Standing Rock Sioux Tribe

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

November 24, 2020

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“We want to be heard, and we want justice.”

Chairman Mike Faith, Jr., Standing Rock Sioux Tribe

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I. DAPL MUST BE SHUT DOWN IMMEDIATELY

On March 25, 2020, District Court Judge James Boasberg ordered the Army Corps of Engineers to prepare an environmental impact statement for the Dakota Access Pipeline (DAPL).[1] On September 10, the Corps published a Notice of Intent in the federal register to prepare the environmental impact statement (EIS), and solicited comment on the scope of the document.[2]

The first step in the NEPA process must be to shut down DAPL. On July 6, 2020 Judge Boasberg ordered the pipeline to be shut down pending completion of an EIS in compliance with the National Environmental Policy Act.[3] The court "vacate(d) the Corps' decision to grant Dakota Access an easement under the Mineral Leasing Act and order(ed) that the Dakota Access Pipeline be shut down within 30 days."[4] As the court opinion stated, "allowing the oil to flow through the pipeline during the remand risks… a spill under Lake Oahe."[5]

The Corps of Engineers, working in tandem with Energy Transfer, the owner and operator of DAPL, immediately appealed. On July 14, the Washington D.C. Circuit Court of Appeals issued an administrative stay of Judge Boasberg's shutdown order, but dissolved stay on August 5. The court ruled that the Corps and Energy Transfer "failed to make a strong showing of likely success on their claims… that the district court abused its discretion in refusing to remand without vacatur" – upholding Judge Boasberg's order to shut down the pipeline.[6] The court denied the Corps and Energy Transfer's motion to stay the portion of Judge Boasberg's order vacating the easement granted by the Corps for DAPL.

Thus, at this point, DAPL is operating on federally-controlled land with no easement, in violation of the Mineral Leasing Act of 1918. DAPL also lacks a valid

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[1] *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, 2020 WL 1441923 (Standing Rock VI).
[2] Department of the Army, Corps of Engineers, *Notice of Intent to Prepare an Environmental Impact Statement for an Easement to Cross Under Lake Oahe, North Dakota for a Fuel-Carrying Pipeline Right-of-Way for a Portion of the Dakota Access Pipeline*, 85 Fed. Reg. 55843 (Sept. 10, 2020).
[3] *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*. 1:16-cv-01534 Doc. #546 (Memorandum Opinion, July 6, 2020).
[4] *Id.*
[5] *Id*.
[6] *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, No. 20-5197, Order Denying Motion (D.C. Cir. Aug. 5, 2020).

permit under section 10 of the Rivers and Harbors Act, as required to operate the pipeline in a flood control project, and is operating in violation of NEPA.

The Dakota Access Pipeline should not be operating due to the failure to properly design and operate the system in a manner that complies with the Pipeline and Hazardous Materials Safety Administration (PHMSA) integrity management and overpressure protection requirements for the Lake Oahe crossing. There is no back-up power to the safety critical emergency shutoff valves at the Oahe crossing. Energy Transfer failed to accurately formulate worst case discharge calculations, or to implement procedures for operations, maintenance and emergency response and required integrity management plans.

The continued operation of DAPL poses an imminent risk to the Missouri River, and to public health and the environment on the Standing Rock Indian Reservation. The Corps of Engineers must shut down DAPL immediately.

II. EXECUTIVE SUMMARY

Standing Rock is a Treaty Tribe, with rights reserved in the Fort Laramie Treaties of 1851 and 1868. The 1851 Fort Laramie Treaty recognized as Sioux Country a vast area of the northern Great Plains – stretching from the Big Horn Mountains to the Missouri River; the Heart River down to the Platte. By 1868, the "Reservation" era had begun, and Standing Rock's ancestors agreed to settle and exercise self-government on the Great Sioux Reservation, while retaining unceded land and valuable hunting rights throughout Sioux Country as described in 1851 Treaty. It is the right of self-government and the hunting and fishing rights memorialized in the 1868 Fort Laramie Treaty that are jeopardized by the Dakota Access Pipeline – the right of the Tribe to control its destiny on its permanent homeland – the Standing Rock Reservation.

The Tribe's Treaty rights include the right to divert as much water as needed for all beneficial uses on its Reservation lands. Standing Rock's reserved water rights extend to the Missouri River, its tributaries and the basin's groundwater. Any release of oil from DAPL will despoil these waters, infringe on the property rights of the Tribe and jeopardize public health on the Standing Rock Reservation. The Corps of Engineers must account for this in the EIS for DAPL.

The Tribe's Treaty rights also include the right of consultation for federal activities that affect Tribal resources. The consultation requirements are prescribed in Executive Order 13175, and the administrative policies of the Corps of Engineers, implementing E.O. 13175. These requirements provide for "meaningful and timely" consultation according to mutually-agreed upon and culturally-sensitive protocols. The Corps of Engineers has failed to comply with these policies in the past, and it appears to be rushing the EIS scoping process, conferring little regard to the need for timely and genuine consultation with the Tribe on its concerns with DAPL.

The Tribe's concerns are significant. Energy Transfer contractors intentionally excavated and destroyed 23 burial sites along the pipeline route, near the Lake Oahe crossing. Consequently, Energy Transfer is not eligible for a permit or easement for DAPL under section 110(k) of the National Historic Preservation Act. Energy Transfer is not eligible for a permit or easement to cross Lake Oahe, due to the anticipatory demolition of burial sites in violation of NHPA section 110(k). In the EIS, the Corps

must select the alternative requiring permanent shutdown of DAPL and removal of the pipeline from underneath the Tribe's riverbed.

The area of potential effects to cultural resources must be surveyed for traditional cultural properties, and must extend to the Reservation. Accordingly, concurrence of the Standing Rock THPO with the Corps of Engineers' determination of impacts to historic properties is required for this EIS. The Corps must comply with the dispute resolution provisions in the applicable regulations, in the event of non-concurrence by the THPO.

The Tribe's concerns with pipeline safety must be fully investigated and disclosed in the environmental impact statement. Energy Transfer fails to meet minimum pipeline safety regulatory requirements or industry best practices. This includes the failure to comply with American Petroleum Industry Recommended Practice 1173 on *Pipeline Safety Management Systems* (2015) and API RP 1160, *Managing System Integrity for Hazardous Liquid Pipelines* (2019). There is no realistic calculation of the potential worst case discharge into the Missouri River, as required by federal regulations. The generic risk assessment methodology used to justify a "low-risk" finding has been discredited, especially for its misapplication in environmental justice communities, but was utilized by Energy Transfer and adopted by the Corps of Engineers.

DAPL lacks effective surge protection for the Lake Oahe crossing and back-up power to the safety critical emergency shutoff valves. A release of oil during a power outage would require manual shutdown of the valves – which is time consuming and could be very difficult during inclement weather. Upon a release of oil, even if the valves at the river's edge close properly, the failure to install surge relief at the Missouri River high consequence area could result in over-pressurization of the pipeline and a catastrophic incident.

A DAPL spill of toxic and highly flammable Bakken crude threatens water intakes and the health and safety of the Standing Rock Sioux Tribe. Energy Transfer's emergency response plan does not identify the elevated hazards and needed protections for Bakken crude oil – one of the most basic requirements of such a plan. The spill clean-up approach focused solely on the lake surface is contradicted by ET's own spill model, which shows the crude oil will quickly become immersed in the water column – a type of spill that is very difficult to remediate. The Energy Transfer plan places Tribal emergency

responders at undue risk. The Corps must address the serious and unresolved emergency response issues for DAPL, in the EIS.

Ultimately, this is a matter of environmental justice. The Standing Rock Sioux Tribe is a vulnerable population to the BTEX contaminants of Bakken crude. Inordinate rates of diabetes mellitus amongst Tribal members pose added concern with the impact of endocrine disruptors. The contaminants in Bakken crude directly attack diabetics, as well reproductive organs –putting women of child-bearing age at disproportionate risk. Rural poverty, caused in part by the forced relocation of Tribal communities by the Corps of Engineers in 1960 for the Oahe Reservoir, exacerbate the public health challenges at Standing Rock. Projects such as DAPL have been found to contribute

These are the issues confronting the Standing Rock Sioux Tribe with the Dakota Access Pipeline. Under the National Environmental Policy Act and related consultation and environmental justice authorities, the Corps must address these issues in a collaborative and transparent manner. Instead, up to this point, the Corps has hidden from the Tribe and the public important information needed to protect public health and the Reservation environment at Standing Rock. There must be full disclosure of the worst case discharge, risk assessment, spill model and other regulatory requirements. Performance verification of safety and leak detection systems should be required in consultation with the Tribe. The pipeline capacity must not be increased, in any event.

The environmental impact statement process is designed to shine a light on the environmental impacts of a federally-permitted project such as DAPL. DAPL's potential impacts on the Standing Rock Sioux Tribe mandate the permanent shutdown of the Lake Oahe crossing the Dakota Access Pipeline.

III. DAPL VIOLATES THE FORT LARAMIE TREATIES OF 1851 AND 1868

The Dakota Access Pipeline violates the Fort Laramie Treaty of September 17, 1851 and the Fort Laramie Treaty of April 29, 1868. This must be disclosed in the EIS.

These Treaties are binding on the United States, today.[7] As instructed by Felix S. Cohen:

> Several different kinds of treaty provisions demonstrate that Indian treaties are similar in many respects to international treaties… [T]erms familiar to modern international diplomacy were used in Indian treaties. The capacity of Indian tribes to make war was frequently recognized. Many of the very early treaties were treaties of peace and friendship, often providing for the restoration or exchange of prisoners and sometimes for the detention of hostages until prisoners were restored… Indian Treaties also typically included provisions fixing boundaries between tribes and the United States.[8]

The binding nature of Treaties with Indian Nations such as Standing Rock is codified in Executive Order 13175. Section 3(a) of E.O. 13175 provides in part: "Agencies shall respect Indian tribal self government and sovereignty, (and) honor tribal treaty and other rights."[9]

Under Article 5 of the 1851 Treaty, the 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.[10]

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[7] *E.g. McGirt v. Oklahoma*, 591 U.S. ___ (2020).
[8] COHEN'S HANDBOOK OF FEDERAL INDIAN LAW (2005 ed.) pp. 27-28.
[9] 65 Fed. Reg. 67250 (Nov. 9, 2000).
[10] 11 Stat. 749.

Subsequently, Article 2 of the Fort Laramie Treaty of April 29, 1868, established the Great Sioux Reservation, comprised of present-day South Dakota from the Wyoming border to the east bank of the Missouri River. 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.[11]

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:

> 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.[12]

Article 15 of the Treaty outlines the general intent of the Treaty, at least as memorialized by the United States:

> The Indians herein named agree that when the agency-house or other buildings shall be constructed on the reservation-named, they will regard *said reservation their permanent home*… but they shall have the right to hunt, as stipulated in Article 11 hereof.[13]

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. The Treaty identifies this as the permanent homeland for the Sioux Nation, the *Oceti Sakowin*. The land surrounding the Great Sioux Reservation, recognized as Sioux land in the 1851 Treaty, was designated as unceded

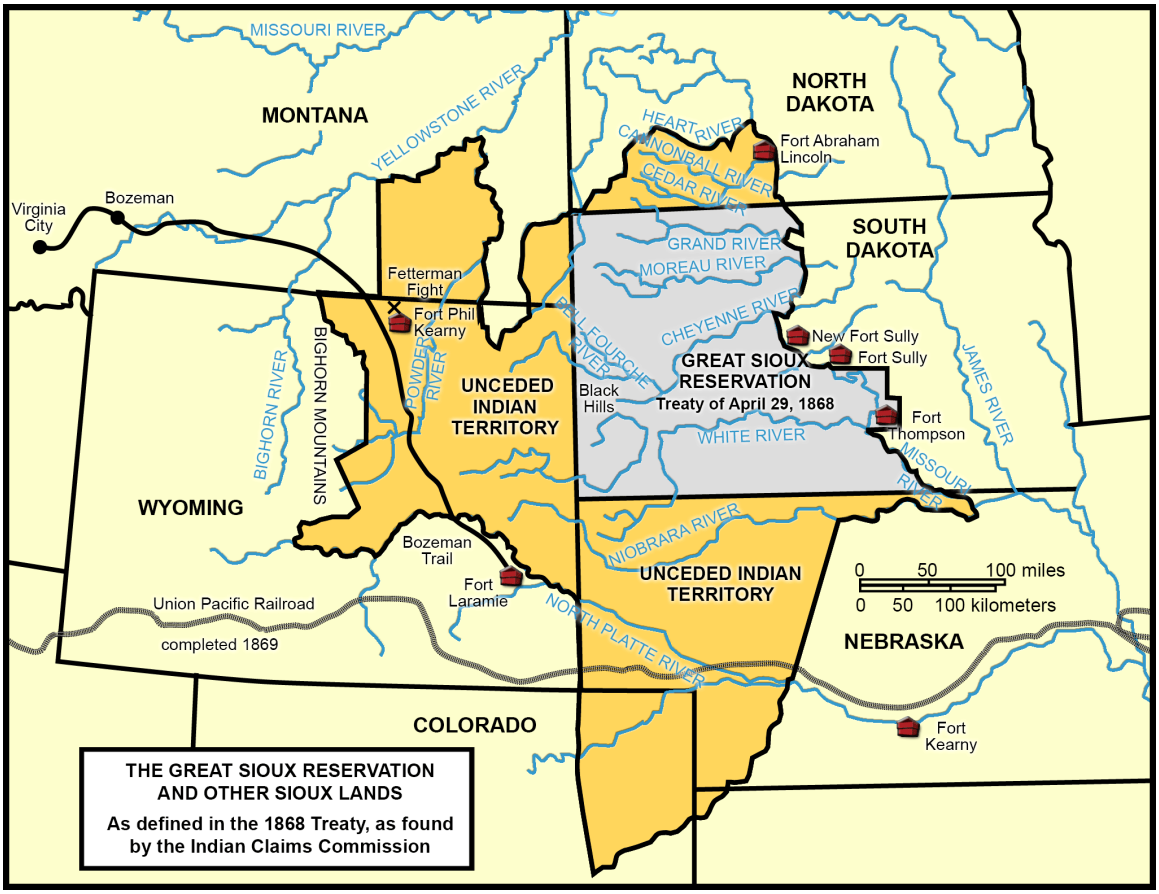
[11] 15 Stat. 635.
[12] 15 Stat. 639.
[13] *Id.*

Sioux territory, with hunting and fishing rights preserved.[14] Recognized Treaty rights also include gathering traditional foods and medicines,[15] the right to consultation,[16] protection and repatriation of cultural objects and burials;[17] and the right to access sacred sites[18] and engage in traditional religious practices[19] – the right to continue to exist as Lakota and Dakota.

The Dakota Access Pipeline was allowed to plow right through the unceded Treaty land, crossing the Heart River into Sioux Nation Treaty territory, angling southwest to the Lake Oahe crossing of the Missouri River. DAPL violates Article 5 of the 1851 Fort Laramie Treaty, which delineates the recognized Sioux territory; Articles 11, 15 and 16 of the 1868 Treaty, which designate land outside of the Reservation as unceded Sioux land, with retained hunting, gathering and other rights; and Article 2 of the 1868 Treaty, which provides for the undisturbed use and occupation of permanent homeland by the *Oceti Sakowin*.

[14] *E.g. Hererra v. Wyoming*, 139 S. Ct. 1686, 1694 (2019).
[15] *E.g. Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172 (1999),
[16] *E.g.* 54 U.S.C. §§302706(b); 306108.
[17] *E.g.* 25 U.S.C. §3001 *et al*.
[18] 61 Fed. Reg. 26771 (May 29, 1996).
[19] *E.g.* 42 U.S.C. §1996.

Figure 1 Map showing Sioux Nation Treaty Boundaries



The reference in Article 11 of the 1868 Treaty to the permanent homeland status of the Reservation is significant with respect to Standing Rock's water rights. In the Fort Laramie Treaties, the Standing Rock and the other Sioux Tribes reserved the Reservation land base, and also reserved water rights required to fulfill the purposes of the Reservation.[20] Article 11 of the 1868 Treaty identifies the Reservation's purpose – providing a permanent homeland for the Sioux.

As explained by the late Professor David H. Getches:

> The breath of purpose… suggests an implied reservation of whatever quantity of water is needed to develop reservation resources of any kind and make them productive… If these ambitious purposes are to be addressed and Indians permitted to

[20] *Winters v. United States*, 207 U.S. 564, 573 (1908).

> "maintain… their way of life," water must be available for a wide range of potential uses… Thus, an implied reservation of water may be justified to the extent water is needed for *any* productive activity…[21]

The permanent homeland purpose entitles the Standing Rock Sioux Tribe to reserved water rights for all potential beneficial uses of water, including municipal and domestic drinking water, agriculture, cultural and ceremonial uses, fish and wildlife, livestock, economic development, energy, etc. The reserved right includes water for future as well as present water uses, with a priority date relating back to the date of establishment of the reservation, giving Tribal water rights the ultimate seniority in the Missouri River system.[22]

Standing Rock's reserved water rights 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 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 describes Indian reserved water rights as "present, perfected rights."[23] They are property rights.[24] The fact that there are treaty-protected property rights subject to trespass and degradation upon a release of oil from DAPL warrants strong consideration in the EIS.

Similarly, as ruled by the District Court, the EIS must account for the impact to Treaty-protected hunting and fishing rights on the Standing Rock Indian Reservation. This is integral to the way of life at Standing Rock. The Missouri River bounds the Reservation for approximately 95 miles, with the east bank designated as the boundary in Article 2 of the 1868 Fort Laramie Treaty.

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[21] David H. Getches, *Water Rights on Indian Allotments*, 26 S.D. L. REV. 405, 411-412 (1981).
[22] *Arizona v, California*, 373 U.S. 546, 610 (1963).
[23] *Id*.
[24] The fact that the extent of the property right has not been adjudicated does not change the fact that the Tribe possesses property rights to the resource subject to trespass and degradation by a release of oil from DAPL.

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.

The fish and wildlife of the Standing Rock Reservation are Treaty-protected resources of the Standing Rock Sioux Tribe. The potential catastrophic impact from an oil spill from DAPL on the flora and fauna of the Reservation, including the impact on traditional foods and medicines, must be fully evaluated in the EIS.

Ultimately, treaties are agreements between nations, and the Fort Laramie Treaties reflect the nationhood of the *Oceti Sakowin* and the Standing Rock Sioux Tribe. The Corps of Engineers must respect the sovereignty of the Standing Rock Sioux Tribe, as a Nation with whom the United States has entered Treaties.

An important aspect of the Nation-to-Nation relationship is consultation. Consultation is a Treaty right. Under Article 5 of the 1868 Treaty:

> The United States agrees that the agent for said Indians shall… keep an office open at all times for the purpose of prompt and diligent inquiry into such matters of complaint … as may be presented for investigation under the provisions of their treaty stipulations, as also for the faithful discharge of other duties enjoined on him by law.[25]

Moreover, the Tribal negotiators of the 1868 Treaty contemplated that the white man's "roads or other works" – such as DAPL – would be an issue in the future. Article 11, clause 6 provides for "three disinterested commissioners… one of said commissioners to be a chief or head-man of the tribe" to determine compensation for utility projects that would affect the Reservation.[26] The Standing Rock Sioux Tribe has the Treaty right to have a say in whether a project such as DAPL may be built and operated so close to the Reservation, under Article 11 clause 6 of the 1868 Fort Laramie Treaty.

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[25] 15 Stat. 636.
[26] 15 Stat. 638.

The late Supreme Court Justice Hugo Black admonished that, "Great nations, like great men, should keep their word."[27] The Corps of Engineers should take note of that.

As the former Chairman and prominent, long-time Standing Rock Tribal leader, the late Aljoe Agard, explained to the United States Senate Committee on Indian Affairs:

> Our ancestors allowed other people to come to this land to live in peace and to prosper. We respectfully request that we be accorded the dignity to do likewise.[28]

[27] *Federal Power Comm'n v. Tuscarora Indian Nation*, 362 U.S. 99, 142, Black, J. *dissenting* (1960).
[28] S. Hrg. 99-844, Hearing Before the Select Committee on Affairs on S. 1453 (statement of Aljoe Agard) (July 16, 1986) p. 100.

IV. THE CORPS VIOLATED FEDERAL CONSULTATION REQUIREMENTS BY PUBLISHING THE NOTICE OF INTENT AND COMMENCING THE NEPA PROCESS PRIOR TO CONSULTATION WITH THE STANDING ROCK SIOUX TRIBE

A. The Corps Routinely Acts without Tribal Consultation

The Corps of Engineers' Missouri River operations significantly impact the Standing Rock Indian Reservation.[29] Nevertheless, the Corps routinely refuses to engage in meaningful consultation with the Standing Rock Sioux Tribe. This is an ongoing problem in the intergovernmental relationship between the Tribe and Corps of Engineers. As a former Tribal leader testified to the U.S. Senate Committee on Indian Affairs:

> We have corresponded, attended meetings, and been visited by officials of the Corps of Engineers… and all has been to no value of the Standing Rock Sioux Tribe. The Corps of Engineers has proven it cannot analyze our environmental impacts, much less impacts on our valuable water rights.[30]

That testimony was given 17 years ago, and nothing has changed. The Corps failed to implement a consultative dialogue on the environmental assessment and permit/easement application for DAPL in 2014-2016, and then failed to consult with the Tribe on the remand report after the Tribe obtained partial summary judgment in 2017.[31] By getting the NEPA scoping process underway in September, 2020, the Corps has already violated the applicable federal consultation requirements, which provide for dialogue *before* any actions are taken on a project or program.

B. Overview of Tribal Consultation Requirements

As stated above, consultation is a Treaty right. The right of consultation is codified administratively in Executive Order 13175 on *Consultation and Coordination with Indian Tribal Governments*, the DoD *American Indian and Alaska Native Policy* and

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[29] *See e.g. Water Problems on the Standing Rock Indian Reservation, Hearing Before the S. Comm. on Indian Affairs*, 108th Cong. (2004).
[30] *Missouri River Master Manual: Hearing Before the S. Comm. on Indian Affairs*), statement of Mike Claymore, 108th Cong. 27 (2003).
[31] Letter of Col. John L. Hudson, PE, to Standing Rock Sioux Tribal Chairman Mike Faith, Jr., dated Nov. 27, 2017.

DoD Instruction 4710.02 on *Interactions with Federally-Recognized Tribes.* In addition, the Department of the Army was part of the multi-agency report entitled, *Improving Tribal Consultation and Tribal Involvement in Federal Infrastructure Decisions*, prepared in 2017 in response to the lack of consultation by the Corps of Engineers with DAPL.

