. 10, 2017) MASTEC0051574-81; id. at Attachment 1, ¶ 10. The Intracompany Work Order was executed in March 2017, following the Commission’s issuance of the Certificate Order in February 2017.

⁵⁷ Id.

Foreman for the Tuscarawas River HDD. Many crew members, including foremen and drillers, were eligible for bonuses from Pretec based, in part, on performance.⁵⁸

E. Commission Issues a Certificate Order in February 2017, and the Order is Subject to Rover's Compliance with Express Environmental Conditions

On February 2, 2017, four months later than Rover had previously projected, the Commission issued the Certificate Order, granting approval of the Rover Pipeline Project subject to forty-five environmental conditions set forth in Appendix B.⁵⁹

Environmental Condition # 1 of the Certificate Order required Rover to “follow the construction procedures and mitigation measures described in its application . . . and as identified in the EIS.”⁶⁰ Rover has not disputed that this condition required it to use the non-toxic/non-hazardous drilling mud, described above, in the HDD process. Environmental Condition # 1 further stated that any modification to an environmental condition must be requested in a filing to the Commission, include a justification as well as an explanation for how the modification “provides an equal or greater level of environmental protection than the original measure,” and be approved in writing by the OEP Director “**before using that modification.**”⁶¹

Environmental Condition # 3 of the Certificate Order stated that prior to commencing any construction, each applicant must file an “affirmative statement” with the Commission, “certified by a senior company official, that all company personnel, environmental inspectors (EI), and contractor personnel will be informed of the EI’s authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.”⁶²

Environmental Condition # 6 of the Certificate Order required Rover to file an “Implementation Plan for review and written approval by the Director of OEP,” that

⁵⁸ Testimony of Robert M. Poteete, at 32 (Oct. 24, 2018) (Poteete Test.); Testimony of Steve Rooney, at 133-34 (Oct. 5, 2018) (Rooney Test.); MasTec, Field Bonus Spreadsheet (2016) MASTEC0059060; MasTec, Field Bonus Spreadsheet (2017) MASTEC0059061. Bill Colson, the General Manager of Pretec, valued speed with respect to the performance of Pretec’s crew at the Tuscarawas River. Colson, with the approval of Bobby Poteete, Vice President of Precision, determined the bonuses for the field employees based on the employee’s performance rating. The bonuses were taken from a “block of money” set aside for bonuses by the Chief Financial Officer of MasTec. Poteete Test. at 34-41.

⁵⁹ See Certificate Order, 158 FERC ¶ 61,109 at PP 6, 281.

⁶⁰ *Id.* at App. B.

⁶¹ *Id.*

⁶² *Id.*

identified, among other things, “the company personnel (if known) and specific portion of the applicant’s organization having responsibility for compliance.”⁶³

Environmental Condition # 7 of the Certificate Order required Rover to employ at least one EI per construction spread⁶⁴ who was required to be:

- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the order and other grants, permits, certificates, or other authorizing documents;
- b. responsible for evaluating the construction contractor’s implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
- c. empowered to order correction of acts that violate the environmental conditions of the order, and any other authorizing document;
- d. a full-time position, separate from all other activity inspectors;
- e. responsible for documenting compliance with the environmental conditions of the order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
- f. responsible for maintaining status reports.⁶⁵

Environmental Condition # 10 of the Certificate Order required written authorization from the Director of OEP before Rover could place its Project into service, and further provided that “[s]uch authorization will only be granted following a determination that rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.”⁶⁶

On February 3, 2017, the day after the Commission issued its Certificate Order, and as required by 18 C.F.R. § 157.20(a), Rover filed its “affirmative statement” accepting the terms of the Certificate Order.⁶⁷ At that time, Rover projected the Rover

⁶³ *Id.*

⁶⁴ Pipeline construction for projects like Rover are typically broken into manageable lengths called “spreads,” with multiple spreads under construction simultaneously. See Rover Pipeline Facts, Construction, (last visited Oct. 4, 2021), <https://www.roverpipelinefacts.com/construction.html>. Each spread is composed of various crews that each have their own responsibilities.

⁶⁵ Certificate Order, 158 FERC ¶ 61,109 at App. B.

⁶⁶ *Id.*

⁶⁷ Rover, Acceptance of Commission Order, Docket No. CP15-93-000 (filed Feb. 3, 2017) (Rover Acceptance of Commission Order).

pipeline being in-service for Phase 1 by July 2017, and for Phase 2 by November 2017.⁶⁸ Thus, by comparison to its contract deadlines, Rover pushed back the in-service date for Phase 1 by less than a month, and made no changes to the in-service date for Phase 2. In addition, that day Rover also filed an Implementation Plan that identified Rover's Executive Vice President, Joey Mahmoud, several Rover managers, and Rover's Lead EIs as "Key Rover personnel having responsibility for environmental compliance."⁶⁹

F. The Commission Issues a Notice to Proceed with Construction in March 2017, at Which Time Rover Plans to Construct Over 500 Miles of Pipeline in Approximately Four Months

On March 3, 2017, four months later than Rover had previously projected, the Commission issued Rover a notice to proceed with construction (Notice to Proceed or NTP) for the Rover Pipeline Project.⁷⁰ That issuance date left Rover's contractors with what Rover described as a "doable but aggressive" construction window of approximately four months to build over 500 miles of pipeline for Phase 1, which included clearing the right-of-way, stringing the pipe, welding the pipe, inspecting the pipe, including HDD drills at crossings, and restoring the right-of-way.⁷¹ Even within that timeframe, Rover had certain earlier regulatory deadlines to meet, like completion of clearing the right-of-way, imposed by the U.S. Fish and Wildlife Service's clearing restrictions for migratory birds.⁷² To keep up with the short timetable, Rover hired what it described as a "small army" of 12,000 construction workers—five times the number of workers that Rover claimed it would have had working simultaneously over a project of this size had such self-imposed time constraints not been present—and asked unions to train and certify new workers.⁷³

Around March 2017, Rover also retained various staffing contractors, including Project Consulting Services, Inc. (PCS), Cleveland Integrity Services (CIS), and Kestrel Engineering Group (Kestrel), to provide temporary employees to Rover. Specifically, Rover hired an HDD Chief from PCS, a Day Utility Inspector and a Night Utility Inspector from CIS, and a Lead Environmental Inspector from Kestrel for Spread A, the portion of the overall construction where the IR at issue occurred.

⁶⁸ Energy Transfer Press Release, Energy Transfer Announces Receipt of FERC Certificate for Construction of Rover Pipeline, Rover Pipeline (Feb. 3, 2017), https://www.roverpipelinefacts.com/documents/02172017/ETP_Press_Release-Rover_FERC_Certificate_Receipt_2-3-2017_Final.pdf (ETP Press Release).

⁶⁹ Rover, Implementation Plan, Docket No. CP15-93-000, at 30 (filed Feb. 3, 2017) (Rover Implementation Plan).

⁷⁰ FERC, Notice to Proceed with Construction, Docket No. CP15-93-000 (issued Mar. 3, 2017) (Delegated Order).

⁷¹ See Mahmoud Test. at 29, 30.

⁷² See *id.* at 29.

⁷³ See *id.* at 30-32, 37.

G. Rover HDD Crews Are Pressed to Begin Drilling, and the Pressure Continues Even as They Encounter Delays Due to Environmental Compliance Issues

HDD crews were slated to begin drilling at the Tuscarawas River on March 18, 2017.⁷⁴ Contemporaneous communications from that morning show that Bill Colson, Pretec's General Manager, was getting heavy pressure from Rover via Precision to get the HDD at the Tuscarawas River started. At around 8:30 AM that morning, Colson had the following text exchange with his Project Manager for the Rover Pipeline Project:⁷⁵

March 18, 2017, 8:36 AM

Colson: Push hard, I know you do, but extra hard!
I want all drills ready turn today/tomorrow!!!!
Let me know as soon as they are ready so I can
push on etc

How long till [the Day Crew Foreman] is
ready

How long before we are good to turn on
Indian fork and Tusc?

Project Manager: [The Day Crew Foreman]
should be going by noon or close to it, [the Indian
Fork HDD Day Crew Foreman] will be this
afternoon.

Colson: I don't care what we have to do... [the
Indian Fork HDD Day Crew Foreman] needs to
be asap as well... I know everything takes time,
but I am getting g my ass tore up

Other contemporaneous communications demonstrate that this pressure appears to have originated from the top of Rover's management. On that same day and within the same timeframe of Colson's text exchange with his Project Manager, Rover's Joey Mahmoud, as well as executives of Precision and Pretec, were directly communicating about drilling progress—or lack thereof, and details about the construction work.

⁷⁴ J.D. Hair & Associates, Inc., Third-Party Review of Design and Construction Activities Rover Pipeline Project: 42-inch Tuscarawas River Crossing by Horizontal Directional Drilling, Docket No. CP15-93-000, at JDHAIR0010 (filed July 31, 2017) (J.D. Hair Report).

⁷⁵ MASTECTEXT00791-94; MASTECTEXT000796-97.

Specifically, less than two hours after Colson and Carter's text exchange, Precision's Vice President, Bobby Poteete, emailed Colson at 10:07 AM to press him about drilling progress: "Drop me a text as soon as we start turning on any crossing. Also, have [the Project Manager] continue to update the spreadsheet daily on each crossing until it strays [sic] turning."⁷⁶ Poteete then went on to discuss the reason why he was pressing Colson about the timing, explaining that the source of the pressure was Rover: "I need to document our challenges as joey [Mahmoud] will be all over me. We received the NTP [Notice to Proceed] on the 3rd and not able to turn the first crossing until the 18th. [H]e will blow a gasket at some point. That's him. . . ."⁷⁷

Just over an hour later, at 11:27 AM, Bill Colson checked in with his Superintendent about drilling progress, and then checked in again at 12:50 PM and 2:25 PM. At that point, the sense of urgency coming from management was clearly evident to crew on the ground, as Colson merely texted the Superintendent a series of questions marks. As shown below, the Superintendent knew exactly what Colson was referring to. Significantly, when the Superintendent explained that there were delays due to the crew's focus on "button[ing] up" some safety and environmental issues that arose, Colson took this to mean that the HDD crew did not "understand the urgency here".⁷⁸

March 18, 2017, 11:27 AM

Colson: Drilling yet

Superintendent: [The Day Crew Foreman] says he be turning shortly.

Colson: Giddy Up, let's go

March 18, 2017, 12:50 PM

Colson: [The Day Crew Foreman] in the ground?

Superintendent: I really wish I could tell you yes, but not as of 20 minutes ago. Should be getting close they were hooking up pump.

Colson: Drill, buddy, drill!!!!

⁷⁶ Email from Bobby Poteete to Bill Colson (Mar. 18, 2017) MASTEC010222.

⁷⁷ *Id.*

⁷⁸ MASTECTEXT00781-84; MASTECTEXT00786-90.

Once pressure continued. lost returns of were never returns only in this already environment. Two 20, 2017, President, Bobby Steve Rooney, relaying what a onsite that day due demonstrating just

level executives were to the most specific details of what was happening onsite, like the exact footage drilled. Poteete wrote:⁸⁰

March 18, 2017, 2:25 PM

Colson: ??

Superintendent: Got dig pit and button up some safety and environmental issues, shouldn't take long.

Colson: Do they not understand or what? Do we need to kick it over to [the Second Day Crew Foreman] to fix... I'm about to fucking lose it here. [The Day Crew Foreman] was supposed to be ready to drill along one ago, I don't think they understand the urgency here... [The Indian Fork HDD Day Crew Foreman] says tonight....

drilling did begin, the That same day, crews drilling mud and they regained.⁷⁹ The lost exacerbated matters time-sensitive days later, on March Precision's Vice Poteete, sent a text to Precision's President, "nightmare" it was to lost returns and how plugged in high-

⁷⁹ In order to succeed with trenchless drilling, drills rely on a constant circulation of mud through the drill to the bit and back out of the hole to lubricate the drill stem and allow forward progress. Losing returns means that mud is pumping down into the hole but is not circulating back out and thus, is "lost" down the hole. The fundamentals of HDD operations are set forth above in Part II.A.

⁸⁰ MASTECEXT02003.

March 20, 2017, 7:16 AM

It's been a nightmare today.

Tuscarawas - 625 ft out with pilot, drilling on...pat returns on joint 6 and have not got them back. Hauling a lot of water and mixing a lot o mud.

As a consequence of losing returns, new drilling mud had to be mixed via a mud system onsite, and then pumped into the hole, instead of being constantly recirculated. The Day Crew Foreman testified that when there were returns of drilling mud, the mud system “darn near runs itself.”⁸¹ However, when there were no returns, mixing and replacing the mud was a labor-intensive process. Workers had to cut 50-pound bags to mix clay with water all day and night. One crew member testified that he mixed 12 to 14 pallets, at 60 bags a pallet, of 50 pound bags in one shift.⁸² This became a serious personnel issue, requiring other laborers to step in to perform the task, because of the enormously difficult nature of the work.⁸³ In addition, drilling often had to shut down to catch up on mud by bringing more water onsite or mixing more clay.⁸⁴



Mud Machine



Bentonite Clay Bags⁸⁵

⁸¹ Day Crew Foreman Test., Vol. I at 49.

⁸² Testimony of Night Crew Laborer # 2, at 34, 39 (Oct. 24, 2017) (Night Crew Laborer # 2 Test.).

⁸³ See, e.g., Testimony of Night Crew Driller, at 59-60, 62-63 (Oct. 25, 2017) (Night Crew Driller Test.); Testimony of Day Crew Laborer # 2, at 31 (Sept. 12, 2017) (Day Crew Laborer # 2 Test.).

⁸⁴ See Night Crew Driller Test. at 43-44.

⁸⁵ OE Staff Photos, Mud Machine (June 2, 2017) IMG_20170602_124153303; OE Staff Photos, Bentonite Clay Bags (June 2, 2017) IMG_20170602_124008816.

