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Troy "Scott" Weston

June 19, 2017

Valois Shea
U.S. Environmental Protection Agency Region 8
Mail Code 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80802-1129

Via email to shea.valois@epa.gov

RE: Oglala Sioux Tribe Comment in Opposition of the Dewey-Burdock Class III and Class V Underground Injection Well Draft Area Permits

Dear Ms. Shea:

I serve as President of the Oglala Sioux Tribe, and I write to submit testimony on behalf of the Oglala Sioux Tribal Council, in opposition to the application by Powertech, Inc. for a Class V Underground Injection Control (UIC) permit, for uranium mining waste at the proposed Dewey-Burdock project site.

An overview of our concerns is as follows:

The proposed waste injection site is within the boundaries of the Great Sioux Reservation, as defined in the Treaty of Fort Laramie of April 29, 1868. (15 Stat. 635). The United Nations Declaration of the Rights of Indigenous peoples prohibits approval of the permits without our consent, and we do not consent. In fact, the Oglala Sioux Tribe adopted Ordinance No. 07-40 explicitly declaring the Pine Ridge Indian Reservation, including its aboriginal territory boundaries, to be a nuclear-free area. Executive Order 13175 on Consultation and Coordination with Indian Tribal Governments requires all agencies to respect Treaty rights, and approval of the Dewey-Burdick permit violate the 1868 Fort Laramie Treaty. Under the Fort Laramie Treaty, and applicable principles of federal and international law, the permit must be denied.

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The Oglala Sioux Tribe possesses reserved water rights to the Cheyenne River, under the legal principles established in *United States v. Winters*, 207 U.S. 564 (1908). The interconnection of the Madison and Minnelusa aquifers and of ground and surface water at artesian springs threatens the Cheyenne headwaters with contamination. The EPA lacks adequate data to demonstrate that our waters will remain protected.

Under section 106 of the National Historic Preservation Act, the EPA must consult with the Oglala Sioux Tribal Historic Preservation Office in the identification, evaluation and determination of potential impacts to historic properties by the proposed Dewey-Burdock injection wells. (54 U.S.C. §306108). Under Executive Order 13175, the EPA must also engage in government-to-government consultation with the Oglala Sioux Tribal Council on the proposed UIC permit. (65 Fed. Reg. 67249). The attempt by EPA to combine Section 106 consultation meetings with government-to-government consultation resulted in confusion and lack of compliance with either consultation requirement.

As discussed in more detail below, for these reasons, the permit application must be denied.

THE PROPOSED DEWEY BURDOCK PERMIT VIOLATES THE 1851 FORT LARAMIE TREATY AND 1868 FORT LARAMIE TREATY

In 1848, the United States needed the permission of the *Oceti Sakowin Oyate* to establish the Oregon Trail. This resulted in the Fort Laramie Treaty of 1851, in which the United States recognized as Sioux Country a vast territory in the northern plains. (11 Stat. 749). Article V defines the territory of the Great Sioux Nation 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.

(11 Stat. 749).

The proposed Dewey-Burdock underground injection wells are clearly within the boundaries of Sioux Country as defined in Article V of the 1851 Fort Laramie Treaty. The permit application, if granted, will violate the Treaty rights of the Oglala Sioux Tribe under the 1851 Treaty.

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Soon after the Treaty was ratified by Congress, the 1863 Montana gold rush resulted in trespassers entering Sioux Country. The United States began building military outposts in Wyoming Territory, in violation of the 1851 Fort Laramie Treaty. Oglala Lakota forces led by Chief Red Cloud defeated the United States in the Powder River War of 1866-1867, forcing closure of the military forts. The United States then negotiated the Fort Laramie Treaty of April 29, 1868.

In the 1868 Treaty, the Oglala and other bands of the *Oceti Sakowin Oyate* reserved the Great Sioux Reservation, as described in Article II:

> The United States agrees that the following district of country, to wit, viz: commencing on the east bank of the Missouri river where the 46th parallel of north latitude crosses the same, thence along low-water mark down said east bank to a point opposite where the northern line of the State of Nebraska strikes the river, thence west across said river, and along the northern line of Nebraska to the 104th degree of longitude west from Greenwich, thence north on said meridian to a point where the 46th parallel of north latitude intercepts the same, thence due east along said parallel to the place of beginning; and in addition thereto, all existing reservations of the east back of said river, shall be and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that **no persons**, except those herein designated and authorized so to do, and except such officers, agents, and employees of the government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, **shall ever be permitted to pass over, settle upon, or reside in the territory described in this article**.

(15 Stat. 635).

Thus, the Great Sioux Reservation comprised all of present-day South Dakota west of the Missouri River (to the east bank), including the Black Hills. Article II recognizes the right of our Tribe to exclude PowerTech. The sacred nature of the Black Hills to the *Oceti Sakowin Oyate* is well documented – these are sacred lands that should not be desecrated in the manner described in the draft UIC permit. The Black Hills are integral to our creation story, and remain an important place for pilgrimage and ceremony by our Tribal members. Ultimately, the proposed permit violates Article II of the 1868 Fort Laramie Treaty and must be denied.

The recharge area for the Black Hills aquifers affected by the proposed DeweyBurdock permit is also protected under the 1868 Treaty. The Powder and Platte River basins were identified as Sioux Country in the 1851 Treaty. Although they lay outside

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of the Great Sioux Reservation as described in Article II of the 1868 Treaty, we retained title to these lands for hunting. Under Article XVI of the Fort Laramie Treaty of 1868, these areas are defined as unceded, and remain in Sioux ownership:

> 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.

(15 Stat. 639).

Article XI of the 1868 Treaty established a process by which a Commission would be formed, to include our head men, prior to approval of "works of utility or necessity" that may affect the Great Sioux Reservation. The Dewey-Burdock permit application may not be approved by EPA in the absence of the formation of a commission as required by Article XI of the 1868 Fort Laramie Treaty.

Under Article XII of the 1868 Treaty:

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

15 Stat. 638.

The United States violated Article XII in every unilateral land taking against the *Oceti Sakowin Oyate*.

In any event, these treaty obligations remain in effect today. As explained by the Chief Justice John Marshall –

> The Indian nations had always been considered as distinct, independent communities, retaining their original natural rights, as the undisputed possessors of the soul from time immemorial… The very term 'nation," so generally applied to them, means "a people distinct from all others." The constitution, by declaring treaties already made, as well as those to be made, the supreme law of the land, has adopted and sanctioned the previous treaties with the Indian nations, and consequently admits their rank among those powers who are capable of making treaties. The words "treaty" and "nation" are words of our own language, selected in our diplomatic and legislative

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> proceedings by ourselves, having each a definite and well understood meaning. We have applied them to Indians as we have applied them to other nations of the earth. They are all applied in the same sense.

(*Worcester v. Georgia*, 31 U.S. (6 Pet.) 515, 559-560 (1832)).

Consequently, the obligations of the United States to the Oglala Sioux Tribe under the 1851 and 1868 Fort Laramie Treaties remain in effect today. The Fort Laramie Treaties enjoy a legal status comparable to treaties with foreign nations. For this reason, the requirements of the United Nations Declaration of the Rights of Indigenous Peoples apply to the Dewey-Burdock UIC permits. Article 29 paragraph 2 prohibits approval of the proposed permits without the consent of the Oglala Sioux Tribe:

> States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.

(U.N. Doc. A/RES/61/295, Sept. 13, 2007).

In Article 37, paragraph 1, the U.N. Declaration requires compliance with our Treaty rights:

> Indigenous peoples shall have the right to the recognition, observance and enforcement of treaties.

These requirements gain special significance under international law where, as here, sacred lands are at risk. Article 25 of the U.N. Declaration provides that:

> Indigenous people have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied lands.

The Dewey-Burdock UIC permit application threatens Treaty land and water of the Oglala Sioux Tribe. The applicable principles of international law require EPA to deny the permit.

These requirements are incorporated into the laws of the United States, pursuant to Executive Order 13175 on *Consultation and Coordination with Indian Tribal Governments*. E.O. 13175 provides that:

> The United States continues to work with Indian tribes on a government-to-government basis to address issues concerning

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> Indian… treaty and other rights. **Agencies shall… honor treaty rights** and other rights.

(65 Fed. Reg. 67249).

The title to the Dewey-Burdock project area remains disputed by the Oglala Sioux Tribe. In the case of *United States v. Sioux Nation of Indians*, 448 U.S. 371, 387 (1980), the United States Supreme Court ruled that the taking of Sioux Nation treaty lands under the Act of February 2, 1877 and other laws violated the 5th Amendment of the United States constitution. In affirming a judgment of $108 million, the Court described the treatment of the Sioux Nation by the United States as "(a) more ripe and rank case of dishonorable dealings will never, in all probability, be found in our nation's history."

The Oglala Sioux Tribe and *Oceti Sakowin Oyate* have not accepted the award of money damages, and have continuously insisted that land restoration be the cornerstone of a settlement of the outstanding Treaty claims under the 1851 and 1868 Treaties. As explained by South Dakota District Judge Lawrence Piersol, "If there is to be any other resolution for these past wrongs… then (it) must come from Congress." (*Different Horse v. Salazar*, Civ. 09-4049, Memorandum Op. and Order p. 9, (D.S.D. 2009)).

Legislation has been introduced in past Congress' to return title to the lands affected by the proposed Dewy Burdock project to the *Oceti Sakowin Oyate*. E.g. 99th Cong., S. 1453 ("Sioux Nation Black Hills Act"). Indeed, the centuries-long efforts of the Oglala Sioux Tribe for the return of our sacred Black Hills has been well documented, and is on-going. Ultimately, as the largest band of the *Oceti Sakowin Oyate*, the Oglala Sioux Tribe retains an unresolved claim under the 1868 Fort Laramie Treaty to the title to the land within and surrounding the project area.

The EPA cannot ignore this claim. The proposed Class V UIC permit violates the 1851 and 1868 Fort Laramie Treaties, the United Nations Declaration of the Rights of Indigenous Peoples and Executive Order 13175. The EPA must deny the Dewey-Burdock permit application.

THE PROPOSED INJECTION WELLS THREATEN WATERS OF THE OGLALA SIOUX TRIBE

Under the principles enunciated by the United States Supreme Court in *Winters v. United States*, 207 U.S. 564 (1908), in the Fort Laramie Treaties, the Oglala Sioux Tribe reserved water rights for all present and future beneficial uses on the Pine Ridge Indian Reservation. The waters sources to fulfill our rights extend to all waters arising upon, flowing over, and bordering our Reservation, as well as to groundwater. Indian water rights are prior and superior to the state law water rights of non-Indians, because they derive from Treaties with an earlier priority date, and are recognized by federal law, and are not dependent upon state law.

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Our reserved water rights extend to the Cheyenne River. The proposed injection wells threaten the Cheyenne River watershed near its headwaters. The proposed DeweyBurdock injection wells and potential migration pathways lead to the Cheyenne River. Dewey Burdock directly threatens waters subject to the Winters Doctrine water rights claims of the Oglala Sioux Tribe.

