

8 COST-BENEFIT ANALYSIS

8.1 Introduction

This chapter summarizes benefits and costs associated with the proposed action and the No-Action alternative. The proposed action is to issue the applicant, Powertech (USA) Inc., an NRC license. The applicant will use the license for the construction, operation, aquifer restoration, and decommissioning of the proposed Dewey-Burdock *in-situ* uranium recovery (ISR) project. Section 4.11 of this Supplemental Environmental Impact Statement (SEIS) discusses the potential socioeconomic impacts of the proposed action.

Implementation of the proposed action will generate regional and local benefits and costs. The regional and local benefits of constructing and operating the proposed Dewey-Burdock ISR Project include increases in employment, economic activity, and tax revenues. The benefits of increased tax revenues will accrue primarily to Fall River and Custer Counties, South Dakota, and the surrounding towns of Edgemont, Hot Springs, and Custer. Increases in economic activity and employment may extend to Rapid City in neighboring Pennington County and the city of Newcastle in Weston County, Wyoming. Costs associated with the proposed Dewey-Burdock ISR Project will be, for the most part, limited to the area surrounding the site. Examples of these costs include changes to current land and water use, and increased road traffic.

8.2 Proposed Action (Alternative 1)

Under the proposed action, the NRC will issue the applicant an NRC license. With this license, the applicant will construct, operate, restore the aquifer, and decommission the proposed Dewey-Burdock ISR Project. Under the proposed action, the applicant is also seeking BLM approval of its modified Plan of Operations subject to mitigation included in the license application and this draft SEIS. Following 2 years of site development and facility construction, there will be 8 years of wellfield and uranium recovery operations (see Figure 2.1-1). During the 8-year operations phase of the project, wellfield construction will continue as additional wellfields are sequentially developed along the uranium roll fronts in both the Dewey and Burdock areas. Wellfield restoration at the Dewey-Burdock site will begin immediately after production activities in the wellfields end. The applicant projects that restoration activities in the first wellfields will begin 2 years after production activities commence. Aquifer restoration activities, including restoration construction, stability monitoring, and regulatory approval of restoration, will continue for 11 years.

Some overlap between wellfield decommissioning and groundwater restoration activities is expected. Wellfield decommissioning is estimated to continue for 8 years. Decommissioning of the Burdock central processing plant and Dewey satellite facility will begin after aquifer restoration and wellfield decommissioning activities are complete. It is anticipated that these activities will take 2 years to complete (Powertech, 2009).

8.2.1 Benefits of the Proposed Action

The principal socioeconomic benefit expected to result from the Dewey-Burdock ISR Project is an increase in employment opportunities in the region. The applicant expects to directly employ 86 workers during construction and 84 workers during operations of the proposed project

(Powertech, 2009). Fewer workers will be involved in aquifer restoration and decommissioning activities (Powertech, 2010). The applicant expects nine workers will be directly involved in aquifer restoration activities and nine workers will be directly involved in decommissioning activities. As discussed in SEIS Section 4.11.1, the construction workforce will most likely not relocate permanently to the area because of the short duration (1 to 2 years) of these activities. Workers are expected to be more likely to relocate near the facility during the operations, aquifer restoration, and decommissioning phases of the proposed project.

The majority of jobs are expected to be filled by workers from outside the region. A standard employment multiplier of 0.7¹ was used to calculate the expected influx of approximately 60 jobs (i.e., 86 jobs \times 0.7 = 60) during construction, 59 jobs (i.e., 84 jobs \times 0.7 = 59) during operations, 6 jobs during aquifer restoration (i.e., 9 jobs \times 0.7 = 6), and 6 jobs during decommissioning (i.e., 9 jobs \times 0.7 = 6) activities.¹

The town nearest to the proposed project is Edgemont, with a population of 774 (USCB, 2012). However, employees supporting project activities might prefer to reside in larger surrounding communities such as Hot Springs, Custer, and Newcastle, which have populations of 3,711, 2,067, and 3,532, respectively (USCB, 2012). The influx of jobs created by the Dewey-Burdock ISR Project and the expected reduction in unemployment are expected to have a MODERATE beneficial impact to the businesses of Edgemont and a SMALL beneficial impact to the businesses of larger towns surrounding the proposed site, such as Hot Springs, Custer, and Newcastle.

In addition to job creation, the proposed project's operations and the addition of regionally based employees are expected to contribute to local, regional, and state revenues. Revenues are expected to increase through the purchase of goods and services and through the taxes levied on goods and services. Overall, the project is expected to generate \$13.54 million in total indirect business tax revenue over the lifetime of construction, operation, restoration, and decommissioning activities (Powertech, 2009). Sources of indirect business tax revenue include property taxes, sales taxes, and motor vehicle license charges.

The Special Tax Division of the Department of Revenue and Regulation of South Dakota levies a severance tax of 4.5 percent (South Dakota Codified Law 10-39A-1), as well as a 0.24 percent conservation tax (South Dakota Codified Law 10-39B-2), on the taxable value of the uranium produced from uranium milling and mining. The applicant's estimate of uranium resources to be recovered at the Dewey-Burdock ISR Project is 3.45 million kg [7.6 million lb] of uranium (as U₃O₈) (Powertech, 2009). If the applicant fully recovers this quantity of uranium and sells it at market prices of approximately \$49.25 per pound (August 6, 2012, quoted price), the severance tax is expected to yield \$16,843,500 and the conservation tax is expected to yield \$898,320 in economic benefits over the life of the project. Fall River and Custer Counties would collect 50 percent of the severance tax. The State of South Dakota collects the remainder of the severance tax and the conservation tax.

In addition, the proposed Dewey-Burdock ISR Project is expected to generate \$186,700,000 in value-added benefits over the life of the project (Powertech, 2009). These

¹The economic multiplier provides a statistical estimate of the total impact that is expected from a regional change in a given economic activity. The multiplier is a ratio of total change to initial change. The multiplier of 0.7 is used in these calculations because it is the standard employment multiplier for the milling/mining industry (Economic Policy Institute, 2003).

include employee wages and benefits; payments to self-employed individuals; payments from interest, rents, royalties, dividends, and profits; and excise and sales taxes paid on retail and commercial transactions.

8.2.2 Benefits From Uranium Production

The taxes to be generated by operations at the proposed Dewey-Burdock ISR Project will be dependent on yellowcake production levels and the number of persons employed in facility operations. The applicant projects 3.45 million kg [7.6 million lb] of uranium will be recovered. However, production of yellowcake will depend on the market price for yellowcake (as uranium) and production costs. Since 2007, the spot market price for uranium has fluctuated significantly, from a high of more than \$130 per pound in 2007 to a low of \$40 per pound in 2009. As of August 6, 2012, the price was \$49.25 per pound (UXC, 2012).

The project's potential benefits to the local community depend on the applicant's operating costs being lower than the future price of uranium. If the price of uranium falls below the costs of operation, then operations would likely be suspended or discontinued.

8.2.3 Costs to the Local Communities

Table 8.2-1 lists the towns within an 80-km [50-mi] radius of the proposed project. These towns are expected to provide the majority of the workers for the proposed project. The table also lists the population of the towns and the distances to the proposed project site. As stated in Section 8.2.1, the construction of the proposed project is expected to employ 86 workers, and if it is assumed that the majority of the construction employment requirements are filled by a workforce from outside the region, there could be an influx of 60 jobs ($86 \text{ jobs} \times 0.7^2 = 60$). Because of the short duration of construction (1 to 2 years) and small size of the construction force, the impact to housing demand would be SMALL (see SEIS Section 4.11.1.1). Workers would not be expected to bring families and school-aged children with them; therefore, there would be a SMALL impact on education services and on health and social services (see SEIS Section 4.11.1.1).

As mentioned in SEIS Section 8.2.1, the proposed project is expected to employ 84 workers during the period of operations, 9 workers during the period of aquifer restoration, and 9 workers during the period of site decommissioning. As described in SEIS Section 4.11.1.2, employment types are expected to be more technical during operations, and

Table 8.2-1. Towns Near the Proposed Dewey-Burdock ISR Project

Town	Population (2010 Estimate)	Distance From Project in km [mi]
Edgemont, SD	774	21 [13]
Custer, SD	2,067	80 [50]
Hot Springs, SD	3,711	64 [40]
Newcastle, WY	3,532	64 [40]
Source: USCB (2012)		

²The multiplier of 0.7 is used in these calculations because it is the standard employment multiplier for the milling/mining industry (Economic Policy Institute, 2003).

as a result, the majority of the operational workforce is expected to be staffed from outside the region. Therefore, it is anticipated that there will be an influx of workers into the towns closest to the project area. Specifically, it is anticipated that there will be an influx of 59 workers ($84 \text{ jobs} \times 0.7^3 = 59$) during operations, 6 jobs during aquifer restoration (i.e., $9 \text{ jobs} \times 0.7 = 6$), and 6 jobs during decommissioning (i.e., $9 \text{ jobs} \times 0.7 = 6$) activities.

It is also expected that workers moving from outside the region to communities within commuting distance of the Dewey-Burdock project site for employment opportunities will arrive with their families. The average household size in the State of South Dakota is 2.42 persons (USCB, 2012). Therefore, newly created jobs have the potential to increase the local population by as many as 172 persons ($59 + 6 + 6 = 71 \text{ workers from outside the region} \times 2.42 \text{ persons per household} = 172 \text{ persons}$). The influx of workers and their families will increase the demand for housing and may spur an increase in the construction of new homes in towns surrounding the proposed site. It is anticipated that the impact of increased housing demand and construction may be MODERATE for small towns such as Edgemont. For larger towns such as Hot Springs, Custer, and Newcastle, which have more available housing, the impact will be SMALL.

The projected population growth from the proposed project will have a SMALL impact on education infrastructure and health and social services. As assessed in SEIS Section 4.11.1, the impact on schools and education-related services during operations, aquifer restoration, and decommissioning will be SMALL. As presented in SEIS Section 3.11.7, towns surrounding the proposed project have adequate medical facilities, social services, and police, fire, and emergency medical services to accommodate the projected project workforce and their families. NRC staff discussions with city and county planners indicate that current and planned upgrades to health care facilities and hospitals in the region will accommodate projected increases in population (NRC, 2009). Furthermore, as discussed in Section 4.11.1, local governments are expected to have the capacity to effectively plan for and manage increased demand for health and social services from workers and their families relocating to towns near the proposed project.

8.3 Evaluation of Findings of the Proposed Dewey-Burdock Project

If NRC issues the applicant a license, it is anticipated that the Dewey-Burdock ISR Project will have a SMALL to MODERATE overall economic impact on the region of influence and will generate primarily regional and local benefits and costs. As discussed earlier, the regional benefits of the project are increased employment opportunities and increased economic activity that will add to tax revenues in the region. Increases in tax revenues are expected to bring the largest benefit to Fall River and Custer Counties, although economic benefits will most likely be shared by neighboring counties and communities in South Dakota and Wyoming. Social and economic costs associated with the Dewey-Burdock project will, for the most part, be limited to communities within commuting distance of the site. Table 8.3-1 summarizes the costs and benefits of the proposed Dewey-Burdock ISR Project.

8.4 No Action (Alternative 2)

Under the No-Action alternative, NRC will not approve the license application for the proposed Dewey-Burdock ISR Project and the Bureau of Land Management (BLM) will not approve the applicant's modified Plan of Operations. The No-Action alternative will result in the applicant not

³Ibid.

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Table 8.3-1. Summary of Costs and Benefits of the Proposed Dewey-Burdock ISR Project

Cost-Benefit Category	Proposed Action
Benefits	
Production Capacity	7.6 million pounds of yellowcake (as uranium)
Other Monetary:	
Severance and conservation taxes	\$17.7 million (estimated)
Indirect business tax revenues	\$13.54 million (estimated)
Nonmonetary benefits (50% of jobs would be from Custer and Fall River Counties)	86 jobs—during construction 60 jobs—local jobs from economic multiplier during construction 84 jobs—during operations 59 jobs—local jobs from economic multiplier during operations 9 jobs—during aquifer restoration 6 jobs—local jobs from economic multiplier during aquifer restoration 9 jobs—during decommissioning 6 jobs—local jobs from economic multiplier during decommissioning
Costs	
Education Infrastructure	SMALL
Health and Social Services	SMALL
Housing Demand	SMALL for larger towns (Hot Springs, Custer, Newcastle) MODERATE for Edgemont
Emergency Response	SMALL
Source: Powertech (2009, 2010)	

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3 constructing and operating the proposed project. No facilities, roads, or wellfields will be built,
4 and no pipelines will be laid as described in SEIS Section 2.1.2. No uranium will be recovered
5 from the subsurface ore body; therefore, injection, production, and monitoring wells will not be
6 installed to operate the facility. No lixiviant will be introduced in the subsurface, and no
7 buildings will be constructed to process extracted uranium or store chemicals involved in
8 that process. Because no uranium will be recovered, neither aquifer restoration nor
9 decommissioning activities will occur. No liquid or solid effluents will be generated. As a result,
10 the proposed site will not be disturbed by proposed project activities and ecological, natural, and
11 socioeconomic resources will remain unaffected. All potential environmental impacts from the
12 proposed action will be avoided. Similarly, all project-specific socioeconomic impacts
13 (e.g., employment, economic activity, population, housing, and local finance) will also
14 be avoided.

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8.5 References

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- Powertech (Powertech (USA) Inc.). "Response to U.S. Nuclear Regulatory Commission Request for Additional Information Powertech (USA) Inc. Dewey-Burdock Project Environmental Review of Application for a U.S. Nuclear Regulatory Commission Source Material License, August 2010." Docket No. 040-09075. ML102238516. Greenwood Village, Colorado: Powertech. 2010.
- Powertech. "Dewey-Burdock Project, Application for NRC Uranium Recovery License Fall River and Custer Counties, South Dakota—Environmental Report." Docket No. 040-09075. ML092870160. Greenwood Village, Colorado: Powertech. 2009.
- South Dakota Codified Law 10-39A-1. Severance Tax Imposed on Energy Minerals—Rate. South Dakota Legislature.
- South Dakota Codified Law 10-39B-2. Imposition of Tax—Rate—Payment—Disposition—Collection. South Dakota Legislature.
- USCB (United States Census Bureau). "American Factfinder, Census 2000 and 2010, 2006–2010 American Community Survey 5-Year Estimate, State and County Quickfacts." ML12248A240. 2012. <<http://factfinder.census.gov>, <http://quickfacts.census.gov>> (17 April 2012).
- UxC (The Ux Consulting Company). "Ux U₃O₈ Prices." 2012. <<http://www.uxc.com/>> (27 July 2012).

9 SUMMARY OF ENVIRONMENTAL IMPACTS

This chapter summarizes the potential environmental impacts of the proposed action and the No-Action alternative. The potential impacts of the proposed action are discussed in terms of (i) unavoidable adverse environmental impacts, (ii) irreversible and irretrievable commitments of resources, (iii) short-term impacts and uses of the environment, and (iv) long-term impacts and the maintenance and enhancement of productivity. The information is presented for each of the 13 resource areas that may be affected by the proposed Dewey-Burdock ISR Project. This information addresses the impacts during each phase of the project (i.e., construction, operation, aquifer restoration, and decommissioning). The specific impacts are described in Table 9-1.

The following terms are defined in NUREG-1748 (NRC, 2003).

- Unavoidable adverse environmental impacts: applies to impacts that cannot be avoided and for which no practical means of mitigation are available
- Irreversible: involves commitments of environmental resources that cannot be restored
- Irretrievable: applies to material resources and will involve commitments of materials that, when used, cannot be recycled or restored for other uses by practical means
- Short-term: represents the period from preconstruction to the end of the decommissioning activities and, therefore, generally affects the present quality of life for the public
- Long-term: represents the period of time following the termination of the site license, with the potential to affect the quality of life for future generations

As discussed in Chapter 4, the significance of potential environmental impacts is categorized as follows:

- SMALL: The environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource
- MODERATE: The environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource
- LARGE: The environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource

The alternatives and their environmental impacts are summarized in the following sections. Section 9.1 describes the environmental impacts from implementing the proposed action, and Section 9.2 describes the environmental impacts from implementing the No-Action alternative.

9.1 Proposed Action (Alternative 1)

Powertech (USA) Inc. (Powertech, referred to herein as the applicant) is seeking an NRC source material license for the construction, operation, aquifer restoration, and decommissioning of the proposed Dewey-Burdock ISR Project (Powertech, 2009a-c). Under

the proposed action, NRC would grant Powertech's license request. The proposed project will consist of processing facilities and sequentially developed wellfields sited in two contiguous areas: the Burdock area and the Dewey area.

Construction of the Dewey-Burdock ISR Project is expected to last about 2 years (see Figure 2.1-1). During this phase, the applicant will construct buildings, access roads, wellfields, pipelines, Class V injection wells, and potential land application areas to be used for liquid waste disposal. Operations are expected to last 8 years. Construction and operations activities would disturb approximately 98 ha [243 ac] if deep well disposal via Class V injection wells is used to dispose of treated wastewater and approximately 566 ha [1,398 ac] if land application is used to dispose of treated wastewater (Powertech, 2010).

During the operations phase, injection wells will be used to inject lixiviant (recovery) solutions into the orebody to recover uranium. Production wells will be used to recover the dissolved uranium, which then will be processed through the central plant. Finally, monitoring wells will be installed to monitor the performance of the wellfields and to mitigate potential excursions from the production zone.

Approximately 0.45 million kg [1 million lb] of U_3O_8 (triuranium octoxide) would be produced per year. After operations at a wellfield cease, the applicant will have to begin aquifer restoration, which will ensure that water quality and groundwater use from surrounding aquifers is not impacted by the proposed action.

The aquifer restoration process is expected to last about 9 years. The methods selected for aquifer restoration will depend on the liquid waste disposal option. For the Class V deep injection well disposal option, groundwater treatment using reverse osmosis (RO) with permeate injection will be the primary restoration method (Powertech, 2011). If land application is used for liquid waste disposal, then groundwater sweep with injection of clean makeup water from the Madison Formation will be used to restore the aquifer. During wellfield and facility decommissioning (expected to last 10 years), disturbed lands will be returned to their prior uses. Wells will be plugged and abandoned, and the land surface will be reclaimed.

The potential environmental impacts from the proposed action are summarized in Table 9-1.

9.2 No Action (Alternative 2)

Under the No-Action alternative, NRC would not issue a license. The applicant will neither construct buildings, roads, or wellfields nor will the facility be operated at the proposed Dewey-Burdock ISR Project. Uranium ore will not be recovered from the site, and the applicant will not receive a license. Under the No-Action alternative, there will be no impact to any of the 13 resource areas from the proposed licensing action. There will be no unavoidable adverse environmental impacts attributable to the proposed action and no relationship between local short-term or long-term uses of the environment. Therefore, there will be no irreversible and irretrievable commitment of resources.

9.3 References

10 CFR Part 20. *Code of Federal Regulations*, Title 10, *Energy*, Part 20. "Standards for Protection Against Radiation." Washington, DC: U.S. Government Printing Office.

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Powertech. "Dewey-Burdock Project, Application for NRC Uranium Recovery License Fall River and Custer Counties, South Dakota—Technical Report." Docket No. 040-09075. ML092870160. Greenwood Village, Colorado: Powertech. August 2009b.

Powertech. "Dewey-Burdock Project, Supplement to Application for NRC Uranium Recovery License Dated February 2009." Docket No. 040-09075. ML092870160. Greenwood Village, Colorado: Powertech. August 2009c.

Table 9-1. Summary of Environmental Impacts of the Proposed Action

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
Land Use (SEIS Section 4.2.1)	There will be a SMALL impact to land use. During construction and operation, the total amount of land affected by earthmoving activities to construct surface facilities, wellfields and associated infrastructure, and to build access roads will depend on the option used to dispose of liquid wastes. For Class V well injection, approximately 98 ha [243 ac] or 2 percent	No impact. There will be no irreversible and irretrievable commitment of land resources from implementing the proposed action. The duration of the project will be approximately 17 years after which time the land could be reclaimed and made available for other uses.	There will be a SMALL impact to land use from implementing the proposed action. Depending on the option used to dispose of liquid wastes, approximately 98 ha [243 ac] (Class V well injection) or 566 ha [1.398 ac] (land application) of the proposed license area will be unavailable for other uses such as grazing and recreation; oil and	There will be no long-term impact to land resources from implementing the proposed action. The land will be available for other uses at the end of the license period.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
	of the proposed license area will be disturbed. For land application, approximately 566 ha [1,398 ac] or 13 percent of the proposed license area will be disturbed. During decommissioning, land will be impacted by earthmoving activities to reclaim and reseed the affected areas.		gas exploration could coexist with the applicant's proposed action.	
Transportation (SEIS Section 4.3.1)	During the construction and operation phases, there will be a MODERATE increase in local traffic counts associated with project-related traffic on Dewey Road, the nearest road to the proposed project. Increased traffic will degrade the road surface, increase dust generation, and increase the potential for traffic accidents and wildlife and livestock kills. During all phases, there will be a SMALL increase in traffic on the more well-traveled regional roads.	There will be an irreversible and irretrievable commitment of fuel for vehicle and equipment operation, heating, commuter traffic, and regional transport.	During construction and operations, there will be a MODERATE impact due to increased traffic on Dewey Road, which will degrade the road surface, increase dust generation, and increase the potential for traffic accidents and wildlife and livestock kills. During operation, aquifer restoration, and decommissioning, there will be a SMALL increased accident risk from transporting yellowcake, ion-exchange resin, byproduct material, and hazardous chemicals. During construction, no	There will be no long-term impacts to transportation following license termination.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
			short-term hazardous material transportation impacts will occur because no chemical or radioactive material will be transported.	
Geology and Soil (SEIS Section 4.4.1)	There will be a SMALL impact on geology and soils. The construction, operations, and decommissioning phases will disturb surface soils during construction of the central and satellite plants, development of the wellfields, laying of pipelines, and construction of new access roads. These impacts will be temporary, and at the end of the decommissioning phase topsoil will be replaced and reseeded.	Soil layers will be irreversibly disturbed by the proposed action; however, topsoil salvaged during the construction phase will be stored and replaced during decommissioning. Therefore, the potential impact will be SMALL. Reseeding and recontouring will mitigate the impact to topsoil.	There will be a SMALL impact to geology and soils. No significant matrix compression or ground subsidence is expected because the net withdrawal of fluid from the production zone aquifers will be about 3 percent or less. Approximately 5.3 ha [13 ac] of topsoil will be stripped. Topsoil salvaged during the construction phase of the project will be replaced during the reclamation and reseeded processes.	There will be no long-term impacts to geology and soils following license termination.
Surface Waters and Wetlands (SEIS Section 4.5.1.1)	There will be a SMALL impact to surface water and wetlands from the proposed action. The occurrence of surface water is limited, and surface water flow in channels is intermittent. U.S. Army Corps of Engineers permits under Section 404 of	There will be no irreversible and irretrievable commitment of either surface water or wetlands from implementing the proposed action. No drainage or body of water will be significantly altered by the proposed action. The impact	There will be a SMALL impact to surface waters and wetlands. The proposed action will not discharge to perennial or ephemeral surface water drainages.	No impact. The proposed action will not discharge to perennial or ephemeral surface water drainages.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
	the Clean Water Act will be required before conducting work in jurisdictional wetlands. The applicant will use best management practices and implement a storm water pollution management plan to ensure surface water runoff from disturbed areas meets NPDES permit limits.	to wetlands will be SMALL because stream flow is intermittent and the applicant will implement best management practices to control erosion, runoff, and sedimentation.		
Groundwater (SEIS Section 4.5.2.1)	There will be a SMALL impact on groundwater from implementing the proposed action by consumption of groundwater, degradation of water quality in the ore production zone, and the drawdown in water levels in wells located outside the project boundaries that are drilled into the ore-bearing aquifer(s). The applicant will provide alternative water sources in the event of significant drawdown to private wells adjacent to the proposed project area. The establishment of an inward hydraulic gradient, as well as an applicant-installed groundwater monitoring network to detect potential	There will be a SMALL impact on groundwater resources. Between 97 and 99.5 percent of groundwater used during the ISR process at the proposed project will be treated and reinjected into the subsurface and/or applied to land irrigation areas. Between 0.5 and 3 percent of groundwater will be consumed.	Short-term impacts to groundwater will include degradation of water quality in production zones and the potential to draw down the water level in neighboring private wells. These impacts will be SMALL. The applicant will provide alternative water sources if water-level drawdowns affect water yields in domestic and livestock wells within and adjacent to the proposed project area.	There will be no long-term impacts to groundwater resources. Both the State of South Dakota and NRC require restoration of affected groundwater following operations. The groundwater quality will be restored to ensure that aquifers will not be affected. Although water levels will be affected in the short term, the water levels will eventually recover after operations and aquifer restoration are completed.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
	vertical and horizontal excursions, will limit the potential for undetected groundwater excursions that could degrade groundwater quality.			
Ecological Resources (SEIS Section 4.6.1)	There will be SMALL to MODERATE impacts until vegetation has been reestablished, and then the impact will be SMALL. Construction and decommissioning of the proposed Dewey-Burdock Project will result in short-term loss (over the ISR facility lifecycle) of vegetation on approximately 98 ha [243 ac] if deep Class V well injection is used to dispose of liquid wastes and approximately 566 ha [1,398 ac] if land application is used to dispose of liquid wastes. The short-term loss of vegetation could stimulate the introduction and spread of undesirable and invasive, nonnative species, and displacement of wildlife species. During operations and aquifer restoration, use of fences will limit.	Vegetative communities directly impacted by earthmoving activities and wildlife injuries and mortalities will be irreversible. However, the implementation of mitigation measures, such as the use of fencing to limit wildlife movement and the applicant's enforcement of speed limits, will reduce potential impacts to wildlife. Furthermore, areas impacted by earthmoving activities will be reclaimed and reseeded.	During any of the ISR phases, SMALL direct impacts to ecological resources could include injuries and fatalities to wildlife caused by either collisions with project-related traffic or habitat removal actions involving the removal of topsoil. Habitat disruption will consist of scattered, confined drill sites for the deep Class V injection well option. Large transformation of the existing habitat would be a MODERATE impact during the decommissioning phase of the deep Class V injection well disposal option and during all facility lifecycle phases of the land application option. Wildlife could be temporarily displaced by increased noise and traffic during either waste	Some of the vegetative communities that exist within the proposed Dewey-Burdock Project could be difficult to reestablish through artificial plantings, and natural seeding could take many years resulting in MODERATE long-term impacts. Wildlife species associated with those communities could experience SMALL to MODERATE long-term impacts if animal populations are reduced in number or replaced by other species with broader habitat requirements.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
	wildlife ingress and egress to wellfields		disposal option. The applicant has committed to implement mitigation measures to reduce the potential impact to SMALL for wildlife species.	
Meteorology, Climatology, and Air Quality (SEIS Section 4.7.1)	There will be a SMALL to MODERATE impact to air quality. During all four phases the generation of air pollutants results in the degradation of air quality. Combustion emissions in and around the proposed site will be lower than NAAQS and PSD Class II regulatory thresholds. Fugitive dust emissions will also be lower than these regulatory thresholds. However, due to the level and nature of fugitive emissions, there is potential for intermittent impacts to localized areas in and around the proposed site. Fugitive emission will also contribute to visibility impacts at Wind Cave National Park, but the impact from the proposed action will be minimal.	There will be no irreversible or irretrievable commitment of air resources from the proposed action.	There will be SMALL to MODERATE impacts. Fugitive dust generated from all four phases has the potential to result in short-term, intermittent impacts in and around the site particularly when vehicles travel on unpaved roads. The effect will be localized and temporary. Use of mitigation measures, such as applying water for dust suppression, will limit fugitive dust emissions.	No impact. There will be no long-term effect on air quality either from the proposed project or following license termination.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
Noise (SEIS Section 4.8.1)	There will be a SMALL impact. Two onsite dwellings (Daniels residence and Beaver Creek Ranch Headquarters) will experience noise above background levels due to their proximity to wellfields and land application areas. However, noise impacts at these residences will be short term, intermittent, and mitigated by sound abatement controls on operating equipment. Noise impacts to raptors will be mitigated by adhering to timing and spatial restrictions within specified distances of active raptor nests as determined by appropriate regulatory agencies (e.g., BLM, FWS, and SDGFP).	Not applicable.	There will be a SMALL impact on two onsite dwellings (Daniels residence and Beaver Creek Ranch Headquarters) due to their proximity to wellfields and land application areas. However, noise impacts at these residences will be short-term, intermittent, and mitigated by sound abatement controls on operating equipment.	No impact. There will be no noise impact following license termination.
Historical and Cultural Resources (SEIS Section 4.9.1)	Impact on historic and cultural resources during the ISR construction phase will be SMALL to LARGE. To mitigate the impact, NRC, BLM, SD SHPO, tribes, and the applicant will develop and execute an agreement that will formalize treatment plans for adversely impacted resources	If archaeological and historic sites cannot be avoided, or the impacts to these sites cannot be mitigated, this could result in an irreversible and irretrievable loss of cultural resources.	There will be a SMALL to LARGE impact on historic and cultural resources during the ISR construction phase. The development of an agreement between NRC, BLM, SD SHPO, tribes, and the applicant will address adverse impacts to cultural	If potential impacts from implementation of the proposed action are not mitigated, then long-term impacts to cultural and historic resources will result.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
	during construction. If other NRHP-eligible sites cannot be avoided, then treatment plans will be developed. If other historic and cultural resources are encountered during the ISR lifecycle, the applicant will notify the appropriate authorities per an unexpected discovery plan.		and historic sites and historic properties of traditional religious and cultural importance to Native American tribes. If any unidentified historic or cultural resources are encountered, work will stop and appropriate authorities will be notified per the unexpected discovery plan.	
Visual and Scenic Resources (SEIS Section 4.10.1)	There would be a SMALL impact on the visual landscape. Visual impacts from drilling and earthmoving activities that generate fugitive dust will be short term. Mitigation measures will be implemented to reduce fugitive dust and visual impacts from buildings. Center pivot irrigation systems in proposed land application areas in the Dewey area will be visible to travelers on Dewey Road; however, Dewey Road is lightly traveled with few residences. Proposed activities will be consistent with the BLM VRM Class III and IV designation for the area.	No impact.	There will be a SMALL short-term impact to the visual landscape from implementing the proposed action. The activities will be consistent with the BLM VRM Class III and IV designation of the area and the existing natural resource exploration activities in the area.	No impact. There will be no impact on the visual landscape following license termination.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
Socioeconomics (SEIS Section 4.11.1)	Implementing the proposed action will have a SMALL socioeconomic impact over the life of the project.	Not applicable.	Implementing the proposed action will have a SMALL impact on local communities.	Following license termination, workers who supported activities at the Dewey-Burdock site will need to find other employment. There will be a loss of revenue to nearby communities, Fall River and Custer Counties, and the state following license termination.
Environmental Justice (SEIS Section 4.12.1)	There will be no disproportionately high and adverse impacts to minority or low-income populations from the construction, operation, aquifer restoration, and decommissioning of the proposed Dewey-Burdock ISR Project. While certain Native Americans may have a heightened interest in cultural resources potentially affected by the proposed action, the impacts to Native Americans in this and other areas is not expected to be disproportionately high or adverse.	Not applicable.	Implementing the proposed action will have a SMALL impact on environmental justice. There will be no disproportionately high and adverse impacts to minority or low-income populations from the construction, operation, aquifer restoration, and decommissioning of the proposed Dewey-Burdock ISR Project.	There will be no long-term environmental justice impacts following license termination. While certain Native Americans have a heightened interest in cultural resources potentially affected by the proposed action, the impacts to Native Americans in this and other areas is not expected to be disproportionately high or adverse. To the extent there might be adverse impacts to historic and cultural sites of interest to Native Americans, these impacts will be mitigated by an agreement that will formalize treatment plans during construction. If NRHP-eligible

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
				sites cannot be avoided, treatment plans will be developed. If other historic and cultural resources are encountered during the ISR lifecycle, the applicant will notify appropriate authorities per an unexpected discovery plan.
Public and Occupational Health (SEIS Section 4.13.1)	There will be a SMALL impact on public and occupational health. Construction and decommissioning will generate fugitive dust emissions that will not result in a significant dose to the public or site workers. The emissions from construction equipment will be of short duration and readily dispersed into the atmosphere.	Not applicable.	There will be a SMALL impact from radiological exposure. Dose calculations under normal operations showed that the highest potential dose within the proposed project area is 6 percent of the 1 mSv [100 mrem] per year public dose limit specified in NRC regulations. The radiological impacts from accidents will be SMALL for workers if procedures to deal with accident scenarios are followed, and SMALL for the public because of the facility's remote location. The nonradiological public and occupational health impacts from normal operations, accidents, and	No impact. There will be no long-term impact to public and occupational health following license termination.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
			chemical exposures will be SMALL if handling and storage procedures are followed.	
Waste Management (SEIS Section 4.14.1)	Solid byproduct material generation and disposal from activities implemented during all postconstruction phases of the Dewey-Burdock ISR Project will result in SMALL impacts on available disposal capacity, because permitted facilities are available to accept the wastes. Disposal of treated liquid byproduct material using Class V injection, land application, or a combination of both will be conducted in accordance with NRC effluent discharge limits in 10 CFR Part 20, Appendix B and EPA (Class V well) or state (land application) permit conditions, and impacts will be SMALL. During decommissioning, the amount of nonhazardous solid waste will exceed available local landfill capacity and will result in MODERATE impacts unless local capacity is expanded prior to decommissioning or waste is shipped to a	The energy consumed during the ISR phases, the construction materials used that could not be reused or recycled, and the space used to properly handle and dispose of all waste types (i.e., wells for liquid wastes and permitted disposal space of solid wastes) will represent an irretrievable commitment of resources, resulting in a SMALL to MODERATE impact.	During all phases, hazards associated with handling and transport of wastes will represent a short-term and SMALL impact.	During all phases, permanent disposal of liquid wastes in onsite injection wells will represent a SMALL impact on the long-term productivity of the land allocated for these wells. Buildup of constituents in soil from potential land application of treated liquid wastes could affect productivity of irrigated land, but proposed monitoring is expected to detect potential problems early, resulting in a SMALL impact.