Executive Order 13175 provides that:

> 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 tribal treaty and other rights… (and) ensure meaningful and timely input by tribal officials…[32]

Section 3 of E.O. 13175 requires all agencies to develop their own Tribal consultation policies. The Department of Defense policy requires the Corps of Engineers to:

> Assess… through consultation, the effect of DoD proposed actions that may have the potential to significantly affect protected tribal resources, tribal rights and Indian lands before decisions are made.
>
> Providing timely notice to, and consulting with, tribal governments prior to taking any actions (that) affect protected tribal resources… (and) Consulting consistent with government-to-government relations and in accordance with protocols mutually agreed to by the particular tribe and DoD, including necessary dispute resolution processes.[33]

More recently, DoD issued Instruction 4710.02 on *Interactions with Federally-Recognized Tribes*. Section 3.1 of the Instruction states that:

> The DoD Components must consult with tribes… whenever proposing an action that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian lands.[34]

With respect to the timing of consultation, the Instruction states in section 3.3:

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[32] 65 Fed. Reg. 67250 (November 9, 2000) (emphasis added).
[33] Department of Defense, *American Indian and Alaska Native Policy* (undated).
[34] http://www.esd.whs.mil/DD/.

> The DoD Components must complete consultations early in the planning process… The DoD Components should initiate consultation early and allow time for follow-up discussions… Consultation may require multiple meetings over a period of months…[35]

Thus, genuine consultation is not a meeting; it is a process. It is a collaboration. The applicable authorities emphasize the need for it to occur early on, and to be meaningful – a mutual dialogue in which the concerns of the consulting party get addressed. The mutuality requirement is reflected in the DoD Policy requiring "protocols mutually agreed to."

Even though the Corps' Missouri River operations significantly impact Standing Rock, the Corps of Engineers has never even begun the process of developing consultation protocols with the Tribe. There are no mutually agreed-upon dispute resolution mechanisms, as required. Decades have passed, and the Corps has not even begun the pre-consultation discussions about how the parties will attempt to work together in a consultative manner.

As a Treaty right, consultation with Tribal governments is a requirement of international law as well as federal law. This right is codified in article 32, paragraph 2 of the U.N. *Declaration on the Rights of Indigenous Peoples*:

> States shall consult and cooperate in good faith with the indigenous peoples … through their own representative institutions in order to obtain their free, informed consent, prior to the approval of any project affecting their lands or territories or other resources…[36]

Thus, international law requires consultation with, and the **consent** of Tribes affected by development projects. Approval of an easement for DAPL without the consultation and consent of the Standing Rock Sioux Tribal Council violates Article 32, 2. of the U.N. Declaration. Ultimately, DAPL violates international human rights law.

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[35] *Id.*

[36] United Nations Resolution No. 61-295, *Declaration on the Rights of Indigenous Peoples,* Sept. 13, 2007.

The Corps must also comply with section 106 of the National Historic Preservation Act.[37] Section 106 requires the Corps to consult with the Tribal Historic Preservation Officer on the impacts of its undertakings on historic properties and traditional cultural properties. Section 106 of the NHPA entails a consultation process separate from, and in addition to, government-to-government consultation under E.O. 13175. Section 106 consultation focuses on impacts to cultural resources, whereas government-to-government consultation requires federal decisionmakers to collaborate with Tribal government officials more broadly on projects and policies that affect Tribal resources or self-government.

[37] 54 U.S.C. §§302706(b), 306108.

Table 1 Summary of Consultation Requirements Applicable to the EIS on the Easement for DAPL

Type of Consultation	Source	Requirement	Consult With
Government-to-government	1868 Fort Laramie Treaty, Art. 5	"prompt and diligent inquiry into such matters of complaint… as may be presented."	Tribal / Treaty Councils
	E.O 13175 on *Consultation and Coordination with Indian Tribal Governments*	"honor tribal treaty and other rights." "ensure meaningful and timely input by tribal officials."	Tribal / Treaty Councils
	DoD *American Indian and Alaska Native Policy*	"Providing timely notice to, and consulting with, tribal governments prior to taking any actions (that) affect protected tribal resources."	Tribal Council
	DoD Instruction 4710.02 on *Interactions with Federally-Recognized Tribes*	"consult with tribes… whenever proposing an action that may… affect protected tribal resources, tribal rights, or Indian lands." "initiate consultation early"	Tribal Council
	U.N. *Declaration on the Rights of Indigenous Peoples*	"free, informed consent, prior to the approval of any project"	Indigenous representative institution
Historic properties and traditional cultural properties	NHPA sections 101(d)(6)(B) & 106	"In carrying out its responsibilities under section [106] of this title, a Federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance"	THPO

C. The Corps Failed to Consult with the Tribe on the Environmental Assessment and Remand Report

1. Environmental Assessment

Energy Transfer Partners filed an application for an easement for DAPL to cross Corps-administered land and underneath the bed of the Missouri River on October 22,

2014.[38] On December 16, 2015, the Corps released the *Draft Environmental Assessment, Dakota Access Pipeline Project, Crossings of Flowage Easements and Federal Lands*, prepared by DAPL's consultant. Table 7-1 in the *Draft EA* identifies 51 agencies the Corps consulted with in preparation of the report. The list includes everyone from state agencies such as the North Dakota Department of Game, Fish and Parks, to the North Dakota Humane Society. The list of the 51 agencies consulted in the Draft EA does not include the Standing Rock Sioux Tribe.

The Corps met with Standing Rock Tribal representatives on DAPL for the first time on February 28, 2016, more than two months after release of the Draft EA, and nearly a year and a half after receiving the application for an easement. Clearly, the Corps failed to conduct government-to-government consultation with the Tribe in a timely manner, as required in E.O. 13175 and the DoD *American Indian and Alaska Native Policy*. There was one other meeting prior to approval of the easement, held on April 29. A draft decision document for DAPL had been released to the public five months earlier. There was no timely or meaningful consultation – nor were there protocols nor agreed-upon dispute resolution mechanisms as required by DoD policy. The whole thing was a sham.

The Corps released the Final Environmental Assessment on July 20, 2016. A new section was added, which was not in the draft document, regarding Tribal Consultation. The new section read as follows:

[38] Energy Transfer Partners LLP, October 22, 2014.

3.7.2 Native American Consultations

The 2004 Programmatic Agreement for the Operation and Management of the Missouri River Main Stem System for Compliance with the National Historic Preservation Act, as amended, (PA) was developed to address challenges associated with cultural and historic resource impacts involved with the ongoing operation and maintenance of the Missouri River system of main stem dams. This agreement outlines the processes through which affected Tribes, agencies and interested parties are consulted by the Corps on issues that may affect important historic and cultural resources. These processes are essential to fulfill the Corps' Tribal Trust Responsibilities and also comply with Section 106 of the NHPA.

The United States Department of Defense recognizes its trust responsibilities to federally recognized Indian Tribes and has established an American Indian and Native Alaskan Trust policy that directs its agencies, including the Corps, to work with Tribes in a manner that incorporates tribal needs, traditional resources, stewardship practices, and the development of viable working relationships. In addition, EO 13175, Consultation and Coordination with Indian Tribal Governments (EO 13175), outlines policy and criteria regarding the establishment of "regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, and are responsible for strengthening the government-to-government relationship between the United States and Indian tribes" (https://www.whitehouse.gov/the-press-office/memorandum-tribal-consultation-signed-president).

EO 13175 continues with the following; "History has shown that failure to include the voices of tribal officials in formulating policy affecting their communities has all too often led to undesirable and, at times, devastating and tragic results. By contrast, meaningful dialogue between Federal officials and tribal officials has greatly improved Federal policy toward Indian tribes. Consultation is a critical ingredient of a

sound and productive Federal-tribal relationship". These concepts are reflected in the Omaha District's PA/Section 106 coordination/consultation process.

Section 106 coordination/consultation was initiated for the Proposed Action beginning in October 2014, with an information letter regarding a preliminary geo-testing of the proposed Oahe crossing alignment. Per the Omaha District's usual process, this letter was sent to Tribes, THPOs, SHPOs, agencies and interested parties, soliciting information relevant to the Proposed Action. Subsequently, the same process was utilized in circulating information and pertinent data for the installation of the Oahe pipeline crossing, in the form of a letter distributed in July 2015. The USACE recommended a "No Historic Properties Subject to Effect" Determination to the North Dakota SHPO and the SHPO concurred on April 22, 2016.

39

The four-paragraph passage comprises the entire documentation of the Army Corps of Engineers for Tribal consultation on DAPL. It is very, very weak.

It confuses government-to-government consultation with NHPA section 106 consultation, which, as described above, are separate requirements on separate issues, involving different officials. The first paragraph suggests that the 2004 *Programmatic Agreement for the Operation and Management of the Missouri River Main Stem System for Compliance with the National Historic Preservation Act* suffices for cultural

[39] *Environmental Assessment, Dakota Access Pipeline Project, Crossings of Flowage Easements and Federal Lands,* a document prepared on behalf of the Army Corps of Engineers Omaha District (July 2016) pp. 78-79.

resources consultation for NHPA section 106. The Programmatic Agreement does in fact bind the signatories to section 106 protocols – but Standing Rock is not a party to the agreement. Standing Rock refused to sign on to the 2004 Programmatic Agreement, deeming it inadequate to protect Tribal cultural sites from the damage caused by the Corps' operation of the Missouri River main stem dam system.

The 2004 Programmatic Agreement may demonstrate NHPA section 106 compliance with the SHPOs and THPOs that entered the agreement, but it does not include Standing Rock. The so-called "Native Consultations" section of the Environmental Assessment contains no other documentation with respect to compliance with the consultation requirements of NHPA section 106 with the Standing Rock THPO. On its face, the EA was inadequate in this regard.

With respect to government-to-government consultation, the brief passage contains language about the need for policy makers to listen to Tribes, but it contains no documentation of any efforts by the Corps to consult with Standing Rock (or any other Tribe). There is no documentation of meetings, Tribal concerns, or steps taken to address Tribal concerns.

The reason for that is none of it happened. There was no government-to-government consultation by the Corps of Engineers with the Standing Rock Sioux Tribe on the environmental assessment. The issue at this point is whether the Corps will continue to violate Standing Rock's consultation rights in the court-ordered EIS process, or whether it will make more of a good faith effort to consult with the Tribe.

The publication of the Notice of Intent on September 10, 2020 is an ominous sign. The Corps published the notice and is rushing the scoping process before consulting with the Standing Rock Tribal Council. The publication of the notice of intent, before Tribal consultation, was premature. The scoping process should be extended and a good faith consultation process commenced.

2. Remand Report

The Standing Rock Sioux Tribe has insisted since 2015 that an environmental assessment is inadequate and that the Corps must prepare an EIS on DAPL. The Corps has been intransigent, repeatedly preparing inadequate reports that ignore or understate

the Tribe's real-world concerns with DAPL. Indeed, the District Court ruled that the Corps and Energy Transfer "unfairly downplay these concerns."[40]

The district court issued partial summary judgment in favor of the Standing Rock Sioux Tribe on June 14, 2017. The court ruled that:

> The agency did not demonstrate that it considered, as the CEQ regulations require, the degree to which the project's effects are likely to be controversial, despite being presented with evidence of scientific flaws, the Court cannot conclude the Corps made a convincing case of no significant impact or took the requisite hard look…
>
> As to aquatic resources, the EA offered only a cursory nod to the potential effects of an oil spill… the EA… was inadequate…
>
> [t]he Corps did not properly consider the environmental justice implications of the project and failed to take a hard look at its environmental consequences.[41]

The District Court remanded and ordered the Corps to supplement the Environmental Assessment with additional environmental analysis of:

(1) resolution of conflicting expert opinions on the risk of an oil spill;

(2) the impact of an oil spill on Tribal hunting and fishing rights; and

(3) environmental justice.

Notwithstanding the fact that the EA and Finding of No Significant Impact violated NEPA in these important areas, the court did not order DAPL to be shut down while the Corps prepared the additional analysis.[42] However, the judge admonished the Corps:

> Compliance with NEPA cannot be reduced to a bureaucratic formality, and the Court expects the Corps not to treat the remand as an exercise in filing out the proper paperwork post hoc.[43]

It was not meant to be.

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[40] *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, 282 F.Supp.3d 91 (D.D.C. 2017) (Standing Rock IV).
[41] *Standing Rock Sioux Tribe v. Army Corps of Eng'rs*, 255 F.3d 101 (D.D.C. 2017) (Standing Rock III).
[42] Standing Rock IV.
[43] *Id*.

Rather than comply with the Tribal consultation requirements, the Corps began the process of compiling information that it – the Corps of Engineers – believed was important for the remand analysis. The Corps actually refused to meet with the Tribe for nearly a year.

The court order directing the Corps to prepare additional analysis was dated June 14, 2017. Rather than offer to work with the Tribe in a collaborative and consultive manner from the outset, Col. John Hudson signed a lawyerly letter to the Tribe dated September 25, 2017, posing a list of questions and document requests. The letter reads like a demand, or a subpoena. Standing Rock's department heads did not consider some of the information requested to be especially helpful for the requisite analysis. Rather than consult with the Tribe, the Corps appeared to be playing a game of "gotcha."

For example, the interrogatories and document demands included:

> A summary of the number of game, fish and wildlife licenses and permits that were issued by the Tribe, to both Tribal members (resident and non-resident), members of other federally-recognized Tribes, and non-members, during 2015, 2016, and 2017. The summary should include a description of the activity permitted and the classification of the license or permit (E.g. Member Game, Fish and Wildlife License for Big Game (Muzzleloader, Deer/Antelope)…
>
> Copies of all hunting and fishing proclamations for 2015, 2016, and 2017. Please provide the number of game tags issued for 2015, 2016, and 2017, including the type of species for which the tag and information on any hunting or fishing restrictions…[44]

The Tribe responded by requesting a meeting. Notwithstanding the directive to engage in "meaningful and timely consultation," Col. Hudson refused to meet with the Tribe until he received a written response to his September 25th letter:

> I am willing to meet with Tribal representatives at your reservation… (only) after the Corps has the opportunity to review the information the Tribe may submit in response to my letter.[45]

[44] Letter of John L. Hudson, PE, U.S. Army Corps of Engineers to Standing Rock Sioux Tribal Chairman Dave Archambault II dated Sept. 25, 2017.
[45] Letter of Col. John L. Hudson, PE, to Standing Rock Sioux Tribal Chairman Mike Faith, Jr., dated Nov. 27, 2017.

On February 21, 2018, the Tribe filed with the Corps a 313-page report entitled *Impacts of an Oil Spill from the Dakota Access Pipeline on the Standing Rock Indian Reservation*.[46] The report stressed the need for an EIS on DAPL. It addressed in detail the Tribe's concerns regarding:

(1) *Tribal hunting and fishing rights* – provisions of the 1868 and 1851 Fort Laramie Treaties relating to hunting and fishing rights; subsistence harvesting; historical and cultural aspects of hunting; fish and wildlife surveys; wetlands and wildlife habitat, including the significance of the Missouri River shoreline habitat, and the impact of an oil spill on the food chain. Included was a comprehensive survey entitled Missouri River High Consequence Assessment, which documented 80 flora species, 24 fish species (based upon 1,000 fish collected) and 41 bird species (based upon 3,366 observations) identified with the Missouri River corridor on the Standing Rock Reservation.

(2) *DAPL spill impacts subject to scientific and expert dispute* – challenged the risk assessment methodology utilized for DAPL; identified the specific hazards of Bakken crude that were ignored in the risk assessment and facility response plan; reviewed the extensive history of pipeline safety violations by Energy Transfer and related companies; questioned assumptions for leak detection and the calculation of worst case discharge; and established Energy Transfer's failure to comply with industry standards such as American Petroleum Institute Recommended Practice 1175 on *Pipeline Leak Detection Program Management*; API RP 1173 on *Pipeline Safety Management System Requirements* and API RP 1174 on *Onshore Hazardous Liquid Emergency Response* and API RP 1133 on *Guidelines for Onshore Hydrocarbon Pipelines Affecting High Consequence Floodplains*.

(3) *Environmental justice* – demonstrating the costs, including hidden costs incurred by the Standing Rock Sioux Tribe and the Reservation community due to DAPL, and the lack of any benefits received by the Tribe, in order to reveal the adverse and disproportionate impact of DAPL suffered by the Standing Rock Sioux Tribe.

Even though Judge Boasberg ordered the remand analysis on June 14, 2017, and the Tribe requested a meeting with the Corps on October 6, 2017, the Corps met with the Tribe on its remand analysis one time, on May 27, 2018. There was no consultative relationship or process, just one meeting. On October 4, the Corps filed its *Analysis of the Issues Remanded by the U.S. District Court for the District of Columbia Related to the Dakota Access Pipeline Crossing at Lake Oahe*.

The Corps' *Analysis* document failed to address virtually any of the concerns expressed by the Tribe in the *Impacts of an Oil Spill* report. As described above, there

[46] Available at https://www.standingrock.org/content/impacts-oil-spill-dapl-standing-rock.

was an exchange of correspondence and one meeting during the remand process, but no timely or genuine consultation. On March 25, 2020, the District Court ruled that the Corps' *Analysis* was insufficient, and directed the Corps to prepare an EIS.

Table 2 Corps of Engineers' Violations of Consultation Requirements in the NEPA Process for DAPL

NEPA Process	COE Start Date	Meeting with Tribe	Meaningful & timely consultation?
Draft EA	Oct. 22, 2014 - DAPL application for easement Dec. 14, 2015 - Draft EA published	Feb. 28, 2016 April 29, 2016	No
Final EA	July 25, 2016	Dec. 4, 2016	No
Remand Analysis	July 14, 2017 - Court order for remand analysis Sept. 25, 2017 – COE info request	May 22, 2018	No
EIS	Sept. 10, 2020 - NOI published Oct. 13-15 – Tribal & public scoping	?	No

D. "Meaningful and Timely" Consultation in the EIS Process

The Corps must consult with the Standing Rock Sioux Tribe in a meaningful and timely manner in the EIS process for DAPL. This means starting all over, because the Corps already violated the requirement of early consultation, by publishing the Notice of Intent and engaging in scoping before consulting with the Tribe.

The starting point, as identified in the DoD *American Indian Policy*, is the development of mutually agreed-upon protocols and dispute resolution procedures. That is Department of Defense agency policy. Section 3.5(b) of DoD Instruction 4710.02 provides in part "DoD staff should take into consideration and respect Tribal protocols." Section 3.7 encourages the use of written agreements for agreed-upon protocols: "The

DoD Components are encouraged to use agreements, such as Consultation Protocol agreements…"

The Omaha District has never complied with these policies. It must do so for the EIS on DAPL.

One important protocol is meeting in Tribal Council chambers. The DoD Instruction recognizes this: "Installations should meet with tribes in their (the Tribe's) area." That cannot be safely accomplished as of this writing, due to the COVID-19.

The Corps must shut down DAPL immediately and suspend scoping until the COVID-19 pandemic subsides, and then initiate Tribal consultation on the DAPL EIS. Consultation should take place at the Standing Rock Tribal Chambers and should involve the Division Commander and District Commander. It should be on the record.

The steps in the government-to-government consultation process for the DAPL EIS should include, but not be limited to:

> (1) Discussion on immediate shutdown of DAPL pending completion of EIS.
>
> (2) Discussion of a protocols agreement, including dispute resolution.
>
> (3) Discussion and seek agreement on additional scoping, including the conduct of scoping meetings on the Standing Rock Reservation after COVID subsides, in accordance with the scoping recommendations prescribed in the Council on Environmental Quality, *Environmental Justice: Guidance Under the National Environmental Policy Act* (1997).
>
> (4) Consultation on the procurement of any contractors needed by the Corps of Engineers for assistance with technical assessments or with preparation of the EIS.
>
> (5) Consultation on Treaty rights affected by DAPL.
>
> (6) Discussion and seek agreement on transparency and the need to access all records, test results, drawings and other documents relating to DAPL.

(7) Discussion and seek agreement on alternatives to be considered and alternatives to be eliminated from consideration in the EIS.

(8) Discussion and seek agreement on the scope of geographic analysis for all environmental and human impacts.

(9) Consultation on disproportionate impacts suffered by the Tribe from DAPL.

(10) Consultation and transparency on performance verification tests of leak detection and integrated safety systems.

(11) Consultation on proposed increase in DAPL flow rate.

(12) Consultation on risk assessment; social impact assessment; health risk assessment and other technical assessments the Corps and Tribe deem necessary to properly evaluate DAPL's impact on the Tribe.

(13) Consultation on pipeline safety standards and systems.

(14) Consultation on the cumulative impacts on the Standing Rock Reservation of DAPL and other federal projects, including but not limited to the operation of the Missouri River main stem dams by the Corps.

(15) Discussion of the requirements for facility response plans and the environmental and public safety impacts of oil spills from pipelines, such as DAPL, with noncompliant response plans.

(16) Review of preliminary draft EIS and discussion of process for public review and comment of draft EIS.

(17) Discussion and seek agreement on preferred alternative.

(18) Consultation on the record of decision.

(19) Other.

The Corps of Engineers conducted what it characterized as a "virtual Tribal scoping meeting" on October 13, 2020. At that time, the Omaha District Tribal Liaison – the very Corps of Engineers' official responsible for Tribal consultation – stated that the

Corps would agree to "a" consultation meeting with any Tribe that asked for one. This statement reflects the failure to understand the Corps' consultation obligations to the Tribe, which are codified in the Corps' own policies. For consultation is not "a meeting," it is a process. And if the Corps fails to fulfill its Tribal consultation obligations in the NEPA process for DAPL, the resulting environmental impact statement will fail.

V. THE ANTICIPATORY DEMOLITION OF NATIVE AMERICAN HISTORIC PROPERTIES DISQUALIFIES ENERGY TRANSFER; STANDING ROCK THPO CONCURRENCE IS REQUIRED FOR DAPL

Section 110(k) of the National Historic Preservation Act prohibits agencies such as the Corps of Engineers from issuing a permit or other approval to any applicant that has intentionally destroyed an historic property in order to undermine the section 106 review process. The statute 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…[47]

On approximately September 2, 2016, a construction crew under contract and ostensibly at the direction of Energy Transfer abruptly altered the construction sequence and relocated to a segment of the pipeline easement that had recently been surveyed for historic properties, and commenced construction in that segment. Twenty-three burial sites with remains of Standing Rock origin were destroyed. In the environmental impact statement for DAPL, the Corps must evaluate, in consultation with the Standing Rock Tribal Historic Preservation Officer, whether the selection of any alternative providing for the operation of DAPL will violate section 110(k).

The applicable CEQ regulations require impacts to historic properties be included in the evaluation of environmental effects to be studied in EIS.[48] The regulations also require an agency's NEPA process to be conducted in coordination with other required planning processes, such as determination of effects to historic properties under section 106 of the National Historic Preservation Act.[49] Similarly, the regulations of the Advisory Council on Historic Preservation under section 106 require coordination in the section 106 process with the NEPA environmental review process.[50] As the Corps has commenced the EIS process for DAPL with publication of the Notice of Intent on

[47] 54 U.S.C. §306113.
[48] 40 CFR §1502.16(g).
[49] 40 CFR §1501.2.
[50] 36 CFR §800.8.

September 10, the CEQ and Advisory Council regulations require the section 106 process for historic properties to be getting underway also.

NHPA section 101(d)(2) recognizes that Tribal Historic Preservation Officers may fulfill the role that State Historic Preservation Officers have in the section 106 process outside of Indian Reservations, for federal agency undertakings affecting Indian Reservation lands, and for consultation on the identification, evaluation and determination of affects to traditional cultural properties (TCPs) regardless of their location.[51] Standing Rock was the first Tribal Nation in the United States to enter an agreement with the Secretary of the Interior for an authorized Tribal Historic Preservation Officer under section 101(d)(2).