On March 23, 2017, a few days into drilling at the Tuscarawas River, a small potential IR was discovered before the much larger IR that occurred in April. The response to this small IR further demonstrates that at the site of the Tuscarawas River HDD operation, regulatory compliance was viewed as a nuisance to construction progress. In a text exchange with his Project Manager that morning, Pretec's General Manager, Bill Colson, expressed his annoyance with having to temporarily suspend construction while the IR was being investigated, and relayed that he had notified Precision's Vice President, Bobby Poteete:⁸⁶

March 23, 2017, 8:36 AM

Project Manager: Where they able to prove that it is actually and IR?

Colson: No.... but we are still shot down

I notified BP

Hope it turns out not to be, so I can shove down their throats

Project Manager: I hope so too.

2 miles from entry and 3 miles from the bit.

From April 2 to April 13, 2017, crews continued to face drilling difficulties and immense time pressures from Rover. Drilling issues were partially documented in contemporaneous drill logs, which show that the crews at the Tuscarawas River believed the reamer to be "balled up" or caked with mud.⁸⁷ Below are images of a clean and balled up reamer from the site of the Project:⁸⁸

⁸⁶ MASTECTEXT00708-11.

⁸⁷ J.D. Hair Report at JDHAIR0214 and JDHAIR0228.

⁸⁸ OE Staff Photo, Clean Reamer (Jun. 2, 2017) (IMG_20170602_123855271); CIS Photo, Balled Up Reamer (April 3, 2017) (CIS0002218). This picture of the balled-up reamer onsite was taken ten days before the IR.



Clean Reamer



**Balled Up Reamer
April 3, 2017**

H. Rover HDD Crews Begin Using Toxic Diesel Fuel and Other Unlawful Substances and Unapproved Additives to Speed Up Drilling Progress

It was when the Rover HDD crews continued experiencing drilling difficulties on April 2, 2017, that they began using unlawful measures to lubricate the drill in order to keep up with job progress demands.⁸⁹ As described below, multiple Rover HDD crew members admitted to, and provided corroborating accounts of, intentionally adding toxic diesel fuel and other toxic substances and unapproved additives to the drilling mud during this period. Rover's Lead EI for Spread A, testified that Rover had a 2,000-gallon tank of diesel fuel onsite, as well as a smaller tank, and estimated that there were "2500 gallons or so" in total of diesel fuel stored onsite.⁹⁰

1. Night Crew Foreman

The Night Crew Foreman was the first to admit to adding diesel fuel to the drilling mud, and provided the following testimony regarding the origin of the idea:

Q: Did you add diesel fuel to the drilling mud at the HDD of the Tuscarawas River?

A: Yes.

Q: Okay. Did you ask other people to do it?

A: I don't believe I did, but it was -- once I did it, I believe that they thought it was okay to do it.

⁸⁹ Testimony of Night Crew Foreman, at 19 (Oct. 11, 2017) (Night Crew Foreman Test.) (Night crew used diesel to combat reamer difficulties); Testimony of Night Crew Laborer # 1, at 27 (Oct. 24, 2017) (Night Crew Laborer # 1 Test.) (pinpoints diesel use between his start date and the IR).

⁹⁰ Testimony of Lead Environmental Inspector for Spread A, at 66 (July 21, 2017) (Lead EI Spread A Test.).

Q: Was it kind of everybody on your crew was doing it or just a few?

A: [The Night Crew Mud Technician] is the only one that I remember. I've heard there was other ones doing it, and I honestly never really seen them.

Q: Is it fair to say that you did it because you thought it would help the drill?

A: Yes.

Q: Okay. How so?

A: The reamer was getting stuck, and it acts as a lubricant.

Q: Okay. The diesel fuel act as a lubricant?

A: It did.

Q: What made you think to use it?

A: From the daytime driller.

Q: Okay. Who is that?

A: [The Day Crew Driller].

Q: Okay. And was he using it?

A: He told me he did.⁹¹

The Night Crew Foreman also admitted to using "burritos," a non-toxic but unapproved lubricant, on multiple occasions to lubricate the drill, and admitted that he did not record his use of it "[b]ecause we weren't supposed to use it."⁹²

2. Night Crew Mud Technician

Subsequently, the Night Crew Mud Technician admitted to adding diesel fuel and unapproved additives to the drilling mud, and that he did so at the instruction of the Night Crew Foreman, in order to speed up drilling progress:

Q: Were you ever told to put diesel in the hole?

A: Yes, I was.

Q: And who -- who told you to do that?

A: My foreman.

⁹¹ Night Crew Foreman Test. at 18-20.

⁹² Id. at 107-109.

Q: [The Night Crew Foreman]?

A: Yep.

Q: Was this after you had been using soap sticks?

A: Uh-huh; yeah.

Q: Was this because the soap sticks and burritos weren't doing the job?

A: That's exactly why.

A: And I think he told [Night Crew Laborer # 2] to one time. Otherwise, he did it a few times himself.

Q: Do you remember how many times -- did you ever see [Night Crew Laborer # 2] do it?

A: Once.

Q: Did you ever see [the Night Crew Foreman] do it?

A: Yep.

Q: And how many times?

A: Not for certain. Two or three.

Q: And how many times did he tell you to do it?

A: I'm not certain on that either.

Q: You can estimate.

A: Yeah, I'd say four or five times.⁹³

The Night Crew Mud Technician also testified that the Night Crew Foreman later told him, after they had already used the soap sticks and burritos, that "none of these were FERC-approved additives and we are not allowed to use them."⁹⁴

The Night Crew Mud Technician further testified about the mechanics of the Rover HDD crew members adding diesel fuel to the drilling mud, explaining that they were similar to pumping gas into a car at a gas station:⁹⁵

⁹³ Night Crew Mud Technician Test. at 80-81.

⁹⁴ Id. at 76-77.

⁹⁵ Id. at 83.

Q: And when you did it, when you put the -- so was it just like when you're filling up a car, it's that kind of handle?

A: Yeah, that's exactly it, except just a little bit bigger.

Q: So you put that into the pipe. Did you have to actually squeeze and hold it, or like at the gas station, can you just like click it?

A: Yeah, it had a clicker, and because we weren't getting returns and there was nothing in the pipe, it never clicked off.⁹⁶

3. Night Crew Laborer # 1

Night Crew Laborer # 1, similarly testified that prior to the April IR, he saw the Night Crew Foreman putting diesel fuel into the drilling mud on one occasion.⁹⁷ When asked how long he observed the Night Crew Foreman was doing this for, he testified: "I would say that it seemed like at least 10 minutes."⁹⁸

4. Night Crew Driller

A Night Crew Driller admitted that the Day Utility Inspector and Night Utility Inspector openly discussed adding diesel fuel to the drilling mud in his presence while they were in the drill cab transitioning between the day and night shifts.⁹⁹ The inspectors, who were retained by and reported directly to Rover, expressed no concern for the conduct. The Night Crew Driller testified that the two inspectors said at the time: "oh, yeah, what's it going to hurt. Pump some diesel down there. We got no returns. Who is ever going to know. What's it going to hurt."¹⁰⁰

5. Night Crew Laborer # 2

Night Crew Laborer # 2 testified that he heard the Night Crew Mud Technician and Night Crew Foreman discussing a couple of times over the radio adding "ruby red" or diesel fuel to the drilling mud.¹⁰¹ He further testified that the Night Crew Mud Technician directed him to add an unapproved additive, "burritos," to the drilling mud and demonstrated for him how to do it.¹⁰² Night Crew Laborer # 2 explained that this instruction to add "burritos" to the drilling mud came from the Night Crew Foreman.¹⁰³

⁹⁶ *Id.*

⁹⁷ Night Crew Laborer # 1 Test. at 27.

⁹⁸ *Id.*

⁹⁹ Night Crew Driller Test. at 95-100.

¹⁰⁰ *Id.* at 100.

¹⁰¹ Night Crew Laborer # 2 Test. at 42-43. Night Crew Laborer # 2 and other HDD crew members testified that "ruby red" refers to diesel fuel. See, e.g., *id.*; Night Crew Mud Technician Test. at 82-83.

¹⁰² Night Crew Laborer # 2 Test. at 29.

¹⁰³ *Id.*

He further testified that he added burritos to the drilling mud “quite a few” times, and estimated the frequency to be “five or six a shift.”¹⁰⁴

6. Night Crew Operator

A Night Crew Operator testified that Day Crew Laborer # 1 referenced below, told her that he saw Day Crew Laborer # 2 and the Day Crew Mud Technician add diesel fuel to the drilling mud.¹⁰⁵ The Night Crew Operator further testified that she herself was told by the Night Crew Foreman to “dump” hydraulic oil into the mud system, and told by a vacuum truck driver to dump the equipment grease and water that puddled into onsite containments into the mud system, and that she did so.¹⁰⁶ While directing the Night Crew Operator to add hydraulic oil to the drilling mud, the Night Crew Foreman displayed the same lack of concern about adding hydraulic oil to the drilling mud, as the Rover Day Utility Inspector and Night Utility Inspector did about adding diesel fuel, responding: “It won’t hurt anything.”¹⁰⁷ The Night Crew Operator provided the following testimony:

A: The hydraulic oil that we took out of the drill rig power unit, I was told to dump it into the mud system, and I did.

Q: That is the --

A: The 5-gallon bucket.

Q: The 5-gallon bucket that we talked about -- about the leak from the power unit?

A: Yes.

Q: Okay. Do you know when approximately that was?

A: It was still in the pilot hole, because the mud system was still on rig side. So it was in -- within the first week or so.

Q: Who told you to do that?

A: [The Night Crew Foreman].

Q: Do you know why he told you to do that?

A: He said it wouldn’t hurt anything. I said, It’s hydraulic oil. He said, It won’t hurt anything. It’s probably the easiest way to get rid of it.

Q: Do you know anything about any other fluids going into the mud that shouldn’t have been?

¹⁰⁴ Id. at 27.

¹⁰⁵ Testimony of Night Crew Operator, at 77-80 (Nov. 13, 2017) (Night Crew Operator Test.).

¹⁰⁶ Id. at 115-17.

¹⁰⁷ Id. at 116.

A: No, I don't. Oh, wait. Sometimes we would suck out the containments, which is the -- the containments that held the power -- the power unit, the containment that held the light plants, the containment that held the fuel cans. And we would suck those out with the vac truck, and they would put that down the hole. I don't know. I mean, sometimes they would haul it away, and sometimes they would put it down the hole. So --

Q: What was it that you were sucking out?

A: It was like, you know, if it rained and the water would be in the containment, but yet there was a slight bit of, say, fuel or oil off the can, or maybe the light plant leaked or something, you know. If it had any kind of grease or anything, that would have been in that.

Q: Who told you -- or who, in fact, put that back in the hole?

A: The vac truck driver

A: Yeah. And that was direct order from someone else. I mean, he wouldn't have done it on his own. If that's what we were told to do, just suck those out and put it down the hole.¹⁰⁸

7. Day Crew Laborer # 1

Day Crew Laborer # 1 testified that prior to the April IR he saw the Day Crew Mud Technician add diesel fuel to the drilling mud,¹⁰⁹ and on multiple occasions he heard the Day Crew Foreman instruct the crew over the radio to add "ruby red" into "the mud system so it could get mixed up."¹¹⁰

8. Vacuum Truck Driver

A Vacuum Truck Driver testified that Day Crew Laborer # 2 admitted to him that he added diesel fuel to the drilling mud, and "was almost boasting about it," stating to the Vacuum Truck Driver: "'of course, there's diesel fuel in there, I dumped it in there. . . . [The Day Crew Foreman] told me to do it. I dumped 2,500 gallons.'"¹¹¹ Notably, as described above, Rover's Lead EI for Spread A, corroborated that Rover had "2500 gallons or so" of diesel fuel stored onsite.¹¹²

¹⁰⁸ Id. at 115-16.

¹⁰⁹ Testimony of Day Crew Laborer # 1, at 81 (Mar. 9, 2018) (Day Crew Laborer # 1 Test.).

¹¹⁰ Id. at 81, 118-22.

¹¹¹ Testimony of Vacuum Truck Driver, at 68-69 (Aug. 23, 2017) (Vacuum Truck Driver Test.).

¹¹² Lead EI Spread A Test. at 66.

9. Day Crew Driller

A Day Crew Driller whom one witness testified was the source of the idea of adding diesel fuel to the drilling mud, admitted that he suggested using diesel fuel to Night Crew Driller and Night Crew Foreman, but that he was only “joking.”¹¹³ The Day Crew Driller further testified that Rover’s Day Utility Inspector contemporaneously showed him an image of what the Day Crew Driller believed was the Day Crew Foreman putting diesel fuel in the drilling mud.¹¹⁴

10. Day Crew Foreman

Initially, the Day Crew Foreman categorically denied adding diesel fuel to the drilling mud and instructing others to do so.¹¹⁵ However, his statements are directly contradicted by multiple other crew members, including crew members that he supervised. The Day Crew Foreman did, however, admit to adding an unapproved additive (“soap sticks”) to the drilling mud, but claimed that it was an “accident.”¹¹⁶ The Day Crew Foreman admitted that at the time he used the “soap sticks,” he knew that they had not been approved by the Commission for Rover’s use.¹¹⁷ When the Day Crew Foreman was questioned by Enforcement a second time, subsequent to other HDD crew members admitting to adding diesel fuel, hydraulic oil, contaminated containment fluid, and non-toxic but unproved additives to the drilling mud, the Day Crew Foreman refused to answer any questions and instead asserted his Fifth Amendment privilege against self-incrimination.¹¹⁸

I. Large Inadvertent Release and Discovery of Diesel Fuel in Drilling Mud

On April 13, 2017, a large IR, later determined to be of nearly 2 million gallons of drilling mud, was discovered on the west/exit side of the Tuscarawas River.¹¹⁹ Rover’s Day Utility Inspector, who ultimately discovered the IR, confirmed that prior to the IR, the right-of-way was not being regularly monitored:

If you’re not getting returns in that pit, you need to have somebody walking all the time, 24 hours a day with a flashlight, and [the IR] would have never happened We may have had a little bit of mud come up, but that should have

¹¹³ See, e.g., Testimony of Day Crew Driller, at 125-28 (Feb. 5, 2018) (Day Crew Driller Test.).