Table 9-1. Summary of Environmental Impacts of the Proposed Action (continued)

Impact Category	Unavoidable Adverse Environmental Impacts	Irreversible and Irretrievable Commitment of Resources	Short-Term Impacts and Uses of the Environment	Long-Term Impacts and the Maintenance and Enhancement of Productivity
	larger regional landfill; then impacts will be SMALL.			

1

10 LIST OF PREPARERS

This section documents all individuals who were involved with the preparation of this Supplemental Environmental Impact Statement. Contributors include staff from the U.S. Nuclear Regulatory Commission and consultants. Each individual's role, education, and experience are outlined next.

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APPENDIX A
CONSULTATION CORRESPONDENCE

CONSULTATION CORRESPONDENCE

The Endangered Species Act of 1973, as amended, and the National Historic Preservation Act of 1966, as amended, require that Federal agencies consult with applicable State and Federal agencies and groups prior to taking action that may affect threatened and endangered species, essential fish habitat, or historical and archaeological resources. This appendix contains consultation documentation related to these federal acts.

Table A-1. Chronology of Consultation Correspondence

Author	Recipient	Date of Letter	ADAMS Accession Number
U.S. Nuclear Regulatory Commission (K. Hsueh)	Fish and Wildlife Conservation Office (P. Gober)	March 15, 2010	ML100331503
U.S. Nuclear Regulatory Commission (K. Hsueh)	Cheyenne River Sioux Tribe (J. Brings Plenty)	March 19, 2010*	ML100331999
U.S. Fish and Wildlife Service (S. Larson)	U.S. Nuclear Regulatory Commission (K. Hsueh)	March 29, 2010	ML100970556
U.S. Nuclear Regulatory Commission (K. Hsueh)	Oglala Sioux Tribe (T. Two Bulls)	September 8, 2010	ML102450647
Turtle Mountain Band of Chippewa	U.S. Nuclear Regulatory Commission	April 7, 2010	ML101100137
U.S. Nuclear Regulatory Commission (K. Hsueh)	Standing Rock Sioux Tribe (R. His Horse is Thunder)	September 10, 2010*	ML102520308
Three Affiliated Tribes, Mandan Hidatsa Arikara (P. "No Tears" Brady)	U.S. Nuclear Regulatory Commission (K. Hsueh)	September 20, 2010	ML102780369
Sisseton Wahpeton Oyate (D. Desrosiers)	U.S. Nuclear Regulatory Commission (H. Yilma)	October 1, 2010	ML103050026
Sisseton Wahpeton Oyate (D. Desrosiers)	U.S. Nuclear Regulatory Commission (K. Hsueh)	November 2, 2010	ML103200287
Rosebud Sioux Tribe (R. Eagle Bear)	U.S. Nuclear Regulatory Commission (K. Hsueh)	November 7, 2010	ML103270443
U.S. Nuclear Regulatory Commission (H. Yilma)	Lower Brule Sioux Tribe (C. Green)	November 12, 2010	ML103330215
Lower Brule Sioux Tribe (M. Jandreau)	U.S. Nuclear Regulatory Commission (K. Hsueh)	November 15, 2010	ML103340146
U.S. Nuclear Regulatory Commission (H. Yilma)	Yankton Sioux Tribe (L. Gravatt)	November 22, 2010	ML103330220
Yankton Sioux Tribe (L. Gravatt)	U.S. Nuclear Regulatory Commission (K. Hsueh)	December 3, 2010	ML110030430
Standing Rock Sioux Tribe (A. Swallow)	U.S. Nuclear Regulatory Commission (K. Hsueh)	December 8, 2010	ML110030700
U.S. Nuclear Regulatory Commission (K. Hsueh)	Advisory Council on Historic Preservation (J. Fowler)	December 15, 2010	ML103270171

Table A–1. Chronology of Consultation Correspondence (continued)

Author	Recipient	Date of Letter	ADAMS Accession Number
Oglala Sioux Tribe (M. Catches Enemy and W. Mesteth)	U.S. Nuclear Regulatory Commission (K. Hsueh)	January 31, 2011	ML110340107
U.S. Nuclear Regulatory Commission (L. Camper)	Crow Tribe of Montana (C. Black Eagle)	March 4, 2011*	ML110550535
Crow Tribe (H.B. Two Leggins)	U.S. Nuclear Regulatory Commission (H. Yilma)	March 10, 2011	ML110690166
U.S. Nuclear Regulatory Commission (L. Camper)	Yankton Sioux Tribe (L. Gravatt)	May 12, 2011*	ML111320395
U.S. Nuclear Regulatory Commission (K. Hsueh)	Powertech (USA) Inc. (R. Blubaugh)	August 12, 2011	ML112170237
Powertech (USA) Inc. (R. Blubaugh)	U.S. Nuclear Regulatory Commission (K. Hsueh)	August 31, 2011	ML112700464
U.S. Nuclear Regulatory Commission (K. Hsueh)	Oglala Sioux Tribe (Mr. James Laysbad)	October 20, 2011*	ML112440097
U.S. Nuclear Regulatory Commission (K. Hsueh)	Oglala Sioux Tribe (Mr. James Laysbad)	October 28, 2011*	ML112980555
U.S. Bureau of Land Management (M. Atkins)	U.S. Nuclear Regulatory Commission (L. Camper)	November 22, 2011	ML113340322
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	January 19, 2012†	ML120330066
Sisseton Wahpeton Oyate (D. Desrosiers)	U.S. Nuclear Regulatory Commission (H. Yilma)	January 24, 2012	ML12031A279
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	March 6, 2012†	ML120670079
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	March 9, 2012†	ML120730509
U.S. Nuclear Regulatory Commission (L. Camper)	Apache Tribe of Oklahoma (Mr. L. Maynahonah)	March 19, 2012*	ML120600178
U.S. Nuclear Regulatory Commission (L. Camper)	Apache Tribe of Oklahoma (Mr. L. Maynahonah)	March 26, 2012*	ML120670319
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	April 5, 2012†	ML12130A067
U.S. Nuclear Regulatory Commission (H. Yilma)	Tribal Historic Preservation Officers	April 20, 2012‡	ML121180264
U.S. Nuclear Regulatory Commission (L. Camper)	Crow Creek Sioux Tribe (Mr. D. Big Eagle)	May 7, 2012*	ML121250102
U.S. Nuclear Regulatory Commission (L. Camper)	Oglala Sioux Tribe (Mr. J. Yellow Bird Steele)	May 23, 2012*	ML12143A185
U.S. Nuclear Regulatory Commission (K. Hsueh)	Northern Cheyenne Tribe (C. Fisher)	June 20, 2012*	ML12172A356
U.S. Nuclear Regulatory Commission (K. Hsueh)	Standing Rock Sioux Tribe (W. Young)	June 26, 2012*	ML12177A319

Table A–1. Chronology of Consultation Correspondence (continued)

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U.S. Nuclear Regulatory Commission (L. Camper)	Northern Arapaho Tribe (Mr. J. Shakespeare)	June 29, 2012*	ML12181A324
Powertech (USA) Inc. (R. Blubaugh)	U.S. Nuclear Regulatory Commission (H. Yilma)	July 20, 2012	ML12213A694
U.S. Nuclear Regulatory Commission (H. Yilma)	Tribal Historic Preservation Officers	August 7, 2012‡	ML12261A375
U.S. Nuclear Regulatory Commission (H. Yilma)	Tribal Historic Preservation Officers	August 9, 2012‡	ML12261A429
U.S. Nuclear Regulatory Commission (H. Yilma)	Tribal Historic Preservation Officers	August 20, 2012‡	ML12261A463
U.S. Nuclear Regulatory Commission (H. Yilma)	Tribal Historic Preservation Officers	August 21, 2012‡	ML12261A454
Powertech (USA) Inc. (R. Blubaugh)	U.S. Nuclear Regulatory Commission (K. Hsueh)	August 29, 2012	ML12243A158
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	August 30, 2012‡	ML12261A470
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	September 18, 2012†	ML12264A594
U.S. Nuclear Regulatory Commission (K. Hsueh)	Powertech (USA) Inc. (R. Blubaugh)	October 4, 2012	ML12278A185
U.S. Nuclear Regulatory Commission (L. Camper)	Crow Tribe of Montana (C. Black Eagle)	October 11, 2012*	ML12283A156
U.S. Nuclear Regulatory Commission (K. Hsueh)	Tribal Historic Preservation Officers	October 12, 2012†	ML12286A310
*Similar letters were sent to tribes listed in SEIS Section 1.7.3.5. †Letter sent via email to tribes listed in SEIS Section 1.7.3.5. ‡Email sent to tribes listed in SEIS Section 1.7.3.5.			

March 15, 2010

Pete Góber
Fish and Wildlife Conservation Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408

SUBJECT: REQUEST FOR INFORMATION REGARDING ENDANGERED OR
THREATENED SPECIES AND CRITICAL HABITAT FOR THE POWERTECH
INC. PROPOSED DEWEY-BURDOCK IN-SITU RECOVERY FACILITY NEAR
EDGEMONT, SOUTH DAKOTA (Docket 040-09075)

Dear Mr. Góber:

The U.S. Nuclear Regulatory Commission (NRC) has received an application from Powertech Inc. (Powertech) for a new radioactive source materials license to develop and operate the Dewey-Burdock Project located near Edgemont, South Dakota in Fall River and Custer Counties. The facility, if licensed, would use an *in-situ* recovery methodology to extract uranium at the Dewey-Burdock site. The proposed project area consists approximately of 10,560 acres (4,282 ha) located on both sides of Dewey Road (County Road 6463) and portions of Sections 1-5, 10-12, 14, and 15, Township 7 South, Range 1 East and Sections 20, 21, 27, 28, 29, and 30-35, Township 6 South, Range 1 East, Black Hill Meridian. A map showing the proposed project boundary is enclosed (Powertech Figure 1.4-1).

As established in Title 10 *Code of Federal Regulations* Part 51 (10 CFR 51), the NRC regulation that implements the National Environmental Policy Act of 1969, as amended, the agency is preparing a Supplemental Environmental Impact Statement (SEIS). In accordance with Section 7 of the Endangered Species Act, the SEIS will include an analysis of potential impacts to endangered or threatened species or critical habitat in the proposed project area. To support the environmental review, the NRC is requesting information from the U.S. Fish and Wildlife Service to facilitate the identification of endangered or threatened species or critical habitat that may be affected by the proposed project. After a careful review and assessment of all the comments received, the NRC will determine what additional actions are necessary to comply with Section 7 of the Endangered Species Act.

The Powertech Dewey-Burdock Project license application is publicly available in the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agency Wide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The accession numbers for the Powertech application including the environmental report is ML092870160.

P. Gober

2

Please submit any information that you may have regarding this environmental review within 30 days of the receipt of this letter to NRC, Attention: Mr. Kevin Hsueh, Mail Stop T8F05, Washington, DC 20555. If you have any questions, please contact Ms. Haimanot Yilma of my staff by telephone at 301-415-8029 or by email at Haimanot.Yilma@nrc.gov. Thank you for your assistance.

Sincerely,

/RA/

Kevin Hsueh, Chief
Environmental Review Branch-B
Environmental Protection and
Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09075

Enclosure: Powertech Figure 1.4-1

cc:
Stan Michals
South Dakota Game Fish and Parks
523 East Capitol Avenue
Pierre, SD 57501

March 19, 2010

Joseph Brings Plenty, Chairman
Cheyenne River Sioux Tribe
P.O. Box 590
Eagle Butte, SD 57625-0590

SUBJECT: INVITATION FOR FORMAL CONSULTATION UNDER NATIONAL HISTORIC PRESERVATION ACT SECTION 106 AS WELL AS REQUEST FOR INFORMATION REGARDING TRIBAL HISTORIC AND CULTURAL RESOURCES POTENTIALLY AFFECTED BY THE POWERTECH INC. PROPOSED DEWEY-BURDOCK IN-SITU RECOVERY FACILITY NEAR EDMONT SOUTH DAKOTA

Dear Chairman Plenty:

The U.S. Nuclear Regulatory Commission (NRC) has received an application from Powertech Inc. (Powertech) for a new radioactive source materials license to develop and operate the Dewey-Burdock Project located near Edgemont, South Dakota in Fall River and Custer Counties. The facility, if licensed, would use an *in-situ* recovery methodology to extract uranium at the Dewey-Burdock site. The proposed project area consists of approximately 10,580 acres (4,282 ha) located on both sides of Dewey Road (County Road 6463) and portions of Sections 1-5, 10-12, 14, and 15, Township 7 South, Range 1 East and Sections 20, 21, 27, 28, 29, and 30-35, Township 6 South, Range 1 East, Black Hill Meridian. A map showing the proposed project boundary is enclosed (Powertech Figure 1.4-1).

The South Dakota State Historic Preservation Officer identified the Cheyenne River Sioux Tribe as potentially attaching religious and cultural significance to historic properties in the project area. By this letter, the NRC invites the Cheyenne River Sioux Tribe to participate as a consulting party in the National Historic Preservation Act Section 106 process. If the Tribe would like to participate as a consulting party, please respond by writing to Mr. Kevin Hsueh.

As established in Title 10 Code of Federal Regulations Part 51 (10 CFR 51), the NRC regulation that implements the National Environmental Policy Act of 1969, as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed action. As part of the environmental review, the SEIS will include an analysis of potential impacts to historic and cultural properties and is therefore requesting input from the Cheyenne River Sioux Tribe to facilitate the identification of tribal historic sites or cultural resources that may be affected by the proposed action. Specifically, the NRC is interested in learning of any areas on the Dewey-Burdock site that you believe have traditional religious or cultural significance. After a careful review and assessment of all the comments received, the NRC will determine what additional actions are necessary to comply with 10 CFR 51 and 36 CFR 800, the implementing regulation for Section 106 of the National Historic Preservation Act.

J. B. Plenty

2

The Powertech Dewey-Burdock Project license application is publicly available in the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agency Wide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The accession numbers for the Powertech application including the Environmental report is ML092870160.

Please submit your request to be a consulting party as well as any information that you may have regarding this environmental review within 30 days of the receipt of this letter to NRC, Attention: Mr. Kevin Hsueh, Mail Stop T8F05, Washington, DC 20555. If you have any questions or comments, or need any additional information, please contact Ms. Haimanot Yilma of my staff by telephone at 301-415-8029, or email at Haimanot.Yilma@nrc.gov.

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch-B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
Figure 1.4-1

cc w/enclosure:
D. Dupris



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

March 29, 2010

Mr. Kevin Hsueh
Nuclear Regulatory Commission
Mail Stop T8F05
Washington, DC 20555

Re: Powertech Dewey-Burdock Project,
Docket 040-09075, Custer and Fall River
County, South Dakota

Dear Mr. Hsueh:

This letter is to provide environmental comments on your March 15, 2010, letter regarding the above referenced project which proposes granting a radioactive source materials license to develop and operate the Dewey-Burdock *in-situ* recovery facility near Edgemont, South Dakota. The Powertech Dewey-Burdock Project is proposed within portions of Sections 1-5, 10-12, 14 and 15, Township 7 South, Range 1 East, Fall River County, South Dakota, and Sections 20, 21, and 27-35, Township 6 South, Range 1 East, Custer County, South Dakota.

These comments have been prepared in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended. This constitutes the report of the Department of the Interior on the proposed project and is to be used in your determination of 404 (b)(1) guidelines (40 CFR 230) and in your public interest review (33 CFR 320.4) as they relate to the protection of fish and wildlife resources.

The National Wetlands Inventory indicates that numerous wetlands exist within the proposed permit boundary area. Two maps are enclosed showing wetlands found within the two initial mine units. The locations of other wetlands within the proposed permit boundary can be accessed at <http://www.fws.gov/wetlands/Data/Mapper.html>.

The U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally, if adverse impacts are unavoidable, then measures should be undertaken to replace the impacted areas.

2

The Fish and Wildlife Coordination Act and Executive Order 11990 (Protection of Wetlands) encourages the protection and conservation of wetlands. In reviewing projects that may impact wetlands, the Service encourages: 1) avoidance of wetlands, if possible, 2) minimization of impacts to wetlands if they cannot be avoided, and 3) replacement of wetland values that may be impacted by a project.

In accordance with section 7(c) of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed species may occur (this list is considered valid for 90 days) within Custer County:

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
Whooping crane (<i>Grus americana</i>)	Endangered	Migration.
Black-footed ferret (<i>Mustela nigripes</i>)	Endangered	None.

The whooping crane generally migrates through the eastern portion of Custer County, and the black-footed ferret is currently only found in the Wind Cave National Park. We have no information to indicate that these species are located within the project boundaries.

Whooping cranes migrate through South Dakota on their way to northern breeding grounds and southern wintering areas. They occupy numerous habitats such as cropland and pastures; wet meadows; shallow marshes; shallow portions of rivers, lakes, reservoirs, and stock ponds; and both freshwater and alkaline basins for feeding and loafing. Overnight roosting sites frequently require shallow water in which they stand and rest. Additionally, should mining activities occur during spring or fall migration, the potential for disturbances to whooping cranes exists. Disturbance (flushing the birds) stresses them at critical times of the year. We recommend that you remain vigilant for these birds. There is little that can be done to reduce disturbance besides ceasing activities at sites where the birds have been observed. The birds normally do not stay in any one area for long during migration. Any whooping crane sightings should be reported to this office.

Fall River County does not have any federally listed species, but the greater sage-grouse (*Centrocercus urophasianus*) is a candidate species that historically occurred in the area and has a potential to be present within the proposed area of review.

The Service determined that the species is warranted for listing pursuant to the Endangered Species Act; however, efforts in that regard will be precluded in deference to higher priority species. This finding means that the greater sage-grouse is now a candidate species for future reclassification as a threatened or endangered species under the Endangered Species Act. The 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered was published in the Federal Register 75: 13909-13958 on March 23, 2010.

3

Candidate species have no legal protection under the Endangered Species Act at the present time; however, some agencies may consider their status in their management efforts.

If the Nuclear Regulatory Agency or their designated representative determines that the project "may adversely affect" listed species in South Dakota, it should request formal consultation from this office. If a "may affect - not likely to adversely affect" determination is made for this project, it should be submitted to this office for concurrence. If a "no effect" determination is made, further consultation may not be necessary. However, a copy of the determination should be sent to this office. For more information regarding Federal action agency responsibilities as related to section 7 of the Endangered Species Act, please refer to the Service's Endangered Species Act Consultation Handbook, available online at <http://endangered.fws.gov/consultations/index.html>.

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service should be informed so that the above determinations can be reconsidered.

The Service appreciates the opportunity to provide comments. If you have any questions regarding these comments, please contact Terry Quesinberry of this office at (605) 224-8693, Extension 237.

Sincerely,



Scott Larson
Acting Field Supervisor
South Dakota Field Office

Enclosures

cc: Corps of Engineers/Regulatory; Pierre, SD

September 8, 2010

Mrs. Theresa Two Bulls
Oglala Sioux Tribe
P.O. Box 2070
Pine Ridge, SD 57770-2070

SUBJECT: REQUEST FOR UPDATED TRIBAL COUNCIL MEMBERS FOR THE OGLALA
SIOUX TRIBE

Dear President Two Bulls:

As established in Title 10 Code of Federal Regulations Part 51 (10 CFR 51), the U.S. Nuclear Commission (NRC) regulation implementing the National Environmental Policy Act of 1969, as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed action. As part of the environmental review, the SEIS will include an analysis of potential impacts of the proposed action to historic and cultural properties.

On March 19, 2010, the NRC sent a letter to your office inviting the Oglala Sioux to participate as a consulting party and requested information regarding tribal historic and cultural resources potentially affected by the proposed Dewey-Burdock ISR facility. This letter was also forwarded to the Cultural Resources Director, Michael Catches Enemy. The March 19th letter is enclosed, for your convenience.

The NRC Staff remains committed to receiving information from the Oglala Sioux concerning cultural and historical resources at the proposed Dewey-Burdock ISR facility. During the recent hearing process, the NRC staff was advised the Tribal Historic Preservation Officer and Cultural Resources Director at the Oglala Sioux tribe had changed. In an effort to ensure continued open and prompt communication between the Oglala Sioux tribe and the NRC, the NRC kindly requests the names and contact information for the new Tribal Historic Preservation Officer and the Cultural Resources Director.

T. Two Bulls

2

The NRC staff requests that you submit information regarding the new tribal officers of the Oglala Sioux tribe to the following address: Attention: Mr. Kevin Hsueh, Mail Stop T8F05, Washington, D.C. 20555. If you have any questions or comments, or need any additional information, please contact the environmental project manager, Ms. Haimanot Yilma by telephone at 301-415-8029, or email at Haimanot.Yilma@nrc.gov.

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch - B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

cc: Counsel for the Oglala Sioux Tribe
Western Mining Action Project
P. O. Box 349
Lyons, CO 80540
Jeffrey C. Parsons

Counsel for the Oglala Sioux Tribe
Gonzales Law Firm
522 7th Street, Suite 202
Rapid City, SD 57701
Grace Dugan Esq



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 19, 2010

It is the determination of the Turtle Mountain Tribal Historic Preservation Office that this project will have no effect on historic properties of importance to the Turtle Mountain Band of Chippewa Indians. A determination of No Historic Properties Affected is granted for the project to proceed.

Twila Martin-Kekabah, Chairperson
Turtle Mountain Band of Chippewa
P.O. Box 900
Belcourt, ND 58316

SUBJECT: INVITATION FOR FORMAL CONSULTATION UNDER NATIONAL HISTORIC PRESERVATION ACT SECTION 106 AS WELL AS REQUEST FOR INFORMATION REGARDING TRIBAL HISTORIC AND CULTURAL RESOURCES POTENTIALLY AFFECTED BY THE POWERTECH INC. PROPOSED DEWEY-BURDOCK IN-SITU RECOVERY FACILITY NEAR EDMONT SOUTH DAKOTA

Dear Chairperson Martin-Kekabah:

The U.S. Nuclear Regulatory Commission (NRC) has received an application from Powertech Inc. (Powertech) for a new radioactive source materials license to develop and operate the Dewey-Burdock Project located near Edgemont, South Dakota in Fall River and Custer Counties. The facility, if licensed, would use an *in-situ* recovery methodology to extract uranium at the Dewey-Burdock site. The proposed project area consists of approximately 10,580 acres (4,282 ha) located on both sides of Dewey Road (County Road 8463) and portions of Sections 1-5, 10-12, 14, and 15, Township 7 South, Range 1 East and Sections 20, 21, 27, 28, 29, and 30-35, Township 6 South, Range 1 East, Black Hill Meridian. A map showing the proposed project boundary is enclosed (Powertech Figure 1.4-1).

The South Dakota State Historic Preservation Officer identified the Turtle Mountain Band of Chippewa as potentially attaching religious and cultural significance to historic properties in the project area. By this letter, the NRC invites the Turtle Mountain Band of Chippewa to participate as a consulting party in the National Historic Preservation Act Section 106 process. If the Band would like to participate as a consulting party, please respond by writing to Mr. Kevin Hsueh.

As established in Title 10 Code of Federal Regulations Part 51 (10 CFR 51), the NRC regulation that implements the National Environmental Policy Act of 1969, as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed action. As part of the environmental review, the SEIS will include an analysis of potential impacts to historic and cultural properties and is therefore requesting input from the Turtle Mountain Band of Chippewa to facilitate the identification of tribal historic sites or cultural resources that may be affected by the proposed action. Specifically, the NRC is interested in learning of any areas on the Dewey-Burdock site that you believe have traditional religious or cultural significance. After a careful review and assessment of all the comments received, the NRC will determine what additional actions are necessary to comply with 10 CFR 51 and 36 CFR 800, the implementing regulation for Section 106 of the National Historic Preservation Act.

September 10, 2010

Ron His Horse Is Thunder, Chairman
Standing Rock Sioux Tribe
P.O. Box D
Ft. Yates, ND 58538-0522

SUBJECT: INVITATION FOR FORMAL CONSULTATION UNDER THE SECTION 106 OF
THE NATIONAL HISTORIC PRESERVATION ACT

Dear Chairman Thunder:

As established in Title 10 *Code of Federal Regulations* Part 51 (10 CFR 51), the U.S. Nuclear Regulatory Commission (NRC) regulations that implement the National Environmental Policy Act (NEPA) of 1969, as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed Powertech Inc. Dewey-Burdock In-Situ Recovery (ISR) Facility near Edgemont, South Dakota. As part of the environmental review, the SEIS will include an analysis of potential impacts of the proposed action to historic and cultural properties.

On March 19, 2010, the NRC sent a letter to your office inviting the Standing Rock Sioux Tribe to participate as a consulting party and requested information regarding tribal historic and cultural resources potentially affected by the proposed Dewey-Burdock ISR facility. A copy of the March 19th letter is enclosed, for your convenience.

To date, the NRC has not received any response from your office regarding the Tribe's interest in becoming a consulting party for the proposed Dewey-Burdock ISR facility near Edgemont South Dakota.

The NRC again extends an invitation to the Standing Rock Sioux Tribe to participate as a consulting party for the proposed Dewey Burdock ISR facility. Specifically, the NRC is interested in learning of any areas on the proposed Dewey-Burdock site that you believe have traditional religious or cultural significance and whether there are specialized concerns or information known to the Tribe that should be considered by the staff during the development of the SEIS.

The NRC staff understands that the Tribe may raise issues in consultation that should be kept confidential and nonpublic; the staff is committed to maintaining confidentiality of said information.

After a careful review and assessment of all information and comments received, the NRC will determine what additional actions are necessary to comply with 10 CFR Part 51 and 36 CFR 800, the implementing regulations for Section 106 of the National Historic Preservation Act.

R. Thunder

2

If the Tribe would like to participate as a consulting party pursuant to Section 106, the Tribe should express its interest in participating and identify areas of concern, within 60 days of receipt of this letter, to ensure that the parties will have the opportunity to engage in meaningful and productive consultation. The Tribe should forward its response to the following address: Mr. Kevin Hsueh, Mail Stop T-8F05, Washington, DC. 20555.

If you have any questions or comments, or need any additional information, please contact the environmental Project Manager, Ms. Haimanot Yilma by telephone at 301-415-8029, or email at Haimanot.Yilma@nrc.gov.

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09075

Enclosure: Letter of March 19, 2010

cc: w/enclosure
Waste' Win Young, THPO
Standing Rock Sioux Tribe
P.O Box D
Fort Yates, ND 58538



TRIBAL HISTORIC PRESERVATION

Mandan Hidatsa Arikara
Perry 'No Tears' Brady, Director,
404 Frontage Road,
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-2490
pbrady@mandan.gov

September 20, 2010

Mr. Kevin Hsueh,
Mail Stop T-8FO5,
Washington, DC 20555

Subject: Invitation for formal consultation under the section 106 of the National Historic
Preservation ACT

Dear Mr. Hsueh

After review of the documentation provided by your Office, the Mandan Hidatsa Arikara
Nations Tribal Historic Preservation Office determines there will be 'No Adverse Affect/No
Historic Properties Affected' in regard to any pre and post-historic relics, artifacts or sacred
In addition, cultural resources in the proposed Project area.

We respectfully request to be notified should any cultural/tribal issue or others arise as the
Project progresses.

Sincerely,

Perry "No Tears" Brady,
Tribal Historic Preservation Officer
Mandan Hidatsa Arikara Nations.

DeweyBurdPubEm Resource

From: Dianne Desrosiers [DianneD@SWO-NSN.GOV]
Sent: Friday, October 01, 2010 11:40 AM
To: Yilma, Haimanot
Subject: Consultation

Good morning,

My name is Dianne Desrosiers and I am the Tribal Historic Preservation Officer for the Sisseton Wahpeton Oyate in NE South Dakota. I am in receipt of your correspondence dated September 10, 2010, invitation for consultation.

At this time the Sisseton Wahpeton Oyate would like to participate in consultation for Section 106 of the NHPA, for the Dewey Burdock ISR facility. We will be sending our request to consult to Mr. Kevin Hsueh.

Thank you for your attention in this matter.



Tribal Historic Preservation Office

P.O. Box 907
205 Oak St. East, Suite 121
Sisseton, SD 57262
(605) 698-3584 phone
(605) 698-4283 fax

November 2, 2010

**Kevin Hsueh, Branch Chief
Environmental Review Branch B
United States Nuclear Regulatory Commission
Mail Stop T-8F05
Washington, DC 20555**

***Re: Invitation for Formal Consultation Under the National Historic Preservation Act;
Proposed Dewey Burdock In Situ Recovery Facility near Edgemont South Dakota***

Dear Mr. Hsueh,

We are in receipt of your correspondence dated September 20, 2010. *Invitation for Formal Consultation Under Section 106 of the National Historic Preservation Act.*

Thank you for inviting the Sisseton Wahpeton Oyate (SWO) to participate as a consulting party as the U.S. Nuclear Regulatory Commission (NRC) works to satisfy its statutory obligations under the National Historic Preservation Act (NHPA) of 1966 (as amended), and National Environmental Policy Act (NEPA) to review impacts to cultural and historic resources potentially impacted by the proposed Powertech, Inc. Dewey-Burdock In-Situ Leach Uranium Mine. As you are aware, the proposed mine is located within the traditional and treaty lands of the Great Sioux Nation, which includes the Dakota bands. The SWO is interested in working with the NRC to identify and protect the cultural and historic resources threatened by the project.

As you may be aware the project is in a high probability and highly sensitive area. The effects to the land and resources include not only site-specific physical impacts, but also broader landscape-level impacts along with more intangible impacts to the integrity of the area from cultural, historical, spiritual, and religious perspectives.