Water rights are property rights, reserved in our Treaties. In addition to our reservation of land, our forefathers reserved the water necessary to transform our remaining landholdings into a permanent homeland for our people. This is specified in Article XV of the 1868 Fort Laramie Treaty:

> 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**.

15 Stat. 639.

Thus, our water rights extend to all waters needed for a permanent homeland. This includes the right to water free from contamination or degradation (*United States v. Gila Valley Irrigation Dist.*, 920 F.Supp. 1444 (D. Ariz. 1996). Consequently, the risk to water quality posed by approval of Dewey-Burdock will violate the Winters Doctrine water rights of the Oglala Sioux Tribe.

The administrative record fails to support the contention that the Dewey-Burdock injection wells will not result in the release of injectate into the Minnelusa formation, or to surface water in the project area. Available data demonstrates that there is potential communication between the Minnelusa and Madison aquifers, and with the surface water.

The U.S. Geologic Survey has explained:

> Ground and surface-water resources in the Black Hills area are highly inter-connected. The quality of the surface water can affect the quality of ground water, and vice versa... The Madison, Minnelusa, and Minnekahta aquifers are especially sensitive to contamination, because of secondary permeability and potential for streamflow recharge.

(USGS, *Atlas of Water Resources in the Black Hills Area, South Dakota*, Water Resources Investigations Atlas HA-747, 2002, pp. 59, 71).

The EPA acknowledges that there is downward flow from the Minnelusa formation into the Madison formation, but discounts the potential for migration upward. (EPA, *Dewey-Burdock Class V Draft Area Permit Fact Sheet*, p. 30). The Madison aquifer is the source for artesian springs in this area. Contamination of the Madison formation potentially impacts surface water through artesian springs. According to

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USGS,

> Aquifer interactions can occur at artesian springs, which discharge about one-half of average recharge to the Madison and Minnelusa aquifers in the Black Hills area. Various investigators have hypothesized that the Madison aquifer is the primary source for many artesian springs.

(Naus et al, *Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota*, Water Resources Investigations Report 01-4129, 2001, p. 2).

The potential pathway for migration of injectate into the Madison aquifer (per EPA) and then into surface water (per USGS) is improperly discounted by EPA. The agency has failed to given proper consideration of the potential existence of pathways resulting from unidentified faults or future seismic activity. The EPA finding that "the nearest potential pathway for fluid movement out of the injection zone in the Dewey area is the Dewey fault," is not supported by adequate data, in light of the regional seismology. (EPA, *Dewey Burdock Class V Draft Area Permit Fact Sheet*, p. 26).

Abandoned exploration wells are ubiquitous in the project area, and likewise provide potential pathways for injectate. (*In re PowerTech (USA) Inc.*, LaGarry, Supplemental Written Testimony, ASLB, Doc. 40-9075-MLA, Nov. 21, 2014). The EPA has failed to consider the potential for abandoned or poorly constructed wells to affect the migration of contaminants.

The directional flow of the groundwater confirms our concern with the migration of pollutants. Horizontal flow has been confirmed for the Inyan Kara formation, and is possible for the Minnelusa aquifer. The recharge area from outcroppings flows toward the Cheyenne watershed. There is an interconnection between surface and groundwater in this area, especially at artesian springs.

The EPA lacks adequate data to support a finding of no migration pathways for contaminants that may be released from the injection wells. The proposed permit relies upon future test results and findings by PowerTech Inc. But EPA has already determined that data provided by PowerTech is unreliable.

The *Dewey Burdock Class V Draft Area Permit Fact Sheet* indicates that PowerTech overstated the critical pressure calculations for injectate into the valuable Madison aquifer by 400-500 percent. (EPA, *Dewey Burdock Class V Draft Area Permit Fact Sheet*, p. 26). Yet the proposed permit relies upon data from PowerTech to determine thickness and interconnection of aquifer formations, test results, and corrective action. The reliance upon PowerTech to provide reliable data to determine the impacts of underground injection is a fatal flaw for the protection of public health and the environment.

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This actual risk posed to water quality in the Cheyenne River watershed is likewise discounted in EPA's *Draft Cumulative Effects Analysis*. The analysis fails to calculate the combined impact of the risk posed by the Dewey-Burdock wells with the impoundment of the Cheyenne River at the Bureau of Reclamation Angostura Unit. Angostura Dam diminishes the water flows of the Cheyenne River on the Pine Ridge Indian Reservation. It interrupts the high spring flows needed for cottonwood regeneration, diminishing the abundance of important plant species used by the Lakota people in ceremonies. Operation of the dam also degrades wildlife habitat on the Pine Ridge Indian Reservation. The return flows from irrigation contain pesticides, heavy metals, and sodium.

According to the South Dakota Department of Environment and Natural Resources:

> The Cheyenne River water quality continues to be generally poor, due to both natural and agricultural sources… During normal or lower flow periods, the upper Cheyenne often exceeds irrigation water quality standards for specific conductance and sodium absorption ratio.

(SD DENR, 2016 Integrated Report for Surface Water Quality, p. 89).

Dewey-Burdock imposes additional risk to an already-impaired Cheyenne River watershed. The cumulative impact of the risk posed by the injection of waste from in situ Uranium extraction with the degradation caused by the Angostura Unit is necessary. However, the EPA *Draft Cumulative Effects Analysis* fails to do so.

Moreover, the accumulation of heavy metals and radionuclides at Angostura must be taken into account by EPA. According to Sharma, et al:

> Delta sediments of Angostura Reservoir were markedly enriched in V, Zn, and U. Uranium was also elevated from the mine spoil and drainages at near U mines sampled near Dewey… Generally, elevated heavy metal concentration existed in both the upper and lower reaches of the Cheyenne River catchment, with higher concentration in the upper reaches indicative of rapid sedimentation processes.

Rohit Sharma, et al, *Stream Sediment Geochemistry of the Upper Cheyenne River Watershed within the Abandoned Uranium Mining Region of the Southern Black Hills, South Dakota, USA*, ENVIRON. EARTH. SCI. (2016) 75:823.

Thus, researchers from the S.D. School of Mines and Technology have uncovered that uranium and mining waste have contaminated the upper Cheyenne River. Contaminants have migrated to Angostura Reservoir, and the active transportation process threatens the Pine Ridge Indian Reservation downstream. The EPA fails to give adequate consideration to the combined risk posed by this pollution with the proposed injection of mining waste

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at Dewey-Burdock. As a result, the *Draft Cumulative Effects Analysis* fails to accurately describe the risk posed to the Oglala Sioux Tribe.

Ultimately, the proposed Dewey-Burdock injection wells pose a risk of potential migration of injectate, through faults and secondary porosity in areas connecting with artesian springs. As a result, the proposed waste injection project directly jeopardizes the waters of the Oglala Sioux Tribe. EPA must deny the Dewey-Burdock permit.

EPA FAILED TO COMPLY WITH THE CONSULTATION REQUIREMENTS OF NHPA SECTION 106

Under Section 106 of the National Historic Preservation Act, "The head of any Federal agency… prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, shall take into account the effect of the undertaking on any historic property." (54 U.S.C. §306108). In the administrative record, EPA has acknowledged that the need to comply with this requirement. However, EPA's *National Historic Preservation Act Draft Compliance and Review Document* fails to demonstrate compliance with NHPA Section 106.

The draft document purports to demonstrate consultation with the OST THPO by reference to a separate document of the Nuclear Regulatory Commission, captioned *Summary of Meeting with OST Regarding the Dewey-Burdock In Situ Uranium Recovery Project. May 19, 2016*. This meeting does not constitute Section 106 compliance by EPA.

The *Summary of Meeting* document states:

> The purpose of the meeting was twofold: (i) to introduce the NRC's new management team responsible for the consultation process with the Oglala Sioux Tribe and the Tribe's new Tribal Historic Preservation Office staff, and (ii) to start the dialogue, on a Government-to-Government basis, regarding a path forward for consultation with the Oglala Sioux Tribe to address the Atomic Safety and Licensing Board's findings…

(www.nrc.gov/docs/ml1618ml16182a069.pdf).

The meeting was about a related action by a separate agency, and not specifically about the identification, evaluation and determination of impacts from the proposed UIC injection wells to be permitted by EPA. It does not constitute compliance by EPA with NHPA Section 106. There were no members of the Oglala Sioux Tribal Council at the meeting. It was not government-to-government consultation in compliance with E.O. 13175. The meeting combined and confused the two separate consultation requirements, and complied with neither requirement.

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The Table beginning on page 7 of the *National Historic Preservation Act Draft Compliance and Review Document* likewise combines the issues of section 106 consultations and government-to-government meetings. On page 9, the Table lists "April 28, 2016 Consultation meeting with the Oglala Sioux Tribe," described as "In-person meeting at the Oglala Sioux Justice Center." The EPA totally confused the governmentto-government consultation requirement under E.O. 13175 with the NHPA Section 106 consultation requirement – and complied with neither requirement.

The lack of NHPA Section 106 consultation is evidenced by the failure to address the OST THPOs concerns with the Programmatic Agreement, as discussed in the May 19, 2016 meeting between the Tribe and NRC. The lack of government-to-government consultation is evidenced by EPA's failure to comply with OST Ordinance No. 11-10 (*Ordinance Establishing Procedures for Government-to-Government Consultation Between the Oglala Sioux Tribe and the United States*). Ultimately, EPA failed to comply with the consultation requirements of federal law, and the Dewey-Burdock UIC permit applications must be denied accordingly.

I further express my support for the related concerns of the consolidated intervenors in this docket, as well as the testimonies of the Tribal Historic Preservation Officers of the *Oceti Sakowin Oyate*.

The concerns of the Oglala Sioux Tribe must be fully considered and acted upon by EPA. Approval of the Dewey-Burdock injection well application would violate the 1851 and 1868 Fort Laramie Treaties. Consequently, it violates federal and international law. It poses extreme risk to the waters of the Oglala Sioux Tribe, reserved under the Winters Doctrine. The EPA has given no consideration to these valuable property rights of our Tribe. Important consultation requirements under NHPA Section 106 and E.O. 13175 have been avoided and confused. EPA has failed to comply with these important consultation requirements. Further, the EPA has failed to consider the cumulative impacts of its actions on water quality and impact on the Pine Ridge Indian Reservation. For these reasons and as further described in the attached addendum, the Dewey-Burdock Class V UIC permit application must be denied.

Additional comments of the Oglala Sioux Tribe providing more detail are attached in the addendum hereto and incorporated herein.

Sincerely,

Troy S. Weston, President
Oglala Sioux Tribe

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ADDENDUM TO OGLALA SIOUX TRIBE COMMENTS

I. Consultation Under the National Historic Preservation Act and Need for Cultural Resource Survey

The federal courts have addressed the strict mandates of the National Historic Preservation Act:

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

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

The Advisory Council on Historic Preservation ("ACHP"), the independent federal agency created by Congress to implement and enforce the NHPA, determines the methods for compliance with the NHPA's requirements. See *National Center for Preservation Law v. Landrieu*, 496 F. Supp. 716, 742 (D.S.C.), *aff'd per curiam,* 635 F.2d 324 (4th Cir. 1980). The ACHP's regulations "govern the implementation of Section 106," not only for the Council itself, but for all other federal agencies. *Id.* See also *National Trust for Historic Preservation v. U.S. Army Corps of Eng'rs*, 552 F. Supp. 784, 790-91 (S.D. Ohio 1982).