¹¹⁴ Id. at 145-48.

¹¹⁵ See Day Crew Foreman Test., Vol. I at 135-37, 146, 149.

¹¹⁶ See id. at 128.

¹¹⁷ See id. at 128-29.

¹¹⁸ Testimony of Day Crew Foreman, Vol. II, at 196-97 (Apr. 25, 2018) (Day Crew Foreman Test., Vol. II).

¹¹⁹ J.D. Hair Report at JDHAIR0005-06.

been -- when I'm drilling and I don't have flow, you automatically -- that is a person's job, get him out there walking. If you need two people out there because it's not safe, get two people walking. I mean, it's a multimillion-dollar [sic] project . . . I'm pretty much the only one that was walking, you know. And if I had put the waders on a week before, you know, maybe it wouldn't have been so bad.¹²⁰

After the large IR, as a further testament to the hyper-focus on drilling progress, Pretec's General Manager, Bill Colson, and the Day Crew Foreman were nonetheless making plans to move the drill stem in order to prevent a hole collapse while Rover awaited permission from the Commission to recommence drilling on April 22, 2017. On April 21, 2017, Colson told his Day Crew Foreman that he could "pump a little mud" and "trip a few joints back and forth to try to ease everything, but they'd prefer it be done at night."¹²¹ The Day Crew Foreman responded "10 4. I will do it first thing in the morning. No one will be the wiser."¹²²

From April 13 to August 6, 2017, Precision estimates that it spent approximately \$6,477,613.07 cleaning the IR,¹²³ including disposal of the drilling mud released in the IR at a local sand and gravel disposal pit and a local quarry.¹²⁴ On or about May 12, 2017, the Ohio EPA informed Rover of hotline tips alleging that diesel fuel was contained in the drilling mud at Tuscarawas River.¹²⁵ On May 26, 2017, the Ohio EPA advised Commission staff and Rover that Ohio EPA's sampling of the mud at the IR revealed the presence of petroleum hydrocarbons consistent with diesel fuel.¹²⁶

III. Enforcement's Investigation

On June 1, 2017, OEP publicly referred this matter to Enforcement for investigation, and urged Rover to cooperate.¹²⁷ Enforcement's investigation sought to

¹²⁰ Testimony of Day Utility Inspector, at 111-12 (Nov. 29, 2017) (Day Utility Inspector Test.) (emphasis added).

¹²¹ MASTECTEXT00484-86.

¹²² *Id.*

¹²³ Tuscarawas IR Cleanup Summary (Oct. 15, 2017) MASTEC0058126.

¹²⁴ See OEP, Letter re: Mitigation Measures Necessary for In-Service Authorization, Docket No. CP15-93-000, at 1 (issued July 12, 2017) (OEP Mitigation Measures Letter); Tuscarawas IR Cleanup Summary.

¹²⁵ Mahmoud Test. at 147-50; Testimony of Buffy Thomason, at 114-18 (Sept. 15, 2017) (Thomason Test.).

¹²⁶ Email from Ed Gortner to Joey Mahmoud (May 26, 2017, 2:57 PM) THDD-00015687 (EPA informs Rover of test results).

¹²⁷ FERC, Letter to Rover, Docket No. CP15-93-000, at 2 (issued June 1, 2017) (regarding the drilling fluid composition found in samples from various locations near the Tuscarawas River HDD).

determine whether and why diesel fuel was used in the drilling mud at the Tuscarawas River HDD operation. Enforcement Staff immediately served its first set of data requests on Rover.¹²⁸ On June 2, Enforcement Staff visited the site of the Tuscarawas River HDD and the IR. Over the next two weeks, Enforcement Staff requested testimony from key Rover witnesses. On June 23, Rover claimed to “fully cooperate” with the investigation, but could not produce key witnesses because it did not want to “disrupt or negatively impact Rover’s ongoing activities.”¹²⁹ Rover produced its first documents on June 26.¹³⁰ Rover did not produce its first witness until August 18, when the first and least relevant Rover witness appeared for testimony.¹³¹

On July 12, 2017, after learning of the presence of diesel fuel in the IR mud, OEP sent Rover a letter, which OEP also submitted to the public FERC docket, requiring that Rover, pursuant to Environmental Condition # 10 in the Certificate Order, remove “all drilling mud and drill cuttings with the presence of petroleum hydrocarbons from the Oster Sand and Gravel Disposal Pit and the Beach City Quarry to an Ohio Environmental Protection Agency approved solid waste disposal site.”¹³² The letter also required that going forward, Rover must remove and dispose of any remaining contaminated IR mud to an Ohio EPA approved solid waste disposal site.¹³³ In the letter, OEP further explained that “[p]rior to authorizing future HDDs, Commission staff also anticipates the development of a set of protocols to prevent future drilling mud contamination.”¹³⁴ OEP admonished that “it is important that Commission staff gain at least a preliminary understanding of the underlying causes for the presence of petroleum hydrocarbons in the drilling fluid at the HDD of the Tuscarawas River,” and expressed “concern[] that the lack of availability of Rover’s personnel and its contractors’ personnel is delaying our ability to determine the relevant facts.”¹³⁵

On July 31, 2017, third-party analyst J.D. Hair released a report prepared at the request of the Commission, regarding the circumstances that led to the IR. J.D. Hair reviewed “[Pretec] and Rover’s documentation of daily HDD construction operations and daily IR monitoring,” and found that their documentation of these activities “was very limited.”¹³⁶ Based on the information available from that documentation, J.D. Hair concluded that the steps Pretec took to restore drilling fluid circulation after returns were

¹²⁸ OE Data Requests to Rover (June 1, 2017).

¹²⁹ Email from Rover to OE (June 23, 2017, 5:05 pm).

¹³⁰ Rover Letter to OE re production for June 1, 2017 Data Request (June 26, 2017).

¹³¹ Testimony of Stacey Boultinghouse (Aug. 18, 2017) (Boultinghouse Test.).

¹³² OEP Mitigation Measures Letter at 1.

¹³³ *Id.* at 2.

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ J.D. Hair Report at JDHAIR0005.

lost, “did fall short of common HDD industry practices.”¹³⁷ J.D. Hair also expressed its opinion that the IR “was due to a combination of weak overburden soil beneath the wetland and annular pressure increases that resulted from [Pretec’s] remedial actions” taken when drilling difficulties emerged at the Tuscarawas River.¹³⁸

J.D. Hair also disputed Pretec reports suggesting that the IR occurred over a 24-hour period, immediately after the right-of-way had been inspected. J.D. Hair’s analysis found that in order for 2 million gallons of drilling mud to have accumulated, “the IR likely occurred 3 to 4 days prior to being discovered.”¹³⁹ Rover’s Day Utility Inspector confirmed in testimony that the right-of-way was not being regularly monitored.¹⁴⁰ Based on its review, J.D. Hair recommended, among other technical drilling changes, that Rover “[u]se third party inspectors for independent monitoring and documenting HDD operations, as well as full-time inspectors to check for inadvertent releases of drilling fluid.”¹⁴¹

On August 4, 2017, Rover responded to the J.D. Hair Report in a docketed letter, and theorized that “diesel concentrations could have been caused by an inadvertent and unreported spill or leak from equipment operating during the clean-up of the IR, or it could have been the deliberate or malicious act of individuals opposed to the project. Given the extensive inspection and oversight [sic] at this and other sites along the project, it is difficult to imagine that this occurred from an unreported spill or leak.”¹⁴² Rover has not changed, in any docketed on-the-record statement to the Commission, its narrative about the source of the diesel fuel in the IR mud.

On August 21, 2017, the Commission authorized Enforcement to conduct a non-public, formal investigation.¹⁴³ On August 28, Enforcement issued subpoenas for documents (re-issuing the previous data requests under subpoena) with return dates of September 13 and September 27.¹⁴⁴

On August 29, 2017, in a letter to Enforcement, Rover repeatedly denied the use of diesel fuel, arguing that the positive petroleum hydrocarbon test results did not necessarily indicate the presence of diesel fuel, and posited that the testing could be

¹³⁷ *Id.* at JDHAIR0006.

¹³⁸ *See id.*

¹³⁹ *See id.* at JDHAIR0007, JDHAIR0061.

¹⁴⁰ Day Utility Inspector Test. at 111-12.

¹⁴¹ J.D. Hair Report at JDHAIR0008.

¹⁴² Rover, Letter re: J.D. Hair Report and FERC Letter Orders, Docket No. CP15-93-000, at 4-5 (filed Aug. 4, 2017).

¹⁴³ FERC, Order of Non-Public, Formal Investigation, Docket No. IN17-04 (issued Aug. 21, 2017).

¹⁴⁴ Enforcement subpoena to Rover for Document Production of Documents (Aug. 28, 2017) (Second Data Request).

explained by way of sabotage or accident.¹⁴⁵ Rover stated that there was “a dearth of evidence to support” Enforcement’s allegations, that “‘Diesel Range Organics’ are not the same thing as diesel fuel,”¹⁴⁶ and that “Rover is not aware of any testing that shows diesel fuel contamination of the drilling mud at the HDD site in contravention of the Commission Order.”¹⁴⁷

On October 3, 2017, Rover’s Executive Vice President of Engineering and Construction, Joey Mahmoud, submitted an affidavit to Enforcement Staff regarding his failure to preserve data despite preservation notices issued by OEP and Enforcement Staff.¹⁴⁸ Specifically, Mahmoud stated that after getting locked out of his phone, he reset it and thus deleted all of the data stored on it, and then restored the phone to whatever the “the most recently available iCloud backup” was at the time.¹⁴⁹ While Mahmoud stated that it is his “understanding that the Company has taken steps to retrieve any information that may not have been restored to the phone,” he later acknowledged in testimony that Rover had identified gaps in his phone records.¹⁵⁰

Enforcement issued an additional subpoena on November 8, 2017, with a return date of December 7, 2017.¹⁵¹ Rover’s production was purportedly complete on March 27, 2018.¹⁵² However, on May 21, 2018, Rover produced more than 4,000 documents that were previously withheld or redacted, and that were not included in their privilege claims.¹⁵³ Rover’s production was complete nearly a year from the original data request (June 1, 2017) and eight months from the first subpoena deadlines (September 13 and September 27, 2017). From June 27, 2017 to present, Enforcement reviewed more than 25,000 documents produced by Rover and third parties. From July 18, 2017 to October 26, 2018, Enforcement took the testimony of 24 witnesses.

On May 10, 2019, Enforcement Staff issued preliminary findings to Rover.¹⁵⁴ On January 19, 2021, Enforcement Staff issued a letter providing notice pursuant to 18 C.F.R. § 1b.19 that Enforcement would be recommending that the Commission issue an

¹⁴⁵ Letter from Rover to Enforcement (Aug. 29, 2017).

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 1-2 (emphasis in original).

¹⁴⁸ See Affidavit of Joey Mahmoud (Oct. 3, 2017) (Mahmoud Aff.).

¹⁴⁹ *Id.* P 7.

¹⁵⁰ *Id.* P 8; Mahmoud Test. at 219-21.

¹⁵¹ Enforcement Subpoena to Rover for Document Production of Documents (Nov. 8, 2017) (Third Set of Data Request).

¹⁵² Rover Letter to Enforcement (Mar. 27, 2018). At the time, Rover made no indication that it would produce additional documents in May 2018. To the contrary, Rover indicated a privilege log was forthcoming and insisted it would not produce a privilege log until its production was complete.

¹⁵³ Rover Letter to OE re Production Responsive to Data Requests (May 21, 2018).

¹⁵⁴ Enforcement Staff Preliminary Findings Letter to Rover (May 10, 2019).

Order to Show Cause why Rover should not be made the subject of a public enforcement proceeding and pay a civil penalty.¹⁵⁵ To-date, Rover has not provided a substantive response to Enforcement's preliminary findings or Enforcement's § 1b.19 notice.

IV. Legal Framework

A. Natural Gas Act

Interstate natural gas pipeline construction is governed by NGA Section 7, which provides:

No natural-gas company or person which will be a natural-gas company upon completion of any proposed construction or extension shall engage in the transportation or sale of natural gas, subject to the jurisdiction of the Commission, or undertake the construction or extension of any facilities therefor, or acquire or operate any such facilities or extensions thereof, unless there is in force with respect to such natural-gas company a certificate of public convenience and necessity issued by the Commission authorizing such acts or operations.¹⁵⁶

Pursuant to Section 7, in order to begin construction on an interstate natural gas pipeline, a company must receive approval from Commission in the form of a certificate of public convenience and necessity.¹⁵⁷ The Commission will issue a certificate only if "it is found that the applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of [the Act] and the requirements, rules, and regulations of the Commission thereunder" and if construction and operation of the pipeline "is or will be required by the present or future public convenience and necessity."¹⁵⁸

As described above, Rover filed its requisite Application on February 20, 2015, and the Commission issued the Certificate Order on February 2, 2017.

1. Natural Gas Act Section 22(a)

Section 22(a) of the NGA gives the Commission authority to impose a civil penalty for a violation of Commission orders, including certificates of public convenience

¹⁵⁵ Enforcement Staff 1b.19 Letter to Rover (Jan. 19, 2021).

¹⁵⁶ 15 U.S.C. § 717f(c)(1)(A).

¹⁵⁷ See Texas E. Transmission Corp., 90 FERC ¶ 61,278, at 61,921 (2000).