1

The area of potential effect is located within the traditional and treaty lands of the Great Sioux Nation and other nations which consider this area, traditional homelands. We are interested in working with the NRC to identify and protect the cultural and historic resources threatened by the project.

At this time the Sisseton Wahpeton Oyate is requesting formal group consultation with regard to the above mentioned project. I would encourage you to make every effort to contact tribes that place religious and cultural significance to properties within the Black Hills (APE) which they deem significant to their existence. In an earlier conversation with a representative from your office (Haimanot Yilma), I suggested contacting the Oglala Sioux Tribe to afford them the opportunity to host such a meeting at the Prairie Winds Casino (which is the tribal nation in closest proximity to the site) and invite tribes to this group consultation. This would offer tribes an opportunity to discuss and share information to better preserve areas of religious and cultural significance.

We look forward to meeting with you in the near future. Together, we will protect and preserve our irreplaceable cultural resources. If you have any questions, please contact our office.

Thank you for your attention in this matter.



Dianne Desrosiers
Tribal Historic Preservation Officer

Cc: Rosebud Sioux Tribe THPO
Oglala Sioux Tribe THPO
Cheyenne River Sioux Tribe THPO
Santee Sioux Tribe THPO
Yankton Sioux Tribe THPO
Northern Cheyenne, THPO
Standing Rock Sioux Tribe THPO
Crow Tribe THPO



Protecting the Land, Cultural,
Heritage and Tradition for
the Future Generation

Tribal Historic Preservation Office

P.O. Box 809
Rosebud, South Dakota
Telephone: (605) 747-4255
Fax: (605) 747-4211
Email: rstthpo@yahoo.com



Russell Eagle Bear
Officer

Kathy Arcoren
Administrative Assistant

November 7, 2010

Kevin Hsueh, Branch Chief
Environmental Review Branch B
United States Nuclear Regulatory Commission
Mail Stop T-8F05
Washington, DC 20555

Re: *Invitation for Formal Consultation Under the National Historic Preservation Act;
Proposed Dewey Burdock In Situ Recovery Facility near Edgemont, South Dakota*

Dear Mr. Hsueh,

We are in receipt of your correspondence dated September 20, 2010. *Invitation for Formal Consultation Under Section 106 of the National Historic Preservation Act.*

Thank you for inviting the Rosebud Sioux Tribe (RST) to participate as a consulting party with the U.S. Nuclear Regulatory Commission (NRC). We realize that the NRC is attempting to work at satisfying its statutory obligations under the National Historic Preservation Act (NHPA) of 1966 (as amended), and National Environmental Policy Act (NEPA) to review impacts to cultural and historic resources potentially impacted by the proposed Powertech, Inc. Dewey-Burdock In-Situ Leach Uranium Mine. As you are aware, the proposed mine is located within the traditional homelands and treaty set aside lands of the Great Sioux Nation. The RST is **interested in working with the NRC to identify and protect the cultural and historic resources threatened by the proposed project.**

As you are undoubtedly aware, the proposed project is in a highly probable and sensitive area regarding cultural resources. The effects to the land and resources include not only site-specific physical impacts, but also broader landscape-level impacts including intangible and tangible impacts to the integrity of the area from cultural, historical, spiritual, and religious perspectives.

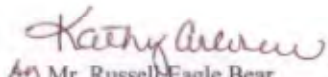
At this time the RST is requesting formal group consultation with regard to the above mentioned project. We encourage you to make every effort to contact tribes that place religious and cultural significance to properties within the Black Hills (APE) that they deem significant to their continuity and existence. We suggest contacting the Oglala Sioux Tribe (OST) to afford them the opportunity to host a meeting at the Prairie Winds Casino and invite tribes to this group

consultation. As a caveat to this suggestion, understand that the OST is the tribe nearest in physical proximity to the APE and what effects' one of our allies, effect's us all. This action would offer tribes an opportunity to discuss and share information to better preserve areas of religious and cultural significance.

We look forward to meeting with you in the near future. Together, we can and will protect and preserve our irreplaceable cultural resources. If you have any questions, please contact our office as soon as possible.

Thank you for your attention in this matter.

Sincerely,


Mr. Russell Eagle Bear
Tribal Historic Preservation Officer
Rosebud Sioux Tribe
PO Box 809
Rosebud, South Dakota 57570
Ph.- (605) 747-4255
Email: rstthpo@yahoo.com

DeweyBurdPubEm Resource

From: Yilma, Haimanot
Sent: Friday, November 12, 2010 4:32 PM
To: clairsgreen@yahoo.com
Cc: DeweyBurdHrgFile Resource
Attachments: Lower Brule Sioux.pdf

Ms. Green,

Per your request, attached please find the consultation letter sent to the Lower Brule Sioux Tribe on September 2010.

Thanks

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8H09



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 10, 2010

Michael Jandreau, Chairman
Lower Brule Sioux Tribe
P.O. Box 187
Lower Brule, SD 57548-0187

SUBJECT: INVITATION FOR FORMAL CONSULTATION UNDER THE SECTION 106 OF
THE NATIONAL HISTORIC PRESERVATION ACT

Dear Chairman Jandreau:

As established in Title 10 *Code of Federal Regulations* Part 51 (10 CFR 51), the U.S. Nuclear Regulatory Commission (NRC) regulations that implement the National Environmental Policy Act (NEPA) of 1969, as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed Powertech Inc. Dewey-Burdock In-Situ Recovery (ISR) Facility near Edgemont, South Dakota. As part of the environmental review, the SEIS will include an analysis of potential impacts of the proposed action to historic and cultural properties.

On March 19, 2010, the NRC sent a letter to your office inviting the Lower Brule Sioux Tribe to participate as a consulting party and requested information regarding tribal historic and cultural resources potentially affected by the proposed Dewey-Burdock ISR facility. A copy of the March 19th letter is enclosed, for your convenience.

To date, the NRC has not received any response from your office regarding the Tribe's interest in becoming a consulting party for the proposed Dewey-Burdock ISR facility near Edgemont South Dakota.

The NRC again extends an invitation to the Lower Brule Sioux Tribe to participate as a consulting party for the proposed Dewey Burdock ISR facility. Specifically, the NRC is interested in learning of any areas on the proposed Dewey-Burdock site that you believe have traditional religious or cultural significance and whether there are specialized concerns or information known to the Tribe that should be considered by the staff during the development of the SEIS.

The NRC staff understands that the Tribe may raise issues in consultation that should be kept confidential and nonpublic; the staff is committed to maintaining confidentiality of said information.

After a careful review and assessment of all information and comments received, the NRC will determine what additional actions are necessary to comply with 10 CFR Part 51 and 36 CFR 800, the implementing regulations for Section 106 of the National Historic Preservation Act.


M. Jandreau

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If the Tribe would like to participate as a consulting party pursuant to Section 106, the Tribe should express its interest in participating and identify areas of concern, within 60 days of receipt of this letter, to ensure that the parties will have the opportunity to engage in meaningful and productive consultation. The Tribe should forward its response to the following address: Mr. Kevin Hsueh, Mail Stop T-8F05, Washington, DC. 20555.

If you have any questions or comments, or need any additional information, please contact the environmental Project Manager, Ms. Haimanot Yilma by telephone at 301-415-8029, or email at Haimanot.Yilma@nrc.gov.

Sincerely,



Kevin Hsueh, Branch Chief
Environmental Review Branch B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09075

Enclosure: Letter of March 19, 2010

cc: w/enclosure
Clair Green
Cultural Resources
Lower Brule Sioux Tribe
P.O. Box 187
Lower Brule, SD 57548-0187



LOWER BRULE SIOUX TRIBE

November 15, 2010

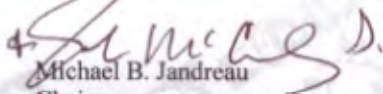
Kevin Hsueh, Branch Chief
Environmental Review, Branch B
Nuclear Regulatory Commission
Mail Stop T-8F05
Washington, DC. 20555

Dear Mr. Hsueh:

The Lower Brule Sioux Tribe requests to participate as a consulting party in both the NHPA Section 106 consultation as well as consultation on the Supplemental EIS for the Dewey-Burdock ISR facility near Edgemont South Dakota. Ms Clair Green, Lower Brule Cultural Resource/Public Information Office (605) 473-8037 is our contact for this project.

Thank you for your consideration.

Sincerely,


Michael B. Jandreau
Chairman

187 Oyate Circle • Lower Brule, SD 57548 • Phone 605-473-5561 • Fax 605-473-5554

DeweyBurdPubEm Resource

From: Yilma, Haimanot
Sent: Monday, November 22, 2010 5:15 PM
To: gravattiana@yahoo.com
Cc: Hsueh, Kevin
Subject: NRC's Consultation letter for proposed Dewey-Burdock ISR facility near Edgemont, SD
Attachments: Yankton Sioux Tribe.pdf

Ms. Gravatt,

Thank you for taking the time to speak with me today. Per our conversation just now and your request, I have attached the consultation letter sent on Sept 10, 2010. Please address your response to the attached letter to my Branch Chief Kevin Hsueh at the following address:

Mr. Kevin Hsueh,
Mail Stop T-8HF05,
Washington, DC 20555.

You can also find this information inside the attached letter.

Sincerely,

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8H09

From: Yilma, Haimanot
Sent: Monday, November 22, 2010 5:01 PM
To: Yilma, Haimanot
Subject:



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 10, 2010

Robert Cournoyer, Chairman
Yankton Sioux Tribe
P.O. Box 248
Marty, SD 57361-0248

SUBJECT: INVITATION FOR FORMAL CONSULTATION UNDER THE SECTION 106 OF
THE NATIONAL HISTORIC PRESERVATION ACT

Dear Chairman Cournoyer:

As established in Title 10 *Code of Federal Regulations* Part 51 (10 CFR 51), the U.S. Nuclear Regulatory Commission (NRC) regulations that implement the National Environmental Policy Act (NEPA) of 1969, as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed Powertech Inc. Dewey-Burdock In-Situ Recovery (ISR) Facility near Edgemont, South Dakota. As part of the environmental review, the SEIS will include an analysis of potential impacts of the proposed action to historic and cultural properties.

On March 19, 2010, the NRC sent a letter to your office inviting the Yankton Sioux Tribe to participate as a consulting party and requested information regarding tribal historic and cultural resources potentially affected by the proposed Dewey-Burdock ISR facility. A copy of the March 19th letter is enclosed for your convenience.

To date, the NRC has not received any response from your office regarding the Tribe's interest in becoming a consulting party for the proposed Dewey-Burdock ISR facility near Edgemont, South Dakota.

The NRC again extends an invitation to the Yankton Sioux Tribe to participate as a consulting party for the proposed Dewey-Burdock ISR facility. Specifically, the NRC is interested in learning of any areas on the proposed Dewey-Burdock site that you believe have traditional religious or cultural significance and whether there are specialized concerns or information known to the Tribe that should be considered by the staff during the development of the SEIS.

The NRC staff understands that the Tribe may raise issues in consultation that should be kept confidential and nonpublic; the staff is committed to maintaining confidentiality of said information.

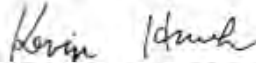
After a careful review and assessment of all information and comments received, the NRC will determine what additional actions are necessary to comply with 10 CFR Part 51 and 36 CFR 800, the implementing regulations for Section 106 of the National Historic Preservation Act.

R. Courmoyer

If the Tribe would like to participate as a consulting party pursuant to Section 106, the Tribe should express its interest in participating and identify areas of concern, within 60 days of receipt of this letter, to ensure that the parties will have the opportunity to engage in meaningful and productive consultation. The Tribe should forward its response to the following address: Mr. Kevin Hsueh, Mail Stop T-8F05, Washington, DC. 20555.

If you have any questions or comments, or need any additional information, please contact the environmental Project Manager, Ms. Haimanot Yilma by telephone at 301-415-8029, or email at Haimanot.Yilma@nrc.gov.

Sincerely,



Kevin Hsueh, Branch Chief
Environmental Review Branch B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No. 040-09075

Enclosure: Letter of March 19, 2010

Box 248
Marty, SD 57361



(605) 384-3804 / 384-3641
FAX (605) 384-5687

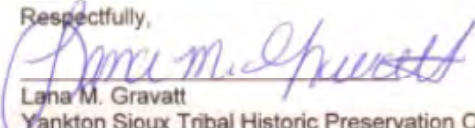
December 3, 2010

Branch Chief Kevin Hsueh
U.S. Nuclear Regulatory Commission
Mail Stop T-8HF05
Washington, DC 20555

Mr. Hsueh:

The Yankton Sioux Tribe is requesting a face to face consultation on all past and current projects at your earliest convenience. The Yankton Sioux Tribe will need to survey projects to protect Traditional Cultural Properties. We want to know what your position is on this. An archeological review is not the same as a TCP survey it is different in knowledge and methodology. We know we have properties of such within your project areas. There is nothing from the Yankton Sioux tribe that states no response means concurrence within 30 days. Please reach me at 1-605-384-3641 or email me at gravattiana@yahoo.com.

Respectfully,


Lana M. Gravatt
Yankton Sioux Tribal Historic Preservation Officer

DeweyBurdPubEm Resource

From: Adrienne Swallow [aswallow@standingrock.org]
Sent: Wednesday, December 08, 2010 3:48 PM
To: Yilma, Haimanot
Co: Hsueh, Kevin
Subject: Dewey-Burdock Project

Dear Mr. Hsueh,
The Standing Rock Tribe is in receipt of your letter dated September 10, 201 regarding our participation as a consulting party under Section 106 of the National Historic Preservation Act for the proposed Dewey Burdock In-Situ Recovery (ISR) facility near Edgemont, SD.

Please note that Ron His Horse is Thunder is no longer our Tribal Chairman and direct all future correspondence to our current Chairman, Charles W. Murphy.

We are not interested in becoming a consulting party for the proposed Dewey-Burdock ISR. In fact, we are opposed to the project because of its proximity to the Black Hills. The Black Hills are considered sacred by the Lakota and Dakota people and we are very concerned that there could be accidental environmental contamination of the area during the operation of in-situ recovery.

We are particularly concerned about contamination of groundwater. What steps will be taken to ensure that groundwater will not be contaminated before, during and after the mine has been completed? How will groundwater be restored to its original pre-mining condition? How will large volumes of waste water be disposed of? How will Native American cultural resources be protected? We hope there will be a satisfactory response to these concerns prior to construction.

We ask that prior to any ground disturbance, a Class III survey be conducted by a Tribal member.

Please keep us informed of all activities regarding the Dewey-Burdock In-Situ Recovery facility.

Sincerely,
Adrienne Swallow
Environmental Protection Specialist
Standing Rock Sioux Tribe
PO Box D
Fort Yates, ND 58535
701-854-8582
cell: 701-226-0291
fax: 701-854-3488
aswallow@standingrock.org

December 15, 2010

Mr. John M. Fowler, Executive Director
Advisory Council on Historic Preservation
Office of Federal Agency Programs
1100 Pennsylvania Ave, NW, Suite 803
Washington, DC 20004

SUBJECT: POWERTECH INC. PROPOSED DEWEY-BURDOCK IN-SITU RECOVERY
FACILITY NEAR EDMONT, SOUTH DAKOTA (DOCKET 040-09075)

Dear Mr. Fowler:

The U.S. Nuclear Regulatory Commission (NRC) has received an application from Powertech Inc. (Powertech) for a new radioactive source materials license to develop and operate the Dewey-Burdock Project located near Edgemont, South Dakota in Fall River and Custer Counties. The facility, if licensed, would use an *in-situ* recovery (ISR) methodology to extract uranium at the Dewey-Burdock site. The proposed project boundary consists of approximately 10,580 acres (4,282 ha) located on both sides of Dewey Road (County Road 6463) and portions of Sections 1-5, 10-12, 14, and 15, Township 7 South, Range 1 East and Sections 20, 21, 27, 28, 29, and 30-35, Township 6 South, Range 1 East, Black Hill Meridian. A map showing the proposed project boundary is enclosed (Powertech Figure 1.4-1).

As established in Title 10 *Code of Federal Regulations* Part 51 (10 CFR 51), the NRC regulation that implements the National Environmental Policy Act of 1969 (NEPA), as amended, the NRC is preparing a Supplemental Environmental Impact Statement (SEIS) for the proposed action. The SEIS will address the impacts associated with the construction, operation, and decommissioning of the proposed facility. As outlined in 36 CFR 800, to comply with Section 106 of the National Historic Preservation Act of 1966 through the requirements of the NEPA, the SEIS will include analyses of potential impacts to historic and cultural resources.

To enhance the scope and quality of our review and facilitate the identification of tribal historic sites and/or cultural resources, specifically, sites that may have traditional religious or cultural significance to Native American Tribes that may be interested in and/or affected by the proposed action, the NRC sent consultation letters to 17 tribes, including the Oglala Sioux, on March 19, 2010 and September 10, 2010. The NRC has also made additional contacts with tribal officials offering consultation and seeking information by other means such as telephone calls and emails.

To date, Turtle Mountain Band of Chippewa and Three Affiliated Tribes (Mandan, Hidatsa & Arikara Nation) responded in writing to the consultation letters and stated they anticipate no adverse effect on cultural resources by the proposed action. Fort Peck Assiniboine & Sioux; Sisseton-Wahpeton Oyate, Rosebud Sioux Tribe, and Lower Brule Sioux responded requesting formal consultation. Eastern Shoshone tribe informally indicated that they are interested in formal consultation. The NRC has not yet received responses from the Oglala Sioux; Cheyenne River Sioux; Crow Creek Sioux; Flandreau-Santee Sioux; Standing Rock Sioux; Yankton Sioux; Spirit Lake Tribe; Lower Sioux Indian Community; Northern Cheyenne; and Northern Arapaho tribes.

J.M. Fowler

2

The NRC plans on issuing the draft SEIS in summer 2011; when the draft becomes available, a copy will be sent to your office for your review and comment. The NRC will also notify the 17 tribes when the draft SEIS is available and request their comments.

The Powertech Dewey-Burdock Project license application is publicly available in the NRC Public Document Room (PDR) located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agency Wide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The accession numbers for the Powertech application including the Environmental Report is ML092870160.

If you have any questions or comments, or need any additional information, please contact Ms. Halmanot Yilma of my staff by telephone at 301-415-8029 or email at halmanot.yilma@nrc.gov

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch B
Environmental Protection
and Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09075

Enclosure: Map

cc: Marian Atkins, Field Office Manager
South Dakota Field Office - BLM
310 Roundup Street
Belle Fourche, SD 57717-1696

Gregory R. Fesko P.G.
Coal Program Coordinator
Branch of Solid Minerals - BLM
Montana State Office
5001 Southgate Drive
Billings, MT 59001

**Oglala Sioux Tribe
Tribal Historic Preservation Office**

P.O. Box 320, W. Hwy 18
Pine Ridge, SD 57770
Phone: (605) 867-5969
Fax: (605) 867-2818
ostnrrathpo@nwr.org

**TRIBAL HISTORIC PRESERVATION ADVISORY COUNCIL:**

Mr. Tom Bad Heart Bull - Oglala District
Mr. Francis "Chubbs" Thunder Hawk - Porcupine District
Mr. Garvard Good Plume, Jr. - Wakpamni District

STAFF:

Tribal Historic Preservation Officer - Mr. Wilmer Mesteth
Project Review Officer - Ms. Roberta Joyce Whiting
Natural Resources Director - Mr. Michael Catches Enemy

January 31, 2011

Kevin Hsueh, Branch Chief
Environmental Review Branch B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management and
Environmental Protection
Office of Federal and State Materials and
Environmental Management Programs
United States Nuclear Regulatory Commission
Mail Stop T-8F05
Washington, DC 20555

Re: Invitation for Formal Consultation under the National Historic Preservation Act; Request for Information under the National Environmental Policy Act; Proposed Powertech Inc. Dewey-Burdock In-Situ Leach Uranium Mine (NRC Docket No. 040-09075)

Dear Mr. Hsueh:

Thank you for your letters dated September 8, 2010, and September 10, 2010, inviting the Oglala Sioux Tribe to participate as a consulting party as the U.S. Nuclear Regulatory Commission (NRC) works to satisfy its statutory obligations under the National Historic Preservation Act (NHPA) and National Environmental Policy Act (NEPA) to review impacts to cultural and historic resources potentially impacted by the proposed Powertech, Inc. Dewey-Burdock In-Situ Leach Uranium Mine. As you are aware, the proposed mine is located within the traditional and treaty lands of the Great Sioux Nation, which includes the Oglala Sioux Tribe. The Tribe is committed to working with the NRC to identify and protect the cultural and historic resources threatened by the project.

Currently, the Oglala Sioux Tribal Preservation Historic Office is directed by Mr. Wilmer Mesteth. The Tribal Historic Preservation Office looks forward to any support the NRC Staff can provide in facilitating this review, including providing the Tribe an ongoing opportunity to review and comment on the agency's review as it is developed. Please note that the responsibilities and resources of other federal agencies to protect the cultural and historical resources of the Oglala Sioux Tribe which are located on and near the adjacent Black Hills National Forest are also implicated by the location of this project, including the U.S. Forest Service and the Bureau of Land Management.

Page 1 of 3

From information obtained through the application submitted to the NRC by Powertech, Inc., the proposed Dewey-Burdock In-Situ Leach Uranium Mine project represents a substantial potential threat to the preservation of cultural and historic resources of the Oglala Sioux Tribe. These impacts include not only site-specific physical impacts, but also broader landscape-level impacts along with more intangible impacts to the integrity of the area from cultural, historical, spiritual, and religious perspectives.

Importantly, the impact from the proposed mine extends not just from the disturbance associated with the Dewey-Burdock site, which could be substantial in itself, but also the impacts associated with the foreseeable use of the Dewey-Burdock site as a regional uranium processing center for potential mining operations across the region. These broader effects are further compounded by the substantial impacts associated with the large open pit uranium mines at the project area that have been egregiously left entirely unreclaimed since the last uranium boom. It is critical for any credible cultural and historic resource impact analysis to consider the entirety of these past and reasonably foreseeable activities.

A review of the application materials submitted by Powertech to the NRC reveals an incomplete analysis. Nowhere does the application recognize the cumulative impacts associated with regional uranium development or past uranium development. Indeed, the applicant's materials represent that the cultural and historic impacts associated with the entire proposal, even when combined with reasonably foreseeable future and past actions, are "none." This conclusion is unsupportable, and appears to have resulted in part from the incomplete methodology employed in reaching it. It appears that the review prepared by Powertech failed to include any direct input from any tribal sources, whether written or oral.

It should be noted that a primary source of credible information in this case are oral histories and ethnographic information of those knowledgeable about the impacted area, whether through personal, family, or ancestral connections. Instead, the application cites only to a handful of studies, most prepared for other projects within some undefined geographic proximity to the proposed mine site. Incorporation of all credible and relevant written and oral sources is necessary, with appropriate measures taken to respect the integrity and confidentiality of such information. In this case, the application fails to assess even the detailed information contained in sworn oral testimony during hearings at the early stages of the State of South Dakota permitting process. These same gaps in information bring into question the reliability and completeness of the application, including the site visit analysis conducted by Powertech. Indeed, the site-visit analysis itself was conducted without any tribal participation and identifies a significant number of archaeological, historical, and traditional cultural resources within the project area that have not yet been evaluated at all.

Critically, information on the historic and cultural significance of the proposed project area is not limited to that held by members of the Oglala Sioux Tribe. Rather, this area is within an area within which other Sioux tribes, in addition to the Cheyenne, Arapahoe, Crow, and Arikara Tribes, among others, also possess intimate cultural knowledge. As such, any credible impact review must assess the historic and cultural impacts associated with these other cultures. For example, the Oglala Sioux Tribal Historic Preservation Office is working toward establishing such a study, with culturally appropriate protocols to protect the information acquired and to incorporate necessary protections where information about such persons is involved in the collection of oral histories and ethnographies.

We look forward to working with the NRC on these important issues. To the fullest extent possible, we ask that the agency share any information that it has collected, and work with the Tribe to identify additional sources of information to include in its analysis. This request includes making available to the Tribe physical copies of all of the cited references in Powertech's application materials, as well as any additional resources NRC Staff may have available. Further, the Tribe requests NRC's help in facilitating a timely site visit and review so as to provide the Tribe an opportunity to conduct a full review of the cultural and historic resources at stake. Lastly, the Oglala Sioux Tribe requests that the NRC sponsor and conduct a regional meeting of Tribal Historic Preservation Officers from all affected tribes in order to encourage effective communication to the NRC.

Thank you for the invitation to conduct a thorough consultation process on this important matter.

Sincerely,



Michael Catches Enemy
Natural Resources Director

Sincerely,



Wilmer Mesteth
Tribal Historic Preservation Officer

Cc: Honorable President John Yellowbird Steele, Oglala Sioux Tribe
Oglala Sioux Tribal Land & Natural Resources Committee
SSR Law
File

March 4, 2011

Cedric Black Eagle, Chairman
Crow Tribe of Montana
Baacheeitcha Avenue
P.O. Box 159
Crow Agency, MT 59022

SUBJECT: INVITATION FOR FORMAL CONSULTATION UNDER SECTION 106 OF THE
NATIONAL HISTORIC PRESERVATION ACT

Chairman Black Eagle:

The U.S. Nuclear Regulatory Commission (NRC) has received an application from Powertech Inc. (Powertech) for a new radioactive source materials license to develop and operate the Dewey-Burdock Project located near Edgemont, South Dakota in Fall River and Custer Counties. The facility, if licensed, would use an *in-situ* recovery methodology to extract uranium at the Dewey-Burdock site. The proposed project area consists of approximately 10,580 acres (4,282 ha) located on both sides of Dewey Road (County Road 6463) and portions of Sections 1-5, 10-12, 14, and 15, Township 7 South, Range 1 East and Sections 20, 21, 27, 28, 29, and 30-35, Township 6 South, Range 1 East, Black Hill Meridian. A map showing the proposed project boundary is enclosed (Powertech Figure 1.4-1).

The South Dakota State Historic Preservation Officer identified the Crow Tribe of Montana as potentially attaching religious and cultural significance to historic properties in the project area. By this letter, the NRC invites the Crow Tribe to participate as a consulting party in the National Historic Preservation Act Section 106 process. If the Tribe would like to participate as a consulting party, please respond to this letter.

In regards to the proposed project, the NRC is also engaged in an environmental review and is preparing a Supplemental Environmental Impact Statement (SEIS) pursuant to the National Environmental Policy Act. As part of this review, the SEIS will include an analysis of potential impacts to historic and cultural properties and is therefore requesting input from the Crow Tribe to facilitate the identification of tribal historic sites or cultural resources that may be affected by the proposed action. Specifically, the NRC is interested in learning of any areas on the Dewey-Burdock site that you believe have traditional religious or cultural significance.

The NRC staff understands that the Tribe may raise issues in consultation that should be kept confidential and nonpublic; the staff is committed to maintaining confidentiality of said information.

After a careful review and assessment of all information and comments received, the NRC will determine what additional actions are necessary to comply with 10 CFR Part 51 and 36 CFR 800, the implementing regulations for Section 106 of the National Historic Preservation Act. If the Tribe would like to participate as a consulting party pursuant to Section 106, the Tribe should express its interest in participating and identify areas of concern, within 60 days of receipt of this letter, to ensure that the parties will have the opportunity to engage in meaningful and productive consultation. The Tribe should forward its response to the following address: Mr. Larry Camper, Mail Stop T-8F05, Washington, DC 20555.

C. B. Eagle

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The Powertech Dewey-Burdock Project license application is publicly available in the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, or from the NRC's Agency Wide Documents Access and Management System (ADAMS). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html>. The accession numbers for the Powertech application including the Environmental report is ML092870160.

If you have any questions or comments, or need any additional information, please contact the Environmental Project Manager, Ms. Haimanot Yilma by telephone at 301-415-8029, or email at Haimanot.Yilma@nrc.gov.

Sincerely,

/RA/ by K. McConnell for

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09075

Enclosure:
Figure 1.4-1

cc with enclosure:

Dale Old Horn, THPO,
Crow Tribe of Montana
Baacheeitcha Avenue
P.O. Box 159
Crow Agency, MT 59022

Hubert Two Leggings
Cultural Resource Officer
Crow Tribe of Montana
Baacheeitcha Avenue
P.O. Box 159
Crow Agency, MT 59022

Marian Atkins
Field Office Manager - BLM
South Dakota Field Office
310 Roundup Street
Belle Fourche, SD 57717-1698

Gregory R. Fesko P.G.
Coal Program Coordinator
Branch of Solid Minerals - BLM
Montana State Office
5001 Southgate Drive
Billings, MT 59001

From: Yilma, Haimanot
Sent: Thursday, March 10, 2011 7:51 AM
To: Miller, Debra; Rajapakse, Champa
Cc: Hsueh, Kevin
Subject: FW: Dewey-Burdock Project

Deb and / or Champa,

Can you please put this email in ADAMS and give me the ML number for my records. I am working from home today.

Kevin,

Just to let you know, Crow tribe of MT is interested in becoming a consulting party for Dewey. I will update the status report.

Thanks
Haimanot

From: Yilma, Haimanot
Sent: Thursday, March 10, 2011 7:46 AM
To: 'Hubert Two Leggins'
Cc: Yilma, Haimanot
Subject: RE: Dewey-Burdock Project

Mr. Two Leggins

Thank you for responding to our invitation letter. This email is sufficient for us to know your interest in becoming a consulting party under the section 106 consultation process. I will share your interest with my management.

Regards,

Haimanot Yilma
Project Manager
301-415-8029

From: Hubert Two Leggins [<mailto:hubertt@crownations.net>]
Sent: Wednesday, March 09, 2011 7:22 PM
To: Yilma, Haimanot
Subject: Dewey-Burdock Project

Hello Ms. Haimanot Yilma,

I accept the invitation for the formal consultation under section 106 of NHPA. The Crow Tribe has religious and cultural significance to the project area and wants to be a consulting party. I don't know if this is going to

Work for Mr. Larry Camper or if I need to send a separate letter to him please let me know.

Thank You

Hubert B. Two Leggins
Crow Tribal Cultural Resource Director/Renewable Resource Supervisor
P. O. Box 159
Crow Agency, Mt. 59022
(406) 638-3793 work
(406) 678-1677 cell

hubertt@crownations.net

May 12, 2011

Ms. Lana Gravatt
Yankton Sioux Tribe
P.O. Box 248
Marty, SD 57631-0248

SUBJECT: INVITATION FOR INFORMAL INFORMATION-GATHERING MEETING
PERTAINING TO THE DEWEY-BURDOCK, CROW BUTTE NORTH TREND,
AND CROW BUTTE LICENSE RENEWAL, *IN-SITU* URANIUM RECOVERY
PROJECTS

Dear Ms. Gravatt:

The U.S. Nuclear Regulatory Commission (NRC) staff would like to extend an invitation to the Yankton Sioux Tribe officials (Tribal Historic Preservation Officers and/or Cultural Resources Officers) to assist the NRC in the identification of tribal historic sites, traditional cultural properties, and cultural resources that may be affected by the actions proposed by Cameco Resources Inc. and Powertech Inc. We are extending this invitation because you indicated that you would like to be a consulting party. The NRC will hold an informal information-gathering meeting on June 7, 8, and 9, 2011, at the Prairie Wind Casino and Hotel on the Pine Ridge Reservation in South Dakota.

The information-gathering meeting will include a staff-to-staff session on June 8, 2011, at the Prairie Wind Casino and Hotel on the Pine Ridge Reservation and two days of site visits (June 7 and 9, 2011) to the proposed facilities. The NRC staff has coordinated with Cameco Resources Inc. and Powertech Inc. to arrange for visits to the proposed facilities. The itinerary for the site visit is included in Enclosure 4. Although attendance at the site visits is optional, Tribal representatives are encouraged to participate because the visits will provide an opportunity to tour an existing facility and to view the proposed project areas.