The Corps must consult with the Standing Rock THPO on all aspects of the section 106 process for the DAPL EIS. The Notice of Intent stated that in making a decision in the EIS process for DAPL, it shall rely in part on "the July 25, 2016 EA/FONSI" in the EIS for DAPL. That is a mistake, as the District Court has already ruled that the Corps violated NEPA by relying on the EA for the FONSI.[52] Moreover, the Corps may not rely on the section 106 process for the EA in the EIS process for DAPL.

With respect to the section 106 consultation process for the DAPL EIS, the Corps may not rely upon the *Programmatic Agreement for the Operation and Management of the Missouri River Main Stem System for Compliance with the National Historic Preservation Act, as amended* (2004)[53] for section 106 consultation with the Standing Rock THPO, because he is not a signatory to the PA. The Corps must utilize the normal section 106 process for consultation with the Standing Rock THPO on the EIS for DAPL.

The section 106 process involves consultation on the delineation of the area of potential affects (APE). This is required under the Advisory Council regulations: "In consultation with the SHPO/THPO, the agency official shall… determine and document the area of potential effects."[54] It is also required under DoD Instruction 4710.02, which

[51] 54 U.S.C. §§302702; 302705; 36 CFR §800.2(c)(2).
[52] Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers,
[53] https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/237.
[54] 36 CFR §800.4(a)(1).

provides in section 3.3a.(1) that "Early involvement means… an opportunity to comment on… the area of potential effect."[55]

The area of potential effect clearly extends to the Standing Rock Indian Reservation. The District Court suggested this also, in the context of environmental justice impacts.[56] Accordingly, the THPO concurrence is required for any finding on the DAPL's effects to historic properties under NHPA section 101(d)(2) and 36 CFR §800.2(c)(2).

Moreover, compliance with the Standing Rock Sioux Tribe Cultural Resources Code is required. The Code requires a Class III survey for all potential impacts to historic properties within the exterior boundaries of the Reservation.[57] The entire APE must be properly surveyed for TCPs in consultation with the Standing Rock THPO.

In the EIS for DAPL, the Corps may not rely on the SHPO concurrence for the determination of effects on historic properties by DAPL, the concurrence of the Standing Rock THPO is required. If the Standing Rock THPO does not concur, no action may be taken by the Corps pending the dispute resolution process outlined in the Advisory Council regulations.[58] The Standing Rock THPO possesses concurrence or objection authority for the determination of impacts to historic properties and traditional cultural properties by DAPL in the EIS process.

[55] http://www.esd.whs.mil/DD/.
[56] Standing Rock III.
[57] SRST Code of Justice, sec. 32-701.
[58] 36 CFR §800.4(d)(1)(ii).

VI. THE CORPS MUST EVALUATE DAPL OIL SPILL RISK BY UP-TO-DATE, RIGOROUS PIPELINE SAFETY, ENVIRONMENTAL RISK AND INTEGRITY MANAGEMENT STANDARDS

A. DAPL Poses Unacceptable Risk of an Oil Spill

The design, construction and operation of the Dakota Access Pipeline (DAPL has been characterized by a failure to meet or apply minimum pipeline safety regulatory requirements[59] and good practice consensus standards.[60] DAPL has not effectively implemented important requirements established by the Pipeline and Hazardous Materials Safety Administration (PHMSA). The DAPL failures include:

- accurately formulating worst case discharge (WCD) calculations;
- procedures for operations, maintenance and emergency response; and integrity management plans.
- violated the Army Corps of Engineers' (Corps) easement conditions and failed a court ordered "independent assessment."
- DAPL poses an imminent risk lacking effective surge protection for the Lake Oahe crossing and back-up power to the safety critical emergency shutoff valves that minimize a spill into the lake - a recognized High Consequence Area (HCA).
- Energy Transfer's (ET) leak detection methodology and past performance are ineffective which will allow for an even greater spill into Lake Oahe.

A DAPL spill of toxic and highly flammable Bakken crude threatens water intakes and the health and safety of the Standing Rock Sioux Tribe. ET's emergency response plan does not identify the elevated hazards and needed protections for Bakken crude oil – one of the most basic requirements of such a plan. The Corps and ET's WCD claims are grossly understated.

The spill clean-up approach focused solely on the lake surface is contradicted by ET's own spill model which shows the crude oil will quickly become immersed in the water column – a type of spill that is very difficult to remediate. The ET plan places

[59] Safety and Environmental Impact Analysis of the Energy Transfer's Dakota Access Pipeline Report to the Standing Rock Sioux Tribe, Donald S. Holmstrom, e.g. worst case discharge, integrity management plans; operations, maintenance and emergency response procedures.
[60] *Id.* e.g., American Petroleum Institute Recommended Practices 1160, 1173, 1174, 1175, 1130, and 1133.

emergency responders at risk. The entirety of the DAPL spill response zone is within the Standing Rock Sioux Indian Reservation, yet DAPL has never met with or coordinated a response to a Lake Oahe spill.

DAPL's location and critical safety deficiencies have required the Standing Rock Department of Emergency Management to develop its own Lake Oahe Pipeline Oil Spill Emergency Response Plan (ERP) and to take other measures to protect the Tribe, sacred cultural resources and the waters of Lake Oahe.[61] The Corps and ET have conducted an unprecedented campaign to conceal even the most basic documentation about DAPL even where they have been contradicted by the U.S. Department of Homeland Security. They have falsely asserted claims of confidentiality and security when the same information - such as worst case discharge volumes - have been released in other forums or similar projects like Keystone XL. One can only conclude that they are fearful that any transparency will reveal their lack of critical safety measures and misleading claims. The Dakota Access Pipeline leaves the Tribe and the Lake Oahe environment vulnerable to disaster and must be shut down.

Safety programs are typically evaluated by adherence to recognized and accepted aindistry best practices - relevant regulations, consensus standards, government recommendations and new lessons learned from recent incidents. Regulatory compliance is necessary but insufficient for safe operations, particularly for U.S. transportation pipelines. The minimum regulatory requirements of PHMSA are dated and have not kept up with recent pipeline safety standards[62] and responses to Congressional mandates and government recommendations remain unfulfilled.[63]

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[61] Tribal Emergency Response Committee (TERC), *Lake Oahe Pipeline Oil Spill Emergency Response Plan* (2020).

[62] 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.

[63] The PHMSA Inspector General recently 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 2016 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://www.oig.dot.gov/sites/default/files/PHMSA%20Progress%20Implementing%20Mandates%20and%20Recommendations%20Final%20Report%5E10-14-16.pdf) (last accessed Feb. 4, 2017).

While the DAPL EA states that: "To prevent pipeline failures resulting in inadvertent releases, Dakota Access would construct and maintain the pipeline "*to meet or exceed industry and governmental requirements and standards*," - for the Dakota Access Pipeline this was not done. Consequently, it is important that the Corp apply and verify that ET has implemented all relevant regulations and modern good practice pipeline safety standards throughout the pipeline's lifecycle to effectively evaluate its environmental impacts.

Details are important. A check the box approach will not suffice. This is particularly true given that Lake Oahe is an HCA and ET has a very troubled safety performance across the Corporation including DAPL.

Since 2012, ET and its subsidiary hazardous liquid pipelines have the worst safety record in terms of spill numbers, significance and volume in the PHMSA database compared to other corporate pipeline families with large numbers of spills.[64] Their most recent spill and enforcement record since 2016 does not reflect improvement. Actual performance including the status of safety systems and incident data represents the real risk of continued operation. The totality of ET's performance data underscores that DAPL must be shut down for the protection of the SRST and the Lake Oahe environment.

During the course of the EIS process the Tribe will present more detailed reports on the technical issues addressed herein. The following comments identify key issues that must be fairly and thoroughly assessed in the EIS scoping process.

B. The Corps Must Evaluate DAPL Oil Spill Risk by Up-to-Date, Rigorous Pipeline Safety, Environmental Risk and Integrity Management Standards

Evaluating the environmental impacts of the DAPL requires first and foremost an assessment of DAPL-specific pipeline spill risks and operator safety systems in place to reduce risk to a targeted level such as "as low as reasonably practicable" or ALARP.[65]

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[64] *Safety and Environmental Impact Analysis of the Energy Transfer's Dakota Access Pipeline Report to the Standing Rock Sioux Tribe*, Donald S. Holmstrom, pp. 7-20.

[65] Center for Chemical Process Safety (CCPS). *Inherently Safer Chemical Processes – A Life Cycle Approach;* 2nd ed., 2009; p 46. CCPS defines ALARP as "a risk reduction goal, where risk reduction efforts are continued until the incremental effort to further reduce risk becomes grossly disproportionate to the level of additional risk reduction."

Effective risk reduction often is defined by application of up to date consensus safety standards.[66] These modern risk and integrity management safety and environmental standards are based upon a management safety system approach to reducing risk and pipeline spills. This methodology places responsibility on management to improve systems and performance to prevent incidents. It rejects dated practices where responsibility related to incident causes were routinely deflected to assertions such as "unavoidable mechanical failure" or "worker error"[67] rather than a company's own management system deficiencies.

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) adopt such a safety system framework. They focus on a "plan-do-check-act" approach for spill prevention and continuous improvement.[68] This methodology is company-specific, and data driven to improve performance over time – it is not a generic or single use exercise.

For the API pipeline safety management system approach (PSMS) "risk management steps are undertaken to reduce risk and support achieving a goal of zero incidents."[69] The highly regarded ISO 31000:2018 standard *Risk Management - Guidelines* applicable to general industry takes a similar approach emphasizing the importance of effective safety management systems, data gathering, evaluation of existing controls and continuous improvement.[70]

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[66] American Petroleum Institute (API) Recommended Practice (RP) 1173, Pipeline Safety Management Systems (2015), p. vii, "The following principles comprise the basis of this safety management system recommended practice… (e) pipeline operators conform to applicable industry codes and consensus standards with the goal of reducing risk, preventing releases, and minimizing the occurrence of abnormal operations."

[67] *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 faulty design or deficient training.

[68] Promulgated in 2015 prior to the construction of DAPL with the guidance of PHMSA, API RP 1173 is a highly regarded safety system based, risk management approach. The NTSB evaluated RP 1173 and determined it exceeded their recommendation. In an important 2019 update to RP 1160 their Integrity Management Plan standard, API included significant emphasis on the safety management system approach from RP 1173.

[69] API RP 1173, p.10.

[70] International Standards Organization, ISO 31000:2018, *Risk Management – Guidelines* (available at https://www.iso.org/obp/ui/#iso:std:iso:31000:ed-2:v1:en last accessed 10-19-20). ISO 31000 is also a

1. Necessity for Using Up-to-Date Safety and Risk Management Standards

Modern pipeline risk management standards arose from recent serious incidents, and were prompted by federal government mandates and recommendations. API RP 1173 (2015) and RP 1160 (2019) were specifically promulgated to address the widespread concern by federal agencies of pipeline spills from companies with poor spill performance records - of which ET is a prime example. It is well-established that oil and chemical accidents are the result of management system failures.[71]

For example, in response to serious pipeline incidents such as the 840,000-gallon Enbridge Marshall, Michigan crude oil spill into the Kalamazoo River, the NTSB issued recommendations that led to the development of API RP 1173 Pipeline Safety Management System Requirements. Reviewing recent serious pipeline incidents, the NTSB concluded that safety management systems "are needed to enhance the safety of pipeline operations."[72] PHMSA helped spur the development of RP 1173 and has supported broad acceptance of management system approach concluding it will result in pipeline safety improvements and risk reduction.[73]

The risk management approach taken by ET and adopted by the Corps are based upon an outdated treatise[74] and proprietary formulas[75] that underestimate risk by limiting

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safety system-based approach requiring continuous improvement that looks beyond limited mechanical integrity threats. It includes elements such as leadership and commitment, human and cultural factors, involvement of stakeholders, use of best available information, and risk reduction.

[71] *Guidelines for Investigating Chemical Process Incidents,* Center for Chemical Process Safety (CCPS) of the American Institute of Chemical Engineers (AICHE), 1992, at p.130.

[72] *Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall Michigan, July 25, 2010*; National Transportation Safety Board Accident Report.

[73] PHMSA, Safety Management Systems API RP 1173, Energy Pipeline Management Summit, slides 25 and 46,
May 23, 2016 (available at https://www.slideshare.net/MarcusEvansEnergy/emphasizing-the-importance-of-pipeline-safety-management-systemsbill-lowry-phmsa) (last accessed 10-19-20).

[74] The Corps and Energy Transfer utilized the pipeline risk assessment process "from the W. Kent Muhlbauer Relative Index Methodology (2004)" U.S. Army Corps of Engineers, Environmental Assessment: Dakota Access Pipeline Project Crossings of Flowage Easements and Federal Lands, at 92. See also Energy Transfer Company, *Dakota Access Pipeline Project, North Dakota Lake Oahe Spill Model Discussion*, Wood Mustang Group, Issued for Use 5-3-16; "a method to quantify risk, based on a text by Kent Muhlbauer, ("*Pipeline Risk Management Manual,*" 2003) was used to quantify risk," p. 11, (RAR014969).

[75] Sunoco Logistics, *Risk Algorithm Document*, January 2015, RAR015777.

the threats examined and fail to address the safety system performance of the operator.[76] The EA and Remand approach for DAPL utilized the pipeline risk assessment process "from the W. Kent Muhlbauer Relative Index Methodology."[77] Muhlbauer's treatise was published in 2004 by a single author. It is not a consensus safety standard developed by a standard-setting body with broad pipeline industry and stakeholder participation. Its dated limited threat concepts have been superseded by API RP 1173 (2015) and RP 1160 (2019).

Voluntary consensus technical standards developed by the American Petroleum Institute, the largest oil industry trade association, are widely recognized and implemented for the transportation pipeline sector.[78] The API RP 1173 and 1160 methodology has been vetted, approved and implemented by the major oil industry oil industry standard setting body with significant participation by PHMSA and other stakeholders. It is not the product of an individual author or company. These modern standards reflect up-to date practices, new lessons learned, and approaches needed to more effectively prevent pipeline incidents.

Moreover, threats examined by a risk assessment need to be data driven and much broader than the typical index model focusing almost exclusively on a handful of integrity management issues. The index scoring-type approach utilized by DAPL has recently been criticized by the NTSB in the San Bruno report, as well as a 2013 DOT/PHMSA study.[79] The recent PHMSA study concluded there were "serious

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[76] It must be noted that while the EA at p.92 claims in passing the Muhlbauer approach is supported by *ASME B31.8S Managing System Integrity of Gas Pipelines* (note B31.8S only explicitly applies to gas pipelines but approach has been used to analyzed threats to pipelines in other service) and API RP 1160 (no version cited but prior to the significant revision in 2019) there is scant evidence that those standards are applied. For example, the claim on p.92 of the EA is the only reference to those standards. In Sunoco's *Risk Algorithm* (2015) (RAR015777) there is no mention of the use of those standards. The Sunoco *Dakota Access Pipeline Project Threat Assessment Report, Missouri River and Lake Oahe HDD Crossing* (2016), has no reference to API RP 1160. For *ASME B31.8S*, the report claims to utilize the approach of that standard but it only references B31.8S's use of limited threats criticized by a PHMSA study, p. iv and 5.

[77] U.S. Army Corps of Engineers, Environmental Assessment: Dakota Access Pipeline Project Crossings of Flowage Easements and Federal Lands, at 92. See also Energy Transfer Company, *Dakota Access Pipeline Project, North Dakota Lake Oahe Spill Model Discussion*, Wood Mustang Group, Issued for Use 5-3-16, p. 11.

[78] The Tribe does not endorse API as an industry trade association or lobbying group nor all of its standards and recommended practices – some of which have significant gaps and permissive language.

[79] Rick Kowalewski, *Pipeline Integrity Management, A Report to the Secretary of Transportation*, October 31,
2013, at 67 (*available at:* http://pstrust.org/wp-content/uploads/2015/10/Kowalewski-IM-PE_Report.pdf) (Last

documented issues with index scoring models" that may lead to undermining spill prevention: "Index-scoring models have a high potential for *adding risk* into the system and *undermining* sound risk decisions."[80] The study cites the conclusions in NTSB San Bruno report as supporting the need for a data driven approach that requires "incorporating leak, failure, and incident data in evaluation of their risk models."[81] The study concludes that the selection of risk factors in the "index model" of Muhlbauer has no analytical basis – it is not data driven.

API Recommended Practices 1173 and 1160 focus on the use of company-specific incident and system performance data for effective risk management. API RP 1173 and 1160 good practice risk assessments and integrity management plans must include a robust discussion of previous incidents and corrective actions. Why previous spills occurred, what were the weaknesses in the company's safety systems, and how long was the detection and spill response times in previous leaks – these are key elements that must be included in the risk analysis. This is particularly important for a company like ET with a worst-in-class spill and PHMSA violation record since 2012 for companies with the most spills.[82]

Both API standards, moreover, emphasize the importance of a broader assessment of management systems elements which was not done for the Dakota Access Pipeline:

> The term "threat" can be applied broadly in a PSMS,[83] such as a threat to a safety culture (NEB Statement on Safety Culture), or a threat to the knowledge and experience of an organization through retirements and attrition. These threats can be assessed using risk assessment and managed with prevention and mitigation measures.[84]

The PHMSA study also pointed out the importance of safety culture and organizational threats that need to be assessed as an essential element of risk and integrity management. As an example, the study noted reports such as "*It's sometimes challenging*

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accessed 10-30-20).
[80] *Id*. pp. 67, 73.
[81] *Id.* p. 67.
[82] See *Safety and Environmental Impact Analysis of the Energy Transfer's Dakota Access Pipeline Report to the Standing Rock Sioux Tribe*, Donald S. Holmstrom, pp. 7-20.
[83] Pipeline Safety Management System
[84] API RP 1173 at 10.

to make repairs in HCAs (pipe under rivers, etc.) and companies are constantly explaining why they can't make repairs. But it's ultimately about cost."[85]

Like API RP 1173 (2015) and RP1160 (2019) the study emphasized the importance of top management leadership and commitment to address these organizational failures. The Corps has ignored these key threats in their analysis despite ET's very troubled safety record that should make the application of up-to-date risk approaches a high priority.

One example is ET's alarming number of spills in HCAs like Lake Oahe. From 2012 to 2018,[86] ET pipelines experienced 50 HCA incidents defined as large spills by PHMSA.[87] Nearly 20% of all the spills in this time period were large spills in HCAs like Lake Oahe, more than any other pipeline operator with a large number of spills. ET's long-standing safety performance deficiencies clearly relate to organizational issues and a failure of top management commitment. The more rigorous up-to-date risk and integrity management standards must be applied to DAPL to address these threats to safety and environmental protection.

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.[88] 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.

Risk assessment approaches such as DAPL's are often performed to evaluate business risk before the initiation of a project or support a desired outcome such as the construction and operation of the Dakota Access Pipeline. But the real benefit in risk

[85] Kowalewski, *Pipeline Integrity Management*, p. 60.
[86] PHMSA's integrity management performance data is available through 2018.
[87] 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.
[88] Standing Rock Sioux Tribe pp. 45-48*, https://www.standingrock.org/content/impacts-oil-spill-dapl-standing-rock.*

assessment is to find ways to reduce risk with actions such as additional protective safety barriers, application of more stringent protections, or safer alternatives. These alternatives can include cessation of operations if serious risks cannot be adequately controlled. That is why DAPL must be shut down immediately.

API RP 1173 requires risk reduction[89] and states "pipeline risk management steps are undertaken to reduce risk and support achieving a goal of zero incidents."[90] It is important to note that even with ET's Lake Oahe narrowly focused threat assessment report, five of the ten threats examined received no recommendations for risk reduction.[91] In addition, dangerous overpressure scenarios identified by the surge analysis study at DAPL river crossings were not addressed. Adopting a more rigorous risk management approach with an expanded review of threats and requiring risk reduction is essential to address DAPL serious safety and environmental issues.

The Corps and ET failed to employ these more rigorous API standards as needed for the design, construction, maintenance, and operation of DAPL.[92] After the EA and Remand process, however, ET belatedly claimed to have applied API RP 1173 and some unidentified portions of RP 1160.[93] However, ET's own email communications with the Corps during the Remand demostrate this claim to be false. In a 2018 email, ET acknowledges they have not implemented API 1173 but had plans to do so.[94] The email stated that standard was only a recommended practice and not mandatory, despite their

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[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] *Id.* p. 10.

[91] *Dakota Access Pipeline Project Threat Assessment Report Missouri River and Lake Oahe HDD Crossings; Dynamic Risk Assessment Systems*; June 26, 2016; pp. 22-38; Eleven threats were list;ed one was not examined as inapplicable.

[92] API RP 1173 applies throughout the life cycle of a pipeline: "Risk management is an integral part of the design, construction, operation and maintenance of a pipeline," "The intent of the 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," pp. vii, x.

[93] Such claims were made in the November 13, 2019 State of North Dakota Public Service Commission hearing on the proposed DAPL capacity increase, Case. No. PU-19-204 OAH File. No. 20190280, and in 2020 by ET consultants in the NEPA litigation. SECOND DECLARATION OF JOHN F. GODFREY IN SUPPORT OF DAKOTA ACCESS, LLC'S REPLY BRIEF ON THE QUESTION OF REMEDY, Case No. 1:16-cv-01534-JEB, June 12, 2020, p.11.

[94] Brent J. Cossette, CIV USARMY CEWO (US), *DAPL Remand – Letter Enclosure Info Current Status,* February 15, 2018, RAR008403.

promise to construct and operate DAPL "*to meet or exceed industry and governmental requirements and standards*."

API RP 1173 and RP 1160 apply to all phases of a pipeline's lifecycle.[95] At the time of the email, DAPL had been designed, constructed, as well as operated, and maintained for nearly a year without the use of these important risk and integrity management standards. It is important to emphasize that there is no evidence in the administrative record of the actual use of these standards by ET.

In fact, ET's experts make light of the goal of zero spills in their declaration – the driving purpose of API RP 1173 and RP 1160.[96] There is no documentary evidence that the pipeline safety management systems required by these standards are actually in place and effectively functioning despite the detailed requirements for documentation and record keeping as a stand-alone PSMS element .[97] ET's spill record is evidence that any alleged use of the standards is certainly at best seriously flawed. Even if ET's recent claims that API RP 1173 has been adopted are assumed as true, this removes any counterarguments for the use of RP 1173 (2015) and RP 1160 (2019) as the risk and integrity management approach in the DAPL EIS.

The need to apply these modern risk management approaches is compelling. As detailed in the API consensus safety standards these modern approaches will effectively evaluate DAPL's environmental impacts and the adequacy of risk reduction measures. 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 1995[98] 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

[95] API RP 1173 (2015) at p. vii and RP 1160 (2019) at viii.
[96] "Plaintiffs unreasonably seek to apply a zero-risk standard in assessing the risk of spills or other incidents on DAPL. Mr. Holmstrom states his expectation, for example, of "zero incidents," instead of engaging in a realistic, apples-to-apples comparison of risk across the industry." SECOND DECLARATION OF JOHN F. GODFREY IN SUPPORT OF DAKOTA ACCESS, LLC'S REPLY BRIEF ON THE QUESTION OF REMEDY, Case No. 1:16-cv-01534-JEB, June 12, 2020, p.3.
[97] API RP 1173, p. 20.
[98] The National Technology Transfer and Advancement Act of 1995, Pub. L. No. 104-113, 110 Stat. 775 (Mar. 7, 1996.)