NHPA § 106 ("Section 106") requires federal agencies, prior to approving any "undertaking," such as the UIC permits for the proposed Dewey-Burdock Project, to "take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register." 16 U.S.C. § 470(f). Section 106 applies to properties already listed in the National Register, as well as those properties that may be eligible for listing. See *Pueblo of Sandia v. United States*, 50 F.3d 856, 859 (10th Cir. 1995). Section 106 provides a mechanism by which governmental agencies may play an important role in "preserving, restoring, and maintaining the historic and cultural foundations of the nation." 16 U.S.C. § 470.

If an undertaking is the type that "may affect" an eligible site, the agency must make a reasonable and good faith effort to seek information from consulting parties, other members of the public, and Native American tribes to identify historic properties in the area of potential effect. 36 C.F.R. § 800.4(d)(2). See also *Pueblo of Sandia*, 50 F.3d at

859-863 (agency failed to make reasonable and good faith effort to identify historic properties).

The NHPA also requires that federal agencies consult with any "Indian tribe ... that attaches religious and cultural significance" to the sites. 16 U.S.C. § 470(a)(d)(6)(B). Consultation must provide the tribe "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 C.F.R. § 800.2(c)(2)(ii).

Apart from requiring that an affected tribe be involved in the identification and evaluation of historic properties, the NHPA requires that "[t]he agency official shall ensure that the section 106 process is initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking." 36 C.F.R. § 800.1(c) (emphasis added). The ACHP has published guidance specifically on this point, reiterating in multiple places that consultation must begin at the earliest possible time in an agency's consideration of an undertaking, even framing such early engagement with the Tribe as an issue of respect for tribal sovereignty. ACHP, Consultation with Indian Tribes in the Section 106 Review Process: A Handbook (November 2008), at 3, 7, 12, and 29.

Regarding respect for tribal sovereignty, the NHPA requires that consultation with Indian tribes "recognize the government-to-government relationship between the Federal Government and Indian tribes." 36 C.F.R. § 800.2(c)(2)(ii)(C). See also Presidential Executive Memorandum entitled "Government-to-Government Relations with Native American Tribal Governments" (April 29, 1994), 59 Fed. Reg. 22951, and Presidential Executive Order 13007, "Indian Sacred Sites" (May 24, 1996), 61 Fed. Reg. 26771. The federal courts echo this principle in mandating all federal agencies to fully implement the federal government's trust responsibility. See *Nance v. EPA*, 645 F.2d 701, 711 (9th Cir. 1981) ("any Federal Government action is subject to the United States' fiduciary responsibilities toward the Indian tribes").

Whenever there is ambiguity interpreting or applying NHPA, or other laws, the federal agency staff is not entitled to "deference to an agency interpretation of an ambiguous statutory provision involving Indian affairs. In the usual circumstance, '[t]he governing canon of construction requires that 'statutes are to be construed liberally in favor of the Indians, with ambiguous provisions interpreted to their benefit.' This departure from the [normal deference to agencies] arises from the fact that the rule of liberally construing statutes to the benefit of the Indians arises not from the ordinary exegesis, but 'from principles of equitable obligations and normative rules of behavior,' applicable to the trust relationship between the United States and the Native American people." *California Valley Miwok Tribe v. United States*, 515 F.3d 1262 (D.C. Cir. 2008) *quoting Albuquerque Indian Rights v. Lujan*, 930 F.2d 49, 59 (D.C. Cir. 1991); *Cobell v. Norton*, 240 F.3d 1081, 1101 (D.C. Cir. 2001) (*quoting Montana v. Blackfeet Tribe of Indians*, 471 U.S. 759, 766, (1985)).

EPA states that:

> Based on the information we have reviewed to date, and subject to resolving concerns identified in the NRC administrative review process, the EPA believes that the level of work completed under the auspices of the NRC on the Class III Cultural Resources Survey appears thorough and comprehensive for the APE defined by the NRC, provided the PA stipulations are followed concerning the unexpected discovery of additional historical properties.

EPA states that its consideration of the extent of cultural resource issues at the Dewey-Burdock site is based on "Section 3.9.3 of the NRC Supplemental Environmental Impact Statement prepared for the Dewey-Burdock Project (SEIS) and summarized in Appendix B of the NRC PA."

EPA's characterization of the current status of the NRC Staff's National Environmental Policy Act and National Historic Preservation Act compliance is not consistent with the Nuclear Regulatory Commission's recent ruling. See CLI-16-20 (https://www.nrc.gov/docs/ML1635/ML16358A434.pdf). In fact, the result of the Nuclear Regulatory Commission process was an express holding that the Class III archaeological study conducted at the site failed to satisfy any of the requirements associated with either the National Environmental Policy Act (NEPA) or the National Historic Preservation Act (NHPA) with respect to cultural resources.

Specifically, the NRC affirmed the Atomic Safety Licensing Board's express ruling that:

> The Board finds that the NRC Staff has not carried its burden of demonstrating that its FSEIS complies with NEPA and with 10 C.F.R. Part 40. The environmental documents do not satisfy the requirements of the NEPA, as they do not adequately address Sioux tribal cultural, historic and religious resources.

In the Matter of Powertech USA, Inc., LBP-15-16, 81 NRC 618, 708 (2015). Thus, EPA's reliance on the NRC SEIS is entirely misplaced. Indeed, there has never been a cultural resources survey conducted on the Dewey-Burdock site that took into account any Sioux cultural resources. Moreover, NRC has divided its project approval into segments rendering the scope of NRC's consultation inapplicable to EPA's UIC analysis and approvals. As such, EPA simply cannot rely on the NRC SEIS analysis in any way for such a survey.

Further, the NRC affirmed the Board's ruling that "Meaningful consultation as required by [the NHPA] has not occurred." Id. This ruling was made despite the existence of the Programmatic Agreement, which EPA suggests it might sign on to in an effort to fulfill its NHPA obligations. However, EPA appears to be unaware that the PA it references

was roundly condemned by every single Sioux tribal government that reviewed it. Indeed, not a single Tribe has agreed to be a signatory on the PA. The critique of the terms of the PA from the Tribes was severe. See attached February 5, 2014 Letter from Oglala Sioux Tribe President Bryan Brewer to NRC Staff; February 20, 2014 email from Standing Rock Sioux Tribe Historic Preservation Officer to NRC Staff (marked Exhibit NRC-016). In these letters, the Oglala Sioux Tribe identifies specific terms in the Agreement that fail to provide any detail or specificity as to future analyses of the project area, methodologies proposed for these analyses, or what mitigation measures may be adopted in the future to address the impacts. Id. at 2. The Standing Rock Sioux Tribe raises similar concerns, but goes into highly specific detail, offering not only a letter describing their frustration in dealing with the NRC Staff on this issue, but also providing multiple substantive line by line comments, questions, and critiques to the Agreement. Id. at 7-20. Unfortunately, NRC Staff did not provide any specific substantive response to either set of tribal concerns, nor did NRC Staff incorporate the changes proposed by either tribe. Instead, NRC Staff and Powertech pushed to finalize the PA without addressing the tribes' concerns.

This type of lack of meaningful consultation, in part, is what led to a NRC ruling finding a failure to comply with the NHPA consultation duties. EPA should not compound and exacerbate this failure by endorsing such a deeply flawed PA. Instead, EPA should seek to conduct a consultation effort that complies with the NHPA and meaningfully involves the Tribes in a discussion of the potentially affected cultural resources, the potential impacts to those resources, and possibly mitigation measures that can be implemented to protect those resources.

In any case, the existing PA is currently the subject of further discussion and negotiation as part of the NRC's finding that the NRC Staff has failed to comply with either NEPA or the NHPA with respect to identifying and evaluating impacts to Sioux cultural resources at the site. *See* attached May 31, 2017 letter from Oglala Sioux Tribe Historic Preservation Office; May 19, 2016 and January 31, 2017 Oglala Sioux Tribe/NRC Staff meeting summaries (all specifically identifying changes to the PA as necessary topics of ongoing NHPA consultation). As such, EPA should increase its involvement and either work to develop an agreement with the affected Tribes, including the Oglala Sioux Tribe, that properly takes into consideration the Tribes' perspectives. In the alternative, EPA should engage in the ongoing discussions between NRC and the Tribes, including the Oglala Sioux Tribe, and work toward a PA that satisfies all parties. The Oglala Sioux Tribe has a formal ordinance in effect regarding consultation, which requires the involvement of the Oglala Sioux Tribal Council. See Ordinance No. 11-10 of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe.

Notably, the record developed during the NRC hearing process demonstrates that the proposed Dewey-Burdock site contains significant cultural resources that could be impacted by the project. This fact is made clear even though no meaningful cultural resources survey has been conducted on the property. Even the Augustana Class III archaeological survey upon which EPA attempts to rely recognizes that "the sheer volume of sites documented in the area is noteworthy." Report at page 7.8. Despite this

acknowledgement, no competent Sioux cultural resources survey has ever been conducted on the site.

The NRC hearing record demonstrates that EPA simply cannot rely on the Powertech-produced Class III archaeological survey for purposes of identifying impacts to cultural resource so as to satisfy its environmental impact review or NHPA obligations. Powertech candidly admits "that identifying religious or culturally significant properties in a project area is entirely reliant of the Tribes themselves and the special expertise of the Tribal cultural practitioners.... Simply put, entities such as NRC or Powertech are not equipped with the Tribe-specific knowledge and traditions to adequately instruct a specific Tribe using 'proper scientific expertise' on this subject." See attached Powertech Opening Statement at 34. The record and testimony contains no evidence that NRC Staff successfully equipped itself or acquired the necessary resources to meet NRC's NEPA duties involving religious and cultural resources. The primary reliance by EPA on the Augustana study is not supportable – particularly given the testimony at the NRC hearing. Dr. Hannus, who lead the Augustana study at the behest of the applicant admitted that his team is not "in any way qualified to be conducting TCP surveys" and further conceded that given the heightened cultural issues of the Sioux Tribes that "there will be sites that will need to be addressed archaeologically and there will be probably sites that need to be addressed as traditional cultural properties." See attached August 19, 2014 Transcript at p. 858, lines 4-8; 12-20. See also August 19, 2014 Transcript at p. 859, lines 18-24 (Dr. Hannus) ("And again, that really should clearly, I think, show us that for us to then be able to make some kind of in roads ourselves, being not of Native background, to identification of sites that are traditional cultural properties that have a tie to spirituality and so on, it is not in our purview to do that.").