¹⁵⁸ 15 U.S.C. § 717(f)(e).

and necessity, of \$1 million per day per violation for as long as the violation continues, as adjusted for inflation.¹⁵⁹

2. Natural Gas Act Section 7(e)

NGA Section 7 also provides the Commission with the authority to attach to a certificate of public convenience and necessity “such reasonable terms and conditions as the public convenience and necessity may require.”¹⁶⁰ In other words, the Commission may require certificate holders, such as Rover, to meet certain conditions—such as environmental conditions—in connection with their construction and operation of interstate natural gas pipelines.¹⁶¹

B. Commission Regulations, 18 C.F.R. § 157.20

Section 157.20 of the Commission’s regulations, which addresses general conditions applicable to certificates, similarly provides that the “terms and conditions” that the Commission finds are “required by the public convenience and necessity, shall attach to the issuance of each certificate and to the exercise of the rights granted thereunder.”¹⁶²

C. Commission’s Certificate Order

Environmental Condition # 1 of the Certificate Order required Rover to follow the construction procedures and mitigation measures described in its application and as identified in the Final EIS.

Rover was therefore required under NGA Section 7 to comply with the conditions contained in the Commission’s Certificate Order, including Environmental Condition # 1, which mandated that Rover “follow the construction procedures and mitigation measures described in its application . . . and as identified in the EIS [Environmental Impact Statement].”¹⁶³

¹⁵⁹ 15 U.S.C. § 717t-1; Civil Monetary Penalty Inflation Adjustments, 158 FERC ¶ 61,017, at P 8 (2017). See also Algonquin Gas Transmission, LLC, 154 FERC ¶ 61,048, at P 14 n.19 (2016) (“Pipeline companies that violate certificate conditions are subject to general and civil penalties.”).

¹⁶⁰ 15 U.S.C. § 717f(e).

¹⁶¹ See, e.g., Algonquin, 154 FERC ¶ 61,048 at P 14 n.19 (“Pipelines cannot begin construction before receiving authorization from the Director of the Commission’s Office of Energy Projects pursuant to a certificate order’s conditions.”); Iroquois Gas Transmission Sys., L.P., 52 FERC ¶ 61,091, at 61,402 n.195 (1990) (“The Commission has a longstanding practice of issuing certificates conditioned on the completion of environmental work or the adherence by the applicants to environmental conditions.”).

¹⁶² 18 C.F.R. § 157.20.

¹⁶³ Certificate Order, 158 FERC ¶ 61,109 at App. B.

The Final EIS stated that “throughout the drilling process, a slurry of naturally occurring, non-toxic bentonite clay and water would be pressurized and pumped through the drilling head to lubricate the drill bit, remove drill cuttings, and hold the hole open.”¹⁶⁴ Further, in describing the water mixture to be used for lubricating the HDDs, the Final EIS stated “[t]hroughout the process of drilling and enlarging the hole, a slurry made of non-toxic/non-hazardous bentonite clay and water, referred to as drilling mud, would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and hold the hole open.”¹⁶⁵

The Final EIS explicitly enumerated the only substances (non-toxic bentonite clay and water) Rover was permitted to use in the HDD process.¹⁶⁶ The Final EIS also required Rover to “closely and continually” monitor HDD activities and to conduct, as feasible, “[v]isual and pedestrian field inspection along the drill path,” “including monitoring the wetlands and waterbodies for evidence of release.”¹⁶⁷ Additionally, the Final EIS required Rover to properly dispose of any drilling mud released from an IR.¹⁶⁸

V. Analysis and Findings

A. Rover Violated the NGA, the Commission’s Regulations, and the Commission’s Certificate Order

1. Rover HDD Crews Intentionally Used Diesel Fuel and Other Toxic Substances and Unapproved Additives in the Drilling Mud

As further described below, Enforcement found that from April 2 through April 13, 2017, multiple HDD crew members employed by Rover’s contractors intentionally added toxic diesel fuel, hydraulic oil, contaminated containment fluids, and unapproved lubricants such as “soap sticks” and “burritos” to combat drilling difficulties and keep up with drilling progress demands.

Witnesses testified that at least the following seven Rover HDD crew members added diesel fuel to drilling mud at the Tuscarawas River HDD: Night Crew Foreman, Night Crew Mud Technician, Day Crew Foreman, Day Crew Mud Technician, Night Crew Laborer # 2, Day Crew Laborer # 2, and Day Crew Driller.¹⁶⁹ The Night Crew Foreman and Night Crew Mud Technician admitted in testimony to engaging in this conduct.¹⁷⁰ Their testimony further shows that diesel fuel was routinely added to the

¹⁶⁴ Final EIS at 2-31 (emphasis added).

¹⁶⁵ *Id.* at 4-88 (emphasis added).

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at App. G-1 at G1-6.

¹⁶⁸ See, e.g., *id.* at G1-7.

¹⁶⁹ See *supra* Part II.H (describing testimony of Night Crew Foreman, Night Crew Mud Technician, Night Crew Laborer # 1, Day Crew Laborer # 1, and Vacuum Truck Driver).

¹⁷⁰ *Id.*

drilling mud.¹⁷¹ The Night Crew Mud Technician testified to adding diesel fuel to the drilling mud five times, and testified to seeing the Night Crew Foreman adding diesel fuel three times.

Witnesses also testified that at least the following four Rover HDD crew members added unapproved additives, like “soap sticks” or “burritos” to lubricate the drill and speed up drilling progress: Night Crew Foreman, Night Crew Mud Technician, Night Crew Laborer # 2, and Day Crew Foreman.¹⁷² Additionally, one witness admitted to adding hydraulic oil to the drilling mud on at least one occasion, and contaminated water from containments on more than one occasion.¹⁷³

Rover’s use of diesel fuel, hydraulic oil, contaminated containment fluids, and unapproved additives to lubricate the drill, constituted clear violations of Section 7(e) of the NGA, the Commission’s implementing regulation at 18 C.F.R. § 157.20, and the Commission’s Certificate Order. Environmental Condition # 1 of the Certificate Order imposed the condition, pursuant to Section 7(e) of the NGA, that Rover “follow the construction procedures and mitigation measures described in its application . . . and as identified in the EIS,”¹⁷⁴ and to request any modification to an environmental condition in a filing to the Commission “before using that modification.”¹⁷⁵ The EIS permitted Rover to use only non-toxic bentonite clay and water in its drilling fluid.

2. Rover HDD Crews Failed to Monitor the Right-of-Way

Enforcement also found that Rover HDD crews at the Tuscarawas River failed to monitor the right-of-way. As demonstrated above, potential IRs slowed progress. Rover’s Lead EI for Spread A believed right-of-way monitoring to be the job of Pretec alone. However, he was listed in Rover’s Application as an individual responsible for environmental compliance,¹⁷⁶ and Environmental Condition # 7 required Lead EIs to be responsible for evaluating the construction contractor’s implementation of environmental mitigation measures, and for documenting compliance with the environmental conditions of the Certificate Order.¹⁷⁷ Further, third-party reviewer J.D. Hair concluded that there was no documentation of monitoring the IR, and that due to the volume of drilling fluid it understood to be found in the wetland, “the IR likely was occurring 3 to 4 days prior to being discovered.”¹⁷⁸ That time period equates to approximately seven shifts of HDD crew members and inspectors who failed to monitor the right-of-way and discover the

¹⁷¹ *Id.*

¹⁷² See *supra* Part II.H (describing testimony of Night Crew Foreman, Night Crew Mud Technician, Night Crew Laborer # 2, and Day Crew Foreman).

¹⁷³ See Night Crew Operator Test. at 116.

¹⁷⁴ Certificate Order, 158 FERC ¶ 61,109 at App. B.

¹⁷⁵ *Id.*

¹⁷⁶ Rover Implementation Plan at 30.

¹⁷⁷ Certificate Order, 158 FERC ¶ 61,109 at App. B.

¹⁷⁸ J.D. Hair Report at JDHAIR0007, JDHAIR0088.

IR.¹⁷⁹ The Day Utility Inspector who ultimately discovered the IR, confirmed that crews were not monitoring the right-of-way as required.¹⁸⁰

Enforcement concluded that this failure to monitor the right-of-way constituted a clear violation of Section 7(e) of the NGA, the Commission's implementing regulation at 18 C.F.R. § 157.20, and the Commission's Certificate Order. Environmental Condition # 1 of the Certificate Order imposed the condition, pursuant to Section 7(e) of the NGA, that Rover "follow the construction procedures and mitigation measures described in its application . . . and as identified in the EIS."¹⁸¹ The HDD Contingency Plan contained in the Final EIS, required Rover to "closely and continually" monitor HDD activities and to conduct, as feasible, "[v]isual and pedestrian field inspection along the drill path," "including monitoring the wetlands and waterbodies for evidence of a release."¹⁸²

3. Rover HDD Crews Failed to Properly Dispose of IR Mud Contaminated with Diesel Fuel and Hydraulic Oil

Additionally, Enforcement found that Rover improperly disposed of the drilling mud released during the IR that was contaminated with toxic diesel fuel and hydraulic oil. Instead of removing the IR mud at a site appropriate for disposing of the contaminated mud, such as an Ohio EPA-approved solid waste disposal site, Rover disposed of the IR mud at the Oster Sand and Gravel Disposal Pit and the Beach City Quarry.¹⁸³ Per a July 12, 2017 request from OEP, Rover was required to remove and dispose of the IR mud from those two locations and transfer it to an Ohio EPA-approved solid waste disposal site.¹⁸⁴ Further, Rover was required to remove and dispose of any remaining IR mud at an Ohio EPA-approved solid waste disposal site.¹⁸⁵

Enforcement concluded that Rover's initial disposal of the contaminated drilling mud from the IR at a local sand and gravel pit and a local quarry constituted a clear violation of Section 7(e) of the NGA, the Commission's implementing regulation at 18 C.F.R. § 157.20, and the Commission's Certificate Order. Environmental Condition # 1 of Certificate Order imposed the condition, pursuant to Section 7(e) of the NGA, that Rover "follow the construction procedures and mitigation measures described in its application. . . and as identified in the EIS."¹⁸⁶ The HDD Contingency Plan contained in the Final EIS, required Rover to properly dispose of drilling mud released from any IR.¹⁸⁷

¹⁷⁹ See *id.* at JDHAIR0061.

¹⁸⁰ Day Utility Inspector Test. at 111-12 (emphasis added).

¹⁸¹ Certificate Order, 158 FERC ¶ 61,109 at App. B.

¹⁸² Final EIS at App. G-1 at G1-6.

¹⁸³ OEP Mitigation Measures Letter at 1.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.* at 2.

¹⁸⁶ Certificate Order, 158 FERC ¶ 61,109 at App. B.

¹⁸⁷ See, e.g., Final EIS at App. G-1 at G1-7.

B. Rover's Weak Environmental Compliance Program and Focus on Construction Speed Created an Environment Ripe for the Violations

In addition to the foregoing violations, Enforcement found that Rover's environmental compliance program was ineffective and superficial. Rover failed to make the requirements for environmental compliance clear. Precision's then-Director of Environmental Compliance stated in testimony that "it seemed like each spread might have had their own interpretation [of the environmental rules.]"¹⁸⁸ Individuals with responsibility for environmental compliance, such as the Lead Environmental Inspector for Spread A, had no specific environmental training.¹⁸⁹ Enforcement also found that Rover failed to define the roles and responsibilities of its inspectors. While Rover hired two individuals nominally as day and night "utility inspectors," Rover provided no job description and no guidance as to their roles or responsibilities until after the IR.¹⁹⁰ In addition, the inspectors were not contemporaneously empowered with the authority to address environmental noncompliance. For example, the Day Utility Inspector related that he told the Day Crew Foreman to take care of an inadequate containment. In return, he got a call from his boss telling him that his job "was to observe and report and not give any direction toward what they should and shouldn't do."¹⁹¹

The inspectors also lacked a meaningful presence on the job site itself. One operator testified that he never met or spoke with the inspector on his shift.¹⁹² Another driller stated that the inspector's job was to "[s]leep in the trucks, make sure that we're doing everything accordingly . . . They just want to know how much footage you made at the end of the day so they can put it on their report."¹⁹³ The inspector's reports confirm that they were mainly concerned with progress and not compliance, as they superficially reported "everything went as planned" while the crews were faced with some of the drilling difficulties described above.¹⁹⁴ The J.D. Hair Report similarly observed that "Pretec Directional Drilling's (PDD) and Rover's documentation of daily

¹⁸⁸ Testimony of Precision's Director of Environmental Compliance, at 49-50, 53 (July 18, 2017) (Director of Environmental Compliance Test.).

¹⁸⁹ Lead EI Spread A Test. at 20.

¹⁹⁰ Compare Email from HDD Chief re Inspector Roles and Responsibilities (Mar. 19, 2017) (CIS0001816), with Email from HDD Chief re Inspector Roles and Responsibilities (Aug. 18, 2017) (CIS0000982), and Utility Inspector Definition and Responsibilities (CIS0003520).

¹⁹¹ Day Utility Inspector Test. at 56.

¹⁹² Night Crew Laborer # 1 Test. at 26.

¹⁹³ Night Crew Driller Test. at 25-26 . This highlights that Rover's environmental inspectors were, at least in part, concentrated on monitoring and reporting to Rover management the speed of work progress.

¹⁹⁴ J.D. Hair Report at JDHAIR0294; Day Utility Inspector Test. at 109 ; Testimony of Night Utility Inspector, at 18 (Nov. 19, 2017) (Night Utility Inspector Test.).

HDD construction operations and daily IR monitoring was very limited,” and consequently “it was not possible for JDH&A to accurately assess or verify conformance with many of the applicable project requirements.”¹⁹⁵

Not only did Rover facilitate an atmosphere in which environmental compliance was treated in practice, as an afterthought, Rover placed direct pressure on its contractor to maintain its “aggressive” construction schedule.¹⁹⁶ Rover sought to have Phase 1 of the project in-service only four months after the Commission issued the Certificate Order.¹⁹⁷ As described above, in order to meet this “aggressive” schedule for this multi-billion dollar Project, Rover hired a “small army” of 12,000 workers, five times the amount of workers that would be optimal in the absence of such pressing deadlines, and asked unions to train and certify new workers.¹⁹⁸ Any delays – including environmental compliance delays – would be costly to Rover and its subcontractors.¹⁹⁹ That pressure from Rover was transferred directly down from executives at its contractor Precision, to the Rover HDD crews onsite who resorted to any means necessary to keep up with job progress demands.