> objectives or activities determined by the agencies and departments.[99]

The language in the Act broadly addresses the use consensus technical standards[100] and is not limited to the use of standards by agencies that have been incorporated by reference in federal regulations. Federal agencies such as the Army Corps are required to use relevant consensus standards in their activities, including in the EIS process. Yet all but one of the consensus standards referenced in the DAPL EA are required by regulation. A number of recent standards and updates developed in response to serious incidents and government mandates were not applied to the project. The Corps and ET have taken a minimum compliance approach. These up-to-date requirements in consensus standards will be identified throughout our scoping report and are vital for spill prevention and an effective environmental assessment.

ET's approach examines only business risk and is limited to a static monetization of potential damages. For impacts to the environment, the ET Risk Algorithm bases their assessment only on cleanup costs expressed as cost per gallon spilled.[101] The ET examination does not consider the specifics of a spill in Lake Oahe, such as harm to the downstream ecosystem, cultural and burial sites, native plants important to the Tribe, fish and wildlife and hunting and fishing.

For safety impacts ET would only consider the immediate "hazard area" of the leak location, not potential downstream safety and human health impacts in Lake Oahe of the extremely flammable and toxic Bakken crude oil. The risk algorithm fails to consider the serious potential impacts to emergency responders.[102] The ET approach does not examine management systems, require performance verification or any of the detailed elements of API RP 1173 and 1160 which focus on demonstrated continuous improvement in preventing hazardous hydrocarbon spills. The static economic business

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[99] *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." These exceptions clearly do not apply.

[100] The Act defines "technical standards" as "performance based or design-specific technical specifications and
related management systems practices." *Id.*

[101] Sunoco Logistics, Risk Algorithm Document, January 2015, RAR015882-83.

[102] See section XX for a more detailed discussion of the threats to emergency responders.

risk approach should be rejected by a federal agency whose focus for NEPA implementation must be on protecting people and the environment not monetary risk.

2. More Rigorous Widely-Accepted Risk Management Approaches are Needed

The following risk and integrity management approaches are required for an effective EIS scoping of the environmental impacts of DAPL:

(i) For EIS scoping, the Corps must avoid a minimum compliance approach for evaluating the environmental impacts to Lake Oahe from DAPL Bakken crude oil spill into Lake Oahe. While the Corps pledged in its environmental analysis that DAPL would "*meet or exceed industry and governmental requirements and standards*," this has not occurred. This is especially important given the challenges for PHMSA to meet government pipeline safety mandates and recommendations and the recent advances in understanding the health and safety hazards of Bakken crude. Many needed protections are not codified in regulatory requirements. Here and elsewhere in this scoping report the SRST will identify areas where recent science, lessons learned for incidents, government recommendations and voluntary consensus safety standards need to be applied.

(ii) The Corps must apply the up-to-date risk and integrity management consensus safety standards API RP 1173 (2015) and RP1160 (2019) to evaluate the environmental impacts of the Dakota Access Pipeline. These standards are widely recognized and accepted by the largest oil industry standard setting body. These standards prescribe a "plan-do-check-act" approach that is broadly adopted and applied by integrated oil and gas companies to reduce risk of crude oil releases. They were developed in response to government recommendations and written with input from the pipeline safety regulator PHMSA. These standards are specifically applicable to hazardous liquid pipelines like DAPL. They are more rigorous, reflecting important advances in risk and integrity management from recent pipeline disasters.

(iii) The Corps must request and apply to their review any written documentation developed pursuant to the application of API RP 1173 (2015) and RP 1160 (2019) including the plans themselves. These standards are based on risk reduction and continuous improvement. The plans and documentation must reflect the effective application of the standards.

(iv) API RP 1173 and 1160 require the evaluation of company specific performance data, audits, leading and lagging indicators, safety culture evaluations and incident investigation reports to improve spill

performance. This company and project-specific data provides information on the real risk of DAPL. The Corps must incorporate this information into its analysis of environmental impacts. Verification that ET's safety management systems are improving for both DAPL and the other ET pipelines is critical. A safety and environmental review shall be carried out with SRST tech team participation during the EIS to determine if the plans and documentation required under good practice standards are actually carried out and if the intended outcomes are reached. The Corps must examine ET's safety management systems, which as the standards emphasize requires review of top management performance and leadership commitment.[103] This review is not limited to a single pipeline project. A hardware review portion of the audit shall include installed performance verification of: 1) Surge prevention and protection systems, 2) Emergency Shutdown and Isolation systems, and 3) leak detection system. Such verification is needed to evaluate the adequacy of ET's risk reduction measures, particularly crucial for a worst in class safety performer.

[103] API RP 1173 defines top management as "A person or group of people, as defined by the operator, who direct and control the organization at the highest level. NOTE Top management can include an organization's chairman, president, executive director, city manager, and their direct reports," p. 5.

VII. THE CORPS OF ENGINEERS MUST ELEVATE ITS SCRUTINY OF ENERGY TRANSFER'S VERY TROUBLED SAFETY AND ENVIRONMENTAL RECORD

Since 2012, Energy Transfer and its subsidiary hazardous liquid pipelines have the worst safety record in terms of spill numbers, significance and volume in the PHMSA database compared to other corporate pipeline families with large numbers of spills. Their most recent spill and enforcement record since 2016 does not reflect improvement. It is clear that ET's corporate oversight over safety and learning from incidents is broken — they are failing to meaningfully lessen the frequency and severity of their pipeline spills.

In order to evaluate the risk of the continued operation of the DAPL Lake Oahe crossing, it is important to review Energy Transfer's pipelines spill record and related data. API RP 1173 specifically addresses pipeline risk by focusing on the operators' performance data. The risk management approach of API RP 1173 first emphasizes data gathering specific to the pipeline system:

> 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 improvement.[10]

API RP 1173 emphasizes the key role such operator's own performance data plays in its continuous assessment and improvement approach that focuses on the real risk measured by the corporation's own safety performance history, not by generic incident data compiled from other operators. The acceptance of generic data in the approval process for the Lake Oahe crossing was a major error by the Corps of Engineers. It should not be repeated in the EIS process.

DAPL-ETCO has experienced 12 spills since the pipelines were operational in June 2017. Over 6,000 gallons (146 Bbls) of crude oil has been spilled with nearly $200,000 in property damage. One spill impacted a High Consequence Area (HCA) and

another spill of 5,000 gallons (119 Bbls) was categorized by PHMSA as significant.[104] The nine Energy Transfer pipelines tracked in my review from 2012 to present spilled hazardous liquid on 290 occasions or on average 2.9 spills per month. These spills were not minor or lacking impact. 94 or 32% of those were significant incidents as defined by PHMSA. The spills resulted in over 2 million gallons (48,777 Bbls) of hazardous liquid released with over $90 million in property damage. Equally alarming is the record in HCAs. From 2012 to 2018[105] the Energy Transfer pipelines experienced 50 incidents defined as large spills by PHMSA.[106] Nearly 20% of all of the spills over this time period were large spills in high consequence areas like Lake Oahe.

Even more revealing of Energy Transfer's failure to make pipeline safety improvements during its corporate leadership tenure is its recent incident history. From the year of the construction of DAPL in 2016[107] to present, the nine Energy Transfer pipelines reviewed had 125 hazardous liquid spills or 2.4 per month. 43 or 34% of those spills were categorized by PHMSA as significant. Over 1 million gallons (25,597 Bbls) of hazardous liquid was spilled leading to $34,477,683 million in property damage. Energy Transfer pipelines experienced 21 HCA large spills and 116 HCA immediate repairs from just 2016 to 2018. This is not meaningful safety improvement.

Spills in the pipeline rights of way (ROW)[108] or releases of hazardous liquid that migrate off the operator's property occur in 31% of all Energy Transfer pipeline incidents. Energy Transfer has implied that since some spills have not migrated outside of the ROW, its spills have had minimal impact. To the contrary, Energy Transfer hazardous liquid spills have had very significant offsite impacts.

Since 2012, 32% of the corporation's spills with offsite consequences have resulted in water system contamination including drinking, surface, ground and well

[104] PHMSA defines a significant spill as resulting in death or injury requiring inpatient hospitalization, $50,000 in
total costs, non-HVL liquid such as crude oil of 50 barrels or more, releases resulting in fire or explosion or HVL releases of 5 barrels or more.
[105] PHMSA's integrity management performance data is available through 2018.
[106] 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.
[107] DAPL incident reports list the installation year the equipment involved in the incident – for all the DAPL incidents it was 2016. DAPL was put into operation in June of 2017.
[108] PHMSA defines rights of way as "the property, or easement, that pipeline operators secure to install and maintain transmission pipelines." https://primis.phmsa.dot.gov/comm/ROWBrief.htm?nocache=3133.

water. The 71 incidents with offsite impacts have resulted in a total spill volume of 1,227,870 gallons (29,235 Bbls). These offsite hazardous liquid releases are in fact 60% of the total incident spill volume since 2012. Rather than a minimal impact, the majority of Energy Transfer's immense incident spill volume impacts people and the environment – not merely the DAPL right-of-way lands. There have been serious impacts to public health and the environment, and damage to private property.

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 present, 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 pipelines over the last 8-years.

That indicates a deteriorating safety performance under Energy Transfer's corporate leadership. The spill record and regulatory violations point to a failure of ET's corporate leadership in addressing the serious history of hazardous liquid spills, lack of effective incident investigation and prevention systems, and a corporate safety culture that that has normalized spills.

DAPL has tried to tout its "exceptional" spill record, citing data based upon spills-per-mile that is "about equal" to the industry average for just one year – 2019. A more complete review of ET's safety record and enforcement history tells a completely different story. Not all pipeline miles would result in the same environmental consequences – ET's record since 2012 of significant spill volumes, serious spill impacts to water systems and HCAs like Lake Oahe undermine DAPL's claims. This is especially the case concerning recent spills and violations.

It must be noted as well that the goal of API RP 1173 is not to drive incidents to a claimed industry average. Hazardous liquid spills are unacceptable. Energy Transfer has

failed in effectively working toward the goal of API RP 1173 – zero incidents and meaningful continuous improvement.

In light of Energy Transfer's poor safety record, and its cavalier denial of the need for improvement, the Corps must confer additional scrutiny and emphasis on ET safety management systems and the potential environmental impacts of DAPL. Specifically:

(i) The Corps' EIS scoping must thoroughly evaluate ET's safety and environmental spill record and management system performance given its extremely poor spill and enforcement record since 2012. The Corps' must use the management safety system elements and metrics of API RP 1173 to assess ET's record including leading and lagging indicators, audits, leadership and management commitment, operational controls, safety culture reviews, incident reports and performance measurement and analysis of data.

(ii) In its EIS scoping of ET's spill record, the Corps must not treat all spills as being of the same significance. The Corps must review large spills in HCAs, significant spills, spills impacting water systems, spills with offsite impacts to the ROW and spills resulting in enforcement actions and fines. Smaller spills are also important to evaluate as they can reveal significant management system deficiencies and be precursors to larger events. The Corps must reject an approach that normalizes spills by looking at an acceptable number of spills per mile. The goal of any safety management system is continuous improvement and reducing incidents to zero - no number of spills is acceptable.

(iii) The Corps must thoroughly review ET's enforcement history in the EIS scoping including its record with other pipeline projects and the diversity of serious problems that indicates more serious top leadership and safety culture deficiencies.

VIII. THE EIS MUST DISCLOSE THE CHEMICAL COMPOSITION AND PROPERTIES OF BAKKEN CRUDE

A. Introduction

The key starting point to effectively evaluate the environmental impacts of a release of Bakken crude oil into the waters of Lake Oahe is to characterize and address the specific harm from the material that may be released. The National Institute of Occupational Safety and Health (NIOSH) has concluded that identification of hazards is the critical first step for risk management and incident prevention.[109] OSHA has noted that non-identification of hazards is a significant root-cause of industrial incidents.[110] Once the specific potential hazards are identified, the risk assessment and emergency response plans must identify the necessary controls to prevent and mitigate pipeline Bakken crude oil spills. This is necessary to protect the environment and public health and welfare on the Standing Rock Reservation.

The accurate characterization of the hazards Bakken crude oil is also critical to understanding critical areas of the environmental impacts of DAPL – potential harm to the SRST such as public health, the environment, emergency responders, environmental justice, hunting and fishing rights, cultural sites, burial grounds, and plants and foodstuffs sacred to the Tribe. Here we will examine the latest technical information available on Bakken crude oil composition and its potential environmental impacts.

B. The Elevated Hazards of Bakken Crude Must be Disclosed in the EIS

Bakken crude oil is a mixture of highly toxic industrial chemicals with a high concentration of light hydrocarbons including dissolved gases and VOCs. It is generally recognized as having physical and chemical characteristics that create elevated hazards of significant chronic and acute adverse health effects. These include cancer, endocrine disruption activity and developmental and reproductive toxicity. Toxic components of

[109] *Importance of Hazard Identification in Risk Management*, Industrial Health, National Institute of Occupational Safety and Health (NIOSH), May 2019, (available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6546586/) (last accessed 11-7-20)
[110] *Id.*

Bakken crude such as BTEX[111] and PAHs[112] have compounding effects that pose even greater hazards than the individual components.

In addition to the serious health concerns, Bakken crude is extremely flammable. Bakken crude flammability is much closer to gasoline than other common varieties of crude oil.[113] In December 2014, the North Dakota Industrial Commission (NDIC) issued an Oil Conditioning Order to reduce the Reid Vapor Pressure (RVP)[114] of Bakken crude produced in the state to improve transportation safety.[115] These health and safety hazards pose serious risks to the public, emergency responders and the environment.

The specific hazards of the Bakken crude oil that could be released is central to understanding the potential environmental impacts of a spill, but the Corps and DAPL documentation has been silent. The Corps' previous analysis ignored the serious hazards of Bakken crude raised repeatedly by the SRST.[116] The warnings associated with the chemical and physical DAPL crude characteristics in the body of the its Facility Response Plan (FRP) lack any references to Bakken crude and are contradicted in the hazard classifications in the Bakken Crude ConocoPhillips Safety Data Sheet (SDS) attached to the FRP as an appendix.[117] The Corps and ET ignore the health and safety warnings of its own attached SDS from a major oil company.

The EA, Remand and DAPL response plans identify the crude oil health hazard as only "slightly hazardous" and that it "may contain benzene, a carcinogen."[118] The Conoco SDS health hazard GHS classification, however, lists Bakken crude as carcinogen category 1B, a presumed human carcinogen.[119] The SDS also states Bakken

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[111] Benzene, Toluene, Ethylbenzene, and Xylene
[112] Polycyclic Aromatic Hydrocarbons
[113] 7 Transportation Safety Board of Canada, TSB Laboratory Report LP148/2013, (available at: http://www.tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/lab/20140306/LP1482013.asp) (last accessed 1-14-20).
[114] Reid Vapor Pressure or RVP is a commonly used method of testing and reporting the vapor pressure of crude oil or refined products.
[115] North Dakota Industrial Commission, Oil Conditioning Order No, 25417, September 23, 2014, (available at: https://www.dmr.nd.gov/oilgas/Approved-or25417.pdf) (last accessed 1-17-20).
[116] See SRST *Impacts of an Oil Spill* and Standing Rock Sioux Tribe, Report Addressing Deficiencies in the Corps of Engineers' *Analysis of the Issues Remanded by the U.S. District Court for the District of Columbia Related to the Dakota Access Pipeline Crossing at Lake Oahe,* pp.26-28.
[117] Dakota Access Pipeline, Facility Response Plan (FRP), Dakota Access Pipeline North Response Zone, Appendix A, Conoco Phillips Safety Data Sheet, p.2, April 2017.
[118] *Id.* FRP at 51. EA at Appendix L at 52.
[119] *Id.* FRP SDS Appendix A at 1.

crude is a "extremely flammable liquid and vapor."[120]DAPL's own SDS also lists Bakken crude as "toxic to aquatic life with long lasting effects"[121] contradicting the Corps' EA and Remand reports.

Bakken crude has been involved in a number of recent transportation incidents, which demonstrates some if its unique hazards to public health, the environment – and to emergency responders. Federal and state agency warnings have been issued for emergency responders addressing elevated hazards of toxicity and flammability. The scientific understanding of the hazards of Bakken crude oil is rapidly evolving as a result of recent catastrophic transportation incidents where the release of Bakken crude resulted in massive fires and reported explosions.

Contrary to the Corps analysis, federal agencies have issued numerous safety alerts from incident lessons learned identifying the elevated hazards of Bakken crude compared to generic light crude oil. The U.S. National Response Team (an organization of 15 Federal departments and agencies responsible for coordinating emergency preparedness and response to oil and hazardous substance pollution incidents) issued safety warnings specifically related to Bakken crude oil:[122]

> Bakken crude is a very light volatile type of crude that acts more like refined products such as gasoline when involved in fire. It also contains a variety of other chemicals such as benzene and hydrogen sulfide, creating additional dangers to first responders, especially respiratory. Additionally, Bakken has a higher gas content, higher vapor pressure, lower flash point and boiling point and thus a higher degree of volatility than most other crudes in the U.S., which correlates to increased ignitability and flammability.

The U.S. National Oceanic and Atmospheric Association (NOAA) has issued responder guidance for Bakken crude oil spills. In the guidance NOAA similarly found that Bakken crude oil has a higher risk of ignition as well as "the production of volatile organic compounds and benzene that pose risks to responders and the public shortly after

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[120] *Id.* FRP Appendix A, p.1.
[121] *Id.*
[122] The U.S. National Response Team, Emerging Risks Responder Awareness Training: Bakken Crude Oil (2015) (available at: https://www.nrt.org/Main/Resources.aspx?ResourceType=Training%20and%20Educational%20Materials (last accessed 1-16-20).

a release, compared to other crude oils."[123] Post-incident analysis of Bakken crude spills has found a higher concentration of toxic VOCs such as benzene. For example, the Canadian Transportation Safety Board analysis of the North Dakota Bakken crude involved in the Lac-Mégantic disaster that killed 47 people found that:

> …reported benzene and other VOC contents well above these exposure limits in portions of the derailment site that were extensively contaminated with the spilled crude oil. This is consistent with the significant concentrations of benzene and other VOCs measured in the occurrence crude oil samples…[124]

These elevated hazards of Bakken crude oil that threaten the Tribe, the environment and emergency responders were ignored in the EA and Remand. It is critical to effectively assess the specific environmental impact of Bakken crude oil spill including the latest science on its hazardous characteristics.

C. Importance of Proper Sampling and Testing Techniques

Out of the Lac-Mégantic rail disaster that killed 47 people, the Canadian Government did extensive testing of the North Dakota Bakken crude oil involved in the incident.[125] It concluded that sampling and testing methods involving open containers that are common for crude oil sampling and testing can result in the loss of hazardous components of Bakken crude including dissolved gases, VOCs, H2S, etc. From their testing, the government issued the *Transport Canada Crude Sampling and Analysis Final Report*.[126]

The Canadian Government expressed concern about the accurate characterization of crudes especially vapor pressure, flash point and Initial Boiling Point (IBP) of crude oil types to ensure safe transportation post-incident. The resulting study noted the

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[123] 5 National Oceanic and Atmospheric Administration, BAKKEN CRUDE OIL AND SIMILAR SHALE OIL SPILLS: RESPONDER GUIDANCE, 2016, at 1, (available at: https://www.nrt.org/sites/70/files/11-2016.7_NOAA_Bakken-First-Responders-Guide.pdf)(Last accessed 1-16-20).

[124] Transportation Safety Board of Canada, TSB Laboratory Report LP148/2013, (available at: http://www.tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/lab/20140306/LP1482013.asp) (last accessed 1-14-20).

[125] The samples were taken from tank cars unaffected by the incident

[126] Transport Canada, *Transport Canada Crude Sampling and Analysis Final Report*, (available at https://crrc.unh.edu/sites/crrc.unh.edu/files/transport_canada_crude_oil_sampling_and_analysis_final_report_2015-08-10_for_distribution.pdf) (last accessed 11-12-20).

inaccuracy of the typical testing of crude oil in open containers.[127] The sampling of crudes for this report included a closed pressurized floating piston cylinder sample, as well as open container samples for comparison. The study used different ASTM standards for the collection of the open and closed crude samples.

The findings included a significant difference between the two sampling methods for vapor pressure and IBP.[128] The reserchers found significant difference using the open container method due to outgassing of the sample.[129] The study also questioned the accuracy of Bakken crude MSDSs and suggested testing to accurately assess the Dangerous Goods Classification for transportation.[130]

There were also important findings for the protection of emergency responders with the loss of light ends (toxic and flammable) including hydrogen sulfide (H2S) in open sampling methods.[131] Although Bakken crude is typically characterized as "sweet" crude – low in H2S – recent Federal Energy Regulatory Commission (FERC) actions in North Dakota have determined Bakken wells vary and H2S can be present in concentrations that threaten worker safety.[132] The issue of crude oil hazard characterization is relevant to the environmental impacts of a DAPL spill in Lake Oahe spill – particularly under ice where the evaporation of the light ends will be suppressed.

A 2014 survey report issued by the industry trade association American Fuel and Petrochemical Manufacturers (AFPM) on Bakken crude characteristics has been erroneously cited to support the conclusion that Bakken is not more hazardous than other types of crude oil. The survey was cited in the RPS Spill Model Report, and was included in the administrative record for the remand in District Court. The paper was prepared by AFPM to submit to DOT to inform ongoing rulemaking due to the recent rail disasters and concern about Bakken crude volatility.

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[127] *Id.* p.15.
[128] *Id.* at 179-180
[129] *Id.*
[130] *Id.* p.183
[131] *Id.* p.186-187.
[132] *Toxic gas in Bakken pipeline points to sour well problem*, Reuters, May 29, 2013, (*available at*: https://www.reuters.com/article/column-kemp-bakken-pipelines/column-toxic-gas-in-bakken-pipeline-points-
to-sour-well-problem-kemp-idUSL5N0EA3SU20130529) (Last accessed 11-14-20).

Unsurprisingly, the AFPM results were used to conclude that Bakken crude risks were low: "This survey shows that Bakken crude oil does not pose risks that are significantly different than other crude oils and other flammable liquids authorized for transportation as flammable liquids. In some respects, Bakken crude oil may be regarded as posing a lower degree of risk than other flammable liquids…"[133]

The survey did not raise the important issue of closed pressurized system sampling versus open container. An appendix in the study listed a number of sampling and testing methodologies for crude oil, but none of the methods is commonly used in the sampling or testing. The survey consulting firm has acknowledged that it merely received the results from AFPM companies - there was no common methodology for the sampling or testing conducted.[134] In light of the findings of the Canadian study, concluding the importance of closed pressurized system sampling and testing methodologies, considerable doubt must be placed upon the accuracy of the AFPM survey.