Applicant witness Dr. Luhman reiterated this point, confirming that "a traditional Level 3 survey may, in fact, encounter some resources that would be associated with Native American groups or which they would identify. But, they wouldn't necessarily identify all of the resources primarily because some of the knowledge is not available to those conducting the Level 3 survey. That would be provided by the Native American groups themselves." August 19, 2014 Transcript at p. 762, line 24 to p.763, line 6. See also, August 19, 2014 Transcript at p. 764, lines 14-18 (OST witness Mr. Mesteth) ("[w]e're the ones that are the experts, not the archaeologists. They make assumptions and hypotheses about our cultural ways and it's not accurate. Some of the information is not accurate. And that's why we object in certain situations."); p. 765, line 25 to p. 766, line 9 (Mr. Mesteth).

Indeed, Dr. Hannus testified that his office has never worked on any projects that considered the cultural resources at a site. August 19, 2014 Transcript at p. 843, lines 4-7. Despite this fact, NRC Staff witness Dr. Luhman testified that NRC Staff relied on Augustana to conduct all of the initial and follow up field survey work at the site, with the exception of the three non-Sioux tribes that submitted reports. August 19, 2014 Transcript at p. 818, lines19-22.

Upon the Sioux Tribes' request as early as 2011 that cultural resource surveys be conducted at the site, NRC Staff prompted the applicant to bring in Dr. Sabastian and her

firm to coordinate this review. August 19, 2014 Transcript at p. 784, lines 20-25 (Dr. Sabastian). However, Dr. Sabastian also testified that she also has never been involved in any kind of "actual physical on-the-ground TCP survey-kind of thing that we're talking about." August 19, 2014 Transcript at p. 846, lines 9-21.

Lastly, Mr. Fosha testified that he worked with the applicant and Augustana "from the very start of the project, so the bulk of this material is a result of myself reviewing what Augustana College had been doing in the field." August 19, 2014 Transcript at p. 865, lines 3-6. Mr. Fosha testified that he met with the applicant and between them discussed methods for identification of sites and the methods and steps to take "throughout the process," but only related to the State of South Dakota permit, and having "nothing to do with the NRC permit or anything like that" – even remarking that "up until the point where Augustana was nearly finished I was the only review agency on this project." August 19, 2014 Transcript at p. 865, line 23 to p. 866, line 5. Despite Mr. Fosha being the only person giving any direction to Dr. Hannus' Augustana team, Mr. Fosha testified that his experience and focus was solely "the field of archaeology" and not culturally as to the concerns of the Tribes. August 19, 2014 Transcript at p. 867, lines 14-20.

The only NRC Staff or applicant witness that testified to having any experience in conducting cultural resource field surveys was NRC Staff witness Dr. Luhman. However, as stated, Dr. Luhman admitted to relying exclusively on Augustana for both the initial field work and the follow up field studies, even though Dr. Hannus' testimony had confirmed that Augustana had no culturally relevant experience. August 19, 2014 Transcript at p. 818, lines19-22 (Dr. Luhman). Dr. Luhman did testify that "in those projects in which I have been involved [a cultural survey] it is typically that [the Tribes] are working alongside with the archaeological survey team as they are going about doing the survey. It could be in the preliminary stages of doing the generalized recognizance (sic) of the project area. Oftentimes the federal agency and other parties will be along that process so that there can be discussions while out in the field, and these are for sometimes very large projects. But in my experience it typically is at the same time when there is an ongoing consultative and survey process." August 19, 2014 Transcript at p. 836, line 18 to p. 837, line 2.

Consistent with the admitted lack of any culturally relevant experience or focus by any of the prior analysts in reviewing sites for cultural resource impacts, at the live hearing NRC Staff witness Ms. Yilma admitted that no written cultural resources analysis prepared during any part of the NEPA analysis included <u>any</u> comments or reports from <u>any</u> Sioux Tribes. August 19, 2014 Transcript at p. 821, lines 3-7; *id.* at p. 875, lines 6-11. This is despite testimony from NRC Staff witness Ms. Yilma as to the Staff's recognition of the importance of the area to the Sioux from a cultural perspective from the earliest stages of the application review stage. August 19, 2014 Transcript at p. 774, line 21 to p. 775, line 1. <u>See also</u>, August 19, 2014 Transcript at p. 771, lines 1-7 (Ms. Yilma). NRC Staff witness Ms. Yilma also testified as to the importance and focus at least as early as 2011 by both the Sioux Tribes and within NRC Staff on the need for culturally-based field surveys in order to fulfill the NEPA and NHPA requirements. August 19, 2014 Transcript at p. 776, line 22 to p. 777, line 3; p. 790, lines 1-17. Indeed, NRC Staff witness Ms. Yilma testified

that after meeting in 2011 with the Oglala Sioux, Standing Rock Sioux, Flandreau Santee Sioux, Sisseton Wahpeton (Sioux), Cheyenne River Sioux, and Rosebud Sioux (see August 19, 2014 Transcript at p. 810, lines 16-22), NRC Staff specifically deliberated about conducting an ethnographic study of the site to ensure incorporation of Sioux cultural and historic perspectives, but "the ultimate decision was instead of an ethnographic study a field survey was necessary, so we focused our attention on the field survey approach." August 19, 2014 Transcript at p. 846 line 22 to 847, lines 8. Despite admitting that it was "necessary" to the analysis, no cultural resources review or field study incorporating any Sioux cultural expertise was ever conducted at the site or incorporated into any NEPA document. August 19, 2014 Transcript at p. 821, lines 3-7 (Ms. Yilma); id. at p. 875, lines 6-11 (Ms. Yilma).

Taken together, this testimony and evidence establishes NRC Staff's failure to conduct the necessary hard look under NEPA, as by their own admission, despite it being necessary to the analysis, no Sioux comments or reports were incorporated into the cultural resources reviews, and none of the parties that conducted any cultural review of the site, including field surveys, were trained, experienced, or competent to review or survey the area for, let alone determine impacts from the project to, the cultural resources of Sioux origin. In answering a follow-up question by Chairman Froehlich to Dr. Hannus asking whether, as Dr. Sabastian had testified, did Dr. Hannus believe that identification of Sioux traditional sites "depends on the knowledge and traditional culture practitioners," Dr. Hannus responded: "Yes, I mean, I absolutely would have to, because there isn't any other way the framework that I work within functions." August 19, 2014 Transcript at p. 860, lines 1-8. In short, admissions and testimony confirm that NRC Staff deferred to the applicant's unqualified consultants, while rejecting proposals to incorporate Sioux cultural expertise.

As a result of Powertech's and NRC Staff's coordinated inability to fulfill their obligations to properly ensure a competent cultural resources survey of the Dewey-Burdock site before approvals are given and the aquifers are impacted, EPA cannot rely on the NRC's NEPA documents to assess the cultural resources impacts of the proposed mine. Instead, the scope of EPA's consultation must match the scope of the UIC duties, which apply to the full life of the proposed mine, not the initial set of NRC-approved segments. Similarly, because NRC Staff has failed to fulfill its government-to-government consultation duties under the NHPA, EPA also cannot rely on the PA or any other NRC Staff consultation to fulfill its own obligations under the NHPA. Rather, EPA must delay any permitting action until a fully competent cultural resources survey is conducted and the Tribe and the public has an opportunity to review and comment on the potential impacts to those important resources. Additionally, EPA should reject the PA as inadequate and engage in meaningful and good-faith consultation with the Oglala Sioux Tribe professional staff and Tribal Council in order to ensure that, in coordination with the Tribe, all cultural resources are identified, impacts are assessed and mitigation measures are developed and implemented.

II. DE FACTO RULEMAKING

A full review of the documents relevant to the proposed Dewey-Burdock project demonstrate that EPA Region 8 has taken efforts to develop what it has referred to in internal documents as "guidance" with respect to how the agency will implement its permitting authority under the Safe Drinking Water Act ("SDWA"), 42 U.S.C. §§ 300h, *et seq.*, Underground Injection Control ("UIC") program, as it relates to ISL mining and processing of uranium. This information came to light in documents obtained via a Freedom of Information Act (FOIA) request submitted in February 2009 on behalf of multiple conservation and Native American organizations in both Colorado and South Dakota. Several significant documents from this period are omitted from the records EPA has made available publicly with respect to this project. The Tribe asserts that all of the documents and records, including all emails, reflecting the coordination between EPA and Powertech and any of its consultants must be made part of the administrative record for this proceeding, and must be disclosed to the public during the public comment process in order to allow for meaningful public review and comment of the proposed Draft UIC permits. Several of these documents are attached, which represent examples of the discussions improperly omitted from the existing public record.

The full set of documents reveal EPA's and Powertech's close coordination in developing regulatory requirements for the UIC permitting process. A draft of the resulting "guidance" is attached. This "guidance" was developed in consultation with the uranium mining industry and without public notice or public involvement. As discussed herein, this process was unlawful. In order to ensure compliance with the federal Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701, *et seq.*, EPA must initiate a national rulemaking to ensure strong involvement from the public and stakeholders for the protection of underground sources of drinking water from the impacts of ISL uranium mining. In the meantime, while this rulemaking process is carried forward, EPA should suspend processing of currently filed applications for ISL uranium mining.

According to the agency's documents, the Dewey-Burdock UIC permit process currently underway through EPA Region 8 is the first instance in the nation where the EPA will be the direct permitting agency for a UIC Class III injection well for the purpose of injecting chemical fluids for dissolving and extracting uranium ores, through ISL uranium mining. The agency's documents also reveal EPA Region 8 staff concern with respect to the adequacy of the existing UIC regulations to provide the specificity necessary to directly implement the program. EPA Region 8's assessment is correct in this regard, which gives rise to serious concerns as to whether the regulations are sufficient to provide protection of underground sources of drinking water from threats posed by ISL uranium mining.

As EPA Region 8 is aware, the proposed Dewey-Burdock ISL project has created considerable controversy and drawn opposition from citizens, local governments, Native American tribal groups and governments, medical organizations, local business, agricultural interests, and conservationists based on the significant threats these ISL uranium mines pose to groundwater, local economies, public health, and cultural resources.

Overall, the documents obtained from EPA Region 8 via FOIA, including extensive email communications between EPA Region 8 staff and mining industry interests, reveal a

troubling lack of transparency and public involvement in the development of the so-called "guidance" documents. Importantly, the proposed "guidance" is highly substantive in nature and, at the least, sketches out several policy conclusions with respect to EPA's regulation of ISL uranium mines. For example, the proposed "guidance" effectively defines the terms "area of review" and "aquifer exemption boundary" as they will apply to all future EPA Region 8 UIC Class III applications. Such decisions will not only establish the equivalent of an obligatory policy for Region 8, but also have national policy implications and long-term environmental impacts. Thus, it appears that Region 8 was engaged in drafting needed changes to the UIC regulations without the benefit of the substantive and procedural protections of notice and comment rulemaking. This process neglects the rulemaking requirements of the APA and the SDWA requirement that only the Administrator may promulgate SDWA regulations. See 42 U.S.C. § 300h(a).