VI. Rover’s Anticipated Defense Is Unavailing

While Rover has not yet responded to the substance of Enforcement’s allegations,²⁰⁰ Enforcement Staff anticipates that Rover will argue that the subcontractor Pretec is solely liable for the addition of diesel fuel and other contaminants to the drilling mud. Rover is likely to cite the fact that Pretec crew members are known to have physically placed the contaminants in the drilling fluid and further contend that those crew members acted contrary to Rover’s policies and instructions. For the reasons discussed below, any attempt by Rover to shirk responsibility for the actions of its own

¹⁹⁵ J.D. Hair Report at JDHAIR0005.

¹⁹⁶ See *supra* Part II.G.

¹⁹⁷ ETP Press Release.

¹⁹⁸ Mahmoud Test. at 30-32, 37.

¹⁹⁹ Rover estimated that the additional compliance measures it was required to take after the IR, which may have prevented the violations found here had they been in place at the outset of construction, cost Rover approximately \$93 million. See Ohio Dep’t. of Tax’n., re: Assessment No. 1901142/Public Utility Personal Property Tax (July 10, 2020), <https://tax.ohio.gov/static/legal/final-determinations/roverpipelinellcfinaldetermination.pdf> (including table that Rover submitted as cost reductions in support of its effort to decrease the taxable value of its property by approximately \$1.6 billion).

²⁰⁰ See *supra* Part III.

contractors on the Project, for which the NGA makes Rover solely responsible,²⁰¹ cannot succeed.

A. Rover is Solely Responsible for Ensuring Compliance with the Certificate Order

Rover alone accepted the terms of the Commission's Certificate Order for the Rover Pipeline Project.²⁰² Rover affirmed under oath that "all company personnel involved with construction and restoration, environmental inspectors, and contractor personnel will be informed of the Environmental Inspector's authority and will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities."²⁰³ In addition, certificates issued to applicants are not transferrable.²⁰⁴ As a result, it was Rover, not its contractors, that was solely responsible for ensuring compliance with the Certificate Order.

B. Rover Cannot Sever Its Regulatory Obligations By Pointing the Finger at the Contractors It Hired

Rover, as the certificate holder, is responsible for any violations of the Certificate Order. It is well-established that a company can be held liable for the actions of its agents, including contractors and their employees, and thus Rover cannot escape liability by pointing to Pretec (or Precision) as the wrongdoers. The Commission itself has stated that a company "is responsible for actions taken by its agents and its agents' employees,"²⁰⁵ and explained its rationale for that position in *Trafalgar Power, Inc.*:

²⁰¹ See, e.g., *infra* note 220; 15 U.S.C. § 717f(e) (providing that "a certificate shall be issued to any qualified applicant therefor, authorizing the whole or any part of the operation, sale, service, construction, extension, or acquisition covered by the application, if it is found that the applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of this chapter and the requirements, rules, and regulations of the Commission thereunder . . .") (emphasis added).

²⁰² See Rover Acceptance of Commission Order.

²⁰³ *Id.*

²⁰⁴ See 18 C.F.R. § 157.20(e) ("The certificate issued to applicant is not transferable in any manner and shall be effective only so long as applicant continues the operations authorized by the order issuing such certificate and in accordance with the provisions of the Natural Gas Act, as well as applicable rules, regulations, and orders of the Commission.").

²⁰⁵ *Berkshire Power Co. LLC et al.*, 154 FERC ¶ 61,259, at P 22 (2016); see also *City of Dover, New Hampshire*, 19 FERC ¶ 61,231, at 61,452 (1982) ("Parties are responsible for their agents' acts as well as their own.").

Corporations act through their employees or contractors and are responsible for the actions and inaction of those workers Placing blame for the license violations on [the contractor in this case, a project engineer] does not relieve the licensee of its responsibility . . . The licensee is ultimately responsible for ensuring that the requirements of its license are met. Licensees can frequently claim that they relied on their project engineers and argue that the Commission should distinguish between knowing failures to comply and situations where licensees relied on their agents and assumed that all license requirements were met. If readily accepted, such arguments could undercut the Commission's ability to ensure compliance with the law.²⁰⁶

Consequently, the Commission found that the actions of Trafalgar's contractor "were the actions of Trafalgar," and rejected Trafalgar's argument that it was not notified of potential violations as "unfounded."²⁰⁷ Any such argument from Rover that it is not responsible for the actions of its contractors or for the violations of the Certificate Order should similarly be rejected by the Commission.

VII. Recommended Remedies and Sanctions

Enforcement Staff recommends a civil penalty of \$40,000,000. Pursuant to NGA Section 22(a), the Commission may assess a civil penalty of up to \$1 million per day, per violation against any person who violates the NGA or any rule, regulation, or order under the statute.²⁰⁸ In determining the appropriate penalty amount, NGA Section 22(c) requires the Commission to consider "the seriousness of the violation and the efforts to remedy the violation."²⁰⁹ The Commission regularly applies its Penalty Guidelines to perform this penalty analysis for violations by companies, such as Rover. However, the Commission also can depart from the Penalty Guidelines in appropriate cases.²¹⁰ Specifically, when adopting the Penalty Guidelines the Commission recognized that they are not "tailored to fit every conceivable circumstance of a case," and the "departure mechanism allows [the Commission] to account for unique or exceptional factors that

²⁰⁶ Trafalgar Power, Inc., 49 FERC ¶ 61,140, at 61,597 (1989).

²⁰⁷ *Id.*

²⁰⁸ 15 U.S.C. § 717t-1(a). Based on inflation adjustments, this penalty authority at the time of Rover's violations increased to \$1,213,503 per day per violation. Civil Monetary Penalty Inflation Adjustments, 158 FERC ¶ 61,017, at P 8.

²⁰⁹ 15 U.S.C. § 717t-1(c).

²¹⁰ FERC Penalty Guidelines § 1A1.1(1) ("The Commission reserves the right to depart from these Guidelines where it deems appropriate.").

might arise in a case.”²¹¹ For the reasons described below, Enforcement Staff believes that a departure is justified here.

The section of the Penalty Guidelines applicable to Rover’s violations, Section 2B1.1, focuses largely on the pecuniary market harm caused by the violations, or the resulting pecuniary gain to the violator.²¹² Rover’s violations are more appropriately viewed in terms of the environmental, safety, and regulatory harms they caused, and these elements are not specifically considered by the Penalty Guidelines.

Therefore, Enforcement Staff believes it would be more appropriate to depart from the Penalty Guidelines in this case and proposes a civil penalty of \$40,000,000, based on the various factors the Commission takes into consideration under the NGA and its Revised Policy Statement on Enforcement.²¹³ As described above, in determining the amount of a proposed penalty under Section 22 of the NGA, the Commission is required to take into consideration “the nature and seriousness of the violation and the efforts to remedy the violation.”²¹⁴ The Commission has identified five factors that the Commission may consider in determining the amount of any civil penalty: (1) seriousness of the offense, (2) commitment to compliance, (3) self-reporting, (4) cooperation, and (5) reliance on staff guidance.²¹⁵

First, the Commission bases the seriousness of a violation on, among other things, the scope of the violation and the circumstances giving rise to it.²¹⁶ The Commission examines the specific harm caused by the violation, and whether the actions were

²¹¹ Enforcement of Statutes, Orders, Rules, and Regulations, 130 FERC ¶ 61,220, at P 32 (2010).

²¹² See FERC Penalty Guidelines § 2B1.1; Application Note 2.

²¹³ See Enforcement of Statutes, Regulations, and Orders, 123 FERC ¶ 61,156, at PP 55-71 (2008) (Revised Policy Statement on Enforcement). The Commission has approved departures in other cases where the circumstances warrant them. See, e.g., Vitol Inc., 169 FERC ¶ 61,070, at P 226 (2019) (“[A] strict application of the Penalty Guidelines to Vitol’s conduct would not adequately account for Corteggiano’s role in this matter, and thus we find that it is appropriate to depart from the Penalty Guidelines in this case.”); National Energy & Trade, L.P., 156 FERC ¶ 61,154, at P 26 (2016) (approving downward departure “[a]fter considering all of the circumstances of this matter, including the fact that National Energy is no longer a going concern”); In re Xcel Energy Inc., 138 FERC ¶ 61,026, at P 13 (2012) (“[W]e determined that a downward departure from the Penalty Guidelines penalty range is appropriate here, given the unique facts and circumstances surrounding the merger of PSCo and SPS and the construction of the Lamar Tie.”).

²¹⁴ 15 U.S.C. § 717t-1(c).

²¹⁵ See Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156 at PP 55-71.

²¹⁶ See id. P 55.

“willful,” “reckless,” or “deliberately indifferent to the results.”²¹⁷ In addition, the Commission looks at whether the “wrongdoer act[ed] in concert with others.”²¹⁸ The Commission also examines whether the actions were “the result of pressure placed on employees by senior management to achieve specific results.”²¹⁹ The Commission also considers “[w]hat penalty amount best discourages improper conduct, while not excessively discouraging beneficial” market activities.²²⁰ Here, Enforcement believes a significant fine is necessary given the seriousness of the violation. As set forth above, several Rover HDD crew members admitted to adding diesel fuel, hydraulic oil, containment fluids, and other unapproved additives into the drilling mud, and/or seeing others do it, and that this happened repeatedly and was openly discussed onsite.²²¹ Enforcement Staff determined that Rover used diesel fuel and other unapproved substances routinely over at least 12 days leading up to the IR, from April 2 through April 13, 2017. The evidence also shows that the IR was occurring for approximately four days before it was discovered, evidencing a failure to adequately monitor the right-of-way.²²² This failure to adequately monitor the right-of-way allowed for 2 million gallons of drilling mud contaminated with toxic diesel fuel and hydraulic oil to continuously flow into a protected wetland near the site of the Tuscarawas River HDD operation.

Second, the Commission considers the company’s demonstrated commitment to compliance at the time of the violations.²²³ Relevant compliance measures include: “(i) systems and protocols for monitoring, identifying, and correcting possible violations, (ii) a management culture that encourages compliance among company personnel, and (iii) tools and training sufficient to enable employees to comply with Commission requirements.”²²⁴ As described in Part V.B above, Enforcement Staff found that Rover’s compliance program for the Rover Pipeline Project was ineffective and superficial. Further, as detailed in Part II.G above, Enforcement Staff found that executives at Rover fueled a culture among its contractors and at the Project site that favored speed and construction progress over regulatory compliance.

Third, the Commission considers whether the company self-reported the violations.²²⁵ Here, Rover did not self-report the violations to the Commission, and the

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *Id.* P 57.

²²¹ See *supra* Part II.H.

²²² See *id.* at JDHAIR0007, JDHAIR0061.

²²³ Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156 at P 57.

²²⁴ *Id.*

²²⁵ *Id.* PP 61-64.

Commission did not learn of the presence of diesel fuel in the IR mud until it was notified by the Ohio EPA on May 26, 2017.

Fourth, the Commission considers whether the company demonstrated “exemplary cooperation,” during Enforcement’s investigation.²²⁶ Examples of uncooperative conduct include “untimely or incomplete responses, unresponsiveness to information requests, misrepresentation, or any other conduct that obstructs a Commission investigation, audit or inquiry.”²²⁷ Further, “[o]bstructionist conduct in an investigation can include, among other things: misrepresentation, persistent delays in responding to information requests, or frivolous objections to information requests.”²²⁸ As discussed in Part III above, Rover withheld or redacted unprivileged and relevant subpoenaed documents for nearly a year, and failed to preserve data subject to OEP and Enforcement Staff’s preservation notices. Based on the foregoing, Enforcement Staff concluded that Rover engaged in obstructionist conduct during the investigation.

Fifth, the Commission considers whether the company reasonably relied, “in good faith, on staff guidance in pursuing the conduct that is ultimately found to be in violation of a Commission requirement.” Rover did not rely, and does not claim to have relied, on staff guidance in pursuing the violative conduct described herein.

Staff’s proposed \$40,000,000 penalty is appropriate under the foregoing analysis and falls below the penalty allowed under the statutory maximum.²²⁹

VIII. Conclusion

For the reasons discussed above, Enforcement recommends that the Commission direct Rover to show cause why it did not violate Section 7(e) of the NGA, 15 U.S.C. § 717f, the Commission’s Regulations, 18 C.F.R. § 157.20, and the Commission’s Certificate Order, by: (i) intentionally including diesel fuel and other toxic substances and unapproved additives in the drilling mud while drilling under the Tuscarawas River in Stark County, Ohio; (ii) failing to adequately monitor the right-of-way for the

²²⁶ *Id.* P 65.

²²⁷ *Id.* P 68.

²²⁸ *Id.*

²²⁹ The Commission’s statutory maximum at the time of the violations was \$1,213,503 per day per violation. Civil Monetary Penalty Inflation Adjustments, 158 FERC ¶ 61,017, at P 8. For the violations described herein, Enforcement Staff calculated a statutory maximum of at least \$52,180,629 based upon the evidence. This includes, but is not limited to, the evidence discussed above in Part II.H. This calculation reflects a conservative view taken by Staff of the number of times each of the following violations occurred: (1) adding toxic and other unapproved additives to the drilling mud, including (i) diesel fuel, (ii) hydraulic oil, (iii) containment fluids, and (iv) non-toxic, but unapproved lubricants; (2) failure to adequately monitor the right-of-way; and (3) failure to properly dispose of the contaminated IR mud.

Tuscarawas River HDD; and (iii) improperly disposing of IR mud that was contaminated with diesel fuel and hydraulic oil. Enforcement further recommends that the Commission direct Rover to show cause why it should not pay a civil penalty of \$40,000,000.