The use of a sealed pressurized system ensures that laboratory testing is representative of a crude oil product. This is particularly true where a loss of light ends can provide an inaccurate picture of some of the toxic and flammable hazards of concern with Bakken crude. Moreover, the AFPM survey is contradicted by considerable findings and safety warnings from numerous government incident investigations and reports. Use of closed pressurized systems for sampling and testing for Bakken crude is critical to accurately assess all of the hazardous environmental impacts from a DAPL spill into Lake Oahe. Any analysis of Bakken crude hazards must be based upon sampling and testing results utilizing a closed pressurized system that fully captures the composition of Bakken crude oil.

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[133] A Survey of Bakken Crude Oil Characteristics Assembled for the U.S. Department of Transportation; submitted by
American Fuel & Petrochemical Manufacturers, Prepared by Dangerous Goods Transport Consulting, Inc.; May 14, 2014; p.27.

[134] Conversation with the principle author 6/17/19. The list of methodologies was compiled from API, ASTM and other sources and did not related to the results received. He recognized the problem of testing methodologies losing light ends and stated the project was given a short time frame to get results to DOT. They had "no luxury of the same method…you take the data that you have."

D. The Corps Must Accurately Assess DAPL's Environmental Impacts Incorporating the Latest Science on the Components of Bakken Crude

The elevated concentrations of benzene in Bakken crude oil poses significant negative human health and environmental impacts from environmental releases.[135] This must be documented in the EIS.

According to the World Health Organization (WHO) benzene is a well-recognized human carcinogen.[136] The International Agency for Research on Cancer has classified benzene as *carcinogenic to humans* (Group 1). Benzene causes acute myeloid leukemia (acute non- lymphocytic leukemia), and there is limited evidence that benzene may also cause acute and chronic lymphocytic leukemia, non-Hodgkin's lymphoma and multiple myeloma. Individuals who have experienced benzene poisoning requiring treatment show a substantially increased risk of mortality from leukemia.[137]

In identifying the potential human health impacts to exposure from the Bakken crude transported by DAPL, the Corps only considered benzene and only at levels beyond the maximum contaminant level (MCL) of 5 ppb. This is another example of the Corps taking a minimum compliance rather than an approach fully protective of human health and the environment. That is the wrong measure, because there is no safe exposure to benzene, which is a highly potent carcinogen. The MCL is not a health-based standard, in that it includes a consideration of what is technically feasible; the MCL Goal or MCLG is the health-based standard, or 'no risk' level.

For benzene, EPA has set the MCLG at zero, acknowledging that there is no safe or 'no risk' level of exposure. DAPL and the Corps significantly underestimate the impacts to drinking water from a worst case discharge (WCD) of Bakken crude oil. The Corps concluded in the Final EA that four (4) gallons was the most likely leak scenario for the DAPL pipeline crossing and unsurprisingly such a leak would not exceed the MCL.[138] However, a 4-gallon leak scenario is extremely unlikely for the 30-inch

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[135] World Health Organization, *Exposure to Benzene: A Major Public Health Concern* (2010) (*available at:* (http://www.who.int/ipcs/features/benzene.pdf) (last accessed 11-12-20).
[136] *Id.* p.2.
[137] *Id.*
[138] U.S. Army Corps of Engineers – Omaha District, Environmental Assessment: Dakota Access Pipeline Project Crossings of Flowage Easements and Federal Land, p. 47 (July 2016).

pipeline 90 to 108 feet under Lake Oahe. Once a pipeline starts leaking it typically continues until discovered.[139]

A slow pipeline leak deep under the bed of Lake Oahe would be especially difficult to detect – "a leak from a buried line, especially a slow leak, can continue for a long time without being detected."[140] As the Tribe detailed in its 2018 report *Impacts of an Oil Spill,* other spill scenarios outlined in the EA would all be above even the minimum compliance level of benzene contamination by 3.4 to 340 times seriously threatening the drinking water and public health of the Tribe. The Tribe's 2018 report noted that more credible worst case discharge scenarios would cause even greater harm.

In addition to the acknowledged cancer risks, benzene causes genetic defects and organ damage, and even short-term exposures can cause skin and eye irritation. Moreover, toxic crude components can have compounding effects and physical health hazards given that Bakken crude has a greater concentration of BTEX, which was not addressed.[141] Benzene, ethylbenzene, n-hexane and naphthalene are all linked to cancer. Benzene, ethylbenzene and n-hexane all cause similar neurotoxic effects.[142] Benzene can cause damage to the bone marrow, leading to anemia and damage to the immune system.[143] Hydrogen sulfide is highly toxic and linked to endocrine disruption. The other chemicals associated with Bakken crude have not been fully tested for potential endocrine effects. ethylbenzene, n-hexane, naphthalene and xylenes all can cause skin irritation.

Certain polycyclic aromatic hydrocarbons found in Bakken crude oil are probable human carcinogens and are linked to adverse reproductive problems.[144] PAHs "have been

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[139] Morgan Henrie et al, PIPELINE LEAK DETECTION HANDBOOK, p. 20 (2016).
[140] *Id.*
[141] *See* the discussion in the Tribe's *Report Addressing Deficiencies in the Corps of Engineers' Analysis of the Issues Remanded by the U.S. District Court for the District of Columbia Related to the Dakota Access Pipeline Crossing at Lake Oahe,* February 2, 2019, p. 26. Benzene concentrations in the Corps analysis are based upon a dated 2010 Marathon Oil data of 0.28 % benzene content – other analysis suggest a Bakken crude oil concentration of 2% benzene, and 15% total BTEX.
[142] National Center for Biotechnology Information, PubChem Compound Database: CID=7500, ethylbenzene
(*available at*: https://pubchem.ncbi.nim.nih.gov/compound/7500) (Last accessed 2-13-2018); National Center for Biotechnology Information, PubChem Compound Database: CID=8058, n-hexane (*available at:* https://pubchem.ncbi.nim.nih.gov/compound/8058) (last accessed 2-13-2018).
[143] National Center for Biotechnology Information, PubChem Compound Database: CID=241, Benzene (*available at:* https://pubchem.ncbi.nim.nih.gov/compound/8058) (last accessed 2-13-2018).
[144] Agency for Toxic Substances & Disease Registry (ATSDR), *Polycyclic Aromatic Hydrocarbons (PAHs)*

shown to cause carcinogenic and mutagenic effects and are potent immunosuppressants."[145] Even the Conoco Bakken crude SDS states "severe exposure can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation, and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death."[146] ET's own SDS that they ignored in the Facility Response Plan guidance characterizes the hazard impacts of Bakken crude in a much more serious light than the unsupported "slightly hazardous" conclusion of the EA and Remand - placing the Tribe and emergency responders at significant risk. The full health impacts to the SRST from credible worst case scenarios of a Bakken crude oil spill need to be accurately assessed, using the latest science relating to cumulative impacts and co-exposures to hazardous Bakken components.

The Corps has underestimated human health and environmental impacts from an oil spill from DAPL Additionally, the Corps fails to address chronic or systemic effects on the ecosystem. For example, if a Bakken spill kills all the plants (not even considered in this model), and then the next winter when the river ices over there is not enough oxygen resulting in widespread fish mortality. The Corps' model is all based on LC50 endpoints, which do not address long term chronic effects. Additionally, Bakken crude PAHs are more persistent in the environment and can lead to toxic aquatic impacts as noted in ET's own SDS.[147]

The Corps states in its *Analysis of Issues* report "Overall, the maximum Total Hydrocarbon Concentrations (THC) were in excess of the thresholds for predicted biological effects."[148] Yet the Corps tries to undermine any conclusions that could be

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What Health Effects Are Associated with PAH Exposure? (referencing EPA and IARC Carcinogenic Classification.) (*available at:* https://www.atsdr.cdc.gov/csem/csem.asp?csem=13&po=11) (last accessed Feb. 2, 2018).

[145] Thamaraiselvan Rengarajan et al., *Exposure on Polycyclic Aromatic Hydrocarbons with Special Focus on Cancer*, ASIA PACIFIC JOURNAL OF TROPICAL BIOMEDICINE, 5,(3), p. 1 (March 2015) (*available at: https://www.sciencedirect.com/science/article/pii/S2221169115300034*) (last accessed Feb. 3, 2018).

[146] Dakota Access Pipeline, Facility Response Plan (FRP), Dakota Access Pipeline North Response Zone, Appendix A, Conoco Phillips Safety Data Sheet, p.2, April 2017.

[147] CB&I Environmental and Infrastructure, Inc., *Bakken Crude Oil Spills – Response Options and Environmental Impacts,* Prepared for Commonwealth of Massachusetts Dept. of Environmental Protection, at E-3; (June 2015) Citing the NOAA 2014. (*available at*: http://www.mass.gov/eea/docs/dep/cleanup/laws/bakken-crude-oil-spills-response-options-and-environmental-impacts.pdf) (last accessed 11-15-2020).

[148] *Analysis of Issues, p. 31-32.*

drawn arguing the duration of exposure would be "relatively short" with no explanation or justification for the assumption. The Corps has recognized elsewhere that weather and ice cover conditions can impact the concentrations and potentially the duration of exposure. In the *Analysis of Issues*, the Corps baldly asserts that any effects would likely result from acute effects rather than chronic exposure over time. The report is overly simplistic in stating that mortality is exclusively a function of duration of exposure.

For these reasons, the EIS must address the following:

> (1) Any analysis of Bakken crude oil and its environmental impacts in the EIS scoping must be from sampling and testing protocols that capture and preserve the full product being transported. Given the volatility of Bakken crude and to avoid loss of the sample, closed pressurized system sampling and testing is required rather than the use of open containers. This is particularly important given that volatile hazardous Bakken components such as BTEX, VOCs, and H2S can be lost if a closed sampling/ testing system is not utilized.
>
> (2) The presumption that there is no safe level of exposure to a chemical causing cancer should also be applied for non-cancer health effects such as diabetes and kidney disease, for which either no 'no effect' exposure level can be identified for a population, given sensitivity and population variability, or for which background (ambient) exposures exceed that level. For example, DAPL Bakken pipeline crude oil contains the following chemicals, most of which are linked to cancer, adverse reproductive and developmental effects, neurotoxic effects, organ toxicity, skin and eye irritation, and acute and chronic aquatic toxicity: Crude Oil (Petroleum) (CAS #8002-05-9); Ethyl Benzene (CAS #100-41-4); Benzene (CAS #71-43-2); Naphthalene (CAS #91-20-3); n-Hexane (CAS #110-54-3); Xylenes (CAS #1330-20-7); Hydrogen Sulfide (CAS #7783-06-4). Co-exposure to all these chemicals, along with other intrinsic and extrinsic factors that affect susceptibility must be included in the DAPL EIS. Both cumulative and compounding impacts must be assessed.
>
> (3) Any analysis of the harm to public health, the ecosystem and emergency responders must include recent science, lessons learned from incidents, and government recommendations. This includes scientific best practices described in the recommendations of the University of California San Francisco, Program on Reproductive Health and the Environment and top scientists and chemical policy experts from across the U.S., to prevent harm from chemicals and pollutants.[149]

[149] UCSF PRHE 2020. Recommendations to Strengthen EPA and its Mission to Protect Public Health. To help EPA put science and public health front and center, a team at the University of California San Francisco, Program on Reproductive Health and the Environment collaborated with top scientists and chemical policy experts from around the country to develop evidence-based recommendations to improve

The Corps must address chronic or systemic effects on the ecosystem including Bakken components that are persistent and can have toxic aquatic impacts such as PAHs.

(4) To assess potential harm from a DAPL spill into Lake Oahe the Corps must evaluate several credible DAPL worst case discharge scenarios rather than the grossly understated WCD provided by ET. This analysis must address the possible doubling of DAPL capacity. These scenarios must be used to evaluate potential hazardous impacts to public health, the ecosystem and emergency responders.

(5) Any evaluation of harm from a Bakken crude oil spill must consider differing Lake Oahe flow, adverse weather and under ice conditions. The analysis cannot assume loss of harmful components as under ice conditions would suppress vaporization.

(6) The Corps' review of the toxicology of the soluble constituents of Bakken crude should include both ingestion and inhalation, to account for the possibility of showering with contaminated well or lake water from a long-term spill occurring below the CPM detection limit. The toxicology review should include soluble constituents of friction inhibitors that would be used for the planned future flow increase. For all constituents, aquatic and wildlife toxicity should be assessed as well.

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hazard and risk assessment, and prevent harms from chemicals and pollutants. See Chemical Policy recommendations. (available at https://prhe.ucsf.edu/recommendations-epa#Chemical%20Policy) (last accessed November 15, 2020).

IX. DESIGN FLAWS PRESENT AN IMMINENT HAZARD AND UNDERSCORE THE NEED FOR PERFORMANCE TESTING AND VERIFICATION

The DAPL Lake Oahe HCA lacks important protections for surge relief and needed backup power for emergency shutoff valves (also referred to as emergency flow restriction devices or EFRDs) that can prevent and mitigate spills. The fact that these safety critical systems are lacking is an imminent hazard. They underscore the need for performance testing and verification of DAPL leak detection and pipeline safety systems.

A. The Lake Oahe High Consequence Area Lacks Safety-Critical Surge Relief Protection

The Lake Oahe crossing of the Dakota Access Pipeline is defined as a an "unusually sensitive area," and a "high consequence area" as defined by PHMSA.[150] 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, all of which are impacted by the Lake Oahe crossing of the Dakota Access Pipeline. In the EIS, the Corps of Engineers must evaluate the genuine risk to the HCA at Standing Rock, in light of this segment of the pipeline's vulnerability to over-pressurization.

Over-pressurization could result in a catastrophic spill, or an explosion. To avoid this, surge prevention controls and surge protection equipment must be properly installed. PHMSA regulations establish pressurization limits: 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 operator must provide adequate controls and protection equipment to control pressure within this limit.[151]

To ensure compliance with these industry regulations, major oil companies typically maintain internal standards that prescribe minimum mandatory requirements for sizing, selection, installation, periodic test and inspection of liquid surge relief valves and surge relief systems on crude oil pipelines. Guidance is provided by experts consulting

[150] 49 CFR §§195.6 & 195.450.
[151] 49 CFR §195.406(b).

with associations such as the American Petroleum Institute (API) and the International Society of Automation's International Electrotechnical Commission (ISA/IEC). The ISA/IEC develops consensus standards for Safety Critical Devices, such as main line valves, surge relief valves and valve actuators.

According to accepted industry accepted practice, "adequate over-pressure controls" refer to maintained Safety Critical Devices that are properly designed, installed and inspected. Safety Critical Devices are the components of an overall integrated safety system. The system must be designed so that a single point failure will be mitigated by other Safety Critical Devices in an integrated system, to prevent a spill or other accident.

Nevertheless, the "surge protection control strategy" for DAPL includes a programmable logic controller (PLC) that shuts down all pump stations no later than 8 seconds after a Main Line Valve (MLV) or station suction Motor Operated Valve (MOV) start to close. Significantly, there is no supporting documentation to support that the DAPL surge prevention system (valve position monitoring devices, communications, programmable logic, and pump controls) are maintained as Safety Critical Devices or that the integrated control system meets even the minimum requirements for design, component selection, and functional testing procedures of an IEC 61511/ISA S84 compliant Safety Instrumented System. Ultimately, the report fails to demonstrate compliance with the requirement for "adequate controls" of pressure surge prescribed by PHMSA.[152]

The Fluid Flow Consultants report limited the scope of the required Surge Relief Valves to only the pump station inlets, leaving the pipeline High Consequence Area river crossing HDD pipeline segments without protection. In other words, the surge protection system is designed to protect the pump stations along the pipeline from damage caused by pressure surge, but not for the segments of the pipeline at the Lake Oahe crossing or other river crossings. Considering the risk associated with the HHD river crossings (High Consequence Areas), proper overpressure protection design requirements include SRVs at these locations, but they do not exist.

[152] 49 CFR §195.406(b).

Consequently, a potential exists for dangerous, high pressure levels that could damage the pipeline due to unplanned main line valve closure (e.g., spurious closure of the EFRD's at Lake Oahe). The automated operational system can fail and result in an unplanned, spurious closure of valves that are located at various segments of the pipeline. Surge relief is required to ensure that a mistaken closure of mainline valves, such as the EFRDs on both sides of Lake Oahe, does not cause a dangerous pressure surge in the pipeline. If one of the Lake Oahe EFRDs were to be subject to a spurious closure, there would no surge protection available for this high consequence area.

The flow analysis study clearly identified a surge related, overpressure event scenario on the DAPL pipeline at the Lake Oahe river crossing that will exceed the limits established by PHMSA.[153] The potential for dangerous, unacceptable high pressure at the Lake Oahe high consequence area pipeline crossing due to a spurious closure of a main line valve remains ignored by Energy Transfer. DAPL's surge analysis report noted that the pump station surge relief valves will only protect the upstream pipeline from the pump station inlet valve or other pump station surge initiators, leaving the pipeline High Consequence Area river crossing without protection.

An important deficiency for analysis during the EIS is the lack of verification of a surge prevention instrumented system and lack of surge relief valves to protect the Lake Oahe river crossing pipeline segment in the event of a spurious main line valve closure. Additional flow analysis and review of the surge prevention instrumentation is required during the EIS in light of the ET's own surge study findings that Lake Oahe (and other river crossings) will be exposed to high pressure that exceeds acceptable levels per 49CFR195.420(b) limits.

As High Consequence Areas, surge relief at the river crossings is required to meet the regulatory standard for "adequate" surge prevention and protection. PHMSA regulations require mitigation of over-pressurization in HCAs such as the DAPL Lake Oahe crossing:

> In identifying the need for additional preventative and mitigative measures, an operator must evaluate the likelihood of a pipeline release occurring and how a release could affect the high consequence area. This determination must consider all relevant risk

[153] 49 C.F.R. § 195.420(b).

> factors, including, but not limited to … viii) exposure of the pipeline to operating pressures exceeding established maximum operating pressure.[154]

With respect to pipeline operations, the PHMSA regulations[155] and the Corps of Engineers easement for the DAPL Lake Oahe crossing require a DAPL-specific operations plan. The *Independent Assessment of Dakota Access Pipeline* describes the operator's failure to comply with this requirement –no such plan has been prepared as required. The regulation requires the operations plan to address the "unintended closure of valves or shutdown."[156] Thus, the DAPL surge report indicates that the pipeline design fails to include proper surge relief from over-pressurization in violation of 49 CFR §195.406(b), and the administrative record lacks a DAPL operations plan that includes requisite mitigation to an unintended valve closure (which, as described above, causes pressure surge) in violation of 49 CFR §195.402(d)(1)(i).

The overpressure risk due to a spurious closure of a main line valve upstream of the pump station valve would not be mitigated by the surge relief at the pump station. The deficiencies and regulatory requirements were clear. Installing surge relief valves to protect the Lake Oahe pipeline crossing from overpressure risk is necessary. This must be disclosed as an environmental impact of DAPL and as a risk factor affecting the Missouri River and the Standing Rock Indian Reservation.

B. DAPL Failed to Supply Back-up Power to Safety-Critical Emergency Flow Restriction Devices at Lake Oahe

The *Independent Assessment* prepared by ETP/Sunoco suggests that there is no back-up power to remotely activate the shut-off valves.[157] Based on the specifications provided in the report and field observations carried out by of the SRST tech team, the emergency isolation valve (EIV) actuators are in fact "fail steady" upon loss of primary power. Therefore, the availability of primary power to the EIV actuators needs to be

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[154] 49 CFR §195.452(2).
[155] 49 CFR §195.402
[156] 49 CFR §195.402(d)(1)(i).
[157] 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).

integrated into the risk analysis and worst case discharge calculation, but the Corps failed to do so. As will be shown below, this disclosure leads the Tribe's technical experts to conclude the WCD time to shut down the DAPL pipeline should now be measured in hours rather than minutes.

> Addressing automated vs manual valve operation at Lake Oahe, the Corps states: In the event of an electrical power failure at an EFRD valve site, the valve will remain in its last position (i.e. "fail-safe" position). If required, the valve actuator can be operated manually via the integrated hand wheel.

Back-up power was required as an easement condition. However, it has only been provided to the communication signal to the valves, and not to remotely power the closing of the shut-off valves on each side of the Missouri River in the event of a primary power supply failure. Power failures are not unusual 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. These factors such as the impact of adverse weather conditions on WCD were required by DOT regulation to be considered by DAPL and the Corps but they ignored the Tribes input and failed to do so.

A critical deficiency with the Oahe WCD estimate is the assumed availability of the EFRDs to operate in an emergency. The valves at Lake Oahe were equipped with electric motor operated actuators. This type of actuator requires primary electrical power to operate. Because no back up primary power supply was provided, the design is inconsistent with federal standards and industry best practices.[158] The failure to provide backup power to the safety critical EFRDs is an imminent hazard that is critical to assess in the Corps' EIS scoping.

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[158] 49 C.F.R. § 195.420(a): "Each operator shall maintain each valve that is necessary for the safe operation of its pipeline systems in good working order at all times."); 49 C.F.R. § 195.262(b)(3) applicable pumping equipment requirement: "The following must be provided … If power is necessary to actuate the safety devices, an auxiliary power supply."); ISO 13623:2017(E): "Remotely operable valves and actuators should be tested remotely to ensure the correct functioning of the whole system."

Accordingly, it is imperative that, in the EIS process, the Corps of Engineers must:

(1) Analyze overpressure risk due to surge at the Lake Oahe and other river crossings. This should include main line valve closure as an initiator, and a thorough evaluation of both surge prevention and protection of safety layers.

(2) Reassess residual risk to the Missouri River and the Standing Rock Indian Reservation with consideration of alternate worst case discharge scenarios in light of the realistic potential for overpressure events.

(3) Require testing of safety critical instrumentation, including leak detection, emergency shutdown and isolation and surge protection and prevention. Installed capabilities should be confirmed and documented in a transparent manner.

X. THE WORST CASE DISCHARGE MUST BE RECALCULATED

A. Introduction – Worst Case Discharge and Risk

The Worst Case discharge (WCD) volume assessment is 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. The Tribe has emphasized that consequence is the most important part of the risk equation.

Modern risk approaches are moving toward a primary focus on consequence analysis for major accident prevention rather than the often-misguided emphasis on incident frequency. This for example is the post-incident approach taken by BP corporate-wide in the wake of Macondo – where they perceived pre-incident that a major blowout in the Gulf of Mexico was "virtually impossible." If a credible consequence is potentially catastrophic, all available measures must be taken to drive risk as low as reasonably practicable or ALARP. WCD is not only key for assessing risk but also spill modeling, potential harm to people and the environment and emergency response.

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. Technology-based leak detection systems can be internal using systems like computational pipeline monitoring (CPM) or external methods that detect the leaked product with devices such as a cable-based system in close proximately to the pipeline with various sensor technologies. Observation is also used involving site workers, scheduled visual inspections or reports from the public.