As noted above, there has been a lack of transparency and public involvement. The EPA Region 8 documents demonstrate that while the uranium mining industry and its scientists and consultants were extensively involved in the drafting and development of the new policies from the earliest stages, there were no efforts by EPA Region 8 to include the public or any public interest organization in the development of these important policies. An EPA Region 8 description of its activities in relation to its regulation of ISL uranium mining, including the extensive interaction with uranium industry representatives, is attached. This lack of public participation is difficult to harmonize with EPA Region 8's direct acknowledgement in the documents of the high level of public interest and controversy surrounding the subject of Powertech ISL uranium mining proposal, and its potential impact on local communities, economies, and natural resources in South Dakota. Indeed, as evidenced by the EPA's decision to revisit the uranium recovery standards, these are issues of national significance and interest.

In order to comply with both the APA and SWDA, and especially given the controversial impacts of ISL mining and the precedent-setting nature of any new regulations in this area, EPA (Region 8 or Headquarters) must suspend processing of currently filed applications and initiate a Tier 1 Rulemaking. Such an action is well grounded in past agency practice and will provide the benefit of the sound science, public participation, and careful review of available technologies and SDWA standards which are conducted during formal rulemaking. The regulatory changes are required before any further or final permits are issued. The regulatory deficiencies and changes and details included in the Region's proposed guidance represent a substantive and controversial regulatory development that implicate the agency's obligations under the SDWA and the Administrative Procedure Act ("APA"), 5 U.S.C. § 553. As the EPA is no doubt aware, the APA requires public notice and comment rulemaking whenever a federal agency embarks on substantive changes in or development of regulations. Id. The SDWA itself specifically states that "[a]ny regulation under this section shall be proposed and promulgated in accordance with section 553 of title 5 (relating to rulemaking)...." 42 U.S.C. § 300h(a)(2).

While not all federal agency policy pronouncements require APA notice and comment rulemaking, the federal courts have held that the critical factor in whether an

agency policy is properly considered an agency rule requiring APA compliance on one hand or mere guidance on the other is the extent to which the policy is binding on future agency conduct. Compliance with the APA's notice and comment rulemaking provisions is required whenever such a policy establishes a "binding norm" that effectively dictates the agency's regulatory discretion with respect to individual permitting decisions. See *Pacific Gas and Electric Co. v. Federal Power Commission*, 506 F.2d 33, 38 (D.C.Cir.1974); ***American Min. Congress v. Marshall***, 671 F.2d 1251 (10th Cir. 1982).

The "guidance" developed by Region 8 constitutes a "binding norm" in this instance. As noted above, EPA Region 8's "guidance" contains detailed analysis defining critical terms in the EPA's UIC regulations, which are to be applied to future UIC Class III permit applications (as evidenced by their application in this instance). Such definitive terms create binding norms, and these concepts must be defined by regulations promulgated through notice and comment rulemaking and approved by the Administrator, as required by law. Such notice and comment rulemaking is critical to the protection of groundwater in any proposed ISL uranium mining area. As such, APA notice and comment rulemaking in this instance is beneficial and legally required. At minimum, given the sharp controversy the Powertech ISL uranium mining project has generated in South Dakota, public involvement and participation in this rulemaking process is essential.

III. BASELINE WATER QUALITY INFORMATION IS LACKING

Powertech relies on the same data regarding the baseline water quality for its EPA permit applications as it did for its NRC license applications. The applicant has provided no significant baseline water quality information since the NRC license proceedings were conducted. Indeed, in response to comments from the Tribe during the NRC process specifically detailing the problems with lack of adequate baseline water quality data, NRC Staff confirmed that the applicant collected data from 2007 to 2009 and that "the NRC staff used this information when drafting the affected environmental section of the SEIS as well as analyzing impacts of the proposed action." FSEIS at E-32; Exhibit NRC-009-B-2.

Exacerbating these problems, NRC Staff stated that:

> the applicant will be required to conduct additional sampling if a license is granted to establish Commission-approved background groundwater quality before beginning operations in each proposed wellfield in accordance with 10 CFR Part 40, Appendix A, Criterion 5B(5). However, this does not mean that the NRC staff lacks sufficient baseline groundwater quality information to assess the environmental impacts of the proposed action.

FSEIS at E-32; Exhibit NRC-009-B. The same problems persist in the EPA UIC permitting process. The admitted data gaps, and the failure to gain additional sampling before the draft permits were issued, establishes that, like NRC Staff, EPA has not required or used the collection of any additional baseline data for its characterization of baseline water quality, but and that EPA will require additional data in the form of "well field packages" in order

to establish a credible baseline for use in the regulatory process. Thus, while the existing administrative record contains data from 2007-2009, the background water quality for use in the actual regulatory process for the facility will be established a future date, outside of any public process, and without the benefit of the public's review and comment.

This approach undermines the UIC permitting process, prevents the EPA from accurately assessing the potential impacts from the project, and prevents the public from being able to effectively review and comment on the project. The result is a lack of compliance with the SDWA and the UIC regulations.

The attached Opening Written Testimony of Dr. Robert E. Moran (Exhibit OST-001) submitted during the NRC hearing process demonstrates the failings of EPA's approach. Exhibit OST-001; Dr. Moran Opening Written Testimony at 16-18. Specifically, Dr. Moran notes the lack of analysis of impacts from past mining activities (p. 16), the lack of necessary information as to the chemical compositions and volumes of wastes, among others (p. 17), the potential bias of the data thus far provided (p. 18) along with the scientifically invalid tactic of requiring the Applicant to collect meaningful water quality data to be used in the configuration of mine design in the future and outside of the public review:

> The delayed production of this critical baseline information until after licensing is not scientifically defensible as it prevent establishment of a baseline on which to identify, disclose, and analyze environmental impacts, alternatives, and mitigation measures involved with the Dewey-Burdock proposal. A scientifically defensible monitoring and mitigation of an operating project is not possible based on the baseline data and analyses I have reviewed.

Exhibit OST-001 at 17.

The attached expert Rebuttal Testimony of Dr. Robert Moran also confirms that EPA has not adequately described the baseline conditions at the site using reasonably comprehensive data. Exhibit OST-018. For instance, Dr. Moran specifically opines that despite expectations that post-license collection of data is sufficient to fill in any gaps that currently exist, such a process deprives expert agencies, the public and the parties to this proceeding (and EPA staff) the opportunity to meaningfully review and evaluate the impacts from the proposed project during the permitting process. Exhibit OST-018, Rebuttal Testimony of Dr. Robert E. Moran at 2 (A.2).

Further, any assertions that this additional data cannot be obtained without full construction of final well-fields is unsupported and contradicted by the expert testimony of Dr. Moran. Dr. Moran opines that adequate baseline data can be gathered "without constructing the ultimate wellfield monitoring network." Id. Dr. Moran points to previous studies undertaken by TVA and Knight Piesold that conducted pump tests to gather baseline data prior to NRC approval. Id. Dr. Moran states that Powertech's consultant Mr. Demuth "confuses hydrological testing that is needed to establish, analyze, and disclose

the hydrogeological setting as part of the NEPA-based NRC permit-approval with the more specialized production tests Powertech will conduct on constructed wellfields." Id. In short, there is no legal, technical, or practical basis to forgo gathering this needed data as part of the UIC application process, or at minimum the EPA draft permit process.

At the hearing conducted in the NRC licensing process, Dr. Moran's testimony confirmed that additional data is necessary for a "complete" baseline analysis, including the collection of data for water quality constituents not presented in the company's application materials, such as strontium and lithium. See attached August 20, 2014 Transcript at p. 1007, line 24 to p. 1008, line 1. Consistent with Dr. Moran's testimony, applicant witness Mr. Demuth admitted that additional data is necessary to provide complete baseline data. Id. at p. 1012, lines 16-20.

Thus, Dr. Moran's expert opening, rebuttal, and live hearing testimony in the NRC administrative process demonstrates that EPA lacks the necessary information to meet its requirements for demonstrating a competent set of baseline data – and instead defers meaningful collection, disclosure, and analysis until a later date, only after the public have been denied the opportunity to comment on the baseline that reveals the affected environment that will be impacted. This critique is centered on EPA's plan to defer collection of baseline and to rely on future analysis of future baseline analyses conducted as part of the well field packages, to be provided only after license issuance. This is in effect an identical system adopted by NRC Staff, which deferred meaningful review of baseline information through a so-called Safety and Environmental Review Panel (SERP) – outside of its NEPA process and long after the public's opportunities for comment and review have run.

Further buttressing this argument is the attached Declaration of Dr. Richard Abitz detailing the requisite standards for scientific validity in a baseline analysis. Exhibit OST-001, at 2. See also, Moran Suppl. Decl. at ¶58 ("The [NRC Staff evaluation], like the Powertech Application, fails to define pre-operational baseline water quality and quantity—both in the ore zones and peripheral zones, both vertically and horizontally."); *accord* ¶¶ 47-74, 75, 82-84, 92-94, 95.

Overall, the Powertech submittal fails to adequately describe the affected aquifers at the site and on adjacent lands and fails to provide the required quantitative description of the chemical and radiological characteristics of these waters necessary to assess the impacts of the operation, including potential changes in water quality caused by the operations.

IV. INADEQUATE HYDROGEOLOGICAL ANALYSIS TO ASSESS POTENTIAL IMPACTS TO GROUNDWATER

The EPA analysis fails to provide sufficient information regarding the hydrologic and geological setting of the area. As a result, the documents and information provided, including the data included in the application materials, similarly fails to provide sufficient

information to establish potential effects of the project on the adjacent surface and ground-water resources, as required.

As with the NRC process, EPA relies on the applicant to submit adequate hydrogeologic data – but only **after** the public process is completed, after a final permit is issued, and with no chance for any public review. This approach violates the SDWA, EPA's UIC regulations, NEPA, and the APA because of the lack (and deferral of collection and review to a later date) of necessary data and analysis to ensure a credible review of impacts to groundwater. The evidence in the record demonstrates that the applicant has not conducted the necessary studies to identify "significant discontinuities, fractures, and channeled deposits."

This issue is addressed head-on by Dr. Moran, who provided expert testimony on the significant contradictory evidence in Powertech's data. Exhibit OST-001, at 18-22. Specifically, Dr. Moran opines on the overwhelming body of evidence undermining the conclusion that the production zone is hydraulically isolated from surrounding aquifers. Id. at 18-19. Dr. Moran further demonstrates that numerous potential pathways for groundwater conductivity, including inter-fingering sediments, fractures and faults, breccia pipes and/or collapse structures, and the 4000 to 6000 unidentified exploration boreholes present at the mine site. Id. at 20. Dr. Moran concludes that "these inconsistencies make clear that Powertech . . . failed to define the detailed, long-term hydrogeologic characteristics and behavior of the relevant Dewey-Burdock aquifers and adjacent sediments." Id.

The lack of data extends to the lack of analysis of evidence of "fault zones" in the proposed mining area (Exhibit OST-001, p. 20-21) as well as the existence of a "trench" in the potentiometric surface of the Fall River aquifer. Id. at 21. Breccia pipe formations and collapse features round out the list of potential migration pathways for which the application fails to address. Id. at 21-22.