The NRC is in the process of conducting environmental reviews for a number of license applications involving in-situ uranium recovery facilities. These applications include Cameco Resources Inc.'s applications for Crow Butte North Trend and Crow Butte License Renewal, as well as Powertech (USA) Inc.'s application for Dewey-Burdock. The NRC is undertaking these reviews as part of our responsibilities under the National Environmental Policy Act (NEPA). Our reviews will culminate in the issuance of an Environmental Assessment, Environmental Impact Statement, or a Supplemental Environmental Impact Statement. These documents will include analyses of potential impacts to historic and cultural properties. In accordance with the National Historic Preservation Act regulation 36 CFR 800.8(c), we are coordinating our Section 106 review with our NEPA assessment. As part of our reviews, the NRC requests the input of Tribes concerned with the effects the proposed actions may have on historic and cultural properties, so their views may be considered in the decision-making process.

The NRC staff is interested in identifying areas within the Crow Butte sites and/or Dewey-Burdock site that have traditional religious or cultural significance to the Yankton Sioux Tribe of South Dakota, so these may be considered in our environmental reviews. Maps identifying the specific locations of each proposed project are enclosed for your reference (Enclosure 1).

L. Gravatt

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Digital copies of the publicly available archaeological surveys prepared for the Crow Butte Resources and Dewey-Burdock projects are enclosed. These reports are contained in 3 -diskettes (one for Crow Butte and two for Dewey-Burdock- Enclosure 3).

Please provide the NRC staff with copies of, or references to, documentary or published materials you like the staff to review.

NRC staff, in conjunction with the Oglala Sioux Tribe has prepared a tentative agenda for this meeting. The draft agenda is enclosed in this letter for your review (Enclosure 2).

Please identify any additional topics you would like to discuss and let us know by May 20, 2011, how many of your tribal representatives will be attending this meeting. We request your reply be addressed to Mr. Larry Camper, Mail Stop T-8F05, Washington, D.C. 20555. In order to attend the site visit, NRC must have your confirmation by this date to ensure adequate transportation is available for all participants. If possible, provide us with the name and job descriptions of tribal representatives who plan to participate. Ms. Haimanot Yilma and Mr. Nathan Goodman will follow up with you via a phone call to finalize meeting logistics.

The applicants will be providing roundtrip transportation between the Prairie Wind Casino and Hotel on the Pine Ridge Reservation and the Crow Butte and Dewey-Burdock sites. However, other travel costs associated with the June 7-9, 2011, meeting will not be covered.

If you have any questions regarding this meeting, please contact my staff members, Ms. Yilma (via email at Haimanot.Yilma@nrc.gov or via phone at 301-415-8029) or Mr. Goodman (via email at Nathan.Goodman@nrc.gov or via phone at 301-415-2703).

Sincerely,

/RA/ APersinko for LCamper

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09075

Docket No.: 040-08943

Enclosures:

1. Map of Crow Butte and Dewey-Burdock
Proposed Project Areas/Boundary
2. Draft Agenda
3. Archeological Surveys of the Proposed
Crow Butte & Dewey-Burdock Projects
4. Itinerary for Site Visits

cc: Chairman Robert Courmoyer

August 12, 2011

Mr. Richard Blubaugh
VP-HS&E Resources
Powertech (USA) Inc.
5575 DTC Parkway
Suite 140
Greenwood Village, CO 80111

SUBJECT: INFORMATION REQUIRED BY THE U.S NUCLEAR REGULATORY COMMISSION STAFF TO SATISFY ITS OBLIGATIONS UNDER SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT AND NATIONAL ENVIRONMENTAL POLICY ACT TO COMPLETE ITS REVIEW OF THE IMPACTS TO THE CULTURAL RESOURCES FROM THE PROPOSED DEWEY-BURDOCK PROJECT

Dear Mr. Blubaugh:

The U.S. Nuclear Regulatory Commission (NRC) has received an application from Powertech (USA) Inc. for a new source material license to permit Powertech to operate the proposed Dewey-Burdock *In-Situ* recovery (ISR) facility. As part of our responsibilities under the National Environmental Policy Act (NEPA), the NRC is conducting an environmental review of Powertech's application. In addition to our NEPA review, the NRC must comply with the National Historic Preservation Act (NHPA). Under Section 106 of the NHPA and its implementing regulations (36 CFR, Part 800), the NRC must take into account the effects that issuing a license to Powertech would have on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the NRC's findings.

In order to comply with NEPA and Section 106 of the NHPA, the NRC must make reasonable and good faith efforts to identify historic properties within the area of potential effects for the proposed Dewey-Burdock ISR facility. Historic properties include properties of traditional religious and cultural importance to one or more Indian Tribes. Based on information gathered during a June 2011 meeting between the NRC and representatives from six Indian Tribes, and based on consultation with the South Dakota State Historic Preservation Officer (SHPO) and the ACHP, the NRC staff has determined that it requires additional information on Traditional Cultural Properties (TCPs) in the area of potential effect for the proposed Dewey-Burdock facility. The NRC staff needs this information not only to fulfill our obligations under Section 106 of the NHPA, but also to fulfill our obligation under NEPA that we assess potential impacts to cultural resources. This information on TCPs would be in addition to the extensive archeological surveys that Powertech has already submitted in support of its license application.

Although the NRC believes that a traditional cultural property survey of the area of potential effect is an effective method to identify these properties; information on TCPs can also be obtained in a variety of ways. For example, site visits by tribal representatives could be used to

R. Blubaugh

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identify TCPs, or an applicant could hire an archaeologist with experience identifying and evaluating potential TCPs. Alternatively, an applicant could use a combination of these or other methods.

The NRC requests that by August 31, 2011, Powertech submit a written plan for acquiring information on TCPs. Upon receipt of this TCP identification plan, the NRC will determine whether the actions outlined in the plan will provide information sufficient for the NRC to meet any applicable requirements under NEPA and the NHPA.

Attached to this letter for your possible use is a list of Indian Tribes that have expressed interest in historic properties in the area of potential effect for the proposed Dewey-Burdock facility.

Please submit your TCP identification plan to NRC, Attention: Mr. Kevin Hsueh, Mail Stop T8F05, Washington, DC 20555. If you have any questions or comments, or need any additional information, please contact Ms. Haimanot Yilma of my staff by telephone at 301-415-8029, or by email at Haimanot.Yilma@NRC.gov.

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch-B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No. 040-09075

cc: See Attached List



RICHARD E. BLUBAUGH
Vice President - Health Safety
& Environmental Resources

POWERTECH (USA) INC.

August 31, 2011

Kevin Hsueh, Branch Chief
Environmental Review Branch B
Environmental Protection and Performance Assessment Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Mail Stop T8-FO5
Washington, DC 20555-0001

Re: Powertech (USA) Inc.'s Response to NRC Request for National Historic
Preservation Act Section 106 Information; Docket No. 040-09075

Dear Mr. Hsueh:

Attached please find a proposal, developed by SRI Foundation, to support Cameco
Resources and Powertech (USA) Inc. efforts to collect National Historic Preservation Act
Section 105 information required for the NRC evaluation of proposed Powertech (USA)
Inc. operations at the proposed Dewey-Burdock Project.

Should you have any questions, please do not hesitate to contact the undersigned at (303)
790-7528.

Respectfully yours,

Richard E. Blubaugh

Enclosure

cc: R.F. Clement, President and CEO

Thompson & Pugsley, PLLC
1225 19th Street, NW
Suite 300
Washington, DC 20036

5575 DTC Parkway, Suite 140 Telephone: 303-790-7528 Website: www.powertechuranium.com
Greenwood Village, CO 80111 USA Facsimile: 303-790-3885 Email: info@powertechuranium.com

Draft Plan August 30, 2011

**Proposal from Cameco Resources and Powertech Inc.
to the U.S. Nuclear Regulatory Commission**

A plan for assisting NRC, as the Federal lead agency for Section 106, by gathering information about properties of religious and cultural significance to Federally-recognized Indian tribes that may be affected by their proposed undertakings

Cameco Resources and Powertech Inc. (hereafter “the companies”) propose to carry out a phased program of information gathering with Indian tribes, as described below, in order to identify places of religious and cultural significance to those tribes that may be affected by the proposed Three Crow, Crow Butte, North Trend, Marsland (Cameco), and Dewey-Burdock (Powertech) projects. These efforts will be carried out in response to NRC’s letter of August 5, 2011, to John Schmuck at Cameco and of August 12, 2011 to Richard Blubaugh of Powertech, requesting additional information on historic properties in support of compliance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulation, 36 CFR part 800. The companies have secured the services of the SRI Foundation (SRIFF) of Rio Rancho, NM to assist them in this effort. Unless otherwise indicated, all tasks below will be carried out by SRIFF under the direction of the companies.

Phase 1

- Prepare a written plan detailing how the companies propose to proceed and a final list of tribes to be contacted. The companies will submit the plan and list of tribes for review by NRC (and by BLM and SHPOs if they wish to review).
- Define a general study area, encompassing all five proposed undertakings, and two proposed expanded areas of potential effects (APEs; 36 CFR §800.4(a)), one including all areas from which the Dewey-Burdock project will be visible and one encompassing all areas from which any of the four Cameco project areas will be visible. These expanded APEs will take into account the potential sensitivity of places of religious and cultural significance to indirect effects.
- Touch base with NRC review and cultural resource staff; Wyoming, South Dakota, and Nebraska State Historic Preservation Officers (SHPOs); and Bureau of Land Management (BLM) South Dakota Field Office personnel to introduce the information-gathering effort and SRIFF staff, and secure agency input on how this effort should proceed. Among the issues to raise: the list of tribes to be contacted, proposed expanded APEs, Advisory Council on Historic Preservation (ACHP) involvement, SHPO preferences for reviewing documents, BLM’s preference for level of involvement, and available information about previously conducted ethnographic research.

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Draft Plan August 30, 2011

- Review NRC documentation concerning previous consultation with tribes and any NRC policies or protocols for tribal consultation.
- Touch base with company attorneys to identify any sensitive issues relative to current administrative appeals or future litigation.
- Revise the plan and the list of tribes to reflect NRC (and SHPO and BLM, if participating) comments.

Phase 2

- Assist the companies in developing joint or separate RFPs to secure the services of appropriate ethnographers to complete identification of properties of religious and cultural significance (36 CFR §800.3(c)(2)(B)(ii)) within the two APEs. Assistance may include identifying potential ethnographic consultants, developing scopes of work, and reviewing and commenting on proposals received.
- Develop a brief overview of Native American use and practices in the study area encompassing the companies' project areas to serve as a context; this overview will include information on types of traditional cultural properties typically encountered in this region.
- Develop a script for initial tribal contacts concerning the information-gathering project, and identify supporting materials to be included. The supporting materials may include maps of the projects and areas to be studied (the APEs), photographs of what developed in situ uranium recovery projects look like, an animation of how the in situ recovery process works, etc. Parameters: Information provided should be brief, clear, and nontechnical. Tribes will be provided with a choice among several possible levels of future participation ranging from "not interested in being consulted about these projects" through "would like to be informed about results of efforts to identify archaeological sites and traditional cultural places" through "wish to participate in field visits and ethnographic interviews." Tribes will be encouraged to offer any comments on the proposed areas to be studied.
- Submit script and materials for review by the companies
- Companies submit script and accompanying materials for review by NRC (and BLM if they wish to participate)
- Revise script and materials per NRC (and BLM) comments

Phase 3

- Make initial contacts with all tribes on the final list. Although NRC has already initiated consultation about these undertakings by letter, it would be most effective if the initial contact about this information-gathering effort were to come from NRC based on draft letters and materials provided by the companies and developed by SRIF. Alternatively, the information sent to the tribes could include copies of the

Draft Plan August 30, 2011

letters from NRC to the companies requesting that the companies gather additional information on traditional cultural properties.

- Follow up with the tribes as needed to secure a response and decision from as many tribes on the list as possible.
- Maintain a detailed record of tribal contacts and responses.
- Provide information to the companies and NRC about tribes wishing to participate in field visits and ethnographic interviews, tribes wishing to participate at lesser levels of consultation, and tribes not wishing to participate.
- Adjust boundaries of the two expanded APEs in response to tribal comments if needed, and coordinate this with SHPOs and NRC.
- Prepare draft letters for NRC's use (if they so wish) to formally invite the interested tribes to be consulting parties for the appropriate Section 106 undertaking or undertakings.

Phase 4

- Provide assistance to the companies in managing the ethnographic contracts: monitor schedules, recordkeeping, and results; assist contractors with any problems; review reports; ensure that contractors are gathering the needed information about identification, eligibility, effects, and potential measures to resolve any adverse effects.
- Provide monthly updates on the progress of the project to the companies for submission to NRC (and BLM if they wish to receive these reports).
- Communicate with those tribes who asked to be kept informed as the projects proceed.

Phase 5

- Assemble information from contractors and prepare eligibility recommendations (36 CFR §800.4(c)) for traditional cultural properties in the Cameco and Powertech APEs.
- The companies then submit these eligibility recommendations to NRC for consultation with SHPOs and tribes (and BLM if any properties are on BLM-managed lands).
- Assemble information from contractors, apply the criteria of adverse effect (36 CFR §800.5(a)), and prepare recommendations concerning the effects of in situ recovery development activities on eligible or listed historic properties within the APEs.
- The companies then submit these effect recommendations to NRC for consultation with SHPOs and tribes (and BLM if any properties are on BLM-managed lands).

Draft Plan August 30, 2011

Optional Phase 6

- If any adverse effects are identified during Phase 5, assist the company or companies and the NRC to complete consultations with BLM, the SHPO(s) and tribal consulting parties (and ACHP, if they choose to participate) to identify measures to resolve the adverse effects (36 CFR §800.6).
- Prepare a draft Section 106 agreement document (or documents, if multiple Section 106 undertakings are found to have adverse effects (36 CFR §800.6(c) or §800.14(b)(3)) and submit to NRC.

October 20, 2011

Mr. James Laysbad, THPO
Oglala Sioux Tribe
P.O. Box 320
Pine Ridge, SD 57770

SUBJECT: TRANSCRIPT OF INFORMAL INFORMATION-GATHERING MEETING,
PERTAINING TO THE DEWEY-BURDOCK, CROW BUTTE NORTH TREND,
AND CROW BUTTE LICENSE RENEWAL *IN-SITU* URANIUM RECOVERY
PROJECTS, HELD AT PRAIRIE WIND CASINO AND HOTEL ON JUNE 8, 2011;
INFORMATION PERTAINING TO TRADITIONAL CULTURAL PROPERTIES;
AND ATTACHED UNREDACTED PORTIONS OF ARCHEOLOGICAL SURVEYS

Dear Mr. Laysbad:

The U.S. Nuclear Regulatory Commission (NRC) extends its thanks to all the Tribal representatives who participated in the Information-Gathering Meeting and associated site visits. We would especially like to thank the Oglala Sioux Tribe for allowing the NRC to hold the meeting on the Pine Ridge Reservation and for hosting meetings. We would also like to thank Mr. Michael Catches Enemy, Oglala Sioux Natural Resources Officer, for serving as the Co-facilitator for the meeting. These efforts culminated in a productive meeting where all parties were able to share their respective viewpoints, comments, and concerns about the uranium recovery process and the facets of the NRC's technical and environmental review process for the *in-situ* recovery facilities.

Enclosed is a paper of the Official Transcript of the Information-Gathering Meeting. If you would like an electronic copy, please contact Ms. Haimanot Yilma or Mr. Nathan Goodman. Please note corrections were not made to the transcript to maintain its originality. If you believe your statements were misrepresented in the transcript, please advise the NRC staff and your comments will be added to the record.

Additionally, at the June 8, 2011 meeting, several Tribal Historic Preservation Officers (THPOs) requested unredacted versions of the archeological surveys submitted as part of the license application. In response to those requests and to facilitate government-to-government consultation, the NRC is enclosing a paper copy of the unredacted portions of the archeological surveys for the Dewey-Burdock, Crow Butte North Trend, and Crow Butte License Renewal projects for your review. A map of all archeological sites on the proposed Dewey-Burdock project area is also included.

As a reminder, this information is sensitive, and the NRC requests the proper storage of these documents, consistent with applicable laws and regulations pertaining to sensitive information.

At the June 8, 2011 meeting, a number of the tribal representatives requested more information on traditional cultural properties (TCPs) be collected. Based on those requests and in accordance

J. Laysbad

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with the requirement of 36 CFR 800.4 (a) the NRC staff has asked the applicants to provide information on how the proposed projects may affect TCPs. In order to address the NRC's request, the applicants may contact your office directly to seek your assistance on developing information on TCPs, in the near future. Once the NRC receives additional information regarding TCPs from the applicants, the NRC plans to distribute the information to all interested THPOs and State Historic Preservation Officers for review and comments.

If you have any questions regarding this letter, please contact my staff members, Ms. Yilma (via email at Haimanot.Yilma@nrc.gov or via phone at 301-415-8029) or Mr. Goodman (via email at Nathan.Goodman@nrc.gov or via phone at 301-415-2703).

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch-B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No. 40-8943, 40-9075

Enclosures:

1. Official Transcript
2. Unredacted Portions of the Archeological Survey for Dewey-Burdock Project
3. Unredacted Portions of the Archeological Survey for Crow Butte North Trend Project
4. Unredacted Portions of the Archeological Survey for License Renewal Project
5. Archeological Sites on the Proposed Dewey-Burdock Project Area

cc:

Mr. Richard E. Blubaugh
Vice President of Environmental Health
and Safety Resources
Powertech (USA), Inc.
5575 DTC Parkway, Suite 140
Greenwood Village, CO 80111

Paige Olson
Review and Compliance Coordinator
South Dakota State Historic Society
900 Governors Drive
Pierre, SD 57501

Jill Dolberg
Nebraska State Historical Society
P.O. Box 82554
1500 R Street
Lincoln, NE 68501

October 28, 2011

Mr. James Laysbad, THPO
Oglala Sioux Tribe
P.O. Box 320
Pine Ridge, SD 57770

SUBJECT: INFORMATION RELATED TO TRADITIONAL CULTURAL PROPERTIES;
PERTAINING TO THE DEWEY-BURDOCK, CROW BUTTE NORTH TREND,
AND CROW BUTTE LICENSE RENEWAL *IN-SITU* URANIUM RECOVERY
PROJECTS

Dear Mr. Laysbad:

The U.S. Nuclear Regulatory Commission (NRC) staff wants to update your office on NRC's ongoing consultation activities, per Section 106 of the National Historic Preservation Act (NHPA), for the proposed Dewey-Burdock and Crow-Butte projects. In response to requests for a survey of traditional cultural properties (TCPs) raised by many Tribal representatives at the June 8, 2011, Information Gathering Meeting, the NRC staff has determined that further work is needed to identify properties of religious and cultural significance to the Tribes. The staff has asked the applicants to undertake studies and surveys to provide the NRC with this information, as is permissible under 36 CFR § 800.2(c)(4).

Powertech (USA), Inc. and Cameco Resources, the respective applicants, have engaged the services of SRI Foundation (SRIF) of Rio Rancho, New Mexico to collect information concerning TCPs that may be located in the proposed Dewey-Burdock and Crow Butte project areas. Dr. Lynne Sebastian will direct these investigations for SRIF; Dr. Martha Graham will contact all consulting Tribes in the near future to develop a plan for gathering information. Attached to this letter are brief biographies of the SRIF lead researchers and a link to the SRIF website.

The NRC remains the lead in carrying out Tribal consultation efforts for both projects, pursuant to its obligation under the regulations of 36 CFR Part 800. Although the NRC has authorized the applicants and, thereby, SRIF, acting on the behalf of the applicants, to contact Tribes to obtain needed information, the NRC, nonetheless, remains legally responsible for all findings and determinations and for maintaining government-to-government relationships with the involved Indian Tribes. In keeping with that, the NRC staff will continue to be involved in consultation activities and will coordinate with SRIF and the Tribes, as necessary, to facilitate SRIF's informational gathering efforts. With that said, the NRC staff invites your office and Tribal leadership to work with SRIF as they reach out to you regarding the Oglala Sioux Tribe. Specifically:

- SRIF will contact all Tribes to determine: (1) if Tribes are interested in participating in field visits and ethnographic interviews, or (2) if the Tribes wish to conduct their own research, with facilitation provided by SRIF. If your office requests the services of an ethnographer or ethno-historian, SRIF will arrange for those services.

J. Laysbad

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- SRIF will coordinate with the NRC, the United States Bureau of Land Management (BLM) (for the proposed Dewey Burdock project), State Historic Preservation Officers (SHPOs), and interested Tribes to adjust boundaries of the area of potential effects (APE) if discussions with Tribes indicate that historic properties outside project boundaries may be affected.
- SRIF will assemble information gathered from interested Tribes, ethnographers, and ethno-historians, prepare preliminary eligibility recommendations for TCPs identified in the proposed Crowe Butte and Dewey-Burdock APEs, and submit the information to the NRC for consideration.
- NRC will review all information and comments provided by consulting parties and will apply the criteria of adverse effect found in 36 CFR § 800.5(a). Based on its review of the information, the NRC will prepare determinations concerning the effects of *in-situ* recovery development activities on eligible or listed historic properties within the APEs.
- The NRC will consult with SHPOs and Tribes, and BLM (when properties are located on BLM-managed lands) on the effect determinations before finalizing its position on such.
- If the NRC determines there are adverse effects to historic properties, the NRC will consult further with interested parties to develop methods to resolve adverse effects.

The NRC staff understands that information provided to SRIF and/or the NRC staff may be sensitive in nature and, as such, you may want the NRC and SRIF to treat provided information as confidential. Both the NRC and SRIF will protect any information identified as confidential, in accordance with 36 CFR § 800.11(c).

If you have any questions or have comments regarding this letter, please contact the following members of my staff: Ms. Haimanot Yilma (via email at Haimanot.Yilma@nrc.gov, or via phone at 301-415-8029), or Mr. Nathan Goodman (via email at Nathan.Goodman@nrc.gov, or via phone at 301-415-2703).

Sincerely,

/RA/

Kevin Hsueh, Branch Chief
Environmental Review Branch-B
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket Nos. 40-8943, 40-9075

Enclosure: SRIF Biographies

cc: See Next Page

cc: With Enclosures:

Mr. John Schmuck
Cameco Resources
202 Carey Avenue, Suite 600
Cheyenne, WY 82001

Ms. Jill Dolberg
Nebraska State Historical Society
P.O. Box 82554
1500 R Street
Lincoln, NE 68501

Mr. Richard E. Blubaugh
Vice President of Environmental Health
and Safety Resources
Powertech (USA), Inc.
5575 DTC Parkway, Suite 140
Greenwood Village, CO 80111

Ms. Paige Olson
Review and Compliance Coordinator
South Dakota Historic Society
900 Governors Drive
Pierre, SD 57501

Mr. John Yellow Bird Steel, President
Oglala Sioux Tribe
P.O. Box 2070
Pine Ridge, SD 57770-2070



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
South Dakota Field Office
310 Roundup Street
Belle Fourche, South Dakota 57717-1698
www.blm.gov/moj



In Reply Refer To:

3809 (MTC040)

Larry W. Camper, Director
Division of Waste Management
And Environmental Protection
Office of Federal and State Materials
And Environmental Management Programs
Mail Stop T-8F5
Washington, DC 20555

RE: BLM requests NRC consent as Lead Agency for the Cultural Section 106 Consultation for the Dewey Burdock In-situ Uranium Recovery Project, Custer and Fall River Counties, South Dakota

Dear Mr. Camper;

During recent NRC/BLM discussions regarding the Dewey Burdock In-situ Uranium Recovery Project, the topic of designating the NRC as lead agency for Section 106 Consultation regarding the Dewey Burdock Project was reviewed. Upon consideration, it is the position of the South Dakota Field Office that the NRC be designated as the lead Agency for the Cultural Section 106 review, and the South Dakota Field Office is seeking concurrence regarding the same.

Please contact me with any concerns you may have at the above address or at (605) 892-7001.

Sincerely,

Marian M. Atkins
South Dakota Field Manager
BLM

CC: Haimanot Yilma – NRC

Richard Blubaugh – Powertech

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
South Dakota Field Office
310 Roundup Street
Belle Fourche, South Dakota 57717

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300



LARRY W. CAMPER
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Systems
Mail Stop T-8F5
Washington, DC 20555

T8F5 1





UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 19, 2012

Dear Tribal Historic Preservation Officers,

The U.S. Nuclear Regulatory Commission invites you to attend a government-to-government consultation on February 14th and 15th, 2012. The meeting will be part of the ongoing consultations under Section 106 of the National Historic Preservation Act (NHPA) associated with three separate applications NRC currently has under review: the Dewey Burdock project; the Crow-Butte North Trend project; and the Crow-Butte license renewal project.

The purpose of the meeting is to hear the views of interested Tribes about the general types and descriptions of historic properties of religious and cultural significance that may be affected by the proposed projects and how these places can be identified and evaluated as part of the ongoing environmental reviews for the above listed projects.

The NRC has identified certain categories of information that will be critical to our evaluation:

1. The general types and descriptions of historic properties of religious and cultural significance to the Tribes that the Tribes know or believe to be located in the three project areas;
2. The Tribes' views and approach on how best to identify and document these potential places;
3. The kinds of potential effects the Tribes believe that these places may be subject to as a result of the proposed projects; and
4. The kinds of measures the Tribes believe might enable NRC to develop a plan to avoid or minimize effects to these places.

The meeting will be held in the Lincoln Room at the Ramkota Best Western at 2111 N. LaCrosse Street, Rapid City, South Dakota, 57701. The NRC has set aside a block of 25 rooms under "NRC Group" for your convenience. Powertech (USA) Inc. and Cameco, Inc. (the applicants) will cover travel and per diem costs for two representatives from each Tribe. In addition, the applicants will also cover, beyond those costs already noted, the travel costs of any Tribal Chair or Tribal President, who chooses to attend. If the representatives from your Tribe are interested in being reimbursed for travel costs, please contact John Schmuck, Senior Permitting Manager for Cameco Resources, at 307-316-7587.

Enclosed is a proposed agenda for the meeting. If there are additional topics that your Tribe would like added to the agenda, please contact the NRC directly. The meeting will not be open to the public because of the sensitive nature of the cultural information to be discussed. The NRC understands confidentiality is necessary in order to protect sensitive information; therefore, methods needed to protect the information will be addressed based on feedback we receive from you.

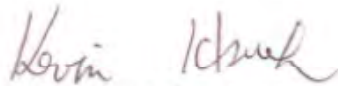
Please provide the names of the Tribal representatives who are planning to attend the meeting to Haimanot Yilma and Nathan Goodman by February 7, 2012.

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Additionally, representatives of the applicants will attend the meeting to exchange relevant information with Tribal officials. The NRC will also allow time for the Tribes to caucus and for NRC, BLM, and Tribal representatives to engage in discussion.

If you have additional questions for the NRC staff, please don't hesitate to contact the project manager for the Dewey-Burdock project, Haimanot Yilma, via phone at 301-415-8029 or e-mail at Haimanot.Yilma@nrc.gov or the project manager for the Crow-Butte North Trend and Crow-Butte license renewal projects, Nathan Goodman, via phone at 301-415-2703 or e-mail at Nathan.Goodman@nrc.gov

Thank you very much,



Kevin Hsueh, Branch Chief
Environmental Review Branch
Environmental Protection and
Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures (2):

Enclosure 1: Proposed Meeting Agenda
Enclosure 2: Initial List of Meeting Attendees

DeweyBurdNonPubEm Resource

From: dianne desrosiers [dyandancer@yahoo.com]
Sent: Tuesday, January 24, 2012 3:46 PM
To: Goodman, Nathan; Yilma, Haimanot
Cc: mgraham@snifoundation.org
Subject: Re: Invitation Letter

Good afternoon,

I am writing to verify our participation in the upcoming meeting to be held in Rapid City. Jim Whitted and I are the Tribal representatives for the Sisseton Wahpeton Oyate. Thank you for your attention in this matter.

Dianne Desrosiers
Tribal Historic Preservation Officer
Sisseton Wahpeton Oyate
PO Box 907
205 Oak St. E, Suite 121
Sisseton, SD 57262
(605)698-3584 office

*"Every part of this Earth is sacred to my people. We are part
of the earth and it is part of us". -Chief Seattle, 1854*

From: "Goodman, Nathan" <Nathan.Goodman@nrc.gov>
To: "Yilma, Haimanot" <Haimanot.Yilma@nrc.gov>; "Goodman, Nathan" <Nathan.Goodman@nrc.gov>
Sent: Thursday, January 19, 2012 3:50 PM
Subject: Invitation Letter

Dear Tribal Historic Preservation Officers,

Attached to this e-mail, you will find three enclosures. The first is an invitation letter to a Tribal Consultation meeting to take place on February 14 and 15, 2012 from our supervisor, Kevin Hsueh. The second is a proposed agenda for the Consultation meeting. And the third is a list of attendees for the same Consultation meeting. If you have any questions or problems opening any of the enclosures, please contact Haimanot or myself.

Thank you,

Nathan Goodman and Haimanot Yilma

Nathan Goodman
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S. NRC
301-415-2703
Nathan.Goodman@nrc.gov

Haimanot Yilma

Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.vilma@nrc.gov
Mail Stop : T8F05



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 6, 2012

Dear Tribal Historic Preservation Officers:

The NRC staff has received an email indicating a conflict for many Tribes with the previously suggested Section 106 meeting dates of March 14 and 15, 2012. In the same email, alternate dates of April 17 through 19 were suggested as possible dates to hold the next Section 106 meeting. Unfortunately, while the staff can accommodate those suggested dates, several of the other anticipated meeting participants already have prior commitments during those dates that cannot be rescheduled.

In an effort to move the Section 106 consultation forward and collect your input, the staff suggests the following:

As indicated in our email invitation on Tuesday, February 28, 2012:

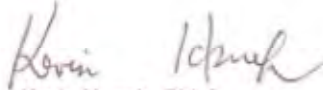
- The staff plans to forward the applicants' Statement of Work (SOW) for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects by **March 9, 2012** for your review and consideration.
- The staff requests your draft SOW for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects by **March 16, 2012**. This will allow the staff to promptly identify areas of agreement and disagreement with the applicants' proposed SOW. This will also allow the staff to identify for the applicants any areas in which they might consider revising their SOW. In brief, this will allow the consulting parties to continue working toward an acceptable SOW.
- The staff plans to review the SOWs submitted by you and the applicants, along with any additional input you or the applicants provide in the next several weeks, and prepare one comprehensive SOW for each of the proposed projects. The staff plans to circulate a comprehensive SOW for each of the projects to all consulting parties by **March 28, 2012**.
- The staff proposes having a 4 hour conference call to discuss the comprehensive SOWs during the week of April 9, 2012, or the week of April 16, 2012.

Based on the outcome of the conference call, if the parties determine another face-to-face meeting is warranted, the staff will arrange such a meeting based on the availabilities of all consulting parties.

2

If you have any questions or concerns about the above plan, please contact Mr. Nathan Goodman via email at Nathan.goodman@nrc.gov, or Ms. Haimanot Yilma via email at Haimanot.yilma@nrc.gov.

Sincerely,



Kevin Hsueh, Chief
Environmental Review Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 9, 2012

Dear Tribal Historic Preservation Officers:

On March 6, 2012, the U.S. Nuclear Regulatory Commission (NRC) staff informed you that we would soon be forwarding the applicants' Statement of Work (SOW) for the proposed Crow Butte North Trend, Crow Butte License Renewal, and Dewey-Burdock projects for your review and consideration. These three SOWs are attached. NRC staff would appreciate any comments you may have on the SOWs before NRC issues its comprehensive SOWs on March 28, 2012.