Energy Transfer has asserted that its computational pipeline monitoring (CPM) leak detection software is state-of-the-art and will detect all spills at or below 1%. However, a comprehensive PHMSA study looking at incident data found that CPM only had a successful detection rate of 20% for hazardous liquid spills.[159] These critical leak

[159] Pipeline and Hazardous Materials Safety Administration, Final Report 12-173, Leak Detection Study, December 10, 2012, p. 2-11, (available at https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/technical-resources/pipeline/16691/leak-detection-study.pdf) (last accessed November 18, 2020).

detection systems are a known significant weak link in mitigating the consequences of an incident.

B. The Environmental Analysis Must Include an Estimate of the Worst Case Discharge in Compliance with PHMSA Regulations

The Tribe has expressed concern about the significantly underestimated Worst Case Discharge into the Missouri River, and the failure to comply with the PHMSA WCD regulations..[160] The PHMSA formula requires consideration of detection time, 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. PHMSA requires that the worst case definition be applied to each element of the calculation. This would require for example assessing the varied impact of worst case adverse weather conditions, worst case organizational evaluation and response to a leak indication, worst case pump, emergency valve and other equipment functioning. All credible scenarios need to be factored in such as weather causing road closures, power failures, leaks below the detection limit, and safety culture challenges that would interfere with a needed shutdown.

An accurate PHMSA WCD volume is a key determination for the consequence of a DAPL spill. That is a prudent approach, because major accidents typically occur when there are multiple system failures. Effective risk assessments also examine more than one credible scenario for WCD consequence analysis.

Other noted WCD consequence analysis efforts have examined multiple scenarios such as the US State Departments review of the Keystone XL pipeline. The Keystone XL looked at three scenarios including a small leak.[161] It is important to go beyond PHMSA minimum compliance of one required WCD calculation. For a pipeline that could be a guillotine rupture – but with DAPL, specific conditions offer several important credible scenarios for alternative WCD volumes.

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[160] Safety and Environmental Impact Analysis of the Energy Transfer's Dakota Access Pipeline Report to the Standing Rock Sioux Tribe, Donald S. Holmstrom, pp.27-29.

[161] Keystone XL Project Pipeline Risk Assessment and Environmental Consequence Analysis, U.S. State Department, July 6, 2009 p. 3-2, (available at https://2012-keystonepipeline-xl.state.gov/documents/organization/205569.pdf) (last accessed November 16, 2020).

The Corps and ET have failed to respond to the fact that Lake Oahe WCD calculation is grossly understated and leaves out key components of the required WCD formula. The DAPL truncated formula looks at the best case of partial equipment shutdown. The calculation only uses the 9-minutes it takes to shut down the pump station. However, the PHMSA formula requires consideration of detection time, organizational and human decision-making, valve closure, and the effects of adverse weather conditions which were not incorporated into the DAPL calculation, even though legally required.

ET and its experts provide misleading information that their WCD calculation was based upon 12.9 minutes and talk about the 3.9 minutes it takes to shut the EFRDs, however that additional time was not included in their calculations. The only time period used by ET in WCD volume calculations was 9 minutes for the shutdown of a pump station – "The Total Volume of Oil Released = The volume of oil that leaves the pipeline under pressure before the pumps are shut down + the volume of oil remaining in the pipeline between the next nearest valves." No detection time was included in the 9-minutes – "Given: the pump stations are designed to shut down in 9-minutes."[162] Even though lacking PHMSA required elements, the Corps makes clear in their final Remand Report that this calculation is the basis for the DAPL WCD.[163]

DAPL-specific conditions support the need to assess additional factors and WCD discharge scenarios. The impacts of adverse weather conditions are more than subfreezing temperatures, as the Corps and ET assert. The Lake Oahe EFRDs do not have backup power to close the valves in the advent of a power failure, not an uncommon event in rural North Dakota. The Corps' Lake Oahe Easement Conditions require EFRDs to be capable of closure at all times. The Corps must consider the availability of the rural power to close the valve but also the issue of adverse weather for travel to the unstaffed EFRD locations. If power is unavailable to close the valves and manual closure is required, it could take up to a number of hours or days for personnel to reach and manually close the valves in harsh North Dakota winter conditions. Travel may be impaired or roads impassable due to snow and ice conditions.

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[162] 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.
[163] Analysis of the Issues Remanded by the US District Court for the District of Columbia Related to the Dakota Access Pipeline Crossing at Lake Oahe; Department of Army, Corps of Engineers; August 2018; p.19.

If a pipeline leak in Lake Oahe occurs in under ice conditions, and CPM and SCADA are not effective, it could take days to discover. A slow leak under the detection limit likely will not surface immediately or at a predicable location. Lake Oahe can be covered in ice 3-5 months out of the year negating either scheduled or random visual observation of a leak. Neither the Corps nor ET have verified the validity of DAPL's claimed 1% detection limit. Even if assumed to be true, a pinhole leak under even a 1% detection limit (up to 6000 bpd currently) could result in a much larger WCD either under ice or given the fact that overflights can be delayed as long as three weeks as described in the EA or undetected for months under ice.

Moreover, the proposed near doubling of DAPL's capacity would significantly increase a true DAPL WCD including a near catastrophic 11,000 BPD from a leak under the detection limit. This would greatly amplify the DAPL spill risk, potential impact to the Tribe and the sensitive Lake Oahe environment, and threat to emergency responders.[164]

C. DAPL's Leak Detection System is Unreliable

ET's has an unsuccessful record of CPM detection of pipeline leaks similar to the findings of the PHMSA leak detection study. The Tribe reviewed PHMSA data and examined Energy Transfer's effectiveness of using CPM to detect leaks using similar criteria as PHMSA limiting the review to spills in the rights-of-way (ROW) where CPM was functional. Looking at the data from ET pipelines from 2012 to the present, CPM was functional in only 25 of the 92 spills that also met the ROW criteria. Of those 25 spills, only 5 or 20% were detected by CPM or SCADA systems, similar to the identified serious weaknesses in operator performance in the PHMSA leak detection study.

Random notification from members of the public were twice as likely to detect Energy Transfer spills than CPM or SCADA. Ground patrols – also touted by Energy Transfer as an effective safeguard – detected zero spills. Moreover, the poor leak

[164] DAPL's claim to preparedness based upon a larger WCD storage tank spill is misguided. An emergency response action to a storage tank spill on land with secondary containment would be significantly different than a spill in Lake Oahe that is larger than the grossly understated DAPL volume in terms of the size of the area of impact, equipment, challenge of adverse weather conditions, impaired access, hazards, training and difficulty.

detection performance of ET needs to be considered as an important factor in the Lake Oahe WCD volume calculation.

ET has failed to verify its leak detection performance as required by industry standards. API RP 1130 on *Computational Pipeline Monitoring for Liquids* (2007) has been incorporated by reference into the PHMSA regulatory scheme. 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 remand record of any actual CPM performance testing or results. Actual withdrawal testing as required by RP 1130 would distinguish marketing claims form real performance. In the absence of detection limit verification, a more conservative figure of a 3% practical limit should be used.

API RP 1175*, Pipeline Leak Detection Management* (2015) has been promulgated in response to mandates and recommendations from Congress and the NTSB to improve identified weaknesses in pipeline leak detection.[165] 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 in the EA or Remand that ET has adopted RP 1175 or used performance metrics to improve its own troubled leak detection record.

Energy Transfer's largest recent incident, the Permian Express II is illustrative of their actual troubled CPM performance. After "line imbalance indications" were discovered, the pipeline continued to operate for 12 days and spilled 361,000 gallons (8600 Bbls) from a pinhole leak that led to $4 million in property damage.[166] API RP 1130 recognizes that leak detection requires evaluation and decision-making by a pipeline controller when detection systems indicate a possible release. Those organizational and human factors issues addressed in RP 1130 were not effectively managed by Energy Transfer in the Permian Express II incident. Energy Transfer's

[165] API RP 1175, Pipeline Leak Detection Program Management, p. 4 (2015).
[166] PHMSA Distribution, Transmission & Gathering, LNG, and Liquid Accident and Incident Data, Hazardous Liquid Accident Data – January 2010 to Present, Incident Report Number 2016035. The description of the incident comes from the report data and narrative.

known historic CPM performance indicates these standards are not being adopted or are applied ineffectively.

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).[167] There is no comparable leak detection safety layer for DAPL.

Compliance with the PHMSA formula for WCD calculations require, and the Corps of Engineers must evaluate in the EIS:

> (1) Realistic detection time, including computer software detection, and organizational and human factors and their impact on decision-making, verification and controller response.
>
> (2) Pump shutdown time.
>
> (3) EFRD valve closure.
>
> (4) Drain down volume of the entire pipeline segment between the Lake Oahe EFRDs.
>
> (5) Credible scenarios for impact from adverse weather conditions, on each of the above, including power failures.
>
> (6) Other credible worst case considerations, such as equipment malfunction, power outages, human error, or erroneous indicators or alarms.

Evaluation of other worst case scenarios should include:

[167] *Keystone XL Shuns Infrared Sensors to Detect Leaks*, Bloomberg, January 18, 2013 (*available at*: https://www.bloomberg.com/news/articles/2013-06-17/keystone-xl-pipeline-shuns-high-tech-oil-spill-detectors) (last accessed 2-4-18)

(1) Impact of an increase in capacity as proposed by Energy Transfer, and other credible scenarios.

(2) A leak under the practical detection limit, including use of a more conservative threshold of three percent, and scenarios with time periods ranging from three weeks (longest period of no overflights) to three months (period of ice conditions).

(3) Adverse winter weather conditions leading to a power failure and road closures

Additionally, considerations for the proper evaluation of the worst case discharge in the EIS must include:

(1) The requirements of industry best practices for computational monitoring and leak detection, such as API RP 1130 and RP 1175. The Corps should require verification of the computational systems for DAPL, with actual withdrawal testing of leak detection capabilities and limits. The Corps should review the performance criteria and metrics for leak detection verify performance.

(2) Assess external leak detection systems and methodologies such as recommended by EPA for the Keystone XL Pipeline.

XI. THE ENVIRONMENTAL ANALYSIS MUST INCLUDE ADDITIONAL SPILL MODELING TO INCLUDE A REALISTIC WORST CASE DISCHARGE

The oil spill trajectory and fate modeling conducted by ET using RPS's OILMAPL and SIMAP modeling systems was flawed and incomplete.[168] A stochastic analysis in SIMAP[169] was conducted for each of two release locations and two release volumes, for a total of four scenarios. The largest release volume modeled was based on the assumption that a pipeline rupture would be detected instantaneously and that a pipeline shutdown would occur within several minutes. The worst case discharge volume modeled in the stochastic analysis is not a true worst case discharge and is grossly understated. Although a large volume release from the pipeline is a low frequency/high consequence event, the environmental, economic, and sociocultural consequences would potentially be severe, and must be fully addressed in the EIS.

As discussed in the Environmental Assessment, ET would utilize a Computational Pipeline Monitoring System (CPM) to monitor the pipeline for leaks. This CPM system is claimed to be capable of detecting leaks down to 1 percent or better of the pipeline flow rate. Given the high flow rate of the pipeline, a release of less than 1 percent of the pipeline flow rate would still amount to a large input of oil into the environment and may go undetected for a substantial amount of time (e.g., weeks or months), particularly during the winter season when ice is present.

The 1 percent leak detection claim has not been verified and discussed above a more conservative 3% percent practical detection limit should be assessed

[168] RPS. 2018. Evaluation of Hydrocarbon Releases into Lake Oahe using OILMAPLand and SIMAP Trajectory, Fate, and Effects Modeling for the Dakota Access Pipeline. Final Report. Prepared for Energy Transfer Partners.

[169] SIMAP's stochastic model is used to determine the range of distances and directions oil spills are likely to travel from the spill sites, and the associated probabilities. The stochastic modeling approach uses multiple model runs (typically 100 or more) of the same spill event to characterize the probable consequences of a spill scenario under typical yet varying environmental conditions.

as a component of an alternative credible WCD. Because of the technical limitations of the CPM system, the potential impacts of a longer duration release of less than 3% percent of the pipeline flow rate should be modeled and assessed.

Each of the four stochastic scenarios modeled consisted of 290 individual model runs: 97 individual trajectories modeled under springtime high river flow conditions, 96 under summer and fall with average river flow conditions, and 97 under wintertime low river flow conditions. In the oil spill modeling report, stochastic results are provided as a combination of these three flow conditions. However, because the wintertime low river flow trajectories have a much smaller spatial extent, averaging these results with the other flow conditions underestimates the calculated probabilities of impact.

For example, the highest predicted potential for oil exceeding 1 g/m^2 to contact shorelines was 41 percent, but if only high flow conditions were to be assessed separately, the probability of shoreline oiling during those conditions would likely be substantially higher (potentially near 100 percent). The stochastic modeling results should be analyzed and presented separately for each of the three flow conditions, rather than averaging them all together into an annualized assessment. This would provide more accurate information for spill response planning and the evaluation of potential impacts.

For each of the stochastic scenarios, three individual trajectories were selected and analyzed in more detail: the 95th percentile deterministic trajectories[170] for surface oil exposure, water column exposure, and shoreline exposure. Both the stochastic and deterministic modeling results indicate that the expected trajectory and fate of a release of oil into Lake Oahe could present a difficult spill response.

Firstly, the timing of a response would be problematic because of the rapid predicted movement of surface oil into the water column or onto the shoreline.

[170] The deterministic simulations provide additional graphical and numerical data describing the trajectory, as well as a time history of oil weathering over the duration of the spill (mass balance).

The minimum time for oil to first contact shorelines was predicted to be less than 12 hours for all of the stochastic scenarios. In the deterministic scenarios, the duration of surface oiling is very short—in less than approximately 12 to 36 hours, virtually all of the surface oil is predicted to either become entrained in the water column, evaporated, or deposited on shore. This short duration of surface oil oiling would make it challenging to mitigate a release of oil with surface booms or other response methods focused on surface oil collection and removal. Another timing issue that could complicate response efforts is the potential for oil trapped under and in ice to resurface or be re-released or during the spring thaw.

Secondly, 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, *in situ* burning, skimming, or other types surface recovery. 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 deterministic simulations, a substantial percentage (24 to 57 percent) of the total volume spilled remained entrained in the water column. Since the 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 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. Recent efforts by 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.[171] 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

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

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 wildlife impacts results presented in table 7-5 of the oil spill modeling report do not adequately address the magnitude of potential impacts. The analysis for wildlife does not appear to consider the total water surface area swept (affected) by oil above a lethal threshold for wildlife, or the probability of oil encounter and mortality by wildlife behavior group. Different wildlife behavior groups (e.g., dabbling waterfowl, surface diving birds, nearshore aerial diving birds, terrestrial wildlife, etc.) have different probabilities of encounter with oil in the environment and different mortalities once oiled.

In the biological exposure model that is available in SIMAP, surface floating oil interacts with wildlife and a portion of wildlife in the area swept by the slick are assumed to die based on their behavior group. The fraction of a wildlife population suffering oil spill impacts is generally considered to be proportional to the water surface area swept by oil greater than 10 µm thick; this level of oiling has been observed to be enough to result in mortality of birds and other wildlife associated with the water's surface.[172,173] The biological effects analysis for wildlife in the oil spill modeling report appears to be based on the maximum amount of water surface area that experienced more than 10 µm of oiling at any given time step during the model simulation. This metric does not reflect the cumulative area swept by oil above the threshold during the entirety of the simulation, and therefore likely severely underestimates the potential wildlife impact area.

[172] French et al. 1996. The CERCLA type A natural resource damage assessment model for coastal and marine environments (NRDAM/CME), Technical Documentation, Vol. I-V. Final Report, submitted to the Office of Environmental Policy and Compliance, U.S. Dept. of the Interior, Washington, DC.
[173] French McCay, D.P. 2009. State-of-the-art and research needs for oil spill impact assessment modeling. In: Proceedings of the 32nd AMOP Technical Seminar on Environmental Contamination and Response, Emergencies Science Division, Environment Canada, Ottawa, ON, Canada, pp. 601-653.

For example, as a surface slick of oil is moving downstream in a river, the cumulative surface area that experiences oiling above the threshold during the oil's transit is typically rather large. As a result, surface oil may affect the same area more than once, as it washes back and forth with the prevailing winds and currents. A snapshot of the surface oil slick at a single moment in time would be much smaller area than the cumulative area swept. The cumulative area swept by oil above the threshold is a much more accurate reflection of the potential for wildlife to encounter a lethal dose of oil and should be used to recalculate the potential wildlife impacts.

Additional spill modeling is required for an accurate hard look at the environmental impacts of DAPL. It should address:

(1) Additional modeling of stochastic oil spill trajectory and fates scenarios that reflects the largest worst case discharge volume from credible scenarios examined for the current DAPL capacity as well as an increase of capacity to 1.1 million BPD.

(2) Additional modeling of stochastic oil spill trajectory and fates scenarios that reflect a long duration discharge of less than 3 percent of the pipeline flow rate (conservative detection limits for the CPM system). For example, a scenario for a weeks or months-long discharge under the detection limit during ice conditions, and a scenario for a discharge under the detection limit discovered by an observation flight at its longest interval (three weeks) and duration of ice cover (three months).

(3) All stochastic modeling results (including probability maps) presented separately for three flow conditions/seasons: springtime high river flow conditions, average river flow conditions (summer and fall), and wintertime low river flow conditions.

(4) Any new or reanalyzed modeling scenarios should use subsurface oil degradation rates appropriate for the location, water body type, and season.

(5) Fully address the implications of the spill modeling results for spill response planning. This should discuss the difficultly of responding to spills with a short duration of surface oiling, spills

with a high proportion of oil entrained in the water column, oil trapped under ice, and a delayed release of ice-bound oil during the spring thaw.

(6) Recalculated biological effects results for wildlife using cumulative surface area swept by oil above the 10 µm threshold and considering the probability of oil encounter and mortality by wildlife behavior group.

XII. THE CORPS OF ENGINEERS MUST FULLY EVALUATE DAPL'S DISPROPORTIONATE IMPACT ON THE STANDING ROCK SIOUX TRIBE

A. Environmental Justice for Indian Tribes

Executive Order 12898 is entitled *Federal Actions to Address Environmental Justice to Address Minority Populations and Low-Income Populations*.[174] It provides that:

> … each Federal agency shall make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States.[175]

According to the Council on Environmental Quality (CEQ), "the Executive Order makes clear that its provisions apply fully to programs involving Native Americans."[176] 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."[177] E.O. subsection 4-401 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."[178] This guidance must be taken into account in agency decision-making.

In the environmental impact statement, the Corps must evaluate the potential for the Dakota Access Pipeline to cause "pollutant-bearing fish or wildlife" and the resulting impact on the Standing Rock Sioux Tribe. E.O. 12898 applies to the DAPL EIS. This requires consultation with other agencies, as well as extensive scoping on the Standing Rock Indian Reservation.

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[174] 59 Fed. Reg. 7629 (November 11, 1994).
[175] *Id*.
[176] Council on Environmental Quality, *Guidance: Environmental Justice Under the National Environmental Policy Act* (1997), p. 1.
[177] 59 Fed. Reg. 7631 (Feb. 16, 1994).
[178] *Id*. at 7631-7632.

B. Scoping and Environmental Justice

The CEQ *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."[179] Impacts to Tribes trigger environmental justice concerns, period – there is no need to engage in a census-block analysis of the relative populations of Indians and non-Indians within the affected area. With respect to DAPL, the District Court has ruled that the half-mile estimate for the affected area was patently inadequate.[180] Under E.O. 12898, *any* release of oil into the Missouri River automatically affects the Standing Rock Sioux Tribe, because it could contaminate a food chain relied upon in subsistence hunting and fishing.

Consequently, the Corps must comply with the 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…"[181] Accordingly, CEQ highlights the need for scoping in environmental communities such as the Standing Rock Reservation to include outreach to:

- Tribal governments;
- Religious organizations;
- Local Tribal media;
- Civic organizations;
- Local business organizations
- Environmental and environmental justice organizations;
- Legal services' providers;
- Homeowners and tenants' organizations;

[179] CEQ, *Guidance: Environmental Justice Under the National Environmental Policy Act*, pp. 10-11.
[180] Standing Rock Sioux Tribe v. Army Corps of Engineers,
[181] CEQ, *Guidance: Environmental Justice Under the National Environmental Policy Act*, p. 13.

- Rural electric cooperatives;
- Community and social service organizations;
- Colleges;
- Local schools;
- Senior citizen groups;
- Other community stakeholders.[182]

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

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 less than one-half mile from the DAPL Lake Oahe crossing, and whose residents will be most directly affected by an oil spill, and may have to be evacuated if airborne benzene caused acute health risk, such as in Marshall, Michigan in 2010. 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."[183] Therefore, scoping outreach to the Standing Rock Elders Preservation Council is necessary, as well as consultation with the Standing Rock Tribal Historic Preservation Officer, in order identify cultural factors relating to environmental concerns. Scoping involving the Reservation's local electrical cooperative, Mor-Gran-Sou, would enable the Corps to assess the risk posed by Energy Transfer's failure to supply secondary power to the Lake Oahe shut-off valves.

Environmental justice scoping is necessary to properly identify DAPL's risk to the environment on the Standing Rock Reservation. This is particularly important in light of the flawed conclusions relating to risk adopted by the Corps of Engineers in 2016.

C. Environmental Justice and Risk

The Corps adopted the following language in the Environmental Assessment for DAPL: "The risk of an inadvertent release in, or reaching Lake Oahe is extremely low

[182] *Id*. at 11.
[183] *Id.* at 9.

(sic)."[184] The low-risk finding was based upon a risk index approach involving probabilities of failure and magnitude of consequence. Standing Rock presented information to the Corps relating to the widespread professional and academic criticism of risk assessment based upon generic pipeline risks and mitigation.[185] But the Corps completely ignored the Tribe's comments and concerns with the DAPL risk assessment in its *Analysis of the Issues Remanded by the U.S. District Court for the District of Columbia Related to the Dakota Access Pipeline Crossing at Lake Oahe*. The lingering controversy contributed to the District Court's decision to order the Corps to prepare an EIS for DAPL.[186]

The index methodology and "limited threat" risk assessment are not appropriate to determine the risk posed to the Standing Rock Sioux Tribe from the Dakota Access Pipeline. The Corps should not have adopted Energy Transfer's outdated risk assessment methodology for the environmental assessment and must not do so for the EIS. Such risk assessments "often are not representative of the risks borne by all segments of the population, and the aspects of risk that risk assessments seek to measure do not capture the concerns of all members of the public."[187] The manner in which the risk of DAPL is assessed is thus an environmental justice issue.

With respect to risk assessments:

> Because of vast data gaps and immense scientific uncertainty (quantitative risk assessment) guidelines… contain default assumptions. The default assumptions are policy judgments, rather than scientific truths, to deal with the uncertainties in identifying hazards, assessing exposures and developing dose-response relationships.[188]

The policy judgments inherent in the indexes for risk assessment generally exclude the values of the Standing Rock Sioux Tribe. As explained in one authoritative study:

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[184] *Environmental Assessment: Dakota Access Pipeline Project Crossings of Flowage Easements and Federal Lands, Prepared on Behalf of the Army Corps of Engineers – Omaha District*, p. 87.
[185] Standing Rock Sioux Tribe, *Impacts of an Oil Spill from the Dakota Access Pipeline on the Standing Rock Indian Reservation* (2018), p. 44, https://www.standingrock.org/content/impacts-oil-spill-dapl-standing-rock.
[186] *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, 2020 WL 1441923 (Standing Rock VI).
[187] Robert R. Kuehn, *The Environmental Justice Implications of Quantitative Risk Assessment*, 1996 U. ILL. L. REV. 103, p. 117.
[188] *Id.* at 115-116.