Similarly, Dr. Moran's attached Rebuttal Testimony reinforces this issue, pointing out that Powertech's own witnesses in the NRC process have contradicted the scientific integrity of the pump test data which form the basis of the applicant's analysis. Exhibit OST-018 at 4. The Powertech consultants also contradict themselves with regard to the impact of the unidentified boreholes, arguing in some places that they may have closed by themselves, but then also that they are open, and that the effect of the boreholes have rendered the existing pump test data suspect. Id. at 3. Further, Dr. Moran affirms that the data currently forming the basis of the hydrogeological analysis underpinning the EPA's draft permits is "inadequate to establish a hydrogeological … baseline." Id. at 3. Dr. Moran concludes based on an extensive review of the information presented, including conclusions by every other scientist (except Powertech's) that has reviewed the historic pump tests at the site, that the supposed aquitards at the site are indeed leaky. Id. at 6. Dr. Moran goes into extensive detail as to the particular bases for the lack of acceptable industry-standard methodology and assumptions employed by Mr. Demuth in his conclusions as to the lack of confining ability of the formations at the site. Id. at 6-7.

These issues of fluid containment were also explored during the NRC hearing, during which serious question was cast on whether the existing analysis and assumptions relied upon by the applicant could demonstrate an ability to contain the mining fluid. As a starting point, Powertech's witness Mr. Lawrence readily admitted that in order to ensure containment of the fluid, the operator would need for the Fuson Shale to be relatively impermeable. August 20, 2014 Transcript at p. 1047, lines 20-23. However, as observed by Judge Barnett, "[i]nterpretations of both the 1979 and 2008 pumping test results were found to be consistent with a leaky confined aquifer model. ... Based on the results of the numerical model, the Applicant concluded that vertical leakage through the Fuson shale is caused by improperly installed wells or improperly abandoned boreholes. So it does appear in the FSEIS that it acknowledges that it is leaky, whether it is coming from boreholes or whatever else, it is leaky." Id. at p. 1050, line 18 to p. 1051, line 5. In response, NRC Staff witness Mr. Prikryl responded: "Yes, that's correct." Id. at p. 1051, line 8. Applicant witness Mr. Lawrence also agreed: "Yes, there were certainly conditions that demonstrated communication." Id. at 1051, lines 15-16.

The applicant witness Mr. Lawrence attempted to explain that such a "leaky" condition would have to be rectified in order to successfully contain the mining fluids. In doing so, applicant witness Mr. Lawrence stated "[t]hat goes back to the development of the wellfield data package. If you run a specific test in the area that you plan to mine, and identify leakage that is occurring, particularly if you can identify that it is an improperly abandoned borehole or improperly constructed well, as was the case in these tests, you can remedy that situation, plug the borehole, rerun the tests and show that basically you have retained confinement." Id. at p. 1051, line 22 to p. 1052, line 5. Critically, however, Mr. Lawrence then admitted that any such additional work of actually demonstrating the ability to contain the fluid would occur "outside of the FSEIS." Id. at p. 1052, lines 6-8. This admission is critical because it demonstrates that, although the applicant has admitted that impermeability of the Fuson shale is critical to effective fluid migration, and that the Fuson shale is leaking, all additional review of that significant problem will be deferred until after the EPA's draft permit process, and after any ability of the public to review and/or comment on this critical information.

Such a scheme negates the ability of the public to provide meaningful comment on the EPA's UIC permitting process. The applicant's materials and EPA draft permits provide no information on where these mysterious leaking boreholes are, or why the applicant and EPA could not have conducted available analyses described by Dr.Moran's written expert testimony to demonstrate whether they in fact could find and plug the boreholes, rerun the test(s) and demonstrate the ability to retain confinement. This lack of analysis unacceptably leaves the public in the dark as to whether this mitigation will work or what the potential impacts may be should the remedy not be successful.

Upon further questioning by Judge Barnett, the applicant witness Mr. Demuth admitted that the applicant's test data did show a lack of sufficient confinement at least in portions of the project area "where we have a well which is completed in both zones and allows it to communicate." Id. at p. 1054, lines 11-13. In that case, Mr. Demuth states, "there may be one or two unplugged exploration boreholes which are identified in the

application. So in that area, the wellfield, any wellfield test is going to have to be examined very carefully." Id. at 1054, lines 12-17. Thus, the applicant witnesses admit that sufficient study has not been completed to demonstrate the ability to contain the mining fluids, but rather a later, post-permit, detailed scientific review will be necessary to "examine" this issue "very carefully." Where such serious questions exist as to such fundamental issues as the ability to contain mining fluids, those issues must be explored and resolved prior to the close of the public's ability to comment on EPA's draft permits.

Tellingly, when NRC Staff witness Mr. Prikryl was asked the same question about how NRC Staff reconciles the past tests, admitted into evidence in that proceeding and attached here, which show leaks in the supposed confining layers at the site, Mr. Prikryl responded: "Well, I'm not familiar with this pump test, what shaft they're talking about or what the location of the pump test itself." Id. at p. 1056, lines 5-12. When queried further as to whether NRC Staff had reviewed this fundamental piece of evidence, NRC Staff witness Mr. Lancaster could not give a satisfactory answer, stating that "we requested this information is our [RAIs] and I think as I recall their conclusions were it's leaky because of a variety of reasons. And one could be the boreholes not being properly abandoned or not being abandoned at all with the correct procedure for plugging and that sort of thing. We recognize that the pump tests show that there is leakiness." Id. at p. 1056, line 25 to p. 1057, line 8.

Consistent with the admissions of NRC Staff and applicant witnesses, the FSEIS fails to conduct the analysis necessary to determine the actual cause of this leakiness or verify the borehole theory. For this reason, EPA's reliance on the NRC Staff environmental and hydrogeologic reviews is unfounded. See also Exhibit OST-018 (Rebuttal Testimony of Dr. Moran) at 3(opining that such lack of investigation fails to meet accepted scientific standards). At minimum, the Board questioning at the hearing confirms that significant questions still remain as to the hydrogeology at the site, and that instead of addressing them prior to issuing the draft permits, EPA Region 8 appears to be content to issue final permits and make these determinations only after the applicant submits its wellfield hydrogeologic data packages – long after all opportunities for public review and comment have expired. Deferring the collection and review of this critical, and admittedly necessary, information until after the permits are issued violates the SDWA, UIC regulations, NEPA, and the Administrative Procedure Act.

Similarly, testimony given by Dr. LaGarry at the NRC hearing demonstrated that the applicant's analysis, which also forms the basis of its UIC application materials, failed to account for faults and fractures in the geology at the site which could cause similar leaky conditions as have been confirmed in the confining layers at the site. See August 20, 2014 Transcript at p. 1065 line 7 to p. 1067, line 10. Upon follow up from Judge Cole, Dr. LaGarry confirmed that in his professional opinion, "that one [report] that was just shown that we were just discussing, the TVA concluded that the leakage might have been caused by an unplugged borehole or some previously as yet undescribed structural feature in that very page we were just reviewing." *Id.* at p. 1069, line 24 to p. 1070, line 4. Indeed, the TVA report referenced demonstrates faults and fractures are prevalent in the area. Exhibit OST-009 at 60. Applicant witness Mr. Lawrence responded that the study does not

conclusively demonstrate fractures in the precise permit area at issue, but his testimony falls far short of demonstrating the absence of such fractures. August 20, 2014 Transcript at p. 1071, lines 2-3. Thus, Mr. Lawrence's testimony confirms that applicant's data and analysis provided to date fails to provide a credible explanation for the TVA's leakage conclusions.

Dr. LaGarry credibly opines that "[s]o this TVA report recognizes that the whole area is fractured and that breccia pipes form along these fractures, but they didn't make it into the scientific literature for maps. But if I was to take a geological mapping field crew out there, we would find them because we're looking for them." Id. at p. 1074, lines 4-9. See also, id. at p. 1074, line 14 to p. 1077, line 23 (Dr. LaGarry discussing the commonly overlooked faults and fractures in the area); p. 1109, line 15 to p. 1111, line 2 (discussion of USGS report (attached, and referenced therein as Exhibit NRC-081 at 7) demonstrating extensive breccia pipe formation in the area).

Dr. LaGarry's (and Dr. Moran's) testimony is consistent with the attached TVA report (Exhibit OST-009), the USGS report (Exhibit NRC-081), the USGS-derived Gott map (Exhibit APP-015(f)), all of which show faults, fractures, and breccia pipes in the immediate area of the proposed project, and thus is far more credible testimony that the geology is highly variable in the area given the scientific evidence. At minimum, this corroboration between the Tribe's expert testimony and the extensive geological reports demonstrates EPA's failure to conduct the necessary physical surveys to confirm or deny the presence of these geological features – especially considering the applicant's pump tests proving leaky confining layers. Instead, EPA's draft permit materials rely on the applicant's assumptions, unsupported by empirical data or detailed site investigation, that somehow in a sea of geological fractures and faults surrounding the Black Hills and particularly in this area, the applicant's chosen site is free of geological irregularity that would affect fluid containment simply because there is no "smoking gun" in the reports showing a major fault directly crossing the site. In this case, the SDWA, UIC regulations, NEPA, and the APA require EPA to do more to reconcile the evidence in order to meet its statutory obligations. Deferring this analysis to a later date through wellfield hydrogeologic data packages or injection authorization data packages is not lawful.

Instead of conducting the rigorous scientific review necessary to determine the hydrogeology conditions of the area, as noted by Dr. Moran, Dr. LaGarry, and others in testimony and during the hearing, EPA simply proposes to allow the applicant to collect this information in the future, after all public commenting is complete and after the permits are issued, through the use of a Safety and Environmental Review Panel (SERP). Notably, this post-permit SERP review is not just a confirmation of information already in existence – including production and injection well patterns and location of monitor wells; documentation of wellfield geology (e.g., geologic cross sections and isopach maps of production zone sand and overlying and underlying confining units); pumping test results; sufficient information to demonstrate that perimeter production zone monitor wells adequately communicate with the production zone; and data and statistical methods used to compute NRC-approved background water quality. As Dr. Moran testifies, this approach

to defer the meaningful collection of data to a future, post-permit, non-public process is not scientifically-defensible. Exhibit OST-001, at 22-23.

The only additional information the applicant appears to have provided is a 2012 report from Petrotek regarding numerical modeling of the hydrogeology and the bore hole data. As EPA is aware, the NRC Staff's FSEIS, upon which EPA relies heavily, in turn relies heavily on the Petrotek report throughout its discussion of confinement issues, as well as geology and water usage impacts. Dr. Moran discusses this Petrotek modeling report and shows that it is not sufficient to resolve the issues with the existing project data. See Exhibit OST-001, Moran Opening Testimony at 23-26. Specifically, the Petrotek Report relies on inadequately detailed inputs into its model, including for hydraulic conductivity and assumptions of no water flows vertically, which is contradicted by the scientific literature, and unsupported assumptions as to the effect of unplugged boreholes in the area and the lack of any faults or fractures. Id. at 23-24. Dr. Moran further points out the contradictions between the Petrotek Report and NRC Staff conclusions in the FSEIS, upon which EPA relies, with regard to the existence of fractures or other flow paths. Id. at 24. Dr. Moran completes his review with a litany of unsupported assumptions made in the Petrotek model that skew the results and render it unreliable as a scientific tool to predict hydraulic conductivity at the site – the ability of the hydrogeology to contain the contamination associated with ISL mining. Id. at 24-26.