Additionally, on March 7, 2012, NRC staff received an e-mail from Sisseton-Wahpeton's Tribal Historic Preservation Officer (THPO) stating that Ben Rhodd, a consultant of the Rosebud Tribe, would be preparing an SOW for NRC's review. This e-mail also stated that the SOW would first be given to the Tribes for their review and concurrence. As NRC staff stated in the e-mail you received on March 6, 2012, we would ask that this SOW be provided to the staff by **March 16, 2012**.

While we appreciate you sharing with us your view of having face-to-face Section 106 consultation meetings, the regulations and guidance issued under the National Historic Preservation Act (NHPA) do not limit Section 106 consultation to face-to-face meetings. Nevertheless, NRC staff agrees that face-to-face group consultation is an important part of the Section 106 consultation process. As such, NRC staff would consider the possibility of having a third face-to-face meeting with the THPOs once it receives the SOW from the Tribes and has developed one comprehensive SOW for each of the three proposed projects.

NRC staff also believes that the consulting parties can continue to make progress on developing SOWs as we await the next face-to-face meeting. NRC staff has proposed a conference call to discuss the proposed SOWs we expect to soon receive from the Tribes and the applicants. NRC staff proposed two possible weeks for conference calls in its e-mail on March 6, 2012. NRC staff proposes to host a conference call either:

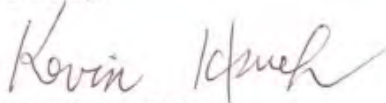
- On April 10, 2012 from 2:30 – 6:30 p.m. EST;
- On April 19, 2012 from 2:30 – 6:30 p.m. EST: or
- Both dates and times if the Tribes wish to have further discussions.

This conference call will give the consulting parties an early opportunity to comment on the proposed SOWs and to bring to the staff's attention any other issues related to the NHPA.

2

If you have any questions, please don't hesitate to contact the project manager for the Dewey-Burdock project, Ms. Haimanot Yilma via phone at 301-415-8029 or e-mail at Haimanot.Yilma@nrc.gov, or the project manager for the Crow Butte North Trend and Crow Butte License Renewal projects, Mr. Nathan Goodman via phone at 301-415-2703 or e-mail at Nathan.Goodman@nrc.gov.

Sincerely,



Kevin Hsueh, Chief
Environmental Review Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Crow Butte North Trend SOW
2. Crow Butte License Renewal SOW
3. Dewey-Burdock SOW

March 19, 2012

Mr. Louis Maynahonah, Chairman
Apache Tribe of Oklahoma
P.O. Box 1220
Anadarko, OK 73005

SUBJECT: ONGOING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION
ACT TRIBAL CONSULTATION LETTER FOR THE PROPOSED CROW BUTTE
NORTH TREND, CROW BUTTE LICENSE RENEWAL, AND DEWEY-
BURDOCK PROJECTS

Dear Chairman Maynahonah:

Enclosed please find a follow-up consultation letter to the Tribal Historic Preservation Officer
pertaining to ongoing Tribal consultation for three proposed projects: Crow Butte North Trend,
Crow Butte License Renewal, and Dewey-Burdock.

The U.S. Nuclear Regulatory Commission staff is transmitting this letter to you to keep you
informed of all Section 106 activities that are underway for the three proposed projects.

If you have any questions or concerns, please contact my staff, Ms. Haimanot Yilma via email
at Haimanot.Yilma@nrc.gov or phone at 301-415-8029 for the Dewey-Burdock project, or
Mr. Nathan Goodman via email at Nathan.Goodman@nrc.gov or phone at 301-415-8029 for
the Crow Butte projects.

Sincerely,

/RA/

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

cc: Mr. Lyman Guy

Enclosure:
Invitation Letter

March 26, 2012

Mr. Louis Maynahonah, Chairman
Apache Tribe of Oklahoma
P.O. Box 1220
Anadarko, OK 73005

SUBJECT: TRANSMITTAL OF TRANSCRIPTS AND ATTENDANCE LISTS FROM
SECTION 106 CONSULTATION MEETINGS

Dear Chairman Maynahonah:

Enclosed please find a copy of the transcripts and attendance lists from the Section 106 Consultation meetings held in Rapid City, South Dakota on February 14 and 15, 2012.

During the February meetings, the U.S. Nuclear Regulatory Commission (NRC) and Bureau of Land Management (BLM) staff received the following key information:

- Tribes are concerned about confidentiality of any information they transmit to the NRC based on a recent undesirable experience with other consulting parties. Tribes expressed an interest in first developing a confidentiality agreement before submitting any Tribal Cultural Properties (TCP) studies to the NRC. A representative from Standing Rock Sioux Tribe volunteered to share a recent confidentiality agreement developed for another project to use as a starting point for Tribes, NRC and BLM when developing an agreement for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects.
- Tribal Representatives requested that for future meeting invitations, the purpose be made clearer in order to ensure that Tribal participants have appropriate levels of decision-making authority.
- Tribal Representatives volunteered to develop project-specific Statements of Work (SOWs) to conduct TCP studies for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects.
- Tribal Representatives requested another face-to-face meeting to go over the draft SOWs for each of the three projects. Tribal Representatives suggested March 14 and 15, 2012 as possible meeting dates. However, due to conflicts with many participating Tribal Representatives, this meeting did not occur. Further discussion is ongoing to schedule a teleconference instead, and potentially another face-to-face meeting.

L. Maynahonah

2

Please note that the transcripts are not publicly available as information discussed during the February meeting is protected under the National Historic Preservation Act (NHPA)¹ and the South Dakota Codified Laws².

If you have any questions or concerns, please contact my staff, Ms. Haimanot Yilma via email at Haimanot.Yilma@nrc.gov or phone at 301-415-8029 for the Dewey-Burdock project, or Mr. Nathan Goodman via email at Nathan.Goodman@nrc.gov or phone at 301-415-8029 for the Crow Butte projects.

Sincerely,

/RA/

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Transcript of 2/14/12 Meeting
2. Transcript of 2/15/12 Meeting
3. Attendance List from 2/14/12 Meeting
4. Attendance List from 2/15/12 Meeting

cc: Mr. Lyman Guy

¹ Section 304 of the National Historic Preservation Act of 1966, As amended through 2006 [16 U.S.C. 470w-3(a)] concerns the confidentiality of the location of sensitive historic resources:

(a) The head of a Federal agency or other public official receiving grant assistance pursuant to this Act, after consultation with the Secretary, shall withhold from disclosure to the public, information about the location, character, or ownership of a historic resource if the Secretary and the agency determine that disclosure may -

- (1) cause a significant invasion of privacy;
- (2) risk harm to the historic resources; or
- (3) impede the use of a traditional religious site by practitioners.

² The release of records pertaining to the location of archaeological sites is restricted under South Dakota Codified Laws (SDCL), specifically, SDCL § 1-20-21.2, Confidentiality of records pertaining to location of archaeological site—Exceptions.

Any records maintained pursuant to § 1-20-21 pertaining to the location of an archaeological site shall remain confidential to protect the integrity of the archaeological site.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 5, 2012

Dear Tribal Historic Preservation Officers:

In a letter dated March 6, 2012, the U.S. Nuclear Regulatory Commission (NRC) staff informed you of our plans to forward comprehensive Statements of Work (SOWs) for the Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects to you by March 28, 2012. We planned to send the comprehensive SOWs after taking into account input from both the Applicants and the Tribes. Also in our March 6 letter, NRC staff stated its intent to forward the Applicants' SOWs to you, requested your comments on the Applicants' SOWs, and proposed a teleconference to discuss the comprehensive SOWs.

On March 7, 2012, NRC staff received an email from Sisseton-Wahpeton's Tribal Historic Preservation Officer stating that an SOW was being developed by the Tribes for NRC review.

On March 9, 2012, the NRC forwarded a copy of the Applicants' SOWs to you, and we reiterated our request to receive your SOW by March 16, 2012. The NRC also requested your comments on the Applicants' SOWs by March 28, 2012. To date, we have not received any input. For this reason, the NRC was unable to develop a comprehensive SOW for each of the three proposed projects.

In order to efficiently move the Section 106 process forward, the NRC suggests the following:

- Conduct a teleconference with all consulting parties (including the Applicants and SRIF) on **April 24, 2012 from 2:30 to 6:30 p.m. EST**. This teleconference will be a working meeting between the THPOs and NRC Staff. During this call, consulting parties would:
 - Use the Applicants' SOWs as a starting point and identify elements essential for developing a comprehensive SOW for each of the three proposed projects.
 - The goal is to have the consulting parties develop three comprehensive SOWs.
 - Schedule dates to conduct the TCP studies.

Alternatively, if the Tribes submit draft SOWs before April 19, 2012, NRC staff can use both SOWs to initiate our discussion. The staff will highlight areas where the SOWs are different so that the consulting parties can use those differences as a starting point to work toward a consensus in those areas.

2

The Applicants' contractor (SRIF) may contact you in the near future to discuss their SOWs that the NRC forwarded to you on March 9, 2012. The intent of their call would be to solicit your feedback on their SOW.

Please let us know if you are available to participate on the April 24, 2012 teleconference by **April 13, 2012**. If you have any questions, you can contact Ms. Haimanot Yilma by phone at 301-425-8029 or via email at Haimanot.Yilma@nrc.gov or Mr. Nathan Goodman by phone at 301-415-2703 or via email at Nathan.Goodman@nrc.gov.

Sincerely,



Kevin Hsueh, Chief
Environmental Review Branch
Environmental Protection
and Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Rajapakse, Champa

From: Goodman, Nathan
Sent: Friday, April 20, 2012 11:01 AM
To: Yilma, Haimanot; Goodman, Nathan
Subject: Upcoming teleconference on April 24, 2012
Attachments: Dewey-Burdock Draft SOW and figures .pdf; Crow Butte-NT and LR Draft SOW figures.pdf; Crow Butte-NT and LR Draft SOW text.pdf

Dear Tribal Historic Preservation Officers:

Haimanot and I would like to remind you of an upcoming teleconference with all consulting parties (including the Applicants, SRIF, BLM, and EPA Region 8) on **April 24, 2012 from 2:30 to 6:30 p.m. EST**. This teleconference will be a working meeting between the THPOs and all other consulting parties. The purpose of this teleconference is to continue NRC's ongoing Section 106 consultations for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey Burdock projects. The NRC staff is interested in identifying areas within the three project sites that have traditional religious or cultural significance to the Tribes, so these may be considered in our environmental reviews. During this teleconference, consulting parties would use the Applicants' SOWs as a starting point and identify elements essential for developing a comprehensive SOW for each of the three proposed projects and schedule dates to conduct the TCP studies. The goal is to have the consulting parties develop three comprehensive SOWs.

Below are the proposed agenda and teleconference phone number and passcode:

Welcome	Kevin Hsueh
Introductions	All
Purpose of meeting	Michelle Ryan
Discussion of Draft SOWs	Haimanot Yilma, Nathan Goodman
1) Crow Butte License Renewal	
2) Crow Butte North Trend	
3) Dewey-Burdock	
<u>Possible discussion topics:</u>	
• Purpose	
• Scope of Work	
• Period of Performance	
• Reports	
• Deliverables Schedule	
• Level of Effort	

Break – 15 min (~4:30-4:45pm)

Discussion of Draft SOWs continued	Haimanot Yilma, Nathan Goodman
------------------------------------	--------------------------------

Summary of concerns and recommendations	Michelle Ryan
Next Steps	Haimanot Yilma, Nathan Goodman
Closing	Kevin Hsueh

Dial-in number: 1-800-369-1134
Passcode: 85795

We would also like to note that the call will be recorded so that a transcript of the meeting can be made available to all parties.

On March 9, 2012, the NRC forwarded a copy of the applicants' SOWs to you for your review and consideration. For your convenience, we are attaching another copy of the three SOWs to this e-mail.

Please contact us by 5:00 PM EST Monday (April 23, 2012) if you are available to participate in the April 24, 2012 teleconference. If you have any questions, you can contact either of us by phone or e-mail, which are provided below.

Thank you,

Haimanot Yilma and Nathan Goodman

Nathan Goodman
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S. NRC
301-415-2703
Nathan.Goodman@nrc.gov

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S. Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8F05

May 7, 2012

Mr. Duane Big Eagle, Chairman
Crow Creek Sioux Tribe
P.O. Box 50
Ft. Thompson, SD 57339-0050

SUBJECT: TRANSMITTAL OF APPLICANT'S DRAFT STATEMENT OF WORK
REGARDING CROW BUTTE NORTH TREND, CROW BUTTE LICENSE
RENEWAL, AND DEWEY-BURDOCK PROJECTS

Dear Chairman Big Eagle:

Enclosed please find a followup letter sent via email to the Tribal Historic Preservation Officers (THPOs) forwarding draft Statement of Works (SOWs) for Identification of Properties of Religious and Cultural Significance that the staff received from Cameco Resources Inc. and Powertech Inc. pertaining to the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects. The SOWs are also enclosed in this letter for your convenience.

In the enclosed letter, the U.S. Nuclear Regulatory Commission (NRC) staff also requested for the THPO's participation in a conference call to discuss the draft SOWs and any other issues related to National Historic Preservation Act (NPHA) as many interested tribes had a conflict with the previously suggested date of March 14 and 15, 2012 to host a face-to-face meeting. The NRC staff encourages the THPOs to continue the dialog with all consulting parties via a conference call in an effort to move the Section 106 consultation forward.

The NRC staff is transmitting this letter to you to keep you informed of all Section 106 activities that are underway for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects.

D. Big Eagle

2

If you have any questions or concerns, please contact my staff, Ms. Haimanot Yilma via email at Haimanot.Yilma@nrc.gov or phone at 301-415-8029 for the Dewey-Burdock project, or Mr. Nathan Goodman via email at Nathan.Goodman@nrc.gov or phone at 301-415-8029 for the Crow Butte projects.

Sincerely,

/RA/

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Followup Letter
2. Draft SOWs

cc: Wanda Wells

May 23, 2012

Mr. John Yellow Bird Steele, President
Oglala Sioux Tribe
P.O. Box 2070
Pine Ridge, SD 57770-2070

SUBJECT: TRANSMITTAL OF A LETTER SENT TO THE TRIBAL HISTORIC
PRESERVATION OFFICERS INVITING THEM TO ATTEND A
TELECONFERENCE REGARDING THE CROW BUTTE NORTH TREND,
CROW BUTTE LICENSE RENEWAL, AND DEWEY-BURDOCK PROJECTS

Dear President Steele:

Enclosed please find a followup letter sent via email to the Tribal Historic Preservation Officers (THPOs). In the letter, the Nuclear Regulatory Commission (NRC) staff invited the THPOs to participate in a teleconference that was held on April 24, 2012. The participants in the teleconference included the NRC staff, representatives from eight Tribes, Bureau of Land Management, U.S. Environmental Protection Agency Region 8, and the South Dakota State Historic Preservation Officer.

The purpose of the April 24, 2012 teleconference was to discuss the draft Statements of Work (SOWs) for identification of historic properties of religious and cultural significance that the staff received from Cameco Resources Inc. and Powertech (USA) Inc. The draft SOWs pertain to the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects. The SOWs were developed taking into account information gathered during a prior Tribal consultation meeting held in Rapid City, South Dakota on February 14 and 15, 2012.

In the enclosed letter, the NRC staff also encouraged the THPOs to submit their own SOW for each project prior to the scheduled teleconference so that the consulting parties can use both the Tribes' and the applicants' documents to finalize a SOW for each project. This will allow the parties to move forward with the identification of historic properties that may be of religious or cultural significance to the Tribes. Based on the staff's review schedule for the three proposed projects mentioned above, the identification of such properties will need to be completed by the fall of 2012. To date, however, the staff has not received the Tribes' SOWs.

The NRC staff is transmitting this letter and attached correspondence to you to keep you informed of all Section 106 activities that are underway for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects.

J. Yellow Bird Steele

2

If you have any questions or concerns, please contact, Ms. Haimanot Yilma via email at Haimanot.Yilma@nrc.gov or phone at 301-415-8029 for the Dewey-Burdock project, or Mr. Nathan Goodman via email at Nathan.Goodman@nrc.gov or phone at 301-415-8029 for the Crow Butte projects.

Sincerely,

/RA by Bill VonTill Acting for/

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
Follow up Letter

cc: Wilmer Mesteth

June 20, 2012

Mr. Conrad Fisher
Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043-0128

SUBJECT: TRANSMITTAL OF EVALUATIVE TESTING REPORT AND ASSOCIATED MAP

Dear Mr. Fisher:

Enclosed please find an Evaluative Testing Report of 20 Sites in the proposed Dewey-Burdock Uranium Recovery project boundary developed by the applicant (Powertech (USA) Inc.). The associated map is also attached for your convenience.

The U.S. Nuclear Regulatory Commission (NRC) is transmitting these documents to you per your request. Please note that some parts of the document and the Map are protected under the National Historic Preservation Act¹ and South Dakota Codified Laws².

If you have any questions or concerns, please contact my staff, Ms. Haimanot Yilma via email at Haimanot.Yilma@nrc.gov or phone at 301-415-8029.

Sincerely,

/RA/

Kevin Hsueh, Chief
Environmental Review Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Supplemental ARC report
2. ARC Map

cc: Chairman Leroy Spang
Mr. Richard Blubaugh, Powertech (USA) Inc
Mr. Gregory R. Fesko, BLM

¹ Section 304 of the National Historic Preservation Act of 1966, As amended through 2006 [16 U.S.C. 470w-3(a)] concerns the confidentiality of the location of sensitive historic resources:

(a) The head of a Federal agency or other public official receiving grant assistance pursuant to this Act, after consultation with the Secretary, shall withhold from disclosure to the public, information about the location, character, or ownership of a historic resource if the Secretary and the agency determine that disclosure may -

- (1) cause a significant invasion of privacy;
- (2) risk harm to the historic resources; or
- (3) impede the use of a traditional religious site by practitioners.

² The release of records pertaining to the location of archaeological sites is restricted under South Dakota Codified Laws (SDCL), specifically, SDCL § 1-20-21.2. Confidentiality of records pertaining to location of archaeological site—Exceptions. Any records maintained pursuant to § 1-20-21 pertaining to the location of an archaeological site shall remain confidential to protect the integrity of the archaeological site.

June 26, 2012

Ms. Waste'Win Young
Standing Rock Sioux Tribe
Tribal Historic Preservation Office
P.O. Box D
Fort Yates, ND 58538-0522

SUBJECT: TRANSMITTAL OF TRANSCRIPT FROM TELECONFERENCE CONDUCTED
ON APRIL 24, 2012

Dear Ms. Young:

Enclosed please find a copy of the transcript from the teleconference conducted on April 24, 2012, pertaining to the proposed Crow Butte North Trend, Crow Butte License Renewal, and Dewey-Burdock projects. The participants in the call included staff from the U.S. Nuclear Regulatory Commission (NRC), the U.S. Environmental Protection Agency (EPA) Region 8, and the Bureau of Land Management (BLM); representatives of Powertech, Cameco, and SRI Foundation (SRIF) (applicant's contractor); the South Dakota State Historic Preservation Officer (SD SHPO); and representatives of eight Tribes (Northern Cheyenne, Oglala Sioux, Rosebud Sioux, Northern Arapaho, Sisseton-Wahpeton, Standing Rock Sioux, Yankton Sioux, and Cheyenne and Arapaho).

During the teleconference, the NRC staff sought feedback from the Tribes on the applicants' proposed Statements of Work (SOWs) for conducting Tribal Cultural Properties (TCP) studies. The staff had previously sent these SOWs to the Tribes on March 9, 2012. The consulting parties discussed the following aspects of the applicants' draft SOWs:

- Adequacy of compensation for Tribal officials conducting the fieldwork.
- Confidentiality of information gathered by the Tribes.
- Amount of acreage to be covered during the fieldwork. Tribes requested 100% surveys of project areas. The Tribes agreed to send two Tribal officials to visit the project areas and determine the scope and extent of the fieldwork.
- Tribal involvement in making eligibility determinations.
- Next steps:
 - Two Tribal officials visit the project areas for initial work assessment;
 - Tribes develop SOWs based on these initial visits;
 - Tribes hold a teleconference to discuss their draft SOWs;
 - Tribes provide copies of draft SOWs to NRC after all Tribal members agree;
 - NRC distributes draft SOWs from Tribes to all other consulting parties including Tribes, applicants, and SHPO;
 - NRC schedules another meeting with all consulting parties to finalize SOWs; and
 - Applicants will provide dates for proposed field work.

W. Young

2

Please note that the transcript of the April 24, 2012 teleconference is not publicly available and that information discussed during the call may be protected from disclosure by the National Historic Preservation Act (NHPA) and South Dakota Codified Laws.

If you have any questions or concerns, please contact my staff Haimanot Yilma via email at Haimanot.yilma@nrc.gov or phone at 301-415-8029 for the Dewey-Burdock project or Nathan Goodman via email at Nathan.goodman@nrc.gov or phone at 301-415-8029 for the Crow Butte projects.

Sincerely,

/RA/

Kevin Hsueh, Chief
Environmental Review Branch
Environmental Protection and Performance
Assessment Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
Transcript from April 24, 2012
Teleconference

cc: Chairman Charles Murphy

June 29, 2012

Chairman Jim Shakespeare
Northern Arapaho Business Committee
P.O. Box 396
Fort Washakie, WY 82514

SUBJECT: TRANSMITTAL OF EMAIL CORRESPONDENCE PERTAINING TO
TELECONFERENCE CONDUCTED ON APRIL 24, 2012

Dear Chairman Shakespeare:

Enclosed please find email correspondence from U.S. Nuclear Regulatory Commission (NRC) staff to Tribal Historic Preservation Officers (THPOs) requesting Tribal participation for a teleconference on April 24, 2012. The NRC staff also included three draft Statements of Work (SOWs) to the email correspondence. The purpose of the teleconference was to discuss the draft SOWs for Identification of Properties of Religious and Cultural Significance received from Cameco Resources Inc. and Powertech Inc. pertaining to the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects. The SOWs were developed taking into account information gathered during the February 2012 Tribal consultation meeting. The applicant's SOWs were first forwarded to your office on March 9, 2012 for review and comment.

The NRC staff is transmitting this letter and attached email correspondence to you to keep you informed of all Section 106 activities for the proposed Crow Butte License Renewal, Crow Butte North Trend, and Dewey-Burdock projects.

If you have any questions or concerns, please contact Ms. Haimanot Yilma via email at Haimanot.Yilma@nrc.gov or by phone at 301-415-8029 for the Dewey-Burdock project, or Mr. Nathan Goodman via email at Nathan.Goodman@nrc.gov or by phone at 301-415-8029 for the Crow Butte projects.

Sincerely,

/RA by Gregory Suber Acting for/

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Followup Email
2. Draft SOWs

cc: Ms. Darlene Conrad



In Reply Refer To:

8100-R
BAS

12-MTD40-15

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
South Dakota Field Office
310 Roundup Street
Belle Fourche, South Dakota 57717-1698
<http://www.blm.gov/sd>

Date: July 20, 2012

Mr. Richard E. Blubaugh
Vice President – Environmental Health & Safety Resources
Powertech (USA) Incorporated
5575 DTC Parkway, Suite 140
Greenwood Village, CO 80111

RE: Cultural Resource review of Evaluative Testing of 20 Sites in the Powertech (USA) Inc. Dewey-Burdock Uranium Project Impact Areas: Volumes 1 and 2. For the Dewey-Burdock Uranium Recovery Project, Fall River and Custer Counties, South Dakota.

Dear Mr. Blubaugh:

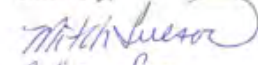
We have reviewed the appropriate volumes of the National Historic Preservation Act, Section 106 cultural compliance reports presented by Archeology Laboratory, Augustana College, for evaluation of cultural resource sites inside areas of potential effect for the proposed Dewey-Burdock project area. The reports reviewed document formal evaluation of 20 cultural resource sites inside areas proposed for the project that could have effect. Of these 20 sites, one site is located in part on BLM administered surface land.

Site 39FA96 was found to be significantly affected by natural erosion and therefore does not possess adequate integrity, does not display workmanship or feeling, and it is not associated with an important historic event. Based on the information provided in the report the Bureau of Land Management (BLM) recommends adequate testing was completed on site 39FA96, the site's integrity has been severely affected by deflation. The portion on BLM administered land does not possess enough information to meet the National Register of Historic Places criteria for an eligible archaeological site; therefore, the BLM is in agreement with the determination for site 39FA96 on this portion, in that it is considered not eligible for nomination to the National Register of Historic Places. Information provided for the remaining 19 sites should be sufficient for the lead Federal Agency to make informed recommendations of eligibility on the historic properties.

Mr. Richard E. Blubaugh
July 20, 2012
Page 2

Please let us know if you should need any additional information. I can be reached as Mr. Mitch Iverson (acting South Dakota Field Manager), (605) 892-7001 or email at Mitchell_Iverson@blm.gov or contact our archaeologist, Brenda Shierts at (605) 723-8712 or Brenda_Shierts@blm.gov.

Sincerely,



Acting For
Marian M. Atkins
South Dakota Field Manager

cc: Paige Olson, SD SHPO
Gary Smith, BLM MSO Historic Preservation Officer
Mark Sant, BLM MSO Tribal Coordinator
Mr. Greg R. Fesko, P.G., BLM MSO Solid Minerals
Haimanot Yilma, NRC, Project Manager Environmental Review Branch

From: [Yilma, Haimanot](#)
To: [Yilma, Haimanot](#)
Cc: [Goodman, Nathan](#)
Subject: Part 1 of 2: Invitation for a Teleconference On Thursday August 9, 2012
Date: Tuesday, August 07, 2012 5:37:00 PM
Attachments: [AreaExample_120710.pdf](#)
[Dewey-Burdock Draft SOW Map 2.pdf](#)
[Dewey-Burdock Draft SOW Map 1.pdf](#)
[Revised Scope of Work Dewey-Burdock Draft 3.docx](#)

Dear Tribal Historic Preservation Officers:

The NRC staff would like to invite you to participate in a teleconference on August 9, 2012 from 2:30 to 6:30 p.m. EST with all consulting parties (including the Applicant, SD SHPO, BLM, EPA Region 8, and SRIF, the applicant's contractor). This teleconference will be a working level meeting between the THPOs and all other consulting parties.

The purpose of this teleconference is to finalize a Statement of Work (SOW) acceptable to all consulting parties and to establish a timeframe for conducting fieldwork to identify any historic properties of religious and cultural significance to the Tribes that may be affected by the proposed Dewey-Burdock Project.

Below are the proposed agenda and teleconference phone number and passcode:

Welcome	Kevin Hsueh
Introductions	All
Purpose of the Meeting	Jean Trefethen
Discussion of Draft SOWs for the Dewey-Burdock Project	Haimanot Yilma
1) Tribes draft SOW	
2) Applicant's revised draft SOW	

Possible Discussion Topics:

- Purpose
- Scope of Work – *amount of land to be surveyed and coverage rate (acres per person)*
- Period of Performance – *start and duration of the fieldwork*
- Reports – *content and confidentiality*

- Level of Effort – *number of people and associated rates*
- Deliverables Schedule

Break –15 min (~4:30-4:45pm EST)

Discussion of Draft SOW continued	Haimanot Yilma
Summary of Concerns and Recommendations	Jean Trefethen
Next Steps	Jean Trefethen and Haimanot Yilma
Closing	Kevin Hsueh

Dial-in number: 1-800-779-3170
Passcode: 3569215

The teleconference will be recorded and a transcript of the meeting will be provided to all consulting parties.

For your convenience, the Dewey Burdock SOW developed by the Tribes is attached for your review. We also attach the Applicant's revised SOW for the Dewey-Burdock Project for your review. The revised Dewey Burdock SOW addresses issues raised in Tribes' draft SOW for the Dewey-Burdock Project and incorporates information gathered during the April 24, 2012 teleconference with all consulting parties. The Applicant's original SOW for the Dewey-Burdock Project was forwarded to you on March 9, 2012.

The revised SOWs for the Crow Butte North Trend, Crow Butte License Renewal, Marsland and Three Crow Projects are also attached for your review. Although these revised SOWs are not on the teleconference agenda, the Applicant will be available to answer general questions.

Please contact me by 11 AM EST Thursday August 9, 2012, if you will participate in the teleconference. If you have any questions, please contact me by phone or e-mail.

Please note that because the size of the attachments, we had to send you the materials in two parts. Part 2 of this email will follow shortly.

Thank you,

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8F05

From: [Yilma Haimanot](#)
To: [Yilma Haimanot](#)
Cc: [Goodman, Nathan](#)
Subject: Reminder: Invitation for a Teleconference today August 9, 2012 from 2:30pm to 6:30pm (EST)
Date: Thursday, August 09, 2012 10:17:00 AM

Good Morning,

The NRC staff would like to remind you of the teleconference with all consulting parties (including the Applicant, SD SHPO, BLM, EPA Region 8, and SRIF, the applicant's contractor) scheduled for today **Thursday August 9, 2012 from 2:30 to 6:30 p.m. (EST)**. This teleconference will be a working level meeting between the THPOs and all other consulting parties.

Below is the proposed agenda and teleconference phone number and passcode:

Dial-in number: 1-800-779-3170
Passcode: 3569215

Proposed Agenda

Welcome	Kevin Hsueh
Introductions	All
Purpose of Meeting	Jean Trefethen
Discussion of Draft SOW for Dewey-Burdock Project	Haimanot Yilma
1) Tribes draft SOW	
2) Applicant's revised draft SOW	

Possible Discussion Topics:

- Purpose
- Scope of Work – *amount of land to be surveyed and coverage rate (acres per person)*
- Period of Performance – *start and duration of the fieldwork*
- Reports – *content and confidentiality*
- Level of Effort – *number of people and associated rates*
- Deliverables Schedule

Break –15 min (~4:30-4:45pm EST)

Discussion of Draft SOW (continued)	Haimanot Yilma
Summary of Concerns and Recommendations	Jean Trefethen
Next Steps	Jean Trefethen and Haimanot Yilma
Closing	Kevin Hsueh

The teleconference will be recorded and a transcript of the meeting will be provided to all consulting parties.

Thank you.

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8F05

From: [Ylma, Haimanot](#)
To: [Ylma, Haimanot](#)
Subject: Proposed Agenda for August 21, 2012 Teleconference starting at 9:00 am (Central time)
Date: Monday, August 20, 2012 12:15:00 PM
Attachments: [Proposed Agenda for 8-21-12 call.docx](#)
[Dewey-Burdock Draft SOW Map 3.pdf](#)
[Revised Scope of Work Dewey-Burdock Draft 3.docx](#)
[Dewey-Burdock Draft SOW Map 1.pdf](#)
[Dewey-Burdock Draft SOW Map 2.pdf](#)

Dear Tribal Historic Preservation Officers:

During the teleconference on August 9, 2012, the consulting parties that attended the call (including representatives from the Oglala Sioux, Cheyenne River Sioux, Crow Creek Sioux, Northern Arapaho, Northern Cheyenne, Rosebud Sioux, Santee Sioux, Sisseton-Wahpeton Oyate, Standing Rock Sioux, and Yankton Sioux tribes) agreed to participate in another teleconference on Tuesday, August 21, 2012 at 9:00 am (Central Time). As requested, the teleconference is scheduled for August 21, 2012 from 9:00 am to 1:00 pm (Central time). The teleconference can be extended for an additional 4 hours if more time is required to discuss the scope estimate details highlighted below. Attached please find the agenda and call-in information.