Appendix
Energy Transfer Sunoco Pipeline
Permian Express II
PHMSA Accident Report - Hazardous
Liquid Pipeline Systems
Report Dated October 10, 2016

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 4/30/2026	
 U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration	Original Report Date:	10/10/2016	
	No.	20160325 -22497 (DOT Use Only)	
ACCIDENT REPORT - HAZARDOUS LIQUID AND CARBON DIOXIDE PIPELINE SYSTEMS			
<p>A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 12 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to the collection of information are mandatory. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing the burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.</p>			
INSTRUCTIONS			
<p>Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline/library/forms.</p>			
PART A - KEY REPORT INFORMATION			
Report Type: (select all that apply)	Original:	Supplemental:	Final:
		Yes	Yes
Last Revision Date:	07/24/2017		
1. Operator's OPS-issued Operator Identification Number (OPID):	18718		
2. Name of Operator	SUNOCO PIPELINE L.P.		
3. Address of Operator:			
3a. Street Address	1300 MAIN STREET		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code	77002		
4. Local time (24-hr clock) and date of accident:	08/29/2016 02:00		
4a. Time Zone for local time			
4b. Daylight Saving in effect?			
5. Location of Accident:			
Latitude / Longitude	32.45279, -100.35862		
6. Commodity released: (select only one, based on predominant volume released)	Crude Oil		
- Specify Commodity Subtype:			
- If "Other" Subtype, Describe:			

- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:	
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend e.g. B2, B20, B100	
7. Estimated volume of commodity released unintentionally (Barrels):	8,600.00
8. Estimated volume of intentional and/or controlled release/blowdown (Barrels):	
9. Estimated volume of commodity recovered (Barrels):	2,000.00
10. Were there fatalities?	No
- If Yes, specify the number in each category:	
10a. Operator employees	
10b. Contractor employees working for the Operator	
10c. Non-Operator emergency responders	
10d. Workers working on the right-of-way, but NOT associated with this Operator	
10e. General public	
10f. Total fatalities (sum of above)	0
11. Were there injuries requiring inpatient hospitalization?	No
- If Yes, specify the number in each category:	
11a. Operator employees	
11b. Contractor employees working for the Operator	
11c. Non-Operator emergency responders	
11d. Workers working on the right-of-way, but NOT associated with this Operator	
11e. General public	
11f. Total injuries (sum of above)	0
12. What was the Operator's initial indication of the Failure? (select only one):	Ground Patrol by Operator or its contractor
Other	
12a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 12, specify the following: (select only one)	
	Operator employee
13. Local time Operator identified failure	09/10/2016 17:15
14. formerly C2 Part of system involved in Accident: (select only one)	Onshore Pipeline, Including Valve Sites
15. formerly B1 Auto-populated based on A14 Was the origin of the Accident onshore?	Yes
Yes (Complete Questions B3-B12)	
No (Complete Questions B13-B15)	
16. Operational Status at time Operator identified failure:	
17. If Operational Status = Routine Start-Up or Normal Operation, was the pipeline/facility shut down due to the Accident?	Yes
Explain:	

If Yes, complete Questions 17.a and 17.b: (use local time, 24-hr clock)	
17a. Local time and date of shutdown	09/10/2016 13:16
17b. Local time pipeline/facility restarted	09/23/2016 07:45
Still shut down*	
18. If A12 = Notification from Emergency Responder, skip A18.a through A18.c.	
18a. Did the operator communicate with Local, State, or Federal Emergency Responders about the accident?	
If No, skip 18b. and 18c	
18b. Which party initiated communication about the accident?	
18c. Local time of initial Operator and Local/State/Federal Emergency Responder communication	
19. Local time Operator responders arrived on site	09/10/2016 17:15
20. Local time of confirmed discovery	
21a. Local time (24-hr clock) and date of initial operator report to the National Response Center :	09/10/2016 19:16
21b. Initial Operator National Response Center Report Number OR	1158671
21c. Additional NRC Report numbers submitted by the operator:	
22. Did the commodity ignite?	No
If Yes, answer 22.a through d:	
22a. Local time of ignition	
22b. How was the fire extinguished?	
specify:	
22c. Estimated volume of commodity consumed by fire (barrels): (must be less than or equal to A7)	
22d. formerly A16. Did the commodity explode?	No
23. If 14. is "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend", answer A23a through f:	
23a. Initial action taken to control flow upstream of failure location	
- If Operational Control	
If Valve Closure, answer A23b and c:	
23b. Local time of valve closure	
23c. Type of upstream valve used to initially isolate release source:	Remotely Controlled
23d. Initial action taken to control flow downstream of failure location	
- If Operational Control	
If Valve Closure, answer A23.e and f:	
23e. Local time of valve closure	
23f. Type of downstream valve used to initially isolate release source	Manual

24. If A6 = Crude Oil , Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions, or Biofuel / Alternative Fuel (including ethanol blends) AND A15. is Onshore, answer questions A24a and c.	
24a. Did the operator notify a "qualified individual" in the Onshore Oil Spill Response Plan?	
If Yes, answer A24b.	
24b. Local time the "qualified individual" was notified.	
24c. Did the operator activate an Oil Spill Removal Organization (OSRO)?	
If Yes, answer A24d and e:	
24d. Local time operator activated OSRO	
24e. Local time OSRO arrived on site	
25. Number of general public evacuated:	0
PART B - ADDITIONAL LOCATION INFORMATION	
1. Pipeline/Facility name:	Permian Express II
2. Segment name/ID:	23018-24" Colorado City to Corsicana
<i>If Yes, Complete Questions (2-12)</i>	
<i>If No, Complete Questions (13-15)</i>	
- If Onshore:	
3. State:	Texas
4. Zip Code:	79556
5. City	Sweetwater
6. County or Parish	Nolan
7. Operator-designated location:	Survey Station No.
8. Specify:	1595+44
9. Was this onshore Accident on Federal land?	No
10. Location of Accident:	Pipeline Right-of-way
11. Area of Accident (as found):	Underground
Specify:	Under soil
- If Other, Describe:	
11a. Depth-of-Cover (in):	54
12. Did Accident occur in a crossing?	No
- If Yes, specify type below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased	
Uncased	
Bored/drilled	
- If Road crossing –	

Cased/ / Bored/drilled	
Uncased	
Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the accident:	
- Select:	
Is this water crossing 100 feet or more in length from high water mark to high water mark?	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) :	
- Area:	
- Block/Tract #:	
15. Area of Accident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility:	Interstate
2. reserved	
3. Item involved in Accident: <i>When A14 is "Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances" C3 will default to "Tank/Vessel"</i>	Pipe
- If Pipe, specify:	Pipe Body
If Pipe Body: Was this a puddle/spot weld?	
3a. Nominal Pipe Size:	24
3b. Wall thickness (in):	.406
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	65,000
3d. Pipe specification:	API 5L
3e. Pipe Seam , specify:	ERW - High Frequency
- If Other, Describe:	
3f. Pipe manufacturer:	Stupp
3g. Pipeline coating type at point of Accident, specify:	Fusion Bonded Epoxy(FBE)
- If Other, Describe:	
3h. Coating field applied?	
- If Weld, including heat-affected zone, specify	
- If Other, Describe:	

If Pipe Girth Weld is selected, complete items C3a through h above. Are any of the C3b through h values different on either side of the girth weld?	
If Yes, enter the different value(s) below:	
3i. Wall thickness (in):	
3j. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3k. Pipe specification:	
Unknown	
3l. Pipe Seam	
- If Other, Describe:	
3m. Pipe manufacturer:	
Unknown	
3n. Pipeline coating type at point of Accident	
- If Other, Describe:	
3o. Coating field applied?	
- If Valve, specify:	
- Valve type	
- If Mainline, Valve Mainline type	
- If Other, Describe:	
3p. Mainline valve manufacturer:	
3q. Type of pump	
- If Other, Describe:	
3r. Type of Service	
- If Other, Describe:	
3s. Tubing material	
3t. Type of tubing	
3u. Specify failure path	
- If Other, Describe:	
3v. Tank Type	
If 3v. = Pressurized:	
3v1. Tank Maximum Operating Pressure	
3v2. What is the set point of the primary pressure relief device on the tank	
3v3. Did the thermal or pressure relief valve activate?	
3v4. Was the MOP of the tank exceeded?	
If 3v = Atmospheric or Low Pressure:	
3v5. Safe-Fill-Level (in feet) at the time of the accident?	
3v6. Was the Safe Fill-Level exceeded?	
3v7. Year of most recent API Std 653 Out-of-Service Inspection	

3v8, API Std 653 In-Service Inspection	
4. Year item involved in Accident was installed:	2015
4a. Year item involved in Accident was manufactured:	2014
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Leak
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	Pinhole
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	Yes
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	Yes
- Vegetation	
- Wildlife	
5. Water contamination:	No
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	
- Groundwater	
- Drinking water: (Select one or both)	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	

5c. Name of body of water, if commonly known:	
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	Yes
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): <i>(Select all that apply)</i>	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated cost to Operator – effective 12-2012, changed to "Estimated Property Damage":	
8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 12-2012, "paid/reimbursed by the Operator" removed	0
8b. Estimated cost of commodity lost	354,900
8c. Estimated cost of Operator's property damage & repairs	513,000
8d. Estimated cost of emergency response	750,000
8e. Estimated cost of environmental remediation	2,400,000
8f. Estimated other costs	0
Describe:	
8g. Total estimated property damage (sum of above)	4,017,900
Injured Persons not included in A11 The number of persons injured, admitted to a hospital, and remaining in the hospital for at least one overnight are reported in A11. <i>If a person is included in A11, do not include them in D9.</i>	
9. Estimated number of persons with injuries requiring treatment in a medical facility but not requiring overnight in-patient hospitalization:	

<i>If a person is included in D9, do not include them in D10.</i>	
10. Estimated number of persons with injuries requiring treatment by EMTs at the site of accident:	
Buildings Affected	
11. Number of residential buildings affected (evacuated or required repair):	
12. Number of business buildings affected (evacuated or required repair):	
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	1,060.00
If C3. Is Tank/Vessel and C3v. is Atmospheric, do not answer E2. and E3	
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,480.00
2a. Limiting factor establishing MOP (select only one):	
describe:	
2b. Date MOP established	
2c. Was the MOP established in conjunction with a reversal of flow direction?	
If E2c = Yes, E2d. What is the date of the most recent surge analysis performed at the point of the Accident?	
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
If A14. is "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend", complete E5 through E7	
5. Answer E5 only when both A23a and A23d are Valve Closure	
Length of segment initially isolated between valves (ft):	67,056
6. Is the pipeline configured to accommodate internal inspection tools?	Yes
- If No, Which physical features limit tool accommodation? (<i>select all that apply</i>)	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	

- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
7. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	No
- If Yes, Which operational factors complicate execution? (select all that apply)	
- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
8. Function of pipeline system:	> 20% SMYS Regulated Transmission
9. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
9a. Was it operating at the time of the Accident?	Yes
9b. Was it fully functional at the time of the Accident?	Yes
9c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
9d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
10. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
10a. Was it operating at the time of the Accident?	Yes
10b. Was it fully functional at the time of the Accident?	No
10c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
10d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
11. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	Yes, specify investigation result(s): (select all that apply)

- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the operator did not investigate)	
- If Yes, specify investigation result(s): (select all that apply)	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	Yes
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	Yes
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
PART F - DRUG & ALCOHOL TESTING INFORMATION	
1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. Specify how many were tested:	
1b. Specify how many failed:	
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Specify how many were tested:	
2b. Specify how many failed:	
PART G - APPARENT CAUSE	
Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).	
Apparent Cause:	G1 - Corrosion Failure

G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column	
Corrosion Failure – Sub-Cause:	External Corrosion
- If External Corrosion:	
1. Results of visual examination:	Localized Pitting
- If Other, Describe:	
2. Type of corrosion: (select all that apply)	
- Galvanic	
- Atmospheric	
- Stray Current	Yes
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Describe:	
2a. If 2 is Stray Current, specify	
2b. Describe the stray current source:	
3. The type(s) of corrosion selected in Question 2 is based on the following: (select all that apply)	
- Field examination	Yes
- Determined by metallurgical analysis	Yes
- Other:	
- If Other, Describe:	
4. Was the failed item buried or submerged?	Yes
- If Yes :	
4a. Was failed item considered to be under cathodic protection at the time of the Accident?	Yes
If Yes - Year protection started:	2016
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	No
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	Yes
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	2016
If "Yes, Other CP Survey" – Most recent year conducted:	
Describe other CP survey	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	Yes
- If Internal Corrosion:	
6. Results of visual examination:	
- Other:	
7. Type of corrosion (select all that apply): -	
- Corrosive Commodity	

- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following <i>(select all that apply)</i> : -	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
9. Location of corrosion <i>(select all that apply)</i> : -	
- Low point in pipe	
- Elbow	
- Dead-Leg	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
G2 - Natural Force Damage - only one sub-cause can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
- If Other, Describe:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Describe:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Describe:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: <i>(select all that apply)</i>	
- Hurricane	
- Tropical Storm	
- Tornado	

- Other	
- If Other, Describe:	
G3 - Excavation Damage - only one sub-cause can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
Complete the following if any Excavation Damage sub-cause is selected.	
1. Did the operator get prior notification of the excavation activity?	
1a. If Yes, Notification received from: <i>(select all that apply)</i> -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
1b. Per the primary Accident Investigator results, did State law exempt the excavator from notifying the one-call center?	
If yes, answer 1c through 1e.	
1c. select one of the following:	
	Describe
1d. Exempting authority:	
1e. Exempting criteria:	
2. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
3. Right-of-Way where event occurred: <i>(select all that apply)</i> -	
- Public	
- If "Public", Specify:	
- Private	
- If "Private", Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Unknown/Other	
4 Was the facility part of a Joint Trench?	
5. Did this event involve a Cross Bore?	
6. Measured Depth from Grade	
	Measured depth From Grade
7. Type of excavator:	
8. Type of excavation equipment:	
9. Type of work performed:	
10. Was the One-Call Center notified?	
If No, skip to question 11	