At the conclusion of the NRC hearing, it was divulged that Powertech had withheld significant data regarding bore holes at the proposed mine site. EPA must affirmatively request and conduct a comprehensive review of this data in order to make any conclusions regarding bore holes with regard to the SDWA and UIC requirements. Any failure by EPA to conduct its own review of this information would violate its statutory and regulatory responsibilities under the SDWA, UIC regulations, NEPA, and APA.

Regarding this post-hearing bore hole data, Dr. LaGarry provided a detailed expert review of that information which confirms his hearing testimony that there are substantial questions as to the hydrogeologic conditions at the site that warrant additional investigation and analysis. Exhibit OST-029 (Written Supplemental Testimony of Dr. Hannan LaGarry). In that document, Dr. LaGarry testifies that his review of the bore hole data demonstrates that the data discloses, at minimum: 140 open, uncased holes; 16 previously cased, redrilled open holes; 4 records of artesian water; 13 records of holes plugged with wooden fenceposts; 6 records of holes plugged with broken steel; 12 records of faults within or beside drilled holes; and 1 drawing of 2 faults and a sink hole within a drilled transect. Exhibit OST-029 at 2. Dr. LaGarry goes on to testify as to the likely consequence of these conditions, all of which support the Tribe's assertions that additional investigation of the site is necessary in order to satisfy the SDWA and UIC statutory and regulatory requirements, and in order for the applicant to demonstrate an ability to contain the mining fluids.

Lastly, the cumulative impacts analysis prepared by EPA does not appear to account for (1) the September 2014 two-page announcement from U.S. EPA stating that it has completed a Preliminary Assessment (PA) of the Darrow/Freezeout/Triangle

abandoned uranium mines located within the area of the proposed Dewey-Burdock project; and (2) the September 24, 2014 document from Seagull Environmental Technologies captioned as "Preliminary Assessment Report regarding the Darrow/Freezeout/Triangle Uranium Mine Site near Edgemont, South Dakota, EPA ID: SDN000803095." Attached, labeled Ex. OST-026.

Specifically, EPA's analysis must analyze the causation link not just between the unreclaimed surface mines and surface water contamination, but also ground water contamination. These EPA documents raise the issue of a causal link to the contamination of ground water and nearby ground water wells. The lack of analysis of these issues demonstrates a lack of basis for any findings regarding the baseline hydrogeology, and particularly groundwater connectivity issues at the site.

EPA concedes in these documents that additional data and sample collection for soils and surface waters is needed beyond what NRC Staff required or EPA has yet obtained. EPA states further that this data collection is necessary to better characterize and define source areas at the unclaimed uranium mines. Ex. OST-026 at 30. Importantly, these are the "source areas" for the "observed release to groundwater" that "has occurred at the site." Id. Thus, the fact that the proposed new sampling includes only soil and surface waters does not disconnect this issue from the "observed" ground water contamination.

Further, EPA's analysis reveals that "[s]ome significant data gaps exist within the information reported." Exhibit OST-026 at 29. BEPA analysis reveals for the first time that while "[g]roundwater samples were collected within the area of the Site from various wells; however, lack of ground water sampling data from near and upgradient of the Site limited availability of reliable background concentrations." Id. Also, EPA points out that although soil samples were collected at the site by Powertech, "of the 25 samples collected, only three were analyzed for additional radionuclides including uranium, Pb-210, and Th-230 – the other known contaminants on site." Id. Together, these EPA documents demonstrate that additional investigation is necessary at the site in order to establish the scientifically credible baseline analysis required by the SWDA, UIC regulations, NEPA, and the APA.

All considered, the discussion presented herein demonstrates that the applicant, and EPA, have failed to provide an adequate baseline geology and hydrogeology analysis and as a result fails to adequately analyze the impacts associated with the proposed mine, particularly on groundwater resources and with respect to the applicant's ability to contain mining fluid.

V. FAILURE TO ADEQUATELY DESCRIBE OR ANALYZE PROPOSED MITIGATION MEASURES

Although EPA lists various mitigation measures that may be used to lessen the impacts from the proposed mining operations, these lists lack any detail necessary for the decisionmakers or public to assess the likely effectiveness of these measures. Further, many of the most crucial mitigation proposals are simply proposals to develop mitigation plans in the future. Reliance on a future, as yet-unsubmitted, mitigation to prevent/mitigate

adverse impacts to the resources at the site fails to provide the detail necessary to gauge the impacts of the proposed mining operation.

The as-yet developed mitigation relied upon in the EPA's analysis even includes such basic and critical things as post-permit issuance pump tests and hydrologic wellfield packages to determine the ability to contain mining fluids and future consultation under the National Historic Preservation Act to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic properties. These represent fundamental aspects and impacts of the mining and in order to assess the impacts of the mine proposal cannot be simply deferred to a later date.

Similarly, the application material and EPA analysis inappropriately defers meaningful review of mitigation until later permits to be considered by the State of South Dakota. These deferred analyses include detailed monitoring and mitigation plan for the state of South Dakota permits associated with the potential land application of wastes, as well as the groundwater discharge permit for the land application. Definition of critical features are left to the future, such as the monitoring program with wells that define the perimeter of operational pollution.

Other mitigation plans left to future development include an avian and wildlife impact and mitigation plans that are being developed in concert with state and federal agencies necessary to keep wildlife from risking contamination from mine site facilities. However, the details of these plans are not proposed to be developed until approved by the South Dakota Department of Environment and Natural Resources and Game and Fish as a permit condition before any construction begins. Thus, instead of analysis in the EPA documentation, the agency simply lists possible mitigation measures without a meaningful review of the details or the effectiveness of the proposed measures. This in turn leaves the public without the ability to provide meaningful input on the mitigation plans.

Instead of presenting well-developed mitigation plans and analyzing their effectiveness in eliminating impacts, the EPA and applicant simply list and mention mitigation measures, and assert that they may be successful in eliminating or substantially reducing the Project's adverse impacts. Under relevant administrative law, a competent cumulative impact review requires that assertions of effectiveness must be supported by substantial evidence in the record. Without the necessary analysis in the impact review, EPA conclusions are arbitrary and capricious in relying on mitigation to conclude that there would be no significant impact to impacts resources.

Review of EPA's impact reviews reveals that disclosure and analysis of impacts are insufficient where the mitigation analysis consists largely, if not exclusively, of a list of plans to be developed later, outside the permitting process and the public review. For instance, with regard to the cultural resources impacts, the agency concedes that consultation is not complete, although that is the process through which impacts are assessed and mitigated. As discussed herein, reliance on a discredited Programmatic Agreement ("PA") is insufficient. Indeed, the PA itself simply defers mitigation planning to some future time.

Instead of providing a reasonably complete discussion of mitigation and providing an analysis of the effectiveness of those mitigation measures, the EPA analysis repeatedly refers to various commitments by the applicant to mitigate impacts by submitting plans in the future as a result of license conditions imposed by the draft permits and the NRC process. These future plans encompass mitigation for a broad scope of impacts, including such basic elements as requiring the applicant to conduct hydrogeological characterization and aquifer pumping tests in each wellfield to examine the hydraulic integrity of the Fuson Shale, which separates the Chilson and Fall River aquifers; a commitment from the applicant to locating unknown boreholes or wells identified through aquifer pump testing, and committing to plugging and abandoning historical wells and exploration holes, holes drilled by the applicant and any wells that fail mechanical integrity tests.

However, no discussion or analysis is provided to explain how an applicant might go about identifying abandoned holes or analyzing the effectiveness of long-after-the-fact plugging and abandonment, nor is any discussion given to what methodology or effectiveness criteria accompanies the pump tests or monitoring well systems. Similar gaps in the analysis exist in the failure of the EPA analysis to assess a plan to review groundwater restoration only for a period of 12 months. There is no support of basis for this time period, nor any discussion of the basis or effectiveness of such a time period. Further, no alternative time periods were analyzed.

Other proposed groundwater impact mitigation that lacks reasonably complete review and analysis as to effectiveness include a proposed, but unevaluated, monitoring well network for the Fall River aquifer in the Burdock area for those wellfields in which the Chilson aquifer is in the production zone in order to address uncertainties in confining properties of the Fuson Shale because leakage may occur through the Fuson Shale and draw-down induced migration of radiological contaminants from abandoned open pit mines in the Burdock area. Despite having none of this information or plans developed, the EPA nevertheless concludes that the risks of this type of contamination are expected to be small. Such unsubstantiated conclusions based on unsubmitted, unreviewed, and even undeveloped mitigation plans are not allowable under the SDWA, UIC regulations, NEPA, or APA.

Historic evidence demonstrates that ISL uranium mines have a very poor record of restoring ground water aquifers – in fact, none have ever actually restored an aquifer used to conduct ISL uranium mining. See J.K. Otton, S. Hall, "In-situ recovery uranium mining in the United States: Overview of production and remediation issues," U.S. Geological Survey, 2009 (IAEA-CN-175/87), Hall, S. "Groundwater Restoration at Uranium In-Situ Recovery Mines, South Texas Coastal Plain," USGS Open File Report 2009-1143 (2009), Darling, B., "Report on Findings Related to the Restoration of In-Situ Uranium Mines in South Texas," Southwest Groundwater Consulting, LLC (2008). The EPA cannot provide information to the public concerning unmitigated impacts where groundwater mitigation plans have not been developed or analyzed for effectiveness.

The same problems exist where the EPA analysis lacks sufficient detail and simply requires plans to be submitted in the future to address other impacts, including air impacts, land disposal of radioactive waste, wildlife protections, and BMPs for storm water control. As discussed, for the most part, these mitigation measures are simply plans to make plans at some point in the future – outside of the public process and shielded from public review or comment. Such assurances, without any details as to the mitigation to be proposed and without evaluation of how effective these restorations efforts are expected to be, do not satisfy EPA's obligations.

Other aspects of the EPA and applicant analysis suffer from the same frailty. Specific examples of mitigation measures that are vaguely and inadequately referenced include:

- Reliance on the future submission and potential issuance of a National Pollution Discharge Elimination Standards ("NPDES") permit to specify mitigation measures and best management practices ("BMPs") to prevent and clean up spills.

- A Fish and Wildlife Service ("FWS") raptor monitoring and mitigation plan has not been developed despite confirmed raptor activity in the project area.

- FWS permits to avoid and mitigate impacts to Bald Eagles' use of three existing Bald Eagle nests.

- Ongoing development of mitigation plans for listed species.

- Generic reference to working BLM mitigation and reclamation guidelines.

- Vaguely referenced and unspecified sound abatement controls.

- Generically referenced mitigation of evaporation pond impacts that are and deferred to later analysis under the Clean Air Act's Hazardous Air Pollution provisions.

- Groundwater mitigation where Powertech excluded such mitigation measures from its proposal or merely assumed compliance with applicable requirements.

In summary, EPA has not met its duty to analyze the impacts of the proposal, cumulative and otherwise.