On Tuesday August 14, 2012 the Nuclear Regulatory Commission (NRC) staff shared the following with you:

- The position of both NRC and Bureau of Land Management (BLM) staff is that the field identification survey for the Dewey-Burdock Project should focus on the proposed initial disturbance (with additional buffers). This area appears in salmon on Map 3 of the revised Statement of Work (SOW) developed by the applicant and forwarded to you on August 7, 2012 by the NRC. This area measures approximately 2,637 acres. This revised SOW is included in this email for your convenience.
- The NRC and BLM staff agree with the Tribes' recommendation that a Programmatic Agreement (PA) be developed to ensure that additional field investigations will be conducted outside this 2,637-acre buffered impact area prior to any future disturbance (such as proposed land-application areas and/or utility line locations). If a license is granted, a requirement to abide by the terms of this PA would be included as a license condition.

In the August 14, 2012 email, the NRC staff also requested that Tribal Representatives review the revised SOW prepared by the applicant for a survey of the 2,637-acre buffered impact area. The NRC staff requested that your review focus on the following important scope estimate details:

- Estimated coverage rate for field identification (# of acres per person day).
- Start date and estimated duration of the field identification effort.
- Proposed report content and confidentiality requirements (to be prepared after the field identification has been completed).
- Number of people required for the field identification, with labor classifications (e.g., surveyor, crew leader, traditional cultural expert) and associated hourly rates.
- Report deliverable schedules.

The goal for the August 21, 2012 teleconference is to discuss these scope estimates listed above

and come to resolution on how to finalize the draft SOW. The NRC staff will incorporate changes discussed during the teleconference and distribute the revised SOW to all consulting parties for final review.

Dewey-Burdock is the first of three projects that will need field identification before the end of 2012 field season. For that reason, it is highly important that we schedule field identification for the Dewey-Burdock project as soon as possible.

Thank you

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8F05

From: [Yilma Haimanot](#)
To: [Yilma Haimanot](#)
Subject: Reminder: Invitation for a Teleconference today August 21, 2012 from 9:00 a.m. to 1:00 p.m. (Central time)
Date: Tuesday, August 21, 2012 8:50:00 AM

Good Morning,

The NRC staff would like to remind you of the teleconference with all consulting parties (including the Applicant, SD SHPO, BLM, EPA Region 8, and SRIF, the applicant's contractor) scheduled for today **Tuesday August 21, 2012 from 9:00 a.m. to 1:00 p.m. (Central time)**. This teleconference will be a working level meeting between the THPOs and all other consulting parties.

Below is the proposed agenda and teleconference phone number and passcode:

Call-In Number: 800-857-9707
Passcode: 6409817

Proposed Agenda

Welcome	Kevin Hsueh
Introductions	All
Purpose of Meeting	Randy Withrow
Discussion of Draft SOWs for the Dewey-Burdock Project	Randy Withrow/ Haimanot Yilma / Lynne Sebastian

Possible Discussion Topics:

- Estimated coverage rate for field identification (# of acres per person day).
- Start date and estimated duration of the field identification effort.
- Proposed report content and confidentiality requirements (to be prepared after the field identification has been completed).
- Number of people required for the field identification, with labor classifications (e.g., surveyor, crew leader, traditional cultural expert) and associated hourly rates.
- Report deliverable schedules.

Break –15 min (~11:30 - 11:45 am EST)

Discussion of Draft SOW (continued)	Randy Withrow/ Haimanot Yilma/ Lynne Sebastian
Summary of Concerns and Recommendations	Randy Withrow

Next StepsRandy Withrow and Haimanot
Yilma**Closing**

Kevin Hsueh

The teleconference will be recorded and a transcript of the meeting will be provided to all consulting parties.

Thank You

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
email: haimanot.yilma@nrc.gov
Mail Stop : T8F05



RICHARD E. BLUBAUGH
Vice President – Health, Safety
& Environmental Resources

POWERTECH (USA) Inc.

August 29, 2012

Kevin Hsueh, Branch Chief
Environmental Review Branch-B
Environmental Protection and Performance Assessment Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State materials and Environmental Management Programs
United States Nuclear Regulatory Commission
Washington D.C. 20555-0001

Re: August 12, 2011 letter from U.S. Nuclear Regulatory Commission (NRC) Staff to Powertech (USA) Inc. concerning information needed to complete Section 106 of the National Historic Preservation Act

Dear Mr. Hsueh:

I am writing in regard to the above-referenced letter in which NRC Staff requested that, as part of its submissions in support of its license application (docket number 040-009075) for the proposed Dewey-Burdock In Situ Leach Uranium Recovery Project (Dewey-Burdock Project), Powertech (USA) Inc. (Powertech) provide NRC Staff with information regarding potential properties of religious and cultural significance (also referred to as "traditional cultural properties") that might be affected by the proposed project.

Over the past year, Powertech has made every effort to comply with this request. First, Powertech hired third-party consultants (SRI Foundation or the Foundation) to identify and facilitate consultations with federally recognized Indian tribes (Tribes) that might ascribe religious and cultural significance to properties within the proposed project area. Once NRC Staff had informed the Tribes about its request to the applicants and explained the Foundation's role, the Foundation began the first of many contacts with the Tribes on November 4, 2011 (see Attachment 1 for a record of tribal communications). The Foundation provided information about the proposed Dewey-Burdock Project and requested Tribal input as to appropriate methods for gathering the information needed by NRC Staff. The Tribes indicated that they needed to conduct an on-the-ground field investigation within the Project area, and that they wished to discuss how to proceed with this identification effort in a face-to-face meeting with NRC.

In partnership with Cameco Resources (which had received the same request for information from NRC), Powertech sponsored a two-day face-to-face Section 106 consultation meeting on February 14 and 15, 2012, among NRC Staff, Bureau of Land Management (BLM), Environmental Protection Agency (EPA), and representatives of the following federally recognized Indian tribes:

Cheyenne River Sioux Tribe
Crow Creek Sioux Tribe
Crow Tribe of Montana
Eastern Shoshone Tribe
Fort Peck

5575 DTC Parkway, Suite 140
Greenwood Village, CO 80111 USA

Telephone: 303-790-7528
Facsimile: 303-790-3885

Website: www.powertechuranium.com
Email: info@powertechuranium.com

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Northern Arapaho Tribe
Northern Cheyenne Tribe
Oglala Sioux Tribe
Rosebud Sioux Tribe
Santee Sioux Tribe of NE
Sisseton-Wahpeton Oyate
Standing Rock Sioux Tribe
Yankton Sioux Tribe

The purpose of this meeting, as established by NRC Staff, was to enable the federal agencies to hear from the Tribes what would be required in order for the Tribes to identify potential properties of religious and cultural significance to them within the Dewey-Burdock and Crow Butte/North Trend Project/license areas. No information about specific identification procedures was forthcoming during this meeting, but the Tribes in attendance proposed to provide NRC Staff with a scope of work (SOW) for the Dewey-Burdock and Crow Butte/North Trend identification efforts. The Tribes also indicated during the meeting that they would not work directly with either Powertech (USA) Inc. or its consultants.

In March of this year, Powertech, at the request of NRC Staff, developed an initial draft SOW for identification of potential properties of religious and cultural significance within the Dewey-Burdock license area. The purpose of this document was to serve as a point of departure for negotiations, along with the anticipated proposed SOW from the Tribes. NRC Staff sent Powertech's draft scope to the Tribes on March 9, 2012, and requested that the Tribes provide their promised proposed SOWs by March 16.

The Tribe's proposed SOW for the Dewey-Burdock Project was not received by NRC Staff until July 13, 2012. This SOW provided rates for items such as salaries, travel, overhead, and per diem; however, it did not provide any information on level of effort (e.g., number of field days, number of travel days, and number of crew members) which would have enabled Powertech to estimate the potential costs. NRC Staff's requests to the Tribes for clarification on level of effort issues subsequent to receipt of the Tribal SOW have been unsuccessful. On July 30, 2012, once again at the request of NRC Staff, Powertech provided a revised SOW for identification of potential properties of religious and cultural significance in the Dewey-Burdock Project area.

Powertech has participated in three conference calls sponsored by NRC and attended by BLM, EPA, and many of the Tribes on the list provided above. The first call was on April 24, 2012, the second on August 9, 2012, and the third on August 21, 2012. During the April 24th call, the Tribes requested that two tribal representatives be assisted in carrying out reconnaissance visits to both the Dewey-Burdock and Crow Butte/North Trend license areas, in order to secure information that would enable the Tribes to complete detailed proposed SOWs for these projects. Powertech accommodated this request, and the Dewey-Burdock Project reconnaissance visit took place on Saturday, May 26th. The purpose of each of these conference calls, as established by NRC Staff, was to secure input from the Tribes that would enable NRC Staff to develop a final SOW for identification of potential properties of religious and cultural significance. None of these calls succeeded in meeting this objective. In the absence of a mutually acceptable SOW, Powertech cannot contract with the Tribes or their representatives to secure the information requested by NRC to complete the identification phase of the Section 106 process.

I regret to inform you that after a year of substantial effort, Powertech is unable to provide the information on potential properties of religious and cultural significance that may be affected by the Dewey-Burdock Project as requested in your letter of August 12, 2011. Further, Powertech has concluded that additional efforts on our part are unlikely to be productive.

One of our primary concerns, from the beginning of this effort, has been to ensure that places of significance to the Tribes within Powertech's proposed Project area that may be affected by Project activities be identified so that Powertech can, to the extent possible, protect them from disturbance. To that end, Powertech is willing to support NRC Staff efforts to complete the Section 106 identification process by providing up to \$100,000 in funding for tribal representatives to carry out fieldwork and reporting activities as agreed upon in consultations among NRC, BLM, and the tribes, provided that the fieldwork is completed this fall. Powertech also will be happy to coordinate with NRC and BLM on providing access for tribal representatives to the project area in order to carry out the agreed upon work.

Respectfully yours,



Richard Blubaugh
Vice President – Health, Safety and Environmental Resources

Enclosures

cc: R. F. Clement, Powertech
John Mays, Powertech
Mark Hollenbeck, Powertech
Lynne Sebastian, SRI Foundation
Martha Graham, SRI Foundation
Haimanot Yilma, NRC
Anthony Thompson, Esq.
Christopher Pugsley, Esq.

From: [Ylma, Haimanot](#)
To: [Ylma, Haimanot](#)
Subject: Information Related to Section 106 Activity for Dewey-Burdock Proposed Project
Date: Thursday, August 30, 2012 2:55:33 PM

Dear Tribal Historic Preservation Officers:

The NRC staff wishes to thank all who participated in the teleconference held on August 21, 2012, to discuss the Applicant's revised Statement of Work (SOW). The consulting parties represented, included, the Oglala Sioux, Cheyenne River Sioux, Northern Cheyenne, Rosebud Sioux, Santee Sioux, Sisseton-Wahpeton Oyate, Standing Rock Sioux, Yankton Sioux tribes, EPA Region 8, BLM, NRC, Powertech Inc, Cameco Inc, SRIF (Powertech and Cameco's consultant) and Louis Berger (NRC contractor)

Participating Tribes requested an opportunity to further discuss and revise the SOW. The consulting parties agreed on the need to focus identification efforts on areas of potential ground disturbance (approximately 2637 acres). The parties also proposed developing a programmatic agreement (PA) to address any future ground disturbance.

Tribal Representatives agreed to meet with Mr. Randy Withrow (NRC contractor) and Mrs. Jean Trefethen (NRC staff), in Bismarck, North Dakota on September 5-6, 2012 to further discuss, and revise the SOW for the proposed Dewey Burdock project.

In the August 21, 2012 teleconference, tribal representatives requested adequate time be provided to record identified sites. Since majority of the sites, that might be present are confidential in nature, detailed description of the sites is not warranted. The NRC staff only requires enough information to determine eligibility pursuant to the NHPA regulations at 36 CFR 800.4 (c)(1). For these reasons, the NRC recommends the revised SOW be designed to meet, but not exceed, these information needs.

On August 29, 2012, the applicant sent a letter to the NRC that states "[i]n the absence of a mutually acceptable SOW, Powertech cannot contract with the Tribes or their representatives to secure the information requested by the NRC to complete identification phase of the section 106 process." (See, ML12243A158.) The applicant recognizes that "places of significance to the Tribes within Powertech's proposed Project area . . . may be affected by Project activities" and that through identification "Powertech can, to the extent possible, protect them from disturbance." The applicant is willing to provide funds up to \$100,000.00 for site identification, as long as work is completed by fall 2012. The applicant will coordinate access to the project area with NRC and the Tribes.

It is the NRC staff's understanding that the working group will develop a revised SOW during the September 5-6, 2012 meeting that will ensure completion of a field survey in the fall of 2012. The NRC requires the following information:

- Estimated coverage rate for field identification (# of acres per person day).
- Start date and estimated duration of the field identification effort.

- Proposed report content and confidentiality requirements.
- Number of people required for the field identification, with labor classifications (e.g., surveyor, crew leader, traditional cultural expert) and associated hourly rates.
- Report deliverable schedules.

The NRC staff encourages the Tribal Representatives to consider the offer provided by the applicant when revising the SOW (which should include the above requested information). If Tribal Representatives are unable to provide the requested information by the end of the September 5th and 6th, 2012 meeting to support completion of a field survey in the fall of 2012, the NRC and BLM staff will develop an alternative approach for identifying historic properties, and will move the Section 106 process forward.

If you have any question regarding this email, please contact me or Mr. Withrow.
Thank you.

Haimanot Yilma
Project Manager
FSME/DWMEP/EPPAD/ERB
U.S Nuclear Regulatory Commission
Phone: 301-415-8029
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Randy Withrow
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www.louisberger.com



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 18, 2012

Dear THPO:

SUBJECT: REQUEST FOR A PROPOSAL WITH COST ESTIMATE; PROPOSED DEWEY
BURDOCK IN-SITU RECOVERY PROJECT

The NRC staff wishes to thank the tribal representatives from the Crow Nation, Oglala Sioux Tribe, Northern Cheyenne Tribe, Rosebud Sioux Tribe, Sisseton-Wahpeton Oyate, Standing Rock Sioux Tribe, and Yankton Sioux Tribe who participated in a project meeting with Jean Trefethen (NRC) and Randy Withrow (NRC contractor) in Bismarck, North Dakota on September 5, 2012. This meeting was scheduled following a teleconference held on August 21, 2012, during which participating tribes requested an opportunity to revise the applicant's proposed Statement of Work (SOW) for completing a Tribal Survey for the Dewey-Burdock Project.

It was the U.S. Nuclear Regulatory Commission (NRC) staff's understanding that this meeting would include an opportunity for a working group composed of NRC and tribal representatives to develop a revised SOW for completion of a field survey in the fall of 2012. Instead, tribal representatives provided NRC with a revised SOW (Enclosure 1) on September 3, 2012, just in advance of the meeting. At the September 5th meeting, most of the discussion actually involved several other topics of concern to the tribes.

Tribes requested NRC's written comment on four principal matters of concern prior to finalizing a scope of work for a field survey limited to the area of direct effect. The tribes' first three concerns involve general matters of compliance with the National Historic Preservation Act (NHPA) or other laws. The NRC staff believes it has previously addressed these issues in meetings, teleconferences and written correspondence with tribal representatives. Nonetheless, the staff will respond to the tribal representatives' concerns below.

- Tribes are concerned that the scope of the tribal survey will be limited to the area of immediate direct effects (2,637 acres) and that tribes would have no assurance that future development outside this area would be subject to proper review prior to construction. Tribal representatives requested a Programmatic Agreement be developed for the Dewey Burdock project to address the need for phased identification of historic properties, including places of traditional religious and cultural significance to tribes.

Staff Response: The NRC staff agrees that a Programmatic Agreement will need to be developed to address the phased identification and evaluation of historic properties. The need for a phased approach to identification and the advantages of developing a Programmatic Agreement for the Dewey Burdock project has been discussed in previous meetings. For example, during the February 14–15, 2012, consultation meeting, the parties discussed the phased identification and evaluation of historic properties on the Dewey-Burdock site. See Meeting Transcripts at the Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML120590330 and ML120590341. Using a phased approach to comply with the NHPA is allowed by the regulations at 36 CFR § 800.14(b). The NRC staff will continue to consult with the tribes and other consulting parties as it develops a Programmatic Agreement.

- Tribes are concerned that potential indirect effects have not yet been fully addressed and requested that the NRC and Bureau of Land Management (BLM) continue consultation with tribes, the South Dakota State Historic Preservation Office (SD SHPO) and the Advisory Council on Historic Preservation (ACHP) to define the area of potential indirect effects and then determine what level of effort is needed to identify properties and assess effects in this area.

Staff Response: The NRC staff will continue to consult with BLM, SD SHPO, and the tribes on all issues arising under Section 106 of the NHPA, including potential indirect effects. The staff will also consult with ACHP as necessary. For approximately the past year, NRC staff has been involved in discussions with the tribes over how to identify historic properties that may be affected by the proposed Dewey-Burdock Project. The staff previously sent the tribes maps identifying the area of potential effect (APE) for the entire Dewey-Burdock Project. The staff also sent the tribes maps showing areas that may be affected during the first phase of the project. These maps identify the placement of buildings, potential wellfields, land application areas, and known archaeological sites (Enclosure 2). The tribes have therefore had the resources to provide input on what areas may be affected, either directly or indirectly, during the first phase of the Dewey-Burdock project. However, to date, tribal representatives have not provided input on specific areas that may be affected during the first phase of the project.

- Tribes expressed concern about the need for confidentiality of site information associated with completion of the tribal survey and the disposition of that information. Tribes requested that the NRC endorse the confidentiality provisions included in the SOW as revised on September 3, 2012.

Staff response: The NRC staff intends to keep survey information confidential to the fullest extent allowed by law. At the same time, the staff must have sufficient information to ensure that we can make an independent recommendation as to whether properties are eligible for inclusion on the National Register of Historic Places. The staff has discussed these issues with tribal representatives previously. See February 2012, Meeting Transcripts at ADAMS Accession Nos. ML110550535, ML120590330 and ML120590341. In the "Reporting" section of the information request (Enclosure 3), the staff proposes a method of reporting fieldwork intended to address the tribes' confidentiality concerns, while at the same time meeting the staff's information needs. We ask that you provide further input on confidentiality in your response to our information request.

In addition to these general NHPA-related concerns, the tribes requested the following action specific to NRC's request for a cost estimate to complete the survey:

- Tribes expressed concern that the daily coverage rates (acres per person/day) requested by NRC for cost estimating purposes might be incorrectly interpreted as a precedent for other survey efforts. Tribes requested that this be waived as a requirement for the purpose of estimating survey costs.

Staff response: Since February 2012, the staff has been trying to facilitate the development of an SOW under which the applicant would contract with the tribes for a survey of the proposed Dewey-Burdock site. The initial SOW from the applicant, which the staff sent to the tribes on May 7, 2012, included coverage rates. At the end of this letter, the staff renews our request for certain information from the tribes. If the tribes object to using coverage rates to estimate survey costs, NRC invites tribes to substitute an alternative means of estimating survey cost.

As we have stated previously, the staff's schedule for completing our NHPA review is tied to our schedule for completing our review under the National Environmental Policy Act (NEPA). Because our schedule calls for issuing our final NEPA document no later than May 2013, it is imperative that we proceed with identifying any NHPA-eligible properties before the end of the 2012 field season (*i.e.*, in the fall 2012).

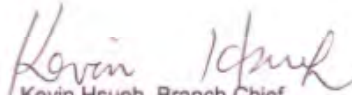
The staff respectfully requests that the participating tribes designate a preferred contractor to complete a cultural resources survey on their behalf and provide NRC with a written proposal with cost estimate based on the 2,637-acre area that may be disturbed during the first phase of the proposed Dewey Burdock project. For your convenience, the staff is enclosing a detailed request for information with this letter (Enclosure 3). This request repeats and consolidates the staff's prior requests for information from the tribes. See, *e.g.*, ADAMS Accession Nos. ML12143A185, ML12261A375, ML12261A429, and ML12261A476. The staff is also forwarding maps showing the location of the entire proposed project area and the proposed initial disturbed area (2,637-acre) to be surveyed. These maps were sent to you previously. See ADAMS Accession No. ML 12261A326.

The NRC staff requests that you submit the proposal with cost estimate stated above to Ms. Kellee Jamerson, NRC Project Manager, or Mr. Randy Withrow, NRC contractor, no later than close of business on October 1, 2012. The proposal can be submitted by email to

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Kellee.Jamerson@nrc.gov or rwithrow@louisberger.com. Following the receipt of this information or after October 1, 2012, NRC and BLM will determine the path forward for identifying any NHPA-eligible properties before the end of the 2012 field season (*i.e.*, in the fall 2012).

Sincerely,



Kevin Hsueh, Branch Chief
Environmental Review Branch
Environmental Protection and Performance
Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Tribes Revised SOW from
September 3, 2012
2. Powertech's Map Depicting Project
Boundary and Proposed Known
Disturbance (ML12261A326)
3. Detailed Request for Information
(Request for Proposal w/Cost Estimate)

**Request for Proposal with Cost Estimate
Tribal Survey for the Proposed Dewey Burdock Project
September 18, 2012**

The U.S. Nuclear Regulatory Commission (NRC) staff requests a written proposal with cost estimate for a survey to identify places of traditional religious and cultural significance to tribes that may be affected by the first phase of the proposed Dewey Burdock Project. This request consolidates prior requests for information that the staff has made in emails, letters, teleconferences, and meetings with tribal representatives. See, e.g., ADAMS Accession Nos. ML12143A185, ML12261A375, ML12261A429, and ML12261A476.

The tribes' proposal with cost estimate should include a brief description of the work that will be completed for both field investigations and reporting. Please include the following specific information in your written proposal.

Fieldwork:

- Describe the size and composition of the survey crew (number of individuals and their titles).
- Provide a proposed start date and estimated duration of fieldwork (number of field days).
- Cost assumptions (including, for example, the estimated number of cultural features that will be recorded).

Reporting:

- Provide a schedule for completion of the following work products or deliverables.
 1. A non-confidential summary of fieldwork including a map showing where survey work was completed (this should not include specific site locations).
 2. A confidential final eligibility report that provides the location of all identified sites, a description of where each site is located in relationship to areas that will be directly impacted by planned operations, and recommendations regarding the eligibility of each site for listing in the National Register of Historic Places. The assessment of eligibility should include references to the appropriate eligibility criteria (36 CFR 60.4) and an assessment of how the site's integrity will be affected directly or indirectly by the proposed undertaking.
 3. A confidential report for use by the applicant showing the location of any eligible sites identified within the proposed Dewey Burdock license area. This report will be prepared once final determinations of eligibility have been completed and will only be shared with the applicant after tribes receive a confidentiality agreement signed by the applicant that limits use to appropriate personnel.

Enclosure 3

- 2 -

Cost Estimate:

Please provide a line-item budget that lists costs for estimated labor and related expenses for both fieldwork and reporting. For labor estimates, please include labor categories or titles, estimated number of hours for each category, and the associated hourly rates. For related expenses such as per diem or equipment rental, please include both the number of days and associated rates used to estimate total costs.

Schedule:

NRC requests that all field investigations be completed by the end of the 2012 field season (i.e., in fall 2012), and that a confidential eligibility report be completed no later than 60 days following completion of the field survey.

Access and Safety:

The applicant, Powertech (USA), will provide access to the properties, and a representative of Powertech (USA) will coordinate with Tribal preferred contractor in terms of access to land. The Powertech (USA) representative will utilize a GPS survey unit to identify all map locations selected by the Tribal preferred contractor for ground examination and will guide the Tribal personnel to the locations they select in the field. The Powertech (USA) representative will also serve as liaison with the local landowners.

Insurance:

All Tribal representatives who will be present during field work will be required to provide proof of liability insurance in the amount of \$500,000 or more, or sign an indemnification statement that will hold harmless both the landowner and Powertech (USA) from any accidents that may occur in the field.

Contracting:

NRC will not contract directly with the preferred contractor selected by participating tribes. NRC will forward the proposal to the project applicant for their consideration and contracting.

October 4, 2012

Richard Blubaugh
Vice President – Health, Safety,
and Environmental Resources
Powertech (USA) Inc.
5575 DTC Parkway, Suite 140
Greenwood Village, CO 80111

SUBJECT: TRANSMITTAL OF TRIBES' PROPOSAL AND COST ESTIMATE FOR THE
PROPOSED DEWEY-BURDOCK ISR PROJECT

Dear Mr. Blubaugh:

On September 27, 2012, the U.S. Nuclear Regulatory Commission (NRC) received a "Proposal with Cost Estimate for Traditional Cultural Properties Survey for Proposed Dewey Burdock Project" from Makoche Wowapi/Mentz-Wilson Consultants, LLP (enclosed).

The NRC requests that you review the enclosed proposal and provide us with any comments by October 10, 2012. To address the possibility that Powertech and Makoche Wowapi/Mentz-Wilson Consultants, LLP might be unable to reach an agreement regarding the proposal, the NRC asks that you also provide a list of alternative methods for identifying potential properties of traditional religious and cultural importance to tribes at the proposed Dewey-Burdock site.

Please note that the cost estimate and breakdown of field crew wages in the Tribes' proposal (pages 3 and 4) has been identified by the consultants as proprietary information and will not be shared with all the consulting parties. In addition, the proposal with cost estimate in its entirety is being withheld from public disclosure under 10 CFR 2.390.

Sincerely,

/RA/

Kevin Hsueh, Chief
Environmental Review Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
Proposal with Cost Estimate

October 11, 2012

Chairman Cedrick Black Eagle
Crow Tribe
Baacheeitcha Avenue
P.O. Box 159
Crow Agency, MT 59022

SUBJECT: TRANSMITTAL OF CORRESPONDENCE PERTAINING TO REQUEST FOR
DETAILED INFORMATION FOR THE PROPOSED DEWEY-BURDOCK
IN-SITU RECOVERY PROJECT

Dear Chairman Black Eagle:

Enclosed please find correspondence sent via email from the U.S. Nuclear Regulatory Commission (NRC) staff to Tribal Historic Preservation Officers (THPOs) in response to concerns raised during a September 5-6, 2012, meeting in Bismarck, North Dakota. The letter requested a proposal with a cost estimate be submitted for the proposed Dewey-Burdock project. Included with the correspondence was the Tribes' revised Statement of Work and Powertech's maps depicting the project boundary and proposed known areas of disturbance.

The NRC staff is transmitting this letter and attached correspondence to you to keep you informed of all Section 106 activities for the proposed Dewey-Burdock ISR project.

If you have any questions or concerns, please contact Ms. Kellee Jamerson of my staff via email at Kellee.Jamerson@nrc.gov or by phone at 301-415-7649.

Sincerely,

/RA/

Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
Letter w/Detailed Request for
Information (Request for Proposal
w/Cost Estimate)

cc: Hubert Two Leggings, THPO



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 12, 2012

Dear Tribal Historic Preservation Officer:

SUBJECT: TRANSMITTAL OF TRIBES' PROPOSAL WITH COST ESTIMATE FOR THE
PROPOSED DEWEY-BURDOCK ISR PROJECT

On September 27, 2012, the U.S. Nuclear Regulatory Commission (NRC) received a "Proposal with Cost Estimate for Traditional Cultural Properties Survey for the Proposed Dewey Burdock Project" from Makoche Wowapi/Mentz-Wilson Consultants, LLP.

The NRC is aware of significant differences in the proposal submitted by Makoche Wowapi/Mentz-Wilson Consultants, LLP and the proposal¹ submitted by Powertech. The NRC anticipates that resolving these differences will not support completion of a field survey in the fall of 2012 for the Dewey-Burdock In-Situ Recovery (ISR) Project and for this reason it seeks alternatives.

The NRC recognizes that there are additional methods for identifying potential properties of traditional religious and cultural importance to tribes at the proposed Dewey-Burdock site. Alternatives include opening the site to interested tribal specialists over a period of several weeks with payments to be made to individual tribes, or seeking ethnohistorical and ethnographic information from tribal specialists in interviews at tribal headquarters.

The NRC requests that you provide us with your ideas on alternative methods for identifying potential properties by close of business Friday, October 19, 2012.

Also, enclosed is Powertech's "Reply to October 4, 2012 Letter and Statement of Work (SOW)," dated October 9, 2012.

Please note that the cost estimate and breakdown of field crew wages in the Tribes' proposal (pages 3 and 4) has been identified by the consultants as proprietary information and will not be shared with all the consulting parties. In addition, the proposal with cost estimate in its entirety are being withheld from public disclosure under 10 CFR 2.390.

Sincerely,

A handwritten signature in black ink that reads "Kevin Hsueh".

Kevin Hsueh, Chief
Environmental Review Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:

1. Proposal with Cost Estimate
2. Powertech letter dated 10/9/12 (ML12285A425)

¹ On August 7, 2012, the NRC forwarded Powertech's revised statement of work (SOW) dated July 30, 2012 (ML12261A333). The NRC received a letter dated August 29, 2012 from Powertech in response to an August 12, 2011 request concerning information needed to complete Section 108 (ML12243A156).

APPENDIX B
ALTERNATE CONCENTRATION LIMITS

ALTERNATE CONCENTRATION LIMITS

In-situ recovery (ISR) facilities operate by first extracting uranium from specific areas called wellfields. After uranium recovery has ended, the groundwater in the wellfield contains constituents that the lixiviant mobilized. Licensees shall commence aquifer restoration in each wellfield soon after the uranium recovery operations end (NRC, 2009). Aquifer restoration criteria for the site-specific baseline constituents are determined either for each individual well or as a wellfield average.

U.S. Nuclear Regulatory Commission (NRC) licensees are required to return water quality parameters to the standards in 10 CFR Part 40, Appendix A, Criterion 5B(5). As stated in the regulations: "5B(5)—At the point of compliance, the concentration of a hazardous constituent must not exceed—(a) The Commission approved background concentration of that constituent in the groundwater; (b) The respective value given in the table in paragraph 5C if the constituent is listed in the table and if the background level of the constituent is below the value listed; or (c) An alternate concentration limit (ACL) is established by the Commission."

For an ACL to be considered by the NRC, a licensee must submit a license amendment application to request an ACL. In this ACL license amendment request, the licensee must provide the basis for any proposed limits, including consideration of practicable corrective actions that limits are as low as reasonably achievable (ALARA), and information on the factors the Commission must consider. NRC will establish a site-specific ACL for a hazardous constituent as provided in Criterion 5B(5) if NRC finds the proposed limit ALARA, after considering practicable corrective actions, and determining that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded.

To determine if the ACL does not pose a potential hazard to human health or the environment, NRC performs three risk assessments (NRC, 2003a). The first is a hazard assessment which evaluates the radiological dose and toxicity of the constituents in question and the risk to human health and environment. The second is an exposure assessment to examine the existing distribution of hazardous constituents, as well as potential sources for future releases and the potential consequences associated with the human and environmental exposure to the hazardous constituents. The last assessment is a corrective action assessment, which evaluates (i) all applicant proposed corrective actions; (ii) the technical feasibility of each proposed corrective actions; (iii) the costs and benefits associated with each proposed corrective action; and (iv) the preferred corrective action to achieve the hazardous constituent concentration, which is protective of human health and the environment.

To perform these assessments, the NRC staff uses a rigorous review process. Licensees must provide a comprehensive ACL amendment that addresses groundwater and surface water quality and expected impacts on human health and the environment. Such information required in an amendment request pursuant to 10 CFR Part 40, Appendix A, Criterion 5B(6) includes the following factors:

- Potential adverse effects on groundwater quality, considering the following:
 - The physical and chemical characteristics of the waste in the licensed site including its potential for migration

-
- The hydrogeologic characteristics of the facility and surrounding land
 - The quantity of groundwater and the direction of groundwater flow
 - The proximity and withdrawal rates of groundwater users
 - The current and future uses of groundwater in the area
 - The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality
 - The potential for health risks caused by human exposure to waste constituents
 - The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents
 - The persistence and permanence of the potential adverse effects
 - Potential adverse effects on hydraulically connected surface water quality, considering the following:
 - The volume and physical and chemical characteristics of the waste in the licensed site
 - The hydrogeologic characteristics of the facility and surrounding land
 - The quantity and quality of groundwater, and the direction of groundwater flow
 - The patterns of rainfall in the region
 - The proximity of the licensed site to surface waters
 - The current and future uses of surface waters in the area and any water quality standards established for those surface waters
 - The existing quality of surface water including other sources of contamination and the cumulative impact on surface water quality
 - The potential for health risks caused by human exposure to waste constituents
 - The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents
 - The persistence and permanence of the potential adverse effects

Although state “class of use” standards are not recognized in NRC’s regulations as restoration standards, these standards may be considered as one factor in evaluating ACL requests for ISR facilities located in South Dakota. Furthermore, in considering ACL requests, particular

importance is placed on protecting underground sources of drinking water (USDWs). The use of modeling and additional groundwater monitoring may be necessary to show that ACLs in ISR wellfields would not adversely impact USDWs. It must be demonstrated that the licensee it has attempted to restore hazardous constituents in groundwater to background or a maximum contaminant level—whichever level is higher.