> QRA (quantitative risk assessment) is built on the assumption that risk can be objectively measured… These assumptions are thoroughly problematic. Subjective perceptions… exist independently of measured risk, and may indeed influence it.[189]

Ultimately, "The result of a risk assessment is not the conclusion of an objective process, but is an outcome heavily influenced by the subjective decisions of the risk assessor."[190] That is the problem with the DAPL risk assessment, prepared by Energy Transfer's consultant and wrongfully adopted by the Corps of Engineers.

Moreover:

> Quantitative risk assessment is based on an assumption that accidents are fundamentally chance or random events, and so can never be totally prevented, no matter what measures we take.
>
> The alternative view is that accidents are caused, and the role of management is to identify and counter those causes. Time and again… analyses of accidents show that they occur because of the failure of some preventive measure or series of measures which should have been in place.[191]

As Standing Rock informed the Corps in 2018:

> [T]hreats examined by the risk assessment need to be broader than the typical index model focusing exclusively on a handful of integrity management issues... The more modern approach to major accident prevention would have the operator assess all risks and take all necessary measures to prevent a major accident where a catastrophic potential is present.[192]

Risk assessment cannot be generic – not all pipelines pose the same level of risk, and not all communities have the same vulnerabilities to pollutants. The Tribe critiqued the ET Risk Algorithm which focused narrowly on cleanup costs expressed as cents per gallon spilled.[193] The ET risk assessment does not consider the specifics of a spill in Lake Oahe, such as harm to the Reservation ecosystem, traditional foods and medicinal plants,

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[189] Andrew Hopkins, *National Research Centre for OHS Regulation, Working Paper 25: Quantitative Risk Assessment: A Critique* (2004). The critique of QRA is valid for any risk assessment claiming to objectively measure risk. Note the Tribe has criticized ET/Sunoco measuring environmental harm based upon its liability for cleanup costs.
[190] Kuehn, p. 134.
[191] Hopkins, p. 15.
[192] Standing Rock Sioux Tribe, p. 46.
[193] Sunoco Logistics, Risk Algorithm Document (January 2015), RAR015882-883.

and cultural resources and burial sites, and fish and wildlife. Risk assessment must identify a project's specific potential hazards and vulnerabilities and evaluate the efficacy of the steps taken, if any, to address to address those hazards and vulnerabilities. This is especially important for environmental justice communities such as the Standing Rock Sioux Tribe.

The DAPL risk assessment failed to do any of this. Consequently, the Corps must re-assess the environmental and public health risks of DAPL in the environmental impact statement.

D. Corps of Engineers' Pick-Sloan Program Impacts to Standing Rock

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,[194] 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 may be the closest school to the pipeline, and may have to be evacuated in the event of a catastrophic 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 1,146-acre Standing Rock irrigation project Cannon Ball Unit is less than 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 immediately downstream from 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 by an oil spill, providing an exposure pathway and jeopardizing the livelihood of Indian ranching families in Cannon Ball district.

[194] https://worldpopulationreview.com/us-cities/cannon-ball-nd-population.

But 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 largest dam and reservoir projects in the United States. "The Oahe Dam destroyed more Indian land than any other public works project in America."[195]

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.[196]

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 ben 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.

[195] Michael L. Lawson, DAMMED INDIANS: THE PICK-SLOAN PLAN AND THE MISSOURI RIVER SIOUX, 1944-1980 (1980), p. 50.
[196] Standing Rock Sioux Tribe, p. 24.

> 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.
>
> 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.[197]

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.[198]

The Bureau of Indian Affairs recently estimated the unemployment rate on the Standing Rock Reservation to be 63 percent.[199] The poverty rate at Standing Rock is approximately 51 percent, as compared to 15 percent nationwide.[200] 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

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[197] *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.
[198] *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.
[199] Bureau of Indian Affairs, *2013 American Indian Population and Labor Force Report*, p. 50 (2014).
[200] https://www.minneapolisfed.gov/indiancountry/ resources/reservation-profiles/standing-rock-reservation.

nation as a whole.[201] The loss of economic resources and community infrastructure as a result of Oahe Dam directly contributed to the socioeconomic challenges facing the Tribe today.

As a former Cannon Ball District Chairman, Pete Red Tomahawk, testified to the U.S. Senate Committee on Indian Affairs:

> We are one of the communities adjacent to the Missouri River. Our community was relocated – 97 percent of our community has been relocated on top of the hill. On top of the hill where our community now sits, it faces the harsh climate of the winter, of the elements that come and whipping at our housing… We have a dire shortage of housing. We have a very serious problem with our youth in looking at youth suicides…[202]

For its part, rather than adopting an administrative mindset to help the Tribe overcome the devastating impacts of removal and relocation, the Corps of Engineers has offered no mitigation, no assistance to the Tribe. To the contrary, in the decades since closure of Oahe Dam, the Corps has consistently opposed Tribal efforts to overcome the devastating impact of the loss of land and social dislocation, as if advised by agency lawyers to purposefully minimize the suffering on the Reservation caused by Pick-Sloan. Officers of the Corps of Engineers have testified in Congressional hearings *against* Tribal efforts to help overcome the social and economic disruption caused by Oahe Dam.[203] The bureaucratic response by the Corps' Omaha District to the Tribe's good faith efforts to recover from the harm caused by Oahe Dam is inexplicable.

Along these lines, on December 16, 2015, the Corps of Engineers published the Draft Environmental Assessment for DAPL, and, even though the Standing Rock Reservation is less than one-half mile downstream from the Lake Oahe crossing, and the pipeline crosses Tribal burial sites, **Standing Rock was not even identified or mentioned in the Draft EA**. It was only after the Tribe provided written comments to the Corps on the Draft EA that the Standing Rock Reservation was even mentioned, in the Final EA. Yet the Corps callously and erroneously adopted the position that the Tribe

[201] *Id.*
[202] S. Hrg. 107-419 (statement of Pete Red Tomahawk), pp. 33-34.
[203] 100th Cong, (statement of Gen. Floyd Dominy).

would experience no potential environmental impact from DAPL, in the Final Environmental Assessment.

In the EIS for DAPL, the Corps must:

> (1) document that the potential impacts of an oil spill could have catastrophic impact to the environment and public health on the Standing Rock Reservation; and
>
> (2) acknowledge that pre-existing public health, historical trauma and socioeconomic baselines exacerbate those effects, resulting in severe and disproportionate adverse impact to the Tribe.

E. Heightened Environmental Risk of DAPL to Standing Rock Tribal Members

"There is a high degree of variability in response of humans to different levels of pollution."[204] Although the Corps has failed to require from Energy Transfer partners information on the precise chemical composition and public health impacts of the Bakken crude in DAPL, available information does indicate that Standing Rock Tribal members are at heightened risk from an oil spill. The Corps of Engineers completely ignored this in the Environmental Assessment, but must thoroughly evaluate it, in consultation with other public health and science agencies, in the Environmental Impact Statement process.

The Centers for Disease Control estimates that Native Americans generally suffer diabetes mellitus twice the rate of white Americans, and at Standing Rock that percentage may be much higher.[205] The rate of deaths of diabetes among Native Americans is estimated at nearly 430 percent higher than the general population.[206] This is consistent with estimates for Standing Rock, attributable to the loss of traditional foods after construction of Oahe.

Diabetics living in poverty in rural areas have difficulty affording and accessing the fresh meats and vegetables necessary to control diabetes. Meanwhile, subsistence and fishing practices are part of the Tribe's culture, making Tribal members more vulnerable to pollutants exposed to the food chain. The public health baseline on the Reservation, in combination with high unemployment and poverty levels, and a diet related to traditional

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[204] Kuehn, p. 122.
[205] https://www.cdc.gov/diabetes/disparities.html.
[206] www.doh.gov/ndep/campaign/DIABET~2.DOC.

subsistence hunting and fishing practices, result in the heightened vulnerability of the Standing Rock Tribal membership to certain pollutants.

The contaminants in Bakken crude oil contain volatile organic compounds and hazardous air pollutants such as benzene, toluene, ethylbenzene, and xylene (BTEX). These contaminants may result in increased endocrine-disrupting 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 effects in both humans and animals." [207] There are impacts to the functions of the adrenal and thyroid glands, which control metabolism and bone growth, as well to reproductive organs.

Endocrine disruptors, such as the BTEX compounds, even at low levels of exposure, can affect "male and female reproduction, breast development and cancer, prostate cancer, neuroendrocrinology, the thyroid gland, metabolism and obesity, and cardiovascular endocrinology."[208] The adrenal glands regulate blood sugar, and consequently the endocrine disruptors in Bakken crude directly disproportionately impact diabetics. As a result, Standing Rock Sioux Tribal members, who suffer diabetes at least twice as high as the general population, are a highly vulnerable population to the endocrine disruptors found in the Bakken crude transported in DAPL.

Women are also especially vulnerable to these contaminants, due to impacts to the reproductive system and 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 population is 18 years or younger – approaching child-bearing age.[209] In nearby Burleigh County North Dakota, the figure is 23 percent, which is also the national average.[210]

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 members of the Standing Rock Sioux Tribe are subject to greater

[207] Madelon L. Finkel, ed., *The Human and Environmental Impact of Fracking: How Fracturing Shale for Gas Affects Us and Our World* (2015) p. 26.
[208] *Id*. at 27.
[209] https://www.census.gov/quickfacts/siouxcountynorthdakota.
[210] https://www.census.gov/quickfacts/fact/table/burleighcountynorthdakota

public risk from the VOCs and BTEX contaminants in Bakken crude, and are disproportionately impacted by DAPL.

Female Tribal members of the Standing Rock Sioux Tribe are also disproportionately impacted by the documented negative socioeconomic consequences of infrastructure development and the oil industry in North Dakota. Pipeline projects such as DAPL have resulted in an increase sexual assault and human trafficking that disproportionately impacts Indian women in North Dakota.[211] The Corps of Engineers should address the risk to Indian women posed by the construction and operation of this massive infrastructure project, in light of the devastating incidence of missing and murdered Indian women.

Ultimately, with respect to environmental justice:

> Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe… should heighten agency attention to alternatives (including alternative sites)… and the preferences expressed by the affected community or population.[212]

The four alternatives identified in the Notice of Intent are inadequate.[213] The EIS for DAPL must fully evaluate a full range of alternatives to the proposed action and "heighten attention" to the preferences of the Standing Rock Sioux Tribe. The Tribe has consistently and continues to make its preferences clear:

> (1) immediately shut down the illegal and dangerous Dakota Access Pipeline pending completion of an EIS that withstands court challenges.
>
> (2) include in the EIS alternative pipeline routes, pursuant to the CEQ *Guidance*.
>
> (3) that the Corps take a hard look at the pipeline safety concerns of the Standing Rock Sioux Tribe, including the operator's overall performance, the failure to properly calculate worst case discharge, to implement pipeline safety management systems, and leak detection and

[211] Kathleen Finn et al., *Responsible Resource Development and Prevention of Sex Trafficking: Safeguarding Native Women and Children of the Fort Berthold Reservation*, 40 Harv. J. L. and Gender 1 (2017).
[212] CEQ, p. 10.
[213] 85 Fed. Reg. 55843.

monitoring systems, and to assess risk to the environment and public health, and the strong environmental justice case for the permanent shut down of DAPL and removal of the pipeline.

XIII. THE CORPS MUST CONDUCT A TECHNICAL HYDROGEOLOGIC EVALUATION OF THE POTENTIAL ENVIRONMENTAL IMPACT OF A RELEASE OF OIL BELOW THE RIVERBED

Analysis indicates that concluded a release of Bakken crude from the DAPL Lake Oahe undercrossing will contaminate the sole source of drinking water for the Standing Rock Sioux Tribe, as well as farms, homes and towns on the east side of Lake Oahe. This is true regardless of the nature of the release; sudden, large-volume, discharge (worst case discharge scenario, or WCD), or a slow, long-duration release that remains undetected for a long period of time. If drinking water is not tested frequently, human exposure of compounds with known carcinogenicity and other toxic effects may be consumed or used for irrigation, potentially causing adverse health effects among the population's sensitive members.[214] In addition, an oil spill from the DAPL Undercrossing could potentially be disastrous to the SRST's use of Lake Oahe to carry on the Tribe's longstanding fishing and hunting tradition and rights.

The consequences of an undetected and ongoing release of Bakken crude below Lake Oahe, and eventually into the lake, is likely to include contamination of the agricultural irrigation water intake at Cannonball. In addition, toxic effects to the aquatic biota comprising the food chain that supports the SRST's Lake Oahe fishing and hunting traditions and rights, and contamination of groundwater outside the river channel, in wells pumping adjacent to the river, are likely to occur. It is therefore imperative that the Corps develop the EIS to include plans for the design and installation of subsurface, sub-lake monitoring equipment, and in-lake sampling programs, as well as on-lake sheen sensors, to ensure that a release of Bakken crude from the DAPL Undercrossing is detected at the earliest opportunity in all weather conditions.

Because DAPL is buried 92 feet below Lake Oahe, a substantial volume of porous and permeable river sediments can harbor a significant mass of Bakken crude, potentially miles downstream, before it surfaces into Lake Oahe. The subsurface migration of Bakken crude released at a rate below the CPM detection threshold may be facilitated by subsurface geology. The geotechnical investigation performed for the DAPL

[214] The toxic effects of benzene and other aromatic, alkylbenzene, and polycyclic aromatic hydrocarbon constituents of Bakken crude are primarily chronic, i.e. induced by long term exposure. Acute toxicity is unlikely; however, that should be confirmed for each individual soluble constituent of Bakken crude that has the potential to be withdrawn from Lake Oahe at the Cannonball irrigation intake and other downstream drinking water intakes.

Undercrossing, which indicates a highly permeable sand with silt and up to 36% gravel, overlain by a low permeable clay or sandy clay unit.

The coarse-grained unit described as 'sands with silt' represents the path of least resistance which leaked oil will follow. The overlying clay unit, or the clay with sand unit, whose downstream extent has not been characterized, may act as a confining layer that would promote oil migration within the sand unit. The confined sand unit would contain and convey the oil flow from an undetected pinhole or larger leak, until that pathway is no longer viable, i.e., until it pinches out into finer-grained sediments which would impede oil migration. Stacked deposits of fluvial sands can present a pathway for oil to rise up through the fluvial sediments at locations where the confining clay is absent and enter Lake Oahe.

The location at which the oil finally enters Lake Oahe is unknown as the subsurface south of the undercrossing has not been characterized. It is important to note that the clay layer is discontinuous. **A geological interconnection to allow the Bakken crude oil to move upward into the lake is inevitable.** Although the four borings drilled within Lake Oahe present somewhat similar lithologies, the degree of heterogeneity is unknown within the up to 1,200-foot gaps between borings. Consequently, the migration pathway followed by oil leaking from the DAPL pipeline below the CPM limit of detection may surface within 50 feet, 500 feet, or 1,000 feet of the pipeline. Only after surfacing will the spill be detectable by visual observation, odor, and sampling, and then only if the lake is not under ice.

In order to evaluate the potential impacts to surface and ground water at the Lake Oahe crossing, the EIS should include:

(1) A detailed technical modeling assessment to estimate credible WCD scenarios volumes, including:

a. the mass of Bakken crude that would be retained within the subsurface;

b. the distance downstream that crude would migrate before it rises into Lake Oahe, if leaked into a sandy layer confined by an overlying clay deposit;

c. subsurface migration rates for Bakken crude; and

d. The under-ice migration distance and rates for BTEX and other soluble constituents of Bakken crude.

(2) Identify constituents of concern in the Bakken crude, characterize their seasonal variation, the fate and transport properties of these chemicals, and their taste and odor thresholds.

(3) A literature search of taste and odor thresholds for soluble constituents of Bakken crude.

(4) Evaluate the effect of a spill on the Standing Rock Sioux Tribe Municipal, Rural and Industrial Water Supply System intake.

(5) A detailed survey of subsurface drinking water sources for residents of the Reservation that are not serviced by the Tribe's Municipal, Rural and Industrial Water Supply System.

(6) Provide fate and transport calculations for the soluble, volatile and semi-volatime constituents of Bakken crude.

(7) Include a detailed description of Energy Transfer's plan to increase flow, including:

a. identification of the type and method of friction inhibitor;
b. the mass mixing ratio for flow inhibitor and Bakken crude;
c. the identity of the main chemical composition of the flow inhibitor; and
d. the taste and odor thresholds of these chemicals.

XIV. THE EIS MUST ADDRESS THE SOVEREIGN AUTHORITY OF THE TRIBE OVER ALL EMERGENCY RESPONSE AND OIL SPILL REMEDIATION ACTIVITIES WITHIN THE EXTERIOR BOUNDARIES OF THE STANDING ROCK INDIAN RESERVATION

A. The Standing Rock Tribal Emergency Response Commission shall be the Lead Response Agency Under Tribal Law

Nearly the entire Lake Oahe Spill Response Zone is within the Standing Rock Sioux Reservation. Accordingly, the Standing Rock Tribal Emergency Response Commission and the Department of Emergency Management shall be the lead response agencies, and the laws of the Standing Rock Sioux Tribe apply to all emergency response and oil spill remediation activities for DAPL. This includes the Tribal Oil Spill Emergency Response Plan. The Corps of Engineers must recognize this in the EIS for DAPl.

The Tribe has concluded that a spill of Bakken crude oil is high-risk given the operator's spill record and that the potential of a spill could be catastrophic – many times larger than stated by the current DAPL Facility Response Plan (FRP). The WCD will be even larger if the proposed doubling of the DAPL capacity is implemented from 600,000 bpd to over 1.1 million bpd. The Tribe has concluded that DAPL has failed to establish an effective emergency response plan, demonstrate timely detection or effective response capability to a pipeline oil spill.

In response, 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).

B. The Corps Must Acknowledge Tribal Law in the EIS and Energy Transfer Must Comply with Tribal Law

The Emergency Planning and Community Right-to-Know Act (EPCRA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Standing Rock Emergency Planning and Community-Right-to-Know Ordinance recognize the paramount role the Tribe fulfills in responding to hazardous materials incidents and

emergency planning. EPA regulations recognize the Standing Rock Sioux Tribe as the proper implementing authority for EPCRA within the exterior boundaries of the Standing Rock Indian Reservation. These statutes recognize Tribal sovereignty and state that Tribes have unique jurisdictional authorities similar to states for emergency planning. EPCRA recognizes that Tribes are typically in the best position to plan and respond to a hazardous materials incident – they are the closest, most familiar, and aware of the environment. The lead agency/organization for DAPL oil spill incident response within the Standing Rock Sioux Tribal reservation is the TERC.

Under Tribal law, the Standing Rock Tribal Chairman has the authority for decision-making as to the Tribe's role and scope of response activities within the exterior boundaries of the Reservation. Any non-Tribal responders must obtain approval to enter the Tribal reservation. Emergency response plans and responder activities within Reservation boundaries must be fully consistent and follow the requirements of the Tribe's ERP.[215]

C. Current ET Emergency Plans are Inadequate and Put Tribal Emergency Responders at Undue Risk

The Corps of Engineers has accepted Facility Response and Geographic Response Plans that fail to comply with the applicable PHMSA regulations. They fail to identify the specific hazards of Bakken crude, a realistic worst case discharge calculation, an accurate technical spill model and hydrogeologic analysis for Lake Oahe, and application of more protection pipeline safety standards – all essential components for emergency response planning. However, an evaluation of these issues is seriously flawed or lacking completely from ET and the Corps' EA and Remand documentation. These deficiencies weaken oil spill response and place emergency responders in harm's way.

Serious flaws of the Corps' analysis and ET's emergency response plans include:

(1) Failure to protect the Tribe and emergency responders from the elevated hazards of Bakken crude oil. Recent studies, incident findings and subsequent governmental research and testing found that Bakken crude

[215] Tribal Emergency Response Committee (TERC), Lake Oahe Pipeline Oil Spill Emergency Response Plan (2020) pp. 1-8.

has elevated hazards of flammability and toxicity compared to conventional light crude oil. Bakken crude is rated as "extremely flammable liquid and vapor" by ET's own SDS while both the ET's FRP states the "crude oil" is flammable, a lesser hazard rating.[216] A spill can lead to both serious acute and long-term effects to people, the environment and emergency responders. The DAPL Geographic Response Plan and some Safety Data Sheets (SDSs) fail to incorporate more up-to-date and scientifically accurate Bakke-specific hazard information. As a result, these sources also do not provide adequate safety guidance and hazard protections.[217]

(2) Failure to address contingencies that a DAPL spill may be caused by or occur during another emergency such as power failure, flooding, landslide or earthquake.

(3) Inadequate plans for notification of residents of the Standing Rock Indian Reservation and potential shelter-in-place or evacuations as needed in the event of a DAPL spill.

(4) Failure to address the responsibilities for the operator of DAPL as outlined in the SRST Lake Oahe Pipeline Oil Spill Emergency Response Plan. These requirements include complying with all laws of the SRST, obtaining permission from the SRST prior to entering the Tribal reservation, submitting Tier Two Emergency and Hazardous Chemical Inventory Reports and other information, coordinate plans with the SRST TERC and conduct joint exercises with the coordination of the Federal On-Scene Coordinator (OSC), and provide the Tribe in preplanning with a FRP and GRP consistent with the SRST ERP.[218]

(5) No discussion in ET's response plans for the role of the Tribe in Incident Command or immediate notification of the Tribe's responder organizations. Under section 306 of the Standing Rock Sioux Emergency Planning and Community Right-to-Know Ordinance, the release of a hazardous substance within the exterior boundaries of the Standing Rock Indian Reservation shall require immediate notification to the SRST Direc-

[216] The FRP treatment of crude oil hazards is not Bakken specific and provides misleading safety data. Dakota Access Pipeline, Emergency Response Action Plan (ERAP) and Facility Response Plan (FRP), Dakota Access Pipeline North Response Zone, ERAP at 37, FRP at 51 (April 2017).
[217] *Id.* p.12-17. Important safety considerations in the event of a DAPL spill not effectively adopted by the Corps analysis and ET's response plans.
[218] *Id.* p.36-37.

tor of Emergency Management, SRST TERC and BIA Fire Management Department.[219]

(6) Failure to 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.

(7) Failure to include in the response plans the Tribal Historic Preservation Officer (THPO) authorizing official approval for historic properties and cultural sites access in the response zone.

(8) Failure of the Corps and PHMSA to consult with the Tribe and provide vital information, and failure of ET to cooperate with the Tribe. Good emergency planning practice and federal regulations require operators to communicate and share needed planning documentation such as unredacted facility response plans, geographical response plans, spill models, WCD calculations, etc., but this has not been done.[220] ET has failed to communicate with the TERC to coordinate vital issues such as response planning, conduct joint exercises, assess needed or available resources, or ensure adequate SRST notification. The lack of response communication and coordination leaves the Tribe and Lake Oahe vulnerable to an emergency response disaster in the making.