Lastly on this point, the EPA and Powertech documents continues to rely on Powertech's intent to dispose of its liquid chemical waste via a Class V underground injection control permit. However, the disposal of waste, and particularly radioactive waste, below the lower-most aquifer that serves as an Underground Source of Drinking Water (USDW), as proposed here, is not a Class V activity. Rather, such disposal is a

Class I underground disposal well. Compare, 40 C.F.R. § 144.80(a) (Class I – deep injection) with 40 C.F.R. § 144.80(e) (Class V – shallow injection). Further demonstrating this fact is the State of South Dakota's Department of Environment and Natural Resources, which classifies any well that proposes to be used for injection of either hazardous or non-hazardous liquid waste, or municipal waste, as a Class I UIC well. See, Chart located on the State of South Dakota's website: http://denr.sd.gov/des/gw/UIC/UIC_Chart.aspx. Importantly, the State of South Dakota specifically and unambiguously precludes operation or construction of any Class I UIC wells within its borders. Indeed, the applicable regulatory provision is even broader, stating in its entirety: "Class I and IV disposal wells prohibited. No injection through a well **which can be defined as** Class I or IV is allowed." S.D. Admin. R. § 74:55:02:02 (emphasis added). This is a significant issue, which the EPA analysis must address.

VI. INADEQUATE ANALYSIS OF DISPOSAL OF SOLID 11E2 BYPRODUCT MATERIAL

The EPA and applicant documentation indicate an intent to use the White Mesa Uranium Mill near the White Mesa Ute Community in Utah as the site for disposal of the radioactive wastes (known as 11e2 Byproduct material) generated by at the proposed Powertech Facility. The EPA analysis fails to acknowledge that the White Mesa Mill is not licensed to receive or dispose of all forms of Powertech's 11e2 Byproduct Material. EPA's draft permits do not, and cannot, authorize Powertech to dispose of 11e2 Byproduct Material at White Mesa. EPA appears to have failed to compare the impacts of transporting and disposing of the solid 11e2 Byproduct Material in Utah against any other alternative disposal site. Further, EPA's cumulative impact report fails to address the cumulative impact or alternatives to Utah licensing the White Mesa Mill as the disposal facility for the ISL wastes.

The EPA documents fail to provide a meaningful review of foreseeable impacts of generating many tons of solid 11e2 Byproduct Materials. Instead, EPA relies on blanket statements that permanent disposal will simply occur in conformance with applicable laws. This uncritical approach does not analyze any of the applicable criteria of regulations applicable to such 11e2 Byproduct Material disposal.

A proper review by EPA must ensure that the impacts and alternatives of creation, storage, and disposal of mill tailings – aka 11e2 Byproduct Material - are fully analyzed and addressed. Permanent disposal of solid 11e2 Byproduct material is a central feature of the proposed mining operation and a competent review must include an analysis of the impacts or alternatives to shipment and disposal at White Mesa. The NRC environmental documents confirm that White Mesa lacks a license approval from Utah to accept and dispose of the wastes created by the draft license or other NRC-licensed ISL facilities in the region. However, neither NRC's nor EPA's analysis includes a review of the impacts such disposition would entail, compares those impacts to other reasonable disposal alternatives, or assess whether disposal at White Mesa facility can be accomplished in accordance with applicable State and federal requirements.

The EPA's cursory discussion of the disposal of Powertech's 11e2 material contains no analysis of whether or not Utah law or the Mill owner's (Energy Fuels) license would allow the interstate transport and disposal of this waste given the history of leaks and violations at the White Mesa facility. Interstate transportation impacts across the Intermountain West are evident, but are dismissed without specific analysis. The EPA presents no information on the type of containers that would be required for the shipments to White Mesa and no corresponding information on the moisture content of the solid 11e2 Byproduct Materials or the anticipated decommissioning wastes.

EPA identifies no other site that is currently licensed to dispose of 11e2 Byproduct Material, implying that no other licensed facility exists in the United States that could accept the Powertech 11e2 Byproduct Material. Whether or not this is the case, White Mesa is not currently licensed to accept Powertech wastes.

The failure to address and license the disposal of solid 11e2 Byproduct Material is not a technical deficiency that can be ignored or pushed off until a later time. EPA has a duty to provide specific information, analysis, and alternatives regarding this major feature of an ISL operation in order to allow the Tribe, the Ute Mountain Ute Tribe, the public, and other government decisionmakers to conduct a meaningful analysis of the full scope of environmental impacts involved with Powertech's proposal.

Upon selecting the White Mesa Mill as the proposed destination for the waste from this proposal and the region, as the EPA documentation has done, EPA must follow through with the necessary analysis. The cumulative impacts report lacks analysis of disposal alternatives, including, but not limited to, access, geology, hydrogeology, quantitative impacts upon water supplies for domestic use, livestock, agriculture, non-domesticated plants and animals, and qualitative on-going and subsequent impacts to water supplies due to releases of chemicals into the surface, groundwater and aquifers flowing through the disposal site. Without such an analysis, EPA, the public, other governmental entities, and the Tribe have no basis to identify and assess alternatives to the license application and find ways to avoid or mitigate possible adverse environmental impacts of the proposed mine.

EPA must provide extra scrutiny to the packaging and transport of these wastes. Other NRC-licensed ISL projects have sent unspecified liquid radioactive wastes in leaking trucks.

The apparent violations involving the Smith Ranch include:

1. the failure to accurately assess the activity of pond sediment and barium sulfate sludge waste shipments;
2. the failure to adequately report the total activity for waste and resin shipments on the associated shipping documents;
3. the failure to accurately label waste shipment packages;
4. the failure to classify and ship the waste packages as Low Specific Activity level two (LSA-II) material;

5. the failure to ship LSA-II waste material in appropriate containers;
6. the failure to ensure by examination or appropriate tests that packages were proper for the contents to be shipped and closure devices were properly secured;
7. the failure to perform evaluations or perform tests that ensured the transportation package would be capable of withstanding the effects of any acceleration and vibration normally incident to transportation;
8. the failure to provide the name of each radionuclide listed and an accurate chemical description of contents; and
9. the failure to provide function specific training to a hazmat employee concerning the requirements that are specifically applicable to the functions the employee performed.

http://www.wise-uranium.org/umopuswy.html#SMITHR (NRC Inspection Report Apr. 3, 2017) The WISE-Uranium site reports a series of problems indicating the ISL industry appears to be plagued with irregularities and other problems that question NRC's licensing and regulatory diligence. Id., see also http://www.wise-uranium.org/new.html (ISL Spill of the Day). Under these circumstances, EPA must not simply rely on NRC's assumptions and must instead diligently investigate and carry out its own analysis of the radioactive and hazardous waste stream involved with the SDWA permitting.

VII. THE EPA HAS AN INDEPENDENT DUTY TO CARRY OUT WILDLIFE SURVEYS AND TO COMPLY WITH THE ENDANGERED SPECIES ACT AND MIGRATORY BIRD TREATY ACT.

Even though the federal approval process has been segmented into individual approvals by NRC, BLM and EPA over the course of a decade, each federal agency (and staff) must satisfy out its independent duties to comply with the Endangered Species Act (16 U.S.C. § 1531 et. seq) ("ESA"), Migratory Bird Treaty Act ("MBTA"), and Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. §§ 668-668d). Each agency must demonstrate compliance before taking action that could take, kill, harm, or otherwise impact the protected species. Failure to comply with these laws can subject the agency and its staff to civil and criminal penalties, unless the harm to the protected species is allowed by a lawfully approved permit issued by the U.S. Fish and Wildlife Service ("U.S. FWS"). EPA lacks U.S. FWS's special expertise in wildlife, and it is U.S. FWS that has permitting authority under federal wildlife laws. For ESA-listed species, EPA and must use "all methods and procedures which are necessary" to "prevent the loss of any endangered species, regardless of the cost." Roosevelt Campobello Intern. Park v. U.S. E.P.A., 684 F.2d 1041, 1048-49 (1st Cir. 1982), *quoting* TVA v. Hill, 437 U.S. at 185, 188 n.34 (1978).

Powertech and NRC prepared biological surveys that were wholly inadequate and limited in scope. Over the course of a decade, those surveys have become stale and do not correspond to current ecological baselines and status of current listings. Even with the limited survey methods, NRC determined that the Powertech project may affect and even cause prohibited take to listed species, including Whooping Cranes, Greater sage grouse (active leks), Bald Eagles, and Golden Eagles. Courts have set aside agency action that lacks accurate and current data on Greater sage grouse because "inaccurate information

and unsupported assumption materially impeded informed decisionmaking and public participation. Or. Nat. Desert Ass'n v. Jewell, 840 F.3d 562, 570 (9th Cir. 2016). EPA cannot simply turn a blind eye to the protected wildlife that may be affected by the activities subject to SDWA permitting.

NRC's FSEIS confirms impacts to MTBA-listed species. See, e.g., FSEIS at 4-97 to 4-98 ("All of these birds are BLM sensitive species and protected by the MBTA."). NRC's FSEIS confirmed that prohibited take of protected species:

> NRC staff expect that similar potential impacts described in SEIS Section 4.6.1.1.1.1.2, including injury or mortality from vehicles and electrical lines, fragmentation, vegetation conversion, and loss of breeding habitat, for nongame and migratory birds will also potentially impact chestnut-collared longspur, dickcissel, loggerhead shrike, and blue-grey gnatcatcher.

FSEIS at 4-98.

EPA's ESA consultation duties, 16 U.S.C. § 1536(a)(2) ("Section 7") are triggered because Section 7 "appl[ies] to all actions in which there is discretionary Federal involvement or control." 50 C.F.R. § 402.03. "Action" is defined as "all activities or programs of any kind authorized or carried out, in whole or in part, by Federal agencies…." 50 C.F.R. § 402.02. EPA is carrying out agency action, and therefore must carry out Section 7 consultation duties or risk civil and criminal penalties for take. Similarly, Powertech does not appear to have applied for a Section 10 permit, and similarly faces ESA penalties for any "take" it may cause. 16 U.S.C. § 1539(a)(1)(B); 50 C.F.R. § 17.32(b).

NRC's FSEIS reveals that active bald eagle and other raptor nests are known to exist in and near the proposed project site. FSEIS at 4-147, *accord* at 3-46 ("Five confirmed, intact raptor nests and one potential nest site were observed within the proposed project area, and the applicant identified two additional nests within a 1.6-km [1-mi] radius of the study area (Powertech, 2009a)"). EPA's SDWA permitting thus is likely involves prohibited take under federal wildlife laws, including direct and cumulative impacts on normal breeding, feeding, and/or sheltering behavior of bald eagles due to at least one confirmed, active nest in the project area. FSEIS at 3-46 to 3-47. Similarly, MTBA-listed raptor species, including "red-tailed hawk, American kestrel, and northern harrier [which] were the most commonly seen raptor species in the proposed project area and will be the primary raptor species impacted by project activities." FSEIS at 4-149.

EPA's SDWA duties independently trigger compliance with federal wildlife laws before any decisions can be issued on Powertech's application.