Before an ISR licensee is allowed to extract uranium, the U.S. Environmental Protection Agency (EPA) under 40 CFR 146.4 and in accordance with the Safe Drinking Water Act must issue an aquifer exemption covering the portion of the aquifer in which the uranium-bearing rock is located. EPA cannot exempt the portion of the aquifer unless it is found that “it does not currently serve as a source of drinking water” and “cannot now and will not in the future serve as a source of drinking water.” Due to these criteria, only impacts outside of the exempted aquifer are evaluated. In most cases, the water in aquifers adjacent to the uranium ore zones does not meet drinking water standards. The staff will not approve an ACL if it will impact any adjacent USDWs. Therefore, the impact of granting an ACL request is SMALL.

Further guidance for the review of ACLs for ISR facilities is being developed in a revision of NUREG–1569 (NRC, 2003a). Existing guidance for the review of ACLs for conventional mills is in NUREG–1620, “Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978” (NRC, 2003b).

References

10 CFR Part 40. Appendix A. *Code of Federal Regulations*, Title 10, *Energy*, Part 40, Appendix A. “Criteria Relating to the Operations of Uranium Mills and to the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily from their Source Material Content.” Washington, DC: U.S. Government Printing Office.

40 CFR Part 146. *Code of Federal Regulations*, Title 40, *Protection of Environment*, Part 146. “Underground Injection Control Program: Criteria and Standards.” Washington, DC: U.S. Government Printing Office.

NRC (U.S. Nuclear Regulatory Commission). NUREG-1910, “Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities.” ML091480244, ML091480188. Washington, DC. NRC. May 2009.

NRC. NUREG–1569, “Standard Review Plan for *In-Situ* Leach Uranium Extraction License Applications.” Final Report. Washington, DC: NRC. June 2003a.

NRC. NUREG–1620, “Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978.” Final Report. Washington, DC: NRC. June 2003b.

APPENDIX C
NONRADIOLOGICAL AIR EMISSIONS ESTIMATES

NONRADIOLOGICAL AIR EMISSIONS ESTIMATES

C1 Introduction

This appendix provides detailed nonradiological air emissions information associated with the proposed action. The information in the appendix consolidates and supplements information from several sources (Powertech, 2009, 2010a–c, 2012 and Inter-Mountain Labs, 2012), which is then summarized in the SEIS.

While NRC is responsible for assessing the potential environmental impacts from the proposed action pursuant to the National Environmental Policy Act of 1969 as amended, NRC does not have the authority to develop or enforce regulations to control nonradiological air emissions from equipment licensees use. For the proposed Dewey-Burdock ISR Project, this authority rests with the South Dakota Department of Environment and Natural Resources (SDDENR). To ensure the air quality of South Dakota is adequately protected, in addition to addressing all NRC regulatory requirements that address radiological emissions, NRC applicants and licensees must also comply with all applicable state and federal air quality regulatory compliance and permitting requirements.

NRC staff acknowledges that SDDENR has not yet conducted the formal air quality permitting for the proposed Dewey-Burdock ISR Project (see Table 1.6-1). In the absence of a formal determination and permitting by the SDDENR, NRC staff will characterize the magnitude of air effluents from the proposed project in part by comparing (i) the emission levels to Prevention of Significant Deterioration and Title V thresholds and (ii) the modeled concentrations to regulatory standards such as NAAQS. This characterization is meant to provide a context for understanding the magnitude of the proposed project's air effluents. The NRC description in this SEIS does not document or represent the formal determination by the SDDENR. As such, the SDDENR determination and permitting may vary with the NRC description.

C2 Non-Greenhouse Combustion Exhaust Emissions

The non-greenhouse combustion exhaust emissions discussion is divided into three sections. Section C.2.1 addresses the emissions inventory that describes the amount or mass of pollutants generated by the proposed action. Section C.2.2 discusses the combustion exhaust emissions from drill rigs. Section C.2.3 addresses the air dispersion modeling that predicts pollutant concentrations based on the emissions inventory.

C2.1 Emission Inventory

The non-greenhouse combustion emissions inventory addresses both stationary and mobile sources associated with the proposed action. Stationary source emissions are limited to the operation phase and are presented in Table C–1 (for ease of reading, all tables are located at the end of this appendix). Mobile source emissions, which occur in each of the four phases of the proposed action, are presented in Table C–2. These two tables identify some individual sources and provide the associated emission levels. In addition, the mobile sources were categorized into one of two source classifications: construction and drilling field equipment or other mobile sources (i.e., light-duty trucks and vehicles) excluding commuters. The construction and drilling field equipment source classification was further categorized into three emission vehicle types: deep well drill rigs, other drill rigs, and other construction and drilling field equipment. The deep well drill rigs are used for drilling the Class V deep injection disposal

wells. The other drill rigs are used for drilling the delineation, monitoring, production, and injection wells. The other construction and drilling field equipment classification includes sources such as bulldozers, graders, scrappers, cranes, forklifts, and backhoes. Table C–3 contains the detailed information used to calculate the mobile sources emission levels. The stationary and mobile emission levels are summarized in Tables 2.1-1 and 2.1-2.

The applicant revised the initial mobile combustion emission inventory to in part incorporate mitigation measures and improve the accuracy of the emissions expected from the ISR activities. The revised emission inventory is the one used in the SEIS text and documented in Table C–2. In association with the revised inventory, the applicant committed to the following actions (Powertech, 2012):

- Lowering the drill rig engine horsepower from 550 horsepower to 300 horsepower, except for the deep well drill rig
- Use of Tier 1, or higher, drill rig engines and Tier 3, or higher, for construction equipment engines

The revised emissions inventory is calculated using emission factors based on these commitments which resulted in lower annual pollution levels relative to the initial inventory. Emission factors are values used to relate the levels of activities to the amounts of pollution produced. In this case the emission factor relates the amount of fuel consumed by the equipment to the mass of pollutants generated. The initial inventory used mostly uncontrolled emission factors (i.e., emission factors based on older engines with greater emission in contrast to newer engines that meet stricter emission standards). The various tiers refers to a phased program of standards that the Federal Government mandated that requires newly manufactured engines to generate lower pollutant emission levels. Higher tier numbers mean stricter emission standards and lower the pollutant levels. Table C–4 describes the effectiveness (i.e., the percent that the emissions are reduced) of the different tier levels based on the associated emission factors. The revised inventory also incorporated equipment load factors (i.e., the fraction of available power utilized). The initial inventory assumed 100 percent duty at maximum horsepower. The revised inventory applied load factors ranging from 25 percent to 59 percent depending on the type of equipment and application. The specifics are available in the Powertech Dewey-Burdock Project Emissions Inventory (Powertech, 2012). Reducing the load factors result in lower emission levels and lower pollutant concentrations. The applicant identified other mitigation they would implement (see SEIS Table 6.2-1). However these other mitigations were not incorporated in the calculation of the revised emissions inventory.

ISR phases may occur simultaneously. To account for overlapping phases, a total emission estimate was calculated by adding together the annual emissions for all four phases. This total or peak year estimate accounts for when all four phases occur simultaneously and represents the highest amount of emissions the proposed action would generate in any one project year. Table 2.1.2 contains the peak year emissions for the mobile sources. The stationary phase did not require a peak year calculation because the emissions are limited to only the operation phase (see Table 2.1-1). Table 2.1-3 contains the peak year estimate for when the stationary and mobile source emissions are combined. The only phase being performed in project year one is construction. The construction phase in project year one consists of two main activities (i) facilities construction and (ii) well field construction. Facilities construction will be completed at the end of project year one. The construction phase associated with the remaining life of the project is limited to well field construction. Therefore, the peak year emission calculations which

account for overlapping phase use the construction emission levels associated with the well field only.

C2.2 NAAQS Pollutant Emissions from Drilling Activities

Information in Table C–4 reveals that the construction phase generates the most NAAQS pollutant emissions relative to the other phases and, within the construction phase, the drill rigs generate the majority of the NAAQS pollutant emissions (PM₁₀, SO₂, NO_x, and CO). The drill rigs are used to dig the various wells associated with ISR. Five types of wells are proposed for this project: delineation wells, monitoring wells, production wells, injection wells, and Class V deep disposal wells. The type of drill rig required for the job can vary based on the type of well. The first four well types require rigs that can drill wells to a depth of less than 305 m, [1,000 ft]. The Class V deep disposal well requires drilling equipment suitable to reach depths of about 914 m [3,000 ft]. The emission estimates include the drilling of eight Class V deep disposal wells over the life of the project. In project year one, four Class V deep disposal wells would be drilled. After project year one, the emission estimates assume that no more than one Class V deep disposal well will be drilled in any single project year. For the pollutants in Table C–4, the percentage of emissions from the construction phase compared to the other phases ranged from 68 to 79 percent depending on the particular pollutant. The percentage of emissions from the drill rigs (excluding the deep well drill rig) compared to all of the construction phase emissions ranged from 61 to 81 percent depending on the pollutant. The percentage of emissions from the deep well drill rig compared to all of the construction phase emissions ranged from 0.2 to 0.3 percent depending on the pollutant. The deep well drill rig emission contribution is relatively small because the proposed project only requires the drilling of up to eight Class V wells.

C.2.3 Air Quality Modeling

Expressing the proposed project's emissions in concentrations can help characterize the magnitude of the emission levels because standards such as NAAQS and Prevention of Significant Deterioration are also expressed in concentrations. The AERMOD dispersion model was used to predict pollutant concentrations based on the emission mass flow rates from the initial air emissions inventory at 47 various locations in and around the proposed site (Powertech, 2010a). These concentrations were provided for each of the four phases of the proposed action: construction (Table C–5), operations (Table C–6), aquifer restoration (Table C–7) and decommissioning (Table C–8). The applicant revised the air emissions inventory. However revised air dispersion modeling results were not provided with the revised inventory. The applicant has committed to perform air dispersion modeling using the revised emission inventory prior to the preparation of the final SEIS (Powertech, 2012). The final SEIS analyses would be based on this updated modeling. SEIS Section 4.7.1 describes the scope of this update.

The modeling results (i.e., pollution concentrations) based on the initial emission inventory were used to generate pollution concentrations for the updated emission inventory. Multiplication factors will be used for each pollutant to calculate the concentration for the revised inventory. A multiplication factor is a value when multiplied by the pollution concentration from the initial inventory yields the pollution concentration associated with the revised inventory. Multiplication factors are generated by calculating the percent difference between the revised emission levels and the initial emission levels associated with a particular set of modeling results (pollutant concentrations). Table C–9 contains the information associated with the generation of the multiplication factors for calculating the peak year concentration values (i.e., the values for when

all four phase occur simultaneously) for the revised inventory. The emission values for the revised inventory presented in Table C–9 came from Table C–3. The emission values for the initial inventory presented in Table C–9 are for the construction phase (Powertech, 2010a). Table C–10 contains the information associated with the calculation of the peak year concentration values for the revised inventory. The concentrations for the initial inventory presented in Table C–10 came from the applicant (see Table ER_RAI AQ8.1 from Powertech, 2010a) and the multiplication factors came from Table C–9. These pollutant concentrations results for the revised emission inventory from the combustion emissions from stationary and mobile sources for the peak year of the proposed action are summarized in Table 2.1-4.

The peak year concentrations are important because they account for when all four phases occur simultaneously and represent the highest amount of emissions the proposed action would generate in any one project year. However, the SEIS analyses also examine emissions associated with individual phases. Pollutant concentrations associated with each phase during the peak year can be calculated by knowing the relative contribution from each phase. Table C–11 contains the percent of emissions by phase for various NAAQS pollutants from combustion emissions from stationary and mobile sources when all phases occur simultaneously. A slight adjustment is needed to address the construction phase emissions in project year one. As described in Section C.2.1, the only phase conducted in project year one is construction and these emissions (presented in SEIS Table 2.1-2) include both facility and wellfield construction. In the subsequent project years when the phases can overlap, the construction phase only entails wellfield construction. Based on the information in Table 2.1-2, the project year one construction NAAQS pollutant emissions would be no more than about 13 percent greater than the construction emissions in the remaining project years.

C3 Greenhouse Gas Emissions

Greenhouse gas emissions were provided for each of the four phases of the proposed action: construction (Table C–12), operations (Table C–13), aquifer restoration (Table C–14), and decommissioning (Table C–15). Each table identifies the various activities associated with each phase as well as the various emission sources that compose each activity. In addition, each emission source in these tables was categorized into one of the following two sources: stationary or mobile. Emission information in Tables C-12 through C-15 were added by source classification for each phase and summarized in Table 2.1-5, which contains a third category of emissions: electrical consumption.

C4 Fugitive Dust Emissions

The fugitive dust emissions discussion is divided into two sections. Section C.4.1 addresses the emissions inventory that describes the amount or mass of pollutants generated by the proposed action. Section C.4.2 addresses the air dispersion modeling (i.e., the concentration of the particulate matter in the air)

C4.1 Emission Inventory

Fugitive dust emissions are provided for vehicle travel on unpaved roads and wind erosion to disturbed land. The applicant revised the initial fugitive dust emission inventory to in part incorporate mitigation measures and improve the accuracy of the emissions expected from the ISR activities. The applicant initially committed to mitigate fugitive dust emission by watering unpaved roads (Powertech 2010a). However, the initial inventory did not account for this when

calculating the emission levels. The revised inventory credits water spray for a 50 percent reduction of all fugitive emissions generated from unpaved roads. The 50 percent reduction for water spray is a conservative, industry accepted value for this particular mitigation (Powertech, 2012). The applicant identified other mitigation they would implement. However, these other mitigations were not incorporated in the calculation of the revised inventory. Changes made to the calculation of the revised inventory intended to improve the accuracy are as follows:

- The number of passenger vehicles and light-duty trucks used in the calculation was reduced to conform more closely with the construction and operation plan.
- The silt content value used in the fugitive dust calculations was lowered to 8.5 percent. This value is typical of western surface mines and unpaved industrial roads (EPA, 1996).

Silt content is one of the variables used to calculate the emission factor for travel on unpaved roads. Emission factors are values used to relate the levels of activities to the amounts of pollution produced. In this case the emission factor relates the number of miles a vehicle travels to the mass of fugitive dust generated. Tables C-16 to C-20 contain the detailed information used to calculate the fugitive dust emissions for vehicle travel on unpaved roads for the various phases.

The revised fugitive emission inventory included wind erosion. Dust generated by wind blowing over land that has been disturbed is an example of wind erosion. The amount of fugitive emissions from wind erosion is a function of the amount of disturbed land. The two liquid waste disposal options, deep well disposal and land application, did vary in the amount of land disturbed. The deep disposal well option disturbed up to around 39.5 hectares [97.5 acres] of land while the land application option disturbed up to around 116.6 hectares [288.2 acres] (Inter-Mountain Labs, 20912). An emission factor was used relate the amount of total suspended particles generated annually to the amount of land disturbed [i.e., 0.345 metric tons [0.38 short tons] of total suspended particles for each acre disturbed (Powertech, 2012)]. Total suspended particles include particles larger than PM_{10} . Here, 30 percent of total suspended particles is comprised of PM_{10} and 15 percent of PM_{10} is comprised of $PM_{2.5}$ (Powertech, 2012). Table C-16 compares the onsite fugitive emission mass flow rate estimates for the two liquid waste disposal options. The emission estimates in this table includes both fugitive sources (i.e., travel on unpaved roads and wind erosion) and provides estimates for all phases as well as the peak year when all phases occur simultaneously.

C4.2 Air Quality Modeling

Fugitive dust emissions were not included in the modeling based on the initial emission inventory described in Section C.2.3. The applicant committed to perform air dispersion modeling using the revised emission inventory prior to the preparation of the final SEIS (Powertech, 2012). The final SEIS analyses would be based on this updated modeling. SEIS Section 4.7.1 describes the scope of this update. To help characterize the Dewey-Burdock fugitive emissions, modeling from a similar project will be used. The similar project is the Atlantic Rim Natural Gas Development Project. This project examined the drilling and

development of 2,000 new natural gas wells in Carbon County, Wyoming. The similarities between the Dewey-Burdock and Atlantic Rim projects are as follows:

- Both projects are similar in scope (i.e., they generate wellfields with a large number wells)
- Both projects have similar sources of fugitive dust: travel on unpaved roads and wind erosion
- Both projects produce similar levels of onsite fugitive dust
- Both projects are located about the same distance away from the nearest Class I area

The Atlantic Rim project analysis included modeling of onsite maximum concentrations that could occur from all sources operating simultaneously in the field (i.e., the peak year value). The annual mass flow rates used in the Atlantic Rim modeling analyses are at 708.1 metric tons [780.4 short tons] for PM₁₀ and 154.8 metric tons [170.6 short tons] for PM_{2.5} (TRC Environmental Corporation, 2006).

The modeling results (i.e., pollution concentrations) from the Atlantic Rim project are used to generate pollution concentrations for the proposed project. Multiplication factors will be used to calculate the fugitive emission concentrations for the revised inventory. Multiplication factors are generated by calculating the percent difference between the particulate matter annual mass flow rates of the Atlantic Rim project and Dewey-Burdock proposed project. The peak year onsite emission level estimates for travel on unpaved roads for the proposed project are at 481.8 metric tons [531.1 short tons] for PM₁₀ and 48.2 metric tons [53.1 short tons] for PM_{2.5}. The multiplication factors for PM₁₀ and PM_{2.5} are 0.68 and 0.31, respectively. Based on the concentration results for the Atlantic Rim project in Table F1.5.1 (TRC Environmental Corporation, 2006), the Dewey-Burdock onsite peak year fugitive dust concentrations (24-hour mean) would be 23.3 µg/m³ for PM₁₀ and 1.2 µg/m³ for PM_{2.5}. Table C-17 contains the percentage of fugitive dust emissions from travel on unpaved roads that each of the four phases contribute to the peak year total when all phases occur simultaneously. Table C-18 contains the onsite fugitive dust emission concentrations from travel on unpaved roads for each of the phases which were calculated using the percentages in Table C-17.

C5 References

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Table C-1. Nonradiological Combustion Emission Estimates Mass Flow Rates (Short Tons* Per Year) From Stationary Sources† for Various Phases of the Proposed Action

Activity	Emission Source	Quantity	Capacity	Operating Hours				Emission Factors						Emissions					
				hr/d	dwk	mo/yr	hr/yr	PM ₁₀ lb/hp-hr	SO _x lb/hp-hr	NO _x lb/hp-hr	CO lb/hp-hr	TOC lb/hp-hr	Aids‡ lb/hp-hr	PM ₁₀ t/yr	SO _x t/yr	NO _x t/yr	CO t/yr	TOC t/yr	Aids t/yr
Central Processing Plant	Propane Heating	1	18 gal/hr	24	7	6	4,368	0.7	0.0002	13.0	7.5	1.000	NA	0.03	7.7E-06	0.5	0.29	0.04	NA
	Thermal Fluid Heater—propane	2	16 gal/hr	24	7	12	8,736	0.7	0.0002	13.0	7.5	1.000	NA	0.10	2.8E-05	1.9	1.07	0.14	NA
	Emergency Backup Generator—propane	1	12 gal/hr	0.25	1	12	13	0.7	0.0002	13.0	7.5	1.000	NA	5.6E-05	1.6E-08	1.0E-03	6.0E-04	8.0E-05	NA
	Fire Suppression System—diesel pump	1	100	0.25	1	12	13	0.002	0.002	0.031000	0.007	0.003	0.0005	0.001	0.001	0.02	0.004	0.002	0.00
Satellite Facility	Propane Heating	1	4 gal/hr	24	7	6	4,368	0.7	0.0002	13.0	7.5	1.000	NA	0.01	1.6E-06	0.1	0.06	0.01	NA
	Emergency Backup Generator—propane	1	6 gal/hr	0.25	1	12	13	0.7	0.0002	13.0	7.5	1.000	NA	2.8E-05	8.0E-09	5.2E-04	3.0E-04	4.0E-05	NA
	Fire Suppression System—diesel pump	1	100	0.25	1	12	13	0.002	0.002	0.031	0.007	0.003	0.0005	1.4E-03	1.3E-03	0.02	4.3E-03	1.6E-03	0.00
Office Building	Propane Heating	1	1 gal/hr	24	7	6	4,368	0.7	0.0002	13.0	7.5	1.000	NA	0.002	4.9E-07	0.03	0.02	0.002	NA
Maintenance and Warehouse Building	Propane Heating	1	3 gal/hr	24	7	6	4,368	0.7	0.0002	13.0	7.5	1.000	NA	0.004	1.2E-06	0.08	0.04	0.01	NA

Source: Modified from Powertech (2010a)
 *Source and appendix mass expressed in short tons only (dual units used in SEIS text with metric being primary).
 †All stationary source emissions are associated with the operation phase.
 ‡Aids = Aldehydes

Table C-2. Nonradiological Combustion Emission Mass Flow Rate Estimates (Short Tons* Per Year) From Mobile Sources for Various Phases of the Proposed Action

Pollutant	Emission Vehicle	Phase†						Source Classification
		Con - F+W	Con - F only	Con - W only	Operation	AR	Decom	
Particulate Matter PM _{10-2.5}	Drill Rig	2.65	0	2.65	0	0	0	C&DFE (\$)
	Deep Well Drill Rig	0.03	0.02	0.01	0	0	0	C&DFE
	Other C&DFE (¶)	1.15	0.38	0.77	0.33	0	0.51	C&DFE
	Light Duty Vehicles	0.37	0.12	0.25	0.56	0.1	0.13	Other Mobile (#)
Sulfur Dioxide	Drill Rig	6.13	0	6.13	0	0	0	C&DFE
	Deep Well Drill Rig	0.08	0.06	0.02	0	0	0	C&DFE
	Other C&DFE	4.8	1.12	3.68	1.58	0	2.11	C&DFE
	Light Duty Vehicles	0.3	0.1	0.2	0.47	0.07	0.11	Other Mobile
Nitrogen Oxides	Drill Rig	45.22	0	45.22	0	0	0	C&DFE
	Deep Well Drill Rig	0.57	0.43	0.14	0	0	0	C&DFE
	Other C&DFE	20.55	6.22	14.33	6.17	0	10.72	C&DFE
	Light Duty Vehicles	5.55	1.78	3.77	8.84	1.26	1.96	Other Mobile
Carbon Monoxide	Drill Rig	56.03	0	56.03	0	0	0	C&DFE
	Deep Well Drill Rig	0.7	0.52	0.18	0	0	0	C&DFE
	Other C&DFE	13.88	3.39	10.49	4.43	0	6.04	C&DFE
	Light Duty Vehicles	3.52	1.13	2.39	5.59	0.8	1.24	Other Mobile
Total Hydrocarbon	Drill Rig	6.39	0	6.39	0	0	0	C&DFE
	Deep Well Drill Rig	0.08	0.06	0.02	0	0	0	C&DFE
	Other C&DFE	5.82	1.37	4.45	1.9	0	2.55	C&DFE
	Light Duty Vehicles	11.11	3.56	7.55	17.67	2.52	3.93	Other Mobile
Formaldehyde	Drill Rig	1.38	0	1.38	0	0	0	C&DFE
	Deep Well Drill Rig	0.2	0	0	0	0	0	C&DFE
	Other C&DFE	0.91	0.28	0.83	0.36	0	0.48	C&DFE
	Light Duty Vehicles	0.24	0.07	0.17	0.39	0.06	0.08	Other Mobile

Source: Modified from Powertech (2012)

*Source document and appendix table mass expressed in short tons only (dual units used in SEIS text with metric being primary).

†Phases = the following abbreviations: Con = construction, F = facilities, W = well fields, AR = aquifer restoration, and Decom = decommissioning

‡PM_{2.5} detailed emission inventory not available

§C&DFE = Construction and Drilling Field Equipment. Examples include drill rigs, bulldozers, graders, and scrapers.

¶Other C&DFE represents construction and drilling field equipment other than drill rigs

#Other mobile = additional mobile sources (i.e., light-duty trucks and vehicles) other than C&DFE and commuter traffic

Table C-3: Tailpipe Emission Factors and Equipment Hours

Basis For Equipment Tailpipe Emissions	Vehicle Parameters			Tailpipe Emission Factors (lb/hp-hr)										Total Equipment Hours per Year by Phase				
	Horse- power	Load Factor	Fuel	THC	NO _x	CO	SO ₂	CO ₂	PM ₁₀	PM _{2.5}	Formalde- hydes	Constr* Facilities/ WF-F	Constr WF Only	Opst	Aquifer Restg	Decom		
Scrapper	462	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	1299				2601		
Buildozer	410	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	433				867		
Compactor	315	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	433				867		
Motor Grader	297	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	1196	763	416		867		
Water Truck (1 500 gal)	325	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	15600	13520	1040		867		
Fueling Truck	325	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	130				520		
Heavy Duty Diesel Truck	325	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	2080	520	520		1388		
Logging Truck	325	25%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	8320	8320	2080				
Electrical Pole Truck	325	25%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	3466	3466					
Truck Mounted Drill Rig, Tier 1	300	50%	Diesel	0.00214	0.01512	0.01873	0.00205	1.15000	0.00089	0.00086	0.00046	33800						
Deep Well Drill Rig, Tier 1	425	59%	Diesel	0.00214	0.01512	0.01873	0.00205	1.15000	0.00089	0.00086	0.00046	300	75					
Trackhoe	268	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	3120	3120			1300		
Backhoe	93	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046	5200	5200			1300		
Loader	351	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046					650		
Tractor	530	40%	Diesel	0.00247	0.03100	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046			160		650		
Resin- hauling Semi-Truck	430	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046			1040				
Pump Pulling Truck	325	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046			6240		2130		
Product Transport Truck	430	40%	Diesel	0.00247	0.00661	0.00573	0.00205	1.15000	0.00033	0.00032	0.00046			208				
Crane	516	25%	Diesel	0.00247	0.03100	0.00668	0.00205	1.15000	0.00220	0.00213	0.00046	694				693		
Forklift	100	25%	Diesel	0.00247	0.03100	0.00668	0.00205	1.15000	0.00220	0.00213	0.00046	9360	7720	2132		2079		
Manlift	50	25%	Diesel	0.00247	0.03100	0.00668	0.00205	1.15000	0.00220	0.00213	0.00046	4160		208		2772		
Cementier	90	59%	LPG	0.00009	0.00118	0.00668	0.00000	1.13636	0.00006	0.00006	0.00000	8320	8320			2130		
Welding Equipment	47	40%	LPG	0.00009	0.00118	0.00668	0.00000	1.13636	0.00006	0.00006	0.00000	9880						
HDPE Fusion Equipment	83	40%	LPG	0.00009	0.00118	0.00668	0.00000	1.13636	0.00006	0.00006	0.00000	6240						
Light Duty Pickup	265	25%	Gas	0.02200	0.01100	0.00696	0.00059	1.08000	0.00072	0.00070	0.00049	10000	6500	18736	2912	4000		

Table C-3: Tailpipe Emission Factors and Equipment Hours (continued)

Basis For Equipment Tailpipe Emissions	Vehicle Parameters			Tailpipe Emission Factors (lb/hp-hr)							Total Equipment Hours per Year by Phase					
	Horse-power	Load Factor	Fuel	THC	NO _x	CO	SO ₂	CO ₂	PM ₁₀	PM _{2.5}	Formaldehydes	Constr* Facilities/ WF†	Constr WF Only	Op‡	Aquifer Res§	Decom
Light Duty Pickup Vehicle	150	25%	Gas	0.02200	0.01100	0.00696	0.00059	1.08000	0.00072	0.00070	0.00049	9263	6825	9720	975	2438

Emission Factor Sources:

1. EPA, AP-42 Table 3.3-1, Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines (THC, SO₂, CO₂, Aldehydes)
2. EPA, Exhaust and Crankcase Emission Factors for Non-Road Engine Modeling - Compression Ignition, April 2004 (PM_{2.5})
3. EPA, Control of Emissions of Air Pollution from Non-Road Diesel Engines; Final Rule, Subpart 89.112, October 1998 (all Tiers: NO_x, CO, PM₁₀; THC for Tier 1)
4. EPA, AP-42 Table 1.5-1, Emission Factors for LPG Combustion

*Construction
† Wellfield
‡ Operations
§ Restoration (aquifer)
|| Decommissioning
¶ Gasoline

Table C-4. Effect of Using Updated Emissions Factors That Account for Pollution Controls for 300–600 Horsepower Engines

Pollutant	Tier 0	Tier 1		Tier 2		Tier 3		Tier 4	
	Emission Factor g/hp-hr*	Emission Factor g/hp-hr	Percent Emissions Reduced From Tier 0 Levels†	Emission Factor g/hp-hr	Percent Emissions Reduced From Tier 0 Levels‡	Emission Factor g/hp-hr	Percent Emissions Reduced From Tier 0 Levels§	Emission Factor g/hp-hr	Percent Emissions Reduced From Tier 0 Levels
Nitrogen Oxides	8.38	6.0153	28	4.3351	48	2.5	70	0.276	97
Carbon Monoxide¶	2.7	1.3060	52	0.8425	69	0.8425	69	0.084	94
Particulate Matter PM ₁₀ #	0.402	0.2008	50	0.1316	67	0.15	63	0.0092	98

Source: Modified from EPA (2004)

*Table only expressed emission factors in units of g/hp-hr. Dual units were not calculated because the value of interest is the percent emissions, which is unitless.

†Calculated using the following equation: $[1 - (\text{Tier 1 emission factor} / \text{Tier 0 emission factor})] * 100$

‡Calculated using the following equation: $[1 - (\text{Tier 2 emission factor} / \text{Tier 0 emission factor})] * 100$

§Calculated using the following equation: $[1 - (\text{Tier 3 emission factor} / \text{Tier 0 emission factor})] * 100$

||Calculated using the following equation: $[1 - (\text{Tier 4 emission factor} / \text{Tier 0 emission factor})] * 100$

¶For carbon monoxide, the tier 2 and tier 3 emission standards are the same and the tier 2 and tier 3 emission factors used in the modeling are also the same values.

#For PM₁₀, the tier 2 and tier 3 emission standards are the same. However, the tier 2 emission factor which is based on actual certification data is actually lower than the tier 3 emission factor which is based on the emission standard.