(9) Failure to address technical complications and deficiencies in the GRP, that threaten emergency response mitigation and clean-up. This include 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

[219] SRST Code of Justice §41-306.

[220] The handful of documents shared have been mandated in federal NEPA litigation, most are redacted and only available to a small number of Tribal staff who have signed protective orders related to the litigation. The TERC and SRST emergency response organizations are not able to review the documents to better plan for a DAPL spill.

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.[221] DHS found that mitigation of submerged oil was complex and difficult 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."[222] Additionally, the DAPL Lake Oahe GRP does not include actions to proactively protect the Lake Oahe shoreline and sensitive receptors that are threatened but not yet impacted by an oil spill. The Tribe has identified the vicinity of the waters, tributaries, estuaries, and banks of Lake Oahe Lake all as sensitive environmental, ecological, cultural and human receptors. All these areas are of vital importance to the SRST and its culture.

(10) Failure of the GRP to fully assess hydrogeologic spill response and remediation issues for credible WCD scenarios 92-108 feet under the Oahe lakebed including a leak under the detection limit. Simplistic assumptions in ET's GRP assume a spill will occur in only one location near the DAPL route. The geotechnical/hydrogeological movement of the Bakken crude in the formations under the lakebed for different scenarios, the potential for movement in the groundwater, unpredictable release locations and timing of crude entering the lake environment are not addressed and could lead to delayed leak detection, ineffective emergency response activities and greater spill impacts. Different WCD release scenarios at such depths can affect leak detection, the timeliness of spill response, downstream impacts, extreme difficulties of spill cleanup, and the likelihood of a persistent toxic contamination of the soil, groundwater, and ongoing contamination of Lake Oahe. These issues are not addressed. Also, not evaluated by the Corps of Engineers and DAPL is the fact that typically most crude oil from spills is not recovered. Nor do they examine on-going impacts from such likely lingering toxic contamination for the Tribe and downstream.

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[221] Department of Homeland Security, *Mitigation of Oil in the Water Column: Mitigation Prototype Tests*, 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."

[222] *Ibid.*

With respect to emergency planning for DAPL, the EIS must address:

(1) The Standing Rock Sioux Tribe's legal authority to control access to the Reservation and to govern oil spill clean-up, and the requirement to comply with the Tribe's *Lake Oahe Pipeline Oil Spill Emergency Response Plan*.

(2) Energy Transfer's lack of cooperation with the Tribe, including its failure to provide vital information, coordinate spill planning and joint exercises and agree to immediate notifications to the Tribe as required by law.

(3) The need to cooperate with the Standing Rock THPO and to properly plan for protection of sensitive environmental and cultural receptors.

(4) The technical deficiencies of Energy Transfer response plans, including

a. the need for analysis of the elevated hazards of Bakken crude;

b. a credible WCD scenario;

c. inadequate plans for notification and communication with the Tribal emergency Response Commission

d. evaluation of the consistency of the Geographic Response Plan with he Spill Model and other planning documents; and

e. Credible scenarios and contingencies involving seismic activity, landslides, flooding or similar emergencies.

XV. BASIC DOCUMENTATION RELATING TO PIPELINE SAFETY AND ENVIRONMENTAL IMPACTS HAVE BEEN IMPROPERLY CONCEALED AND MUST BE DISCLOSED IN THE EIS PROCESS

Many of the key DAPL records have been withheld from public review by the Corps of Engineers, or heavily redacted. This includes documents that are directly relate to environmental impacts and public health, such as the risk assessment, WCD, response plans, Corps evaluations, spill modelling, downstream impact reports, and pipeline surge evaluations Even the Corps' Court-ordered remand report, *Analysis of the Issues*, was significantly redacted.

Some of these documents make misleading claims, reflect regulatory violations, identify safety concerns that are unaddressed, and have gaping holes in technical or factual support. These are precisely the issues that NEPA was created to address to ensure that environmental impacts of governmental actions were thoroughly reviewed, and any needed protections were identified. During the preparation of the EA, however, the Corps did not act as Congress intended. Standing Rock Tribal members (and the general public) have not been able to see the most important documentation addressing pipeline safety and the environmental and public health impacts of DAPL.

For example, it is inappropriate to withhold the analysis and calculation of WCD volume. The WCD is vital to analyze consequence for risk assessment, spill modelling, potential environmental and public health impacts and emergency response planning. It is difficult to assess environmental impacts without this important volume calculation. Moreover, the Tribe's emergency responders are placed in peril - unable to adequately prepare, equip themselves and train for a spill of a WCD volume magnitude that is unknown to them.

Ironically, despite the fact that the DAPL WCD has been withheld by the Corps and subject to a protective order in the NEPA litigation, in other venues the DAPL WCD has been made public. In the original North Dakota Public Service Commission (NDPSC) docket for DAPL, the pipeline's worst case discharge volume has been in the public record since 2015.[223] The largest DAPL WCD calculations and volumes for a tank

[223] The DAPL Sunoco L.P. Facility Response Plan, Dakota Access Pipeline North Response Zone, June 2015, p.41, listed only as "Exhibit DA7" was among thousands of pages of documents, (available at https://psc.nd.gov/database/documents/14-0842/097-010.pdf) (last accessed November 21, 2020).

in North Dakota (75,000 BPD) and a pipeline segment in South Dakota (25,174 BPD) are explicitly provided, however, the Lake Oahe crossing WCD volume threatening the Tribe was not revealed. In 2017, when the Department of Homeland Security (DHS) reviewed the DAPL FRP that contains the Lake Oahe WCD volume, it determined it contained no Security Sensitive Information (SSI).[224] Nonetheless it was withheld from the public by the Corps and PHMSA.[225]

Other recent pipeline WCDs have been made publicly available. For example, the TransCanada Keystone Pipeline which recently had a serious crude oil spill in North Dakota stated to be 383,000 gallons, listed their pipeline WCD volume as 27,329 bbls in the Emergency Response Plan provided to the South Dakota Public Utilities Commission.[226] In 2016, at the same time the Army Corps of Engineers was reviewing DAPL and excluding reference to WCD for Lake Oahe, the Corps approved the Sacagawea Pipeline constructed under Lake Sacagawea with a Finding of No Significant Impact (FONSI). The Corps listed the WCD volume as 5,000 bbls in their Amended Environmental Assessment.[227] This WCD was published by the same office of the Corps during the same period they hid the WCD from the DAPL EA and Facility Response Plan.

The failure to provide the DAPL WCD and other key safety information undermines the ability of the Standing Rock Sioux Tribe to protect public health and the Reservation environment. Providing the WCD publicly for other segments of DAPL as well as other major pipelines, while hiding this information from the Standing Rock Sioux Tribe for the DAPL Lake Oahe crossing, is a disparate treatment and a violation of Executive Order 12898 on environmental justice.

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[224] U.S. Department of Homeland Security, RE: Sensitive Security Information Review of Eleven Documents Attached to Dakota Access, LLC's February 1, 2017 Motion for Protective Order, February 27, 2017, (available at https://assets.documentcloud.org/documents/3711402/sensative-security-information-Page-2-of-2.pdf) (last accessed November 21, 2020). See also Dakota Pipeline Is Ready for Oil, Without Spill Response Plan for Standing Rock, Inside Climate News, May 10, 2017, (available at https://insideclimatenews.org/news/10052017/dakota-access-pipeline-oil-spill-standing-rock-court-battle-protests) (last accessed November 21, 2020)

[225] DHS is the agency specifically tasked by Congress with reviewing records for SSI. The Corps and PHMSA lack that authority, expertise and training.

[226] Available at https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2014/HP14-001/draexhibits/39.pdf. (last accessed November 21, 2020).

[227] Available at https://usace.contentdm.oclc.org/digital/api/collection/p16021coll7/id/2672/download, p. 57, (last accessed November 21, 2020).

In the EIS process, the Corps must disclose risk, safety and emergency response records. If there is any concern about whether the record may be security sensitive information (SSI), the Department of Homeland Security is the agency possessing the authority and expertise to make that decision, not the Corps. If the documents do not contain SSI or confidential business information (CBI), the records must be released. Moreover, important safety-related information that is redacted in documents such as the spill model, downstream receptors impact report, FRP and Lake Oahe GRP must be made available. Failing to provide this vital safety data will harm emergency response efforts and put Standing Rock emergency responders at risk.

XVI. THE PROPOSAL TO SUBSTANTIALLY INCREASE THE CAPACITY OF DAPL MUST BE CRITICALLY EVALUATED

Modern pipeline safety standards require a detailed review of the safety implications of an increase to pipeline capacity. Energy Transfer has proposed increasing the flow rate of the Dakota Access Pipeline from 570,000 barrels per day to 1.1 million barrels per day. – nearly doubling the capacity of the pipeline.

The proposal to double capacity renders a significant part of the NEPA analysis, and work done on remand, no longer applicable. For example, the Corps would need to identify a new WCD based on the increased maximum flow rate. That corrected WCD would then inform the spill model, downstream receptor analysis, Facility Response Plan, Geographic Response Plan and DAPL risk assessment—all of which rely on the existing (already flawed) WCD.

DAPL has falsely asserted that the WCD would not change if the capacity was doubled.[228] The Corps must critically evaluate that false claim. Significantly, in the PHMSA regulations, the WCD would significantly increase – it is directly correlated in the required calculation to the "maximum flow rate expressed in barrels per hour."[65]

In order to increase the flow rate of an existing pipeline, the operator must comply with applicable pipeline industry standards and recommended practices that must include API RP 1173 (2015) and RP 1160 2019 which require a detailed management of change (MOC) written analysis. The recently enacted API RP 1160 explicitly requires a management of change review for an increase in flow rate. RP 1160 states that "an increase in throughput" triggers management of change to evaluate its impact on the Integrity Management Plan (IMP). The standard highlights a capacity increase related to maximum operating pressure (MOP) as a prime example of the need for an MOC.[229] RP 1160 takes a broad view of the potential impact of throughput changes:

> These operational changes can impact various aspects of a pipeline's operation, maintenance, monitoring, integrity management, and emergency response, including the following:

[228] Such claims were made in the November 13, 2019 State of North Dakota Public Service Commission hearing on the proposed DAPL capacity increase, Case. No. PU-19-204 OAH File. No. 20190280. DAPL further claimed that an MOC process was being utilized but otherwise acknowledged that a key safety standard, API RP 1160 *Managing System Integrity for Hazardous Liquid Pipelines* with detailed MOC requirements was not fully adopted.

[229] API RP 1160 (2019), Section 14.1, Table 13 Examples of Management of Change, p. 79.

- Pressure gradient, velocity, and the location, magnitude, and frequency of pressure surges and cycles may change.

- Throughput increases may impact the pressure profile and pressure transients.

- Product changes may warrant a material compatibility and corrosion susceptibility review.

- Leak detection and monitoring systems may be affected.

- Significant additions, removal or modifications of pump stations, tank farms, and ILI[230] launching/receiving facilities may be required.

- Appurtenances such as flow meters, strainers, corrosion control devices, leak detection devices, control valves and sectionalizing valves may need to be altered.

Memorandum of Change is an important management system used within industry, to assess the safety impact of a proposed operating pressure and flowrate change. A proper MOC analysis will evaluate impacts of flow rate change on the design, sizing, equipment selection, and location of the existing Surge Relief Valves, Emergency Shutdown and Isolation Systems, and the Leak Detection System. The MOC process is critical to ensure that the systems installed to protect the Lake Oahe HCA pipeline segment from overpressure due to surge and to reduce the WCD volume are properly designed, tested, and maintained to meet the proposed flowrate and pressure increase.

With a significant capacity increase, the adequacy of surge relief systems is particularly important to evaluate. When sizing the devices that protect oil flowlines and pipelines from dangerous overpressure, comprehensive pressure-flow-surge analysis is required. The API has determined that system timing constraints (surge relief set pressure) are absolutely necessary to ensure that the surge relief systems have adequate time to act to protect the pipeline. Surge relief systems include fast acting, high-capacity valves that open very quickly to remove surge pressures from the line. Increases in pipeline flowrate directly reduce the time allowed for the surge relief valves to operate

[230] In Line Inspection

and increase the required capacity, making it critical to analyze the installed surge relief system capabilities when flowrates are increased. This is a special concern for the Lake Oahe HCA that already lacks adequate surge relief protection.

The MOC process also typically includes a Quantitative Risk Assessment to identify risk gaps that require mitigation measures prior to proceeding with the proposed production rate increase.[231]

In the EIS, the Corps must address the need for a management of change (MOC) review to assess the safety implications of the proposed DAPL capacity increase. There must be verification that installed safety systems are suited for an increase in operating pressure and flow rate. The Corps must apply the more rigorous, detailed MOC requirements of API RP 1173 (2015) and RP 1160 (2019).

In the management of change review the following issues must be examined and will lead to significant safety concerns from doubling of pipeline flow within the Lake Oahe High Consequence Area. The concerns include:

> (1) Changes to the Integrity Management Plan, performing a damage mechanism review (such as new management threats), increased corrosion/erosion, changes to inspection intervals, etc.
>
> (2) Any increases in DAPL operating pressure, close to or over the existing MOP and reductions to existing operating pressure safety margins.
>
> (3) Upgrades to existing pipeline Safety Instrumented Systems (SIS) such as Surge Relief Valves, Emergency Shutdown and Interlock Systems, SCADA communications, Pump Controllers, Leak Detection Systems, Emergency Flow Restriction Devices, etc. addressing the increased risk associated with larger WCD volumes and align SIS capabilities with more challenging Process Safety Time requirements.
>
> (4) Changes to the Operations and Maintenance Manual.
>
> (5) Revised spill model and downstream receptor report.

[231] *See also* U.S. Pipeline and Hazardous Materials Safety Administration, *Guidance to Operators Regarding Flow Reversals, Product Changes and Conversion to Service* that API RP 1160 recommends as guidance for pipeline throughput increases as well.

(6) Revised surge relief and maximum allowable operating pressure (MAOP) analysis.

(7) Revised credible WCD and alternative scenarios.

(8) Revised Facility Response Plan and Geographic Response Plan including revised tactics and increased requirements for personnel and equipment. The applicable DOT pipeline regulations provide that "Each operator shall update its response plan to address new or different operating conditions or information."[232]

(9) Revised risk analysis due to increased environment risk. Such a conclusion under API RP 1173 would likely require a decision that the throughput increase was unsafe or the risk to Tribe and the environment was unacceptable given the existing equipment, personnel and safety system performance.

[232] 40 CFR §194.121(a).

XVII. THE EIS MUST IDENTIFY ENVIRONMENTAL EFFECTS OF DAPL, INCLUDING THE CUMULATIVE IMPACTS TO PEOPLE, LAND, WATER, AND THE EARTH

A. DAPL Disrupts Existing Tribal Land Uses

The CEQ regulations require the Corps to fully evaluate the environmental effects of DAPL. This includes the direct effects, indirect effects and cumulative effects of the DAPL in combination with other federal actions. It also includes:

> Possible conflicts between the proposed action and the objectives of… in the case of an Indian tribe… land use plans, policies and controls for the area concerned.[233]

The Corps of Engineers must include in the environmental effects analysis the fact that the Standing Rock Sioux Tribe's land use in the affected area is residential, cultural and agricultural, not industrial. Existing Tribal land uses have already been significantly impacted by DAPL. The potential for catastrophic adverse impact to longstanding Tribal land uses in the affected area mandates the permanent shutdown of DAPL.

B. DAPL's Cumulative Impacts with Corps of Engineers' Management of Missouri River Water Flows

The Corps must account for the cumulative effect of DAPL, with the construction and operation of the Missouri River main stem dams. Under NEPA, environmental effects include "economic, social, or health" effects.[234] As described above, the socioeconomic effects of the relocation of Cannon Ball and other Tribal communities continue to be experienced today. The closure of the gates of Oahe Dam was decades ago, but the historical trauma and environmental effects, for NEPA purposes, linger today, and must be identified as a cumulative impact in the DAPL EIS.

This applies to the regulation of the water levels of Lake Oahe under the Missouri River Master Water Control Manual. The Corps of Engineers' Missouri River operations focus on downstream navigation and water intakes, to the detriment of water uses on the

[233] 40 CFR §1502.16(c).
[234] 40 CFR §1508.8(b).

Standing Rock Reservation. In 2003, water releases for downstream navigation, in combination with drought conditions, caused low water levels in Oahe Reservoir. Excessive silt deposits resulted in the breakdown of the Fort Yates intake for the Reservation water system. On November 23, 2003, three Tribal communities lost their drinking water supplies for ten days. The Corps of Engineers' water releases contributed to adverse environmental conditions, that led to a public health crisis on the Standing Rock Reservation.

This demonstrates the significant and adverse environmental and public health impact that the Corps' Missouri River operations impose on the Standing Rock Sioux Tribe, today. Moreover, the significant variations in the water levels of the Oahe Reservoir, caused by the lack of adaptive management by the Corps in the operation of the main stem dams, necessitates a much more vigorous spill model than that produced by Energy Transfer.

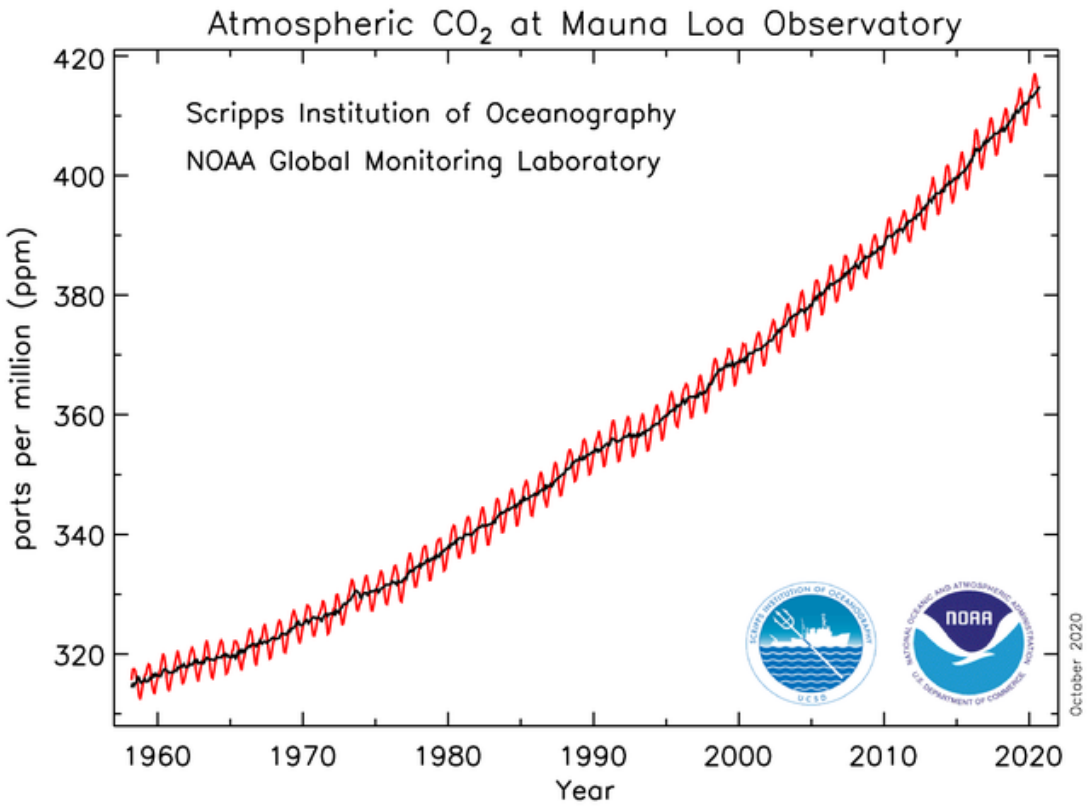
C. The Corps Must Reject DAPL due to the Cumulative Impacts to Global Climate

1. Anthropogenic CO_2 emissions with other GHGs are Causing Warming of Earth's surface and climate change.

In 1896, Svant Arrhenius, a Swedish chemist, understanding the basic physics of how molecules like CO_2 differentially transmit shortwave solar radiation, but absorb longwave thermal radiation, postulated that the then new practice of burning fossil fuels emitting CO_2 could one day warm the global atmosphere. In 1958, Dr. David Keeling began the modern monitoring of atmospheric CO_2 at Mauna Loa, Hawaii, a remote location not near any local CO_2 sources. As Arrhenius postulated, the monitoring proved that CO_2 has continued to rise every year from 1958 to the present from an initial concentration of 316 ppm in 1958, to a global monthly average level of 409.8 ppm in 2019.[235]

[235] https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide#:~:text=The%20global%20average%20atmospheric%20carbon,plus%20or%20minus%200.1%20ppm.

Figure 2 Atmospheric CO2 concentration measured at Mauna Loa observatory from 1958 to the present. https://www.esrl.noaa.gov/gmd/ccgg/trends/



The Mauna Loa measurements are now replicated at dozens of stations world-wide, all of which confirm the growing CO_2 concentrations, and have annual peak readings of 407 – 410ppm. The continuous rise in atmospheric CO_2 has in fact caused global, and national air temperatures to rise, as measured by US weather stations. The 2018 National Climate Assessment (NCA 2018) found that air temperatures in the US had risen by 1.8degF since the beginning of the 20th Century, and that "climate change increasingly threatens Indigenous communities' livelihoods, economies, health, and cultural identities by disrupting interconnected social, physical, and ecological systems."

It is irrefutable and well known for over ten decades that as CO_2 concentrations increase, the surface of the planet warms and the oceans warm. That global warming causes climate change and has many harmful effects on ecosystems and humans is discussed below. It is as if the Earth has a constant fever, and just as in the human body,

even a slight rise in temperature weakens the organism, increases vulnerability of the organism, and can have dangerous long-term effects on the system.

2. Crude Oil and its Byproducts Extracted and Transmitted by Pipeline from North Dakota Contribute to the Degradation of the Global Climate

In 2016 the environmental group, Oil Change International, calculated that "the total emissions that would be delivered by the Dakota Access Pipeline are a factor of the average throughput and the emissions intensity of the crude oil it would deliver. We calculate that at typical utilization rates of 95% of capacity, total lifecycle emissions from producing, transporting, processing and burning the products derived from the oil would amount to **101.4 million metric tons of CO2e per year**. These emissions are equivalent to **29.5 typical U.S. coal plants** or the average emissions of **21.4 million U.S. passenger vehicles**.[236]

They used the Oil Climate Index for the life cycle emissions of Bakken crude oil and the EPA Greenhouse Gas Equivalencies Calculator for coal plant and vehicle equivalents. 95% utilization equates to average annual throughput of 541,500 barrels per day. Nearly doubling the throughput to nearly 1 million barrels per day, as the pipeline operator, Energy Transfer, has proposed, would accelerate the rate at which those emissions were released into the atmosphere. Furthermore, the weather variability and climate impacts due to increasing annual temperatures will increase the risk of an oil spill. This must be accounted for by the Corps of Engineers in the EIS for DAPL.

For these reasons, the Dakota Access Pipeline should be permanently shut down.

[236] http://priceofoil.org/2016/09/12/the-dakota-access-pipeline-will-lock-in-the-emissions-of-30-coal-plants/