10a. If Yes, specify ticket number:	
10b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
10 c. Was work area white lined?	
11. Type of Locator:	
12. Were facility locate marks visible in the area of excavation?	
13. Did the damage cause an interruption in service?	
13a. If Yes, specify duration of the interruption (hours)	
14. Description of the CGA-DIRT Root Cause <i>(select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):</i>	
Root Cause Category	
Root Cause Type	
(comment required)	
G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column	
Other Outside Force Damage – Sub-Cause:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
If this sub-section is picked, please complete questions 5-11 below	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Previous Mechanical Damage NOT Related to Excavation: Complete Questions 3-7 ONLY IF the “Item Involved in Accident” (from PART C, Question 3) is Pipe or Weld.	
- If Intentional Damage:	
3. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
4. Describe:	
Complete the following if Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation sub-cause is selected.	
5. Was the driver of the vehicle or equipment issued one or more citations related to the accident?	
If 5 is Yes, what was the nature of the citations (select all that apply)	
5a. Excessive Speed	
5b. Reckless Driving	

5c. Driving Under the Influence	
5e. Other	
If Other, Describe	
6. Was the driver under control of the vehicle at the time of the collision?	
7. Estimated speed of the vehicle at the time of impact (miles per hour)?	
- Unknown	
8. Type of vehicle? (select only one)	
9. Where did the vehicle travel from to hit the pipeline facility? (select only one)	
10. Shortest distance from answer in 9. to the damaged pipeline facility (in feet):	
11. At the time of the accident, were protections installed to protect the damaged pipeline facility from vehicular damage?	
If 11 is Yes, specify type of protection (select all that apply):	
11a. Bollards/Guard Posts	
11b. Barricades – include Jersey barriers and fences in instructions	
11c. Guard Rails	
If Other, Describe	
G5 - Material Failure of Pipe or Weld - only one sub-cause can be selected from the shaded left-hand column	
Use this section to report material failures ONLY IF the “Item Involved in Accident” (from PART C, Question 3) is “Pipe”, “Weld” or “Tank/Vessel”.	
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-cause shown above is based on the following: <i>(select all that apply)</i>	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If “Other Analysis”, Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
-If Design-, Construction-, Installation- or Fabrication-related	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Original Manufacturing-related (NOT girth weld or other welds formed in the field)	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	

- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- If Other - Describe:	
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional factors: <i>(select all that apply)</i> :	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other:	
- If Other, Describe:	
G6 – Equipment Failure - only one sub-cause can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	
- If Malfunction of Control/Relief Equipment:	
1. Specify: <i>(select all that apply)</i> -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
- If Pump or Pump-related Equipment:	
2. Specify:	
- If Other – Describe:	
- If Threaded Connection/Coupling Failure:	
3. Specify:	
- If Other – Describe:	

- If Non-threaded Connection Failure:	
4. Specify:	
- If Other – Describe:	
- If Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: <i>(select all that apply)</i>	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Improper maintenance	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Erosion/Abnormal Wear	
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
- If Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
1. Specify:	
- If Other, Describe:	
- If Other Incorrect Operation	
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to <i>(select all that apply):</i> -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	

5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Accident Cause - only one sub-cause can be selected from the shaded left-hand column	
Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	
Mandatory comment field:	
PART J – COMPLETED INTEGRITY INSPECTIONS	
Complete the following if the “Item Involved in Accident” (from PART C, Question 3) is Pipe or Weld and the “Cause” (from Part G) is:	
Corrosion (any subCause in Part G1); or	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4); or	
Material Failure of Pipe or Weld (any subCause in Part G5)	
J1. Have internal inspection tools collected data at the point of the Accident?	Yes
J1a. If Yes, for each tool and technology used provide the information below for the most recent and previous tool runs:	
Axial Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Circumferential/Transverse Wave Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Resolution (select only one):	

Other Describe	
Ultrasonic	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Most recent run Attuned to (select only one)	
Other Describe	
If Attuned to Wall Measurement, most recent run Metal Loss Resolution (select only one):	
Other Describe	
Geometry/Deformation	
Most recent run Year:	2015
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Most recent run Measurement Cups (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Other Describe	
Previous run Resolution (select only one):	
Other Describe	
Previous run Measurement Cups (select only one):	
Electromagnetic Acoustic Transducer (EMAT)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Cathodic Protection Current Measurement (CPCM)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Other, specify tool	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Answer J1.b only when the cause is:	

Answer J1.b only when the cause is:	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4)	
J1b. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained	
J2. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident? (initial post construction pressure test is NOT reported here)	No
Most recent year tested:	
Test pressure (psig):	
J3. Has Direct Assessment been conducted on the pipeline segment?	No
Most recent year conducted:	
Most recent year conducted:	
If J3 is Yes, J3a. For each type, indicate the year of the most recent assessment	
External Corrosion Direct Assessment (ECDA)	
Other, specify type	
J4. Has one or more non-destructive examination been conducted prior to the Accident at the point of the Accident since January 1, 2002?	No
4a. If Yes, for each examination conducted, select type of non-destructive examination and indicate most recent year the examination was conducted:	
Radiography	
Guided Wave Ultrasonic	
Handheld Ultrasonic Tool	
Wet Magnetic Particle Test	
Dry Magnetic Particle Test	
Other	
- If Other, specify type	
PART K – CONTRIBUTING FACTORS	
The Apparent Cause of the accident is contained in Part G. Do not report the Apparent Cause again in this Part K. If Contributing Factors were identified during a root cause analysis, select all that apply below and explain each in the Narrative:	
External Corrosion	
External Corrosion, Galvanic	
External Corrosion, Atmospheric	
External Corrosion, Stray Current Induced	
External Corrosion, Microbiologically Induced	
External Corrosion, Selective Seam	
Internal Corrosion	
Internal Corrosion, Corrosive Commodity	
Internal Corrosion, Water drop-out/Acid	
Internal Corrosion, Microbiological	
Internal Corrosion, Erosion	
Natural Forces	
Earth Movement, NOT due to Heavy Rains/Floods	

Heavy Rains/Floods	
Lightning	
Temperature	
High Winds	
Tree/Vegetation Root	
Excavation Damage	
Excavation Damage by Operator (First Party)	
Excavation Damage by Operator's Contractor (Second Party)	
Excavation Damage by Third Party	
Previous Damage due to Excavation Activity	
Other Outside Force	
Nearby Industrial, Man-made, or Other Fire/Explosion	
Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation	
Damage by Boats, Barges, Drilling Rigs, or Other Adrift Maritime Equipment	
Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation	
Electrical Arcing from Other Equipment or Facility	
Previous Mechanical Damage NOT Related to Excavation	
Intentional Damage	
Pipe/Weld Failure	
Design-related	
Construction-related	
Installation-related	
Fabrication-related	
Original Manufacturing-related	
Environmental Cracking-related, Stress Corrosion Cracking	
Environmental Cracking-related, Sulfide Stress Cracking	
Environmental Cracking-related, Hydrogen Stress Cracking	
Environmental Cracking-related, Hard Spot	
Equipment Failure	
Malfunction of Control/Relief Equipment	
Pump or Pump-related Equipment	
Threaded Connection/Coupling Failure	
Non-threaded Connection Failure	
Defective or Loose Tubing or Fitting	
Failure of Equipment Body (except Compressor), Vessel Plate, or other Material	
Incorrect Operation	

Damage by Operator or Operator's Contractor NOT Excavation and NOT Vehicle/Equipment Damage	
Tank, Vessel, or Sump/Separator Allowed or Caused to Overflow or Overflow	
Valve Left or Placed in Wrong Position, but NOT Resulting in Overpressure	
Pipeline or Equipment Over pressured	
Equipment Not Installed Properly	
Wrong Equipment Specified or Installed	
Inadequate Procedure	
No procedure established	
Failure to follow procedures	
PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT	
<p>Beginning on the morning of August 29, 2016 the Control Center began investigating line imbalance indications identified via over/short calculations. Until the discovery of the release on September 10, 2016 numerous methods were employed to determine the cause(s) of the imbalance. At no time during the investigation process did the imbalance exceed established normal operating tolerances. The over/short calculations were reviewed alongside CPM data to assess alignment between what the two methods were reporting. CPM was not yet fully functional and was being run in parallel with normal hourly over/short line balance calculations. During the timeframe between August 29 and September 10 the line was patrolled numerous times via aerial, walking, driving and combinations of these methods. Additionally, meters were checked for accuracy and function with issues identified on September 3 and 6 that required repairs. Tank to tank line balance calculations were also employed. On September 2 a static pressure test was carried out but the results did not identify a leak condition. On the evening of September 9 a second static pressure test was initiated. This test was terminated at 13:16 on September 10 when indications pointed to a suspected release. Patrol of the pipeline continued that day until the discovery of the release via ground patrol at approximately 17:15.</p> <p>Subsequent to discovery the line was excavated and a through wall failure was observed at the 6 o'clock position. The failed pipe was cut out and replaced. Line was restarted on September 23, 2016 under a PHMSA required 20% reduction in operating pressure. Metallurgical analysis of the failed pipe concluded that the cause of the through wall leak was external pitting/corrosion located at the 6 o'clock orientation, adjacent to a girth weld, at a single pit. The primary contributing factor to the corrosion rate was DC stray current interference from an adjacent pipeline. All contaminated soil has been removed for proper disposal or remediated on site. PHMSA issued a Corrective Action Order (CAO) in response to this accident (CPF 4-2016-5030H). A root cause failure analysis (RCFA) was conducted and identified recommendations for improvement to pre construction assessments and control room procedures. Actions to address these recommendations and the root cause of the accident will be carried out under the PHMSA issued CAO.</p>	
PART I - PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	Todd G. Nardozzi
Preparer's Title	Sr. Manager DOT Compliance
Preparer's Telephone Number	281-637-6576
Preparer's E-mail Address	todd.nardozzi@energytransfer.com
Preparer's Facsimile Number	877-917-0448
Local Contact Name	
Local Contact Email	
Local Contact Phone	
Authorized Signer Name	Todd G. Nardozzi
Authorized Signer Title	Sr. Manager DOT Compliance
Authorized Signer Telephone Number	281-637-6576
Authorized Signer Email	todd.nardozzi@energytransfer.com
Date	07/24/2017

Appendix I

Economic Issues with Dakota Access
Pipeline Lake Oahe Crossing Project:
Draft Environmental Impact Statement
Spenser Phillips, Ph.D.,
Economist and Principal
December 12, 2023

KEY-LOG ECONOMICS

Research and strategy for the land community

To: Natural Resources Defense Council and Standing Rock Sioux Tribe
From: Spencer Phillips, Ph.D., Economist & Principal
Date: 12 December 2023
Subject: Economic Issues with Dakota Access Pipeline Lake Oahe Crossing Project: Draft Environmental Impact Statement

Contents

Overview	1
Specific Concerns	1
The DEIS contains inconsistent geographic and temporal scope of analysis.	1
The DEIS compares economic apples to oranges in an inadequate economic analysis	3
The DEIS further mischaracterizes temporary economic effects due to well shut-in and/or decreased production.	3
The DEIS fails to assess, or even to mention, effects on ecosystem goods and services.	5
Abbreviations Used	6
Works Cited	6

Overview

The Dakota Access Pipeline Lake Oahe Crossing Project: Draft Environmental Impact Statement (DEIS) fails to appropriately consider all economic impacts of each alternative, presents inconsistent analysis of alternatives, and draws inappropriate comparisons among the potential economic effects of these alternatives. In addition, USACE should employ its own and other U.S. government guidance for assessing the impact of federal actions on ecosystem goods and services.

Specific Concerns

The DEIS contains inconsistent geographic and temporal scope of analysis.

In its description of alternatives, USACE states “Because the USACE’s authority is limited to granting an easement under the MLA in a single location, this EIS evaluates alternatives to granting and denying an easement across the USACE’s federal property.”¹ It also notes that its “analysis is limited to effects of allowing the pipeline to cross federally owned lands at Lake Oahe in Morton and Emmons counties, North Dakota.”² However, this limitation is only in place for certain effects on the human environment; the DEIS considers just two census tracts (one on either side of the Missouri River at the crossing and, importantly, upstream of the Standing Rock Indian Reservation) when evaluating certain potential economic effects of the project. For other effects and different alternatives, however, the DEIS considers a multi-county region (e.g. for housing and

¹ U.S. Army Corps of Engineers Omaha District, “Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement,” 2–1.

² U.S. Army Corps of Engineers Omaha District, 2–1.

property tax effects), the entire state of North Dakota (transportation tax revenue impacts), the Fort Berthold Reservation, the multi-state region DAPL traverses, and the nation as a whole (energy markets).

Arguably, and in light of USACE's obligations to consider cumulative effects and reasonably foreseeable impacts on the human environment,³ effects of the alternatives in or on these larger geographic regions areas should be considered. The pairing of specific geographies to some types of effects but not others in the DEIS, combined with the comparison of estimated effects in or on smaller geographies to effects on larger areas, gives a false impression of the relative intensity of those effects.

For example, the DEIS states that "the DAPL project created about 12,000 construction jobs across five states."⁴ It does not state that these were all temporary jobs, as the construction took only 10 months. Later, USACE estimates that there would be 750 construction jobs (and 2,200 indirect jobs) created as a result of Alternative 1. It labels these jobs as "temporary" while noting that the removal of the pipeline and restoration of the land "would take 6 to 20 years or more to abandon the pipeline by removal and finalize restoration)."⁵ Nevertheless, USACE states that the beneficial impacts of Alternative 1 would be "negligible."⁶

To put these figures in the right perspective and create a useful comparison and a basis for declaring whether (or not) the beneficial impact of Alternative 1 is "negligible," USACE should have estimated the "unknown" number of jobs created by the construction of the Oahe Crossing during the DAPL construction period. USACE could also have recognized that 12,000 jobs that last for only 10 months are like 10,000 jobs that last for one year and that those 10,000 temporary jobs occurred in states (ND, SD, IA, and IL) with a combined population of 17.8 million people. Thus DAPL created 5.6 construction jobs per 10,000 persons in those states during the construction period. Alternative 1, by contrast, would create 750 jobs in two counties with a combined population of 34,380, or 218 jobs per 10,000 persons. And those jobs would persist for between 6 and 20 years. Therefore, the characterization of the beneficial economic impact of Alternative 1 as "negligible" in the DEIS is without basis.

On the cost side, USACE counts the loss of direct and indirect jobs in oil extraction, lost state tax revenue, lost county property taxes, lost royalties, and others among the costs of abandonment (Alternatives 1 or 2). If realized, these costs would be spread across a geographic area much larger than the two census tracts chosen for purposes of evaluating the costs of the other Alternatives that involve continued operation, including operation at a more intensive rate.⁷ Therefore, the DEIS assessment of the economic costs of Alternatives 1 and 2 are also without basis.

The DEIS fails to take a consistent approach that counts economic benefits and costs in both upstream and downstream areas (along the pipeline and waterways) likely to experience the effects of the pipeline's

³ Council on Environmental Quality, "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. 40 CFR 1500-1508.," sec. 1508.7, 1502.22.

⁴ U.S. Army Corps of Engineers Omaha District, "Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement," 3-194.

⁵ U.S. Army Corps of Engineers Omaha District, 3-200.

⁶ U.S. Army Corps of Engineers Omaha District, ES-20.

⁷ U.S. Army Corps of Engineers Omaha District, sec. 3.8.1.

operation, including natural resource damages due to leaks or spills that occur during its operation. This includes Sioux County, ND, the entire Standing Rock Indian Reservation, and communities on both sides of the Missouri River downstream of the crossing site.

The DEIS compares economic apples to oranges in an inadequate economic analysis

In part due to the inconsistent treatment of geography and the failure to adjust or normalize quantitative information about certain economic impacts for the duration, affected population, or other factors, the DEIS uses language that presents a biased impression of these impacts. For example, temporary construction employment impacts associated with Alternative 1 are described as “long-term” but “negligible.” The estimates are of 750 direct construction jobs and 2,200 indirect jobs that, as noted above, may be in place for a period of between 6 and 20 years.

By contrast, USACE estimates that Alternative 1 would also “reduce full-time jobs from closures of oil rigs in North Dakota by 600 to 700 jobs”^{8,9} — a change in employment USACE characterizes as “major,” even though it is clear elsewhere that many or most of these jobs would return if alternative capacity for transporting crude oil from North Dakota is developed, such as via the North Bismarck Reroute.

USACE characterizes these and related effects as “major and long-term to permanent,”¹⁰ but in truth, jobs on the rigs, in pipeline maintenance, and other support functions are subject to many frequently variable factors such as the price of oil, the rate of extraction, and the presence of economically recoverable reserves that could be transported by DAPL. Jobs in this boom-and-bust industry that also depend on DAPL would only exist for as long as the pipeline is economically justifiable based on these factors. At a maximum, they would exist for the period during which the permit is in effect (up to 50 years) and/or the pipeline remains in operating condition (also ~ 50 years), but they would not be permanent.

The DEIS fails to provide any basis for the claim that 750 direct jobs that would be needed for between 6 and 20 years in counties with a combined population of 34,380 are “temporary” and “negligible” while the idling of 600 to 700 workers for perhaps a year or so while an alternative route is constructed is a “major” impact. This characterization seems unsubstantiated considering that the mining sector, which includes oil and gas, has lost almost 8,500 jobs in the past 10 years¹¹ due to changes in oil prices and other factors.

The DEIS further mischaracterizes temporary economic effects due to well shut-in and/or decreased production.

The DEIS repeats, without evident examination and with insufficient interpretation, estimates of financial and job losses provided by Dakota Access.¹² These estimates include specific estimates of impacts (e.g. “\$3.81 billion to \$5.95 billion in revenue losses caused by the shut-in of wells and production”) as well as vague estimates like

⁸ U.S. Army Corps of Engineers Omaha District, 3–203.

⁹ USACE earlier cites an estimate provided by Dakota Access that the number of rig jobs lost due to shut-down would be “600 to 750 U.S. Army Corps of Engineers Omaha District, 3–201.”

¹⁰ U.S. Army Corps of Engineers Omaha District, 3–203.

¹¹ U.S. Bureau of Economic Analysis, “BEA Interactive Data Application.”

¹² U.S. Army Corps of Engineers Omaha District, “Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement,” 3-201 ff.

“Millions of dollars in lost tax revenues annually to the Three Affiliated Tribes of the Fort Berthold Reservation,” “Millions of dollars in capital costs incurred by [upstream and downstream customers],” or “Increase supply costs for refiners....”¹³

The DEIS fails to critically examine the information provided, for example:

- The DEIS fails to consider whether the revenue, tax, employment, and other effects are truly losses or simply postponements of economic activity. Oil in the ground will still be there when and if alternative transportation is arranged — which USACE explicitly assumes will happen — in which case the true value of the loss would be only and at most the forgone return on investment for the duration of the postponement. Those are real impacts, to be sure, but the level of impact would be some minor fraction of the value of the oil that might otherwise be sold today, not the full amount. And it “might otherwise be sold” because drillers and shippers may decide to slow or postpone production for strategic and market reasons at any time. As the fluctuations in mining employment cited above suggest, there is nothing new, catastrophic, or out-of-the-ordinary in short-term gains and losses in the energy industry.
- The DEIS repeats Dakota Access’s claim that Alternatives 1 and 2 will result in property tax losses in several states, including Louisiana, Mississippi, Tennessee, Kentucky, Arkansas, and Texas. However, the DEIS fails to explain how those losses are relevant to the USACE’s deliberations when the DEIS already clearly ignores or greatly discounts impacts that will be felt in North Dakota, a few hundred feet from the project site — that is, in Sioux County, which is not considered as part of the affected environment along with Morton and Emmons county and other portions of North Dakota.
- The DEIS fails to normalize and harmonize impact estimates to represent consistent and coherent estimates of the potential effects of shut-in wells. And like the probabilistic treatment of effects on water quality in the event of a leak, these estimates should be turned into “expected value,” which would be the probability that the effect will occur multiplied by the possible dollar value of the effect. Yet the DEIS failed to calculate the expected value of the effects of shut-in wells.
- The DEIS fails to consider whether the indirect job effects—“losses by third-party service vendors such as maintenance contractors, utility companies, [etc.]”¹⁴—are permanent changes in employment or rather jobs that may transition to another industry and/or location. The DEIS, citing Dakota Access, notes that “*short-term* drops in the supply of crude oil from the DAPL Project would eventually be filled by other sources at the national level, but at higher prices, *resulting in long-term negative socioeconomic impacts.*”¹⁵ If the closure of the Oahe crossing does have such an effect (a temporary drop in crude oil supply and a temporary increase in crude oil prices), then one would expect employment opportunities to open up in competing regions, drawing labor and capital from North Dakota to places where they can be more profitably employed in the short to medium run.

¹³ U.S. Army Corps of Engineers Omaha District, 3–201.

¹⁴ U.S. Army Corps of Engineers Omaha District, 3–201.

¹⁵ U.S. Army Corps of Engineers Omaha District, 3–202, emphasis added.

That inflow (to other regions) of labor and capital will boost crude oil production in, and deliveries from, those other regions, and the short-term increase in the price of crude oil will subside. In the long run, therefore, and contrary to the implied contention in the passage from the DEIS just quoted, there is no reason to believe the price increases would persist and or that there would be “long-term negative socioeconomic impacts.” This would be especially true in the likely scenario that the closure of the Oahe Crossing portion of DAPL under Alternatives 1 or 2 would be followed by the development and implementation of alternative transportation options. When those options do come on line, supply will increase, and prices will fall.

The DEIS fails to assess, or even to mention, effects on ecosystem goods and services.

USACE has long been a participant in the National Ecosystem Services Partnership (NESP), whose members include several other U.S. government agencies, private businesses, and nonprofit organizations¹⁶. NESP promotes research, best practices, and tools for consideration in planning of Ecosystem Goods and Services (EGS), to use USACE’s preferred term. Among the resources included as part of the NESP guidebook are USACE’s own reviews of USACE’s history with the ideas behind EGS and recommendations for using EGS concepts, as well as policies and practices for using those concepts in USACE planning.¹⁷ Wainger et al., note that “The framework [proposed for the U.S. Army Corps of Engineers] is compatible with goals to create a single decision-support document covering National Environmental Policy Act requirements and planning objectives when comparing project alternatives.”¹⁸

EGS are “goods and services that are derived from self-regulating or managed ecosystems and that are tangibly used or otherwise appreciated [by humans].”¹⁹ They include material that is used directly (water for drinking), indirectly, (water as habitat for fish and wildlife), actively (water as surface on which to engage in recreational activities), and passively (water as part of aesthetically pleasing scenery). The value of ecosystem goods and services can derive from human’s biophysical (water for hydration or as habitat for fish harvested for food) or personal (positive effects on health and well-being from experiencing that aesthetically pleasing scenery) needs and experiences. Thus EGS and an EGS framework and approach provide a comprehensive and coherent means of enumerating and assessing (and in some cases ascribing monetary values to) all of the ways in which nature provides benefits to humans.

Had USACE utilized such a framework for its assessment of alternatives in the Oahe Crossing DEIS some of the problems of disjointed consideration of the effects of the alternatives on jobs, cultural values, water quality, fish & wildlife, et al. could have been much improved. As it is, the DEIS treats different values important to people differently and, therefore, unevenly. The DEIS misses entirely the connections between, for example, the risk of losing access to subsistence resources and socioeconomic well-being.

Evaluation of the impact of federal actions on ecosystem goods and services does not require monetization of those impacts; qualitative descriptions are certainly useful and much better than no consideration at all. The

¹⁶ National Ecosystem Services Partnership, *Federal Resource Management and Ecosystem Services Guidebook*.

¹⁷ Reed, Martin, and Cushing, “Using Information on Ecosystem Goods and Services in Corps Planning”; Tazik et al., “Incorporating Ecosystem Goods and Services in Environmental Planning”; Wainger et al., “A Proposed Ecosystem Services Analysis Framework for the U.S. Army Corps of Engineers.”

¹⁸ Wainger et al., “A Proposed Ecosystem Services Analysis Framework for the U.S. Army Corps of Engineers,” ii.

¹⁹ Wainger et al., 1.

newly revised Circular A-4 includes a recommendation that “analysis should account for effects on environmental or ecosystem services, or changes in the value of natural assets.”²⁰ Forthcoming guidance from the Office of Management and Budget provides detailed information on how to assess impacts on ecosystem goods and services.²¹ USACE should have used these resources and USACE’s own documents referenced above to inform DEIS’s consideration of the Oahe Crossing project.

Abbreviations Used

DAPL Dakota Access Pipeline

DEIS: Draft Environmental Impact Statement, specifically and in these comments, the Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement

NEPA National Environmental Policy Act

NESP National Ecosystem Services Partnership

USACE U.S. Army Corps of Engineers

Works Cited

“Circular A-4.” Office of Management and Budget, Executive Office of the President, November 9, 2023.

Council on Environmental Quality. “Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. 40 CFR 1500-1508.” Washington, DC: Executive Office of the President, Council on Environmental Quality, 1992.

National Ecosystem Services Partnership. *Federal Resource Management and Ecosystem Services Guidebook*. 2nd ed. Durham, North Carolina National Ecosystem Services Partnership, Duke University, 2016. <https://nespguidebook.com/>.

Office of Management and Budget. “Guidance for Assessing Changes in Environmental and Ecosystem Services in Benefit-Cost Analysis.” Review Draft. Washington, DC: Executive Office of the President, Office of Management and Budget, forthcoming. <https://www.whitehouse.gov/wp-content/uploads/2023/08/DraftESGuidance.pdf>.

Reed, Denise, Lynn Martin, and Janet A. Cushing. “Using Information on Ecosystem Goods and Services in Corps Planning: An Examination of Authorities, Policies, Guidance, and Practices.” *Institute for Water Resources*, 2013.

Tazik, David J., Janet Cushing, Elizabeth O. Murray, and Lisa Wainger. “Incorporating Ecosystem Goods and Services in Environmental Planning: A Literature Review of Definitions, Classification, and Operational Approaches.” US Army Corps of Engineers, Engineer Research And Development Center, 2013.

U.S. Army Corps of Engineers Omaha District. “Dakota Access Pipeline Lake Oahe Crossing Project Draft Environmental Impact Statement.” Draft Environmental Impact Statement. Omaha, September 2023.

U.S. Bureau of Economic Analysis. “BEA Interactive Data Application.” Data & Tools. U.S. Bureau of Economic Analysis, 2023.

https://apps.bea.gov/itable/?ReqID=70&step=1&_gl=1*68wptx*_ga*MTE3NDY2MzgWOC4xNzAyMzk1MzQ0*_ga_J4698JNNFT*MTcwMjM5NTM1NC4xLjEuMTcwMjM5NTM2NC4wLjAuMA..

Wainger, Lisa, Anna McMurray, Hannah Griscom, Elizabeth Murray, Janet Cushing, Charles Theiling, and Shawn

²⁰ “Circular A-4,” 51.

²¹ Office of Management and Budget, “Guidance for Assessing Changes in Environmental and Ecosystem Services in Benefit-Cost Analysis.”

Komlos. "A Proposed Ecosystem Services Analysis Framework for the U.S. Army Corps of Engineers." Engineer Research and Development Center (U.S.), August 10, 2020.
<https://doi.org/10.21079/11681/37741>.