Table C-5. Nonradiological Combustion Concentration Estimates From 47 Locations in and Around the Dewey-Burdock Site From Multiple Sources for the Construction Phase

Location*	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP	0.00982	0.00011	0.02	0.039	0.309	24.4	1.36	0.021
SF-NE	0.0000682	0.0000041	0.0074	0.00035	0.002	0.2	0.05	0.00081
SF-E	0.0159	0.00017	0.031	0.06	0.483	39.5	2.15	0.034
SF-SE	0.0000446	0.0000017	0.003	0.00014	0.0009	0.11	0.02	0.00032
SF-S	0.00542	0.00006	0.11	0.021	0.172	13.4	0.74	0.012
SF-SW	0.0000655	0.0000034	0.0061	0.00034	0.002	0.2	0.04	0.00067
SF-W	0.0121	0.00013	0.24	0.049	0.392	30.1	1.65	0.026
SF-NW	0.011	0.00012	0.22	0.042	0.338	27.2	1.49	0.023
SF-N	0.0000738	0.000004	0.0072	0.00036	0.003	0.2	0.05	0.00079
CPP-N	0.000112	0.0000071	0.013	0.0005	0.004	0.3	0.09	0.0014
CPP-NE	0.000175	0.0000031	0.0055	0.00064	0.005	0.4	0.04	0.0006
CPP-E	0.0138	0.00015	0.27	0.051	0.411	34.3	1.88	0.03
CPP-SE	0.0000639	0.00000092	0.0016	0.00029	0.002	0.2	0.01	0.00018
CPP-S	0.000233	0.0000042	0.0076	0.00086	0.007	0.6	0.05	0.00083
CPP-SW	0.000189	0.0000035	0.0063	0.0007	0.006	0.5	0.04	0.00068
CPP-W	0.00778	0.000086	0.15	0.031	0.25	19.3	1.06	0.017
CPP-NW	0.000047	0.0000026	0.0047	0.00015	0.001	0.12	0.03	0.00051
B.C. Ranch	0.00908	0.0001	0.18	0.035	0.28	22.5	1.24	0.019
Burdock School	0.000149	0.0000025	0.0045	0.00055	0.004	0.4	0.03	0.00049
Daniels Ranch	0.0119	0.00018	0.33	0.045	0.359	29.5	2.25	0.036
LA-2	0.0000481	0.0000016	0.0029	0.0002	0.0013	0.12	0.02	0.00032
SF	0.0132	0.00014	0.26	0.052	0.42	32.8	1.79	0.028
Heck Ranch	0.000127	0.000003	0.0053	0.00047	0.004	0.3	0.04	0.00058
Mining Unit 5	0.00345	0.000049	0.089	0.011	0.089	8.6	0.61	0.0097
SF-SSW	0.0000473	0.0000018	0.0032	0.00017	0.0012	0.12	0.02	0.00035
SF-WSW	0.00498	0.000055	0.099	0.016	0.126	12.3	0.68	0.011
SF-WNW	0.0118	0.00013	0.23	0.046	0.37	29.2	1.6	0.025
SF-NNW	0.00386	0.000043	0.078	0.013	0.1	9.6	0.54	0.0085

Table C–5. Nonradiological Combustion Concentration Estimates From 47 Locations in and Around the Dewey-Burdock Site From Multiple Sources for the Construction Phase (continued)

	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
Location*	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP-NNW	0.000334	0.0000091	0.016	0.0014	0.011	0.8	0.11	0.0018
CCP-NNE	0.000103	0.0000061	0.011	0.0003	0.0014	0.3	0.08	0.0012
CPP-ENE	0.0239	0.000062	1.1	0.074	0.579	59.3	7.7	0.12
CPP-ESE	0.0000938	0.0000021	0.0037	0.00035	0.002	0.2	0.03	0.00041
CPP-SSE	0.0000743	0.0000012	0.0021	0.00027	0.002	0.2	0.01	0.00023
CPP-SSW	0.0181	0.00045	0.8	0.065	0.455	45	5.55	0.088
CCP-WSW	0.00439	0.000049	0.087	0.014	0.115	10.9	0.6	0.0095
CPP-WNW	0.0000549	0.000003	0.0054	0.00028	0.002	0.1	0.04	0.00059
Puttman Ranch	0.0000347	0.00000041	0.00074	0.00013	0.00076	0.09	0.01	0.00008
Background	0.0000256	0.00000048	0.00086	0.000073	0.00043	0.06	0.01	0.000094
Englebert Ranch	0.0000527	0.00000044	0.00078	0.00026	0.0015	0.13	0.01	0.000086
LA-1	0.0118	0.00013	0.23	0.047	0.372	29.2	1.6	0.025
Edgemont	0.00017	0.0000047	0.0084	0.00084	0.007	0.4	0.06	0.00091
Spencer Ranch	0.0000379	0.0000017	0.003	0.00013	0.00092	0.09	0.02	0.00033
Mining Unit 2	0.0142	0.00016	0.28	0.055	0.44	35.3	1.92	0.03

Source: Modified from Powertech (2010a)
 *Locations are specified in Figure 2.1-13
 †To convert µg/m³ to oz/yd³, multiply by 2.74 × 10⁻⁸

Table C–6. Nonradiological Combustion Concentration Estimates From 47 Locations in and Around the Dewey-Burdock Site From Multiple Sources for the Operations Phase

	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
Location*	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP	0.00315	0.000087	0.37	0.031	0.074	7.8	2.14	0.028
SF-NE	0.0000862	0.0000061	0.025	0.00079	0.005	0.2	0.14	0.0019
SF-E	0.00632	0.00017	0.63	0.056	0.207	16	3.71	0.051
SF-SE	0.0000334	0.0000025	0.0093	0.00023	0.0017	0.09	0.06	0.00076
SF-S	0.00174	0.000047	0.2	0.017	0.042	4.3	1.14	0.015
SF-SW	0.0045900	0.000048	0.076	0.019	0.15	12.5	0.58	0.011
SF-W	0.0047	0.00012	0.46	0.043	0.142	11.8	2.71	0.037
SF-NW	0.00364	0.0001	0.41	0.035	0.087	9.1	2.38	0.032
SF-N	0.0000841	0.0000059	0.024	0.00077	0.005	0.2	0.14	0.0019
CPP-N	0.00925	0.000096	0.15	0.033	0.265	25.1	1.16	0.021
CPP-NE	0.0000931	0.0000052	0.021	0.00085	0.005	0.2	0.12	0.0016
CPP-E	0.00446	0.00021	0.64	0.041	0.111	12	3.99	0.059
CPP-SE	0.0000749	0.0000025	0.006	0.00034	0.002	0.2	0.04	0.00063
CPP-S	0.00592	0.00013	0.19	0.022	0.173	16.1	1.48	0.028
CPP-SW	0.000125	0.0000062	0.021	0.00075	0.006	0.3	0.13	0.0018
CPP-W	0.00253	0.000066	0.28	0.025	0.061	6.3	1.64	0.022
CPP-NW	0.00574	0.000058	0.085	0.023	0.183	15.6	0.66	0.012
B.C. Ranch	0.00301	0.000083	0.34	0.029	0.071	7.5	1.98	0.026
Burdock School	0.00022	0.0000058	0.017	0.00097	0.008	0.6	0.11	0.0016
Daniels Ranch	0.0171	0.00048	1.1	0.059	0.431	46.3	7.28	0.12
LA-2	0.0000743	0.0000028	0.011	0.00068	0.0036	0.18	0.06	0.00085
SF	0.00514	0.00013	0.51	0.047	0.158	13	2.99	0.041
Heck Ranch	0.0000553	0.0000036	0.015	0.00051	0.004	0.1	0.09	0.0012
Mining Unit 5	0.0224	0.00049	0.77	0.079	0.572	60.8	5.81	0.11

Table C–6. Nonradiological Combustion Concentration Estimates From 47 Locations in and Around the Dewey-Burdock Site From Multiple Sources for the Operations Phase (continued)

Location*	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
Location*	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
SF-NNE	0.0000851	0.000006	0.024	0.00078	0.005	0.2	0.14	0.0019
SF-ENE	0.000257	0.000019	0.079	0.0021	0.01	0.6	0.46	0.0061
SF-ESE	0.00654	0.000066	0.1	0.026	0.205	17.79	0.77	0.014
SF-SSE	0.00139	0.000041	0.17	0.013	0.031	3.4	1.01	0.013
SF-SSW	0.0000279	0.0000027	0.0098	0.00026	0.0019	0.07	0.06	0.00081
SF-WSW	0.00609	0.000096	0.26	0.029	0.197	16.4	1.66	0.025
SF-WNW	0.00406	0.00011	0.44	0.038	0.101	10.1	2.56	0.034
SF-NNW	0.000979	0.000039	0.17	0.0091	0.025	2.4	0.96	0.013
CPP-NNW	0.00829	0.000089	0.15	0.03	0.24	22.5	1.11	0.02
CCP-NNE	0.0106	0.00011	0.16	0.037	0.3	28.8	1.25	0.023
CPP-ENE	0.00731	0.00056	2.3	0.04	0.187	18.5	13.3	0.18
CPP-ESE	0.00661	0.000066	0.092	0.029	0.231	18	0.73	0.014
CPP-SSE	0.000255	0.0000064	0.013	0.0012	0.008	0.7	0.09	0.0015
CPP-SSW	0.00543	0.00038	1.6	0.031	0.14	13.7	9.04	0.12
CCP-WSW	0.00123	0.000042	0.18	0.012	0.027	3.1	1.02	0.013
CPP-WNW	0.000027	0.0000044	0.018	0.00056	0.003	0.2	0.11	0.0014
Puttman Ranch	0.000027	0.00000035	0.0011	0.00015	0.00078	0.07	0.01	0.000097
Background	0.0000194	0.00000083	0.0029	0.0002	0.0012	0.05	0.02	0.00024
Englebert Ranch	0.0000542	0.00000073	0.0024	0.0003	0.0015	0.14	0.01	0.00021
LA-1	0.00509	0.00013	0.46	0.044	0.18	13.4	2.77	0.038
Edgemont	0.000102	0.0000067	0.024	0.00098	0.005	0.3	0.15	0.002
Spencer Ranch	0.0000332	0.0000026	0.0097	0.00025	0.0019	0.09	0.06	0.00078
Mining Unit 2	0.00576	0.00015	0.56	0.051	0.193	14.6	3.31	0.046

Source: Modified from Powertech (2010a)

*Locations are specified in Figure 2.1-13

†To convert µg/m³ to oz/yd³, multiply by 2.74 × 10⁻⁸

Table C–7. Nonradiological Combustion Concentration Estimates From 47 Locations in and Around the Dewey-Burdock Site From Multiple Sources for the Aquifer Restoration Phase

Location*	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
Location*	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP	0.0022	0.000058	0.18	0.0088	0.021	1.562	1.232	0.0074
SF-NE	0.00000469	0.000000052	0.00016	0.000018	0	0.003	0.001	0.0000055
SF-E	0.00000621	0.000000085	0.00027	0.000024	0	0.004	0.002	0.000011
SF-SE	0.0000178	0.0000011	0.0034	0.000067	0.0005	0.013	0.024	0.00014
SF-S	0.00122	0.000032	0.098	0.0048	0.012	0.862	0.677	0.0041
SF-SW	0.00000839	0.00000019	0.00059	0.000027	0	0.006	0.004	0.000025
SF-W	0.00000756	0.000000085	0.00027	0.000024	0	0.006	0.002	0.000011
SF-NW	0.00000617	0.000000077	0.00023	0.000019	0	0.004	0.002	0.000011
SF-N	0.00000472	0.000000052	0.00016	0.000018	0	0.003	0.001	0.0000055
CPP-N	0.00000874	0.00000012	0.00039	0.000034	0	0.006	0.003	0.000017
CPP-NE	0.000019	0.000001	0.0032	0.000061	0	0.014	0.022	0.00013
CPP-E	0.003	0.000083	0.26	0.012	0.27	2.126	1.771	0.011
CPP-SE	0.0000114	0.00000032	0.00097	0.000037	0	0.008	0.007	0.000042
CPP-S	0.00000782	0.00000015	0.00047	0.000025	0	0.006	0.003	0.000019
CPP-SW	0.00000522	0.00000039	0.0012	0.000016	0	0.004	0.008	0.00005
CPP-W	0.00177	0.000046	0.14	0.0071	0.17	1.254	0.972	0.0058

Table C–7. Nonradiological Combustion Concentration Estimates From 47 Locations in and Around the Dewey-Burdock Site From Multiple Sources for the Aquifer Restoration Phase (continued)

Location*	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP-NW	0.0000124	0.00000019	0.00057	0.000039	0	0.009	0.004	0.000025
B.C. Ranch	0.00000677	0.00000077	0.00023	0.000021	0	0.005	0.002	0.0000083
Burdock School	0.00000491	0.00000044	0.0013	0.000016	0	0.003	0.009	0.000055
Daniels Ranch	0.00261	0.000072	0.22	0.01	0.024	1.848	1.522	0.0091
LA-2	0.0000147	0.00000099	0.003	0.000051	0.00039	0.01	0.021	0.00012
SF	0.00000726	0.000000085	0.00027	0.000023	0	0.005	0.002	0.000011
Heck Ranch	0.0000387	0.0000022	0.0068	0.00014	0.001	0.027	0.047	0.00028
Mining Unit 5	0.000613	0.000025	0.075	0.0023	0.006	0.435	0.521	0.0031
SF-NNE	0.00000474	0.000000052	0.00016	0.000018	0	0.003	0.001	0.0000055
SF-ENE	0.00000519	0.00000006	0.00019	0.00002	0	0.004	0.001	0.0000083
SF-ESE	0.0000117	0.00000017	0.00051	0.000037	0	0.008	0.004	0.000022
SF-SSE	0.000973	0.000028	0.087	0.0038	0.009	0.69	0.599	0.0036
SF-SSW	0.000019	0.0000011	0.0035	0.000071	0.00051	0.013	0.024	0.00015
SF-WSW	0.00000883	0.00000011	0.00035	0.000028	0	0.006	0.002	0.000014
SF-WNW	0.00000659	0.000000081	0.00024	0.000021	0	0.005	0.002	0.000011
SF-NNW	0.00000485	0.000000064	0.0002	0.000019	0	0.003	0.001	0.0000083
CPP-NNW	0.00000859	0.00000013	0.00039	0.000029	0	0.006	0.003	0.000017
CCP-NNE	0.00000916	0.00000012	0.00038	0.000035	0.00019	0.006	0.003	0.000017
CPP-ENE	0.0000276	0.0000012	0.0036	0.000088	0.001	0.02	0.025	0.00015
CPP-ESE	0.0000176	0.0000014	0.0043	0.000066	0	0.013	0.029	0.00018
CPP-SSE	0.00000943	0.00000021	0.00065	0.00003	0	0.007	0.004	0.000028
CPP-SSW	0.00000754	0.00000016	0.00048	0.000023	0	0.005	0.003	0.000019
CCP-WSW	0.000861	0.000028	0.085	0.0033	0.008	0.61	0.587	0.0035
CPP-WNW	0.0000424	0.0000026	0.008	0.00016	0.001	0.03	0.056	0.00033
Puttman Ranch	0.00000189	0.000000028	0.00009	0.0000071	0.000026	0.001	0.001	0.0000028
Background	0.00000433	0.00000015	0.00045	0.000013	0.000093	0.003	0.003	0.000019
Englebert Ranch	0.0000163	0.00000017	0.00052	0.000061	0.00035	0.012	0.004	0.000022
LA-1	0.00000793	0.000000093	0.00028	0.000025	0	0.006	0.002	0.000011
Edgemont	0.0000604	0.0000035	0.011	0.00028	0.001	0.043	0.074	0.00044
Spencer Ranch	0.000019	0.0000012	0.0037	0.000071	0.00053	0.013	0.025	0.00015
Mining Unit 2	0.00000676	0.000000089	0.00027	0.000021	0	0.005	0.002	0.000011

Source: Modified from Powertech (2010a)
 *Locations are specified in Figure 2.1-13.
 †To convert µg/m³ to oz/yd³, multiply by 2.74 × 10⁻⁸.

Table C–8. Nonradiological Combustion Concentration Estimates From 47 Locations In and Around the Dewey-Burdock Site From Multiple Sources for the Decommissioning Phase

Location*	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8-Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP	0.00614	0.000058	0.18	0.012	0.093	9.14	1.232	0.0074
SF-NE	0.0000426	0.000000052	0.00016	0.00011	0.001	0.06	0.001	0.0000055
SF-E	0.00995	0.000000085	0.00027	0.018	0.145	14.81	0.002	0.000011
SF-SE	0.0000279	0.0000011	0.0034	0.000042	0.00027	0.04	0.024	0.00014
SF-S	0.00339	0.000032	0.098	0.0064	0.052	5.04	0.677	0.0041
SF-SW	0.0000409	0.00000019	0.00059	0.0001	0.001	0.06	0.004	0.000025
SF-W	0.00757	0.000000085	0.00027	0.015	0.117	11.27	0.002	0.000011
SF-NW	0.00684	0.000000077	0.00023	0.013	0.101	10.19	0.002	0.000011
SF-N	0.0000461	0.000000052	0.00016	0.00011	0.001	0.07	0.001	0.0000055
CPP-N	0.0000702	0.00000012	0.00039	0.00015	0.001	0.1	0.003	0.000017
CPP-NE	0.000109	0.000001	0.0032	0.00019	0.002	0.16	0.022	0.00013

Table C–8. Nonradiological Combustion Concentration Estimates From 47 Locations In and Around the Dewey-Burdock Site From Multiple Sources for the Decommissioning Phase (continued)

Location*	SO ₂		NO _x	CO		PM ₁₀	TOC	Aldehydes
	Maximum 24-Hour Mean	Annual Mean	Annual Mean	Maximum 8- Hour Mean	Maximum 1-Hour Mean	Maximum 24-Hour Mean	Annual Mean	Annual Mean
	ppm	ppm	ppb	ppm	ppm	µg/m ³ †	µg/m ³	ppm
CPP-E	0.00865	0.000083	0.26	0.015	0.123	12.88	1.771	0.011
CPP-SE	0.00004	0.00000032	0.00097	0.000088	0.001	0.06	0.007	0.000042
CPP-S	0.000146	0.00000015	0.00047	0.00026	0.002	0.22	0.003	0.000019
CPP-SW	0.000118	0.00000039	0.0012	0.00021	0.002	0.16	0.008	0.00005
CPP-W	0.00487	0.000046	0.14	0.0094	0.075	7.24	0.972	0.0058
CPP-NW	0.0000298	0.00000019	0.00057	0.000046	0	0.04	0.004	0.000025
B.C. Ranch	0.00568	0.000000077	0.00023	0.01	0.084	8.45	0.002	0.0000083
Burdock School	0.0000933	0.00000044	0.0013	0.00017	0.001	0.14	0.009	0.000055
Daniels Ranch	0.00743	0.000072	0.22	0.013	0.108	11.06	1.522	0.0091
LA-2	0.00003	0.00000099	0.003	0.000059	0.00038	0.04	0.021	0.00012
SF	0.00826	0.000000085	0.00027	0.016	0.126	12.3	0.002	0.000011
Heck Ranch	0.0000797	0.00000022	0.0068	0.00014	0.001	0.12	0.047	0.00028
Mining Unit 5	0.00215	0.000025	0.075	0.0034	0.027	3.21	0.521	0.0031
SF-NNE	0.0000446	0.000000052	0.00016	0.00011	0.001	0.07	0.001	0.0000055
SF-ENE	0.000726	0.00000006	0.00019	0.0013	0.01	1.08	0.001	0.0000083
SF-ESE	0.0000324	0.000000017	0.00051	0.00008	0.001	0.05	0.004	0.000022
SF-SSE	0.00293	0.000028	0.087	0.005	0.04	4.36	0.599	0.0036
SF-SSW	0.0000296	0.0000011	0.0035	0.00005	0.00035	0.04	0.024	0.00015
SF-WSW	0.00311	0.00000011	0.00035	0.0047	0.038	4.63	0.002	0.000014
SF-WNW	0.00735	0.000000081	0.00024	0.014	0.111	10.94	0.002	0.000011
SF-NNW	0.00241	0.000000064	0.0002	0.0038	0.03	3.59	0.001	0.0000083
CPP-NNW	0.000209	0.00000013	0.00039	0.00042	0.003	0.31	0.003	0.000017
CCP-NNE	0.0000645	0.00000012	0.00038	0.00009	0.00043	0.1	0.003	0.000017
CPP-ENE	0.0149	0.0000012	0.0036	0.022	0.174	22.25	0.025	0.00015
CPP-ESE	0.0000586	0.0000014	0.0043	0.0001	0.001	0.09	0.029	0.00018
CPP-SSE	0.0000464	0.00000021	0.00065	0.000082	0.001	0.07	0.004	0.000028
CPP-SSW	0.0113	0.00000016	0.00048	0.019	0.136	16.86	0.003	0.000019
CCP-WSW	0.00274	0.000028	0.085	0.0043	0.034	4.08	0.587	0.0035
CPP-WNW	0.0000343	0.0000026	0.008	0.000085	0.001	0.05	0.056	0.00033
Puttman Ranch	0.0000217	0.000000028	0.00009	0.000039	0.00023	0.03	0.001	0.0000028
Background	0.000016	0.00000015	0.00045	0.000022	0.00013	0.02	0.003	0.000019
Englebert Ranch	0.000033	0.00000017	0.00052	0.000077	0.00046	0.05	0.004	0.000022
LA-1	0.00735	0.000000093	0.00028	0.014	0.112	10.93	0.002	0.000011
Edgemont	0.000106	0.0000035	0.011	0.00025	0.002	0.16	0.074	0.00044
Spencer Ranch	0.0000237	0.0000012	0.0037	0.000039	0.00027	0.04	0.025	0.00015
Mining Unit 2	0.00889	0.000000089	0.00027	0.016	0.132	13.23	0.002	0.000011

Source: Modified from Powertech (2010a)
 *Locations are specified in Figure 2.1-13
 †To convert µg/m³ to oz/yd³, multiply by 2.74 × 10⁻⁸

Table C–9. Quantitative Difference Between the Revised and Initial Nonradiological Combustion Emission Mass Flow Rate Estimates (Short Tons* per Year) Including Both Stationary and Mobile Sources.

Pollutant	Revised Inventory	Initial Inventory	Multiplication Factor (Revised/Initial)	Percent (Revised/Initial) ×100
Particulate Matter PM ₁₀ †	5.4	39	0.138	13.8
Sulfur Dioxide	14.4	36	0.40	40
Nitrogen Oxides	95.0	77	1.234	123.4
Carbon Monoxide	88.7	143	0.62	62

Source: Revised inventory modified from Powertech (2012) and initial inventory modified from Powertech (2010a)
 *Source document and appendix table mass expressed in short tons only (dual units used in SEIS text with metric being primary)
 †PM_{2.5} detailed emission inventory not available

Table C–10. Calculation for the NAAQS Pollutant Peak Year Concentrations for the Revised Inventory Utilizing the Air Dispersion Modeling Results from the Initial Inventory

Pollutant	Time	Concentration from Dispersion Modeling of Initial Inventory*		Multiplication Factor‡	Calculated Concentration for Revised Inventory	
		Expressed in $\mu\text{g}/\text{m}^3$ †	Expressed in ppb		Expressed in $\mu\text{g}/\text{m}^3$	Expressed in ppb
Particulate Matter PM ₁₀ §	24-hour mean	59.3	na	0.138	8.2	na
Sulfur Dioxide	24-hour mean	59.3	23.9	0.40	23.7	9.6
Sulfur Dioxide	Annual mean	1.5	0.62	0.40	0.6	0.25
Nitrogen Oxides	Annual mean	3.8	1.1	1.23	4.7	1.3
Carbon Monoxide	8-hour mean	418.8	74	0.62	260.0	45.9
Carbon Monoxide	1-hour mean	3,286	579	0.62	2037	359

Source: Revised inventory modified from Powertech (2012) and initial inventory modified from Powertech (2010a).
 *Most concentrations in this table are expressed in two different units to accommodate for comparisons to the NAAQS and Prevention of Significant Deterioration regulations which can differ in units used to express the concentrations
 ‡Multiplication factor = the value when multiplied by the concentration from the dispersion modeling of the initial inventory yields the peak year concentrations of the revised inventory. The multiplication factor comes from the percent difference calculated in Table C–9
 †To convert $\mu\text{g}/\text{m}^3$ to oz/yd^3 , multiply by 2.74×10^{-8}
 §PM_{2.5} emission inventory not available for inclusion in air dispersion modeling
 ¶Not applicable. See footnote *

Table C–11. Percentage of Emissions by Phase for Various NAAQS Pollutants from Combustion Emissions From Stationary and Mobile Sources When All Phases Occur Simultaneously (i.e., a Peak Year*)

Pollutant	Phase			
	Construction (Well Field Only)	Operation	Aquifer Restoration	Decommissioning
Particulate Matter PM ₁₀	69.0	19.0	1.8	10.1
Sulfur Dioxide	70.2	13.8	0.7	15.3
Nitrogen Oxides	66.7	18.7	1.3	13.3
Carbon Monoxide	77.9	13.0	0.9	8.2

Source: Modified from Powertech (2012)
 *Peak year accounts for when all four phase occur simultaneously and represents the highest amount of emission the proposed action would generate in any one project year.

Table C–12. Nonradiological Combustion Emission Estimates (Mass* Per Year) for Greenhouse Gases for the Construction Phase of the Proposed Action

Activity	Emission Vehicle	Pollutant			Source Classification
		CO ₂	CH ₄	N ₂ O	
Earthworks Construction	Scraper	345	0.01	0.01	Mobile
	Bulldozer	102	0.01	0.01	Mobile
	Compactor	0	0	0	Mobile
	Motor Grader	74	0.01	0.01	Mobile
	Heavy-Duty Water Truck	389	0.02	0.03	Mobile
	Fueling Truck	24	0	0	Mobile
	Light-Duty Pickup	74	0.05	0.06	Mobile
Facilities Construction	Crane	206	0.01	0.01	Mobile
	Welding Equipment	225	0.02	0.03	Mobile
	Forklift	119	0.02	0.03	Mobile
	Man Lift	120	0.02	0.03	Mobile
	Heavy-Duty Diesel Truck	389	0.02	0.03	Mobile
	Light Duty Truck	744	0.59	0.19	Mobile

Table C–12. Nonradiological Combustion Emission Estimates (Mass* Per Year) for Greenhouse Gases for the Construction Phase of the Proposed Action (continued)

Activity	Emission Vehicle	Pollutant			Source Classification
		CO ₂	CH ₄	N ₂ O	
Wellfield/Electric Construction	High-Density Polyethylene (HDPE) Fusion Equipment	298	0.07	0.09	Mobile
	Trackhoe	481	0.07	0.09	Mobile
	Backhoe	167	0.07	0.09	Mobile
	Welding Equipment	42	0.03	0.04	Mobile
	Electrical Pole Truck	648	0.04	0.05	Mobile
	Motor Grader	130	0.02	0.02	Mobile
	Forklift	179	0.07	0.09	Mobile
	Light-Duty Truck	2,679	3.53	1.15	Mobile
Drilling	Truck-Mounted Rotary Drill Rig	10,689	0.1	0.07	Mobile
	Heavy-Duty Water Truck	2,527	1.2	0.38	Mobile
	Backhoe	111	0.05	0.06	Mobile
	Forklift	239	0.05	0.06	Mobile
	Cementer (gas)	404	0.05	0.06	Mobile
	Logging Truck	1,555	0.05	0.06	Mobile
	Light-Duty Truck	1,116	0.59	0.19	Mobile

Source: Modified from Powertech (2010a)
*Source and appendix mass expressed in short tons only (dual units used in SEIS text with metric being primary)

Table C–13. Nonradiological Combustion Emission Estimates (Mass* Per Year) for Greenhouse Gases for the Operations Phase of the Proposed Action

Activity	Emission Source	Pollutant			Source Classification
		CO ₂	CH ₄	N ₂ O	
Central Processing Plant	Propane Heating	483	0.04	na†	Stationary
	Thermal Fluid Heater	1,780	0.14	na	Stationary
	Emergency Backup Generator	1	0.00008	na	Stationary
	Fire Suppression System	0.7	0	0	Stationary
Satellite Facility	Propane Heating	102	0.01	na	Stationary
	Emergency Backup Generator	0.5	0.00004	na	Stationary
	Fire Suppression System	0.7	0.0003	0	Stationary
Office Building	Propane Heating	31	0.013	na	Stationary
Maintenance + Warehouse Building	Propane Heating	72	0.01	na	Stationary
Central Processing Plant Operations	Man Lift	6	0	0.01	Mobile
	Welding Equipment	17	0.01	0.02	Mobile
	Forklift (Warehouse)	56	0	0.01	Mobile
	Forklift (Packaging)	24	0	0.01	Mobile
	Light-Duty Truck	1,786	1.8	0.58	Mobile
	Light-Duty Vehicles	708	2.5	0.81	Mobile
Satellite Facility and Warehouse Facility Operations	Resin Hauling Semi Truck	257	0	0.03	Mobile
	Pump-Pulling Truck	1,166	0	0.04	Mobile
	Motor Grader	71	0.01	0.01	Mobile
	Logging Truck	389	0.05	0.06	Mobile
	Light-Duty Truck	2,500	9.9	3.23	Mobile
	Light-Duty Vehicles	253	1.8	0.58	Mobile
Product Transport	Diesel Semi with Trailer	51	0	0.01	Mobile

Source: Modified from Powertech (2010a)
*Source and appendix mass expressed in short tons only (dual units used in SEIS text with metric being primary).
†Not applicable.

Table C–14. Nonradiological Combustion Emission Estimates (Mass* Per Year) for Greenhouse Gases for the Aquifer Restoration Phase of the Proposed Action

Activity	Emission Vehicle	Pollutant			Source Classification
		CO ₂	CH ₄	N ₂ O	
Restoration Operations	Cement (gas)	17	0.39	0.13	Mobile
	Light-Duty Truck	446	1.8	0.58	Mobile
	Light-Duty Vehicle	126	1.8	0.58	Mobile

Source: Modified from Powertech (2010a)
 *Source and appendix mass expressed in short tons only (dual units used in SEIS text with metric being primary).

Table C–15. Nonradiological Combustion Emission Estimates (Mass* Per Year) for Greenhouse Gases for the Decommissioning Phase of the Proposed Action

Activity	Emission Vehicle	Pollutant			Source Classification
		CO ₂	CH ₄	N ₂ O	
Earthwork	Scraper	691	0.02	0.02	Mobile
	Motor Grader	148	0.02	0.02	Mobile
	Compactor	148	0.02	0.02	Mobile
	Bulldozer	204	0.02	0.02	Mobile
	Excavator	200	0.01	0.02	Mobile
	Backhoe	70	0.01	0.02	Mobile
	Loader	131	0.01	0.02	Mobile
	Tractor	198	0.01	0.02	Mobile
	Fueling Truck	97	0.01	0.01	Mobile
	Light-Duty Truck	186	0.73	0.24	Mobile
Demolition	Crane	206	0.02	0.02	Mobile
	Welding/Cutting Equipment	75	0.02	0.02	Mobile
	Man Lift	80	0.02	0.02	Mobile
	Forklift	119	0.02	0.02	Mobile
	Heavy-Duty Truck (Diesel)	259	0.01	0.01	Mobile
	Light-Duty Truck	496	0.78	0.26	Mobile
	Light-Duty Vehicle	421	1.18	0.38	Mobile

Source: Modified from Powertech (2010a)
 *Source and appendix mass expressed in short tons only (dual units used in SEIS text with metric being primary)

Table C–16. Facilities and Initial Well Field Construction Phase—Year 1 Only

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	Lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ¹⁰ Tons/yr	Emission Factor References
Scraper	3	433	15	30	3.10	19,485		50%	15.10	
Bulldozer	1	433					0.70	0%	0.15	AP-42 Section 13.2.2
Compactor	1	433	5	5	1.38	2,165		50%	0.75	AP-42 Section 13.2.2
Motor Grader	1	1,196	10		3.06	11,960		50%	9.15	AP-42 Table 11.9-1

Table C–16. Facilities and Initial Well Field Construction Phase—Year 1 Only (continued)

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	Lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor References
Water Truck (1,500 gallon)	15	1,040	15	16	2.34	234,000		50%	136.65	AP-42 Section 13.2.2
Fueling Truck	1	130	15	10	1.89	1,950		50%	0.92	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	2	260	15	20	2.58	7,800		50%	5.04	AP-42 Section 13.2.2
Logging Truck	4	2,080	15	10	1.89	124,800		50%	58.99	AP-42 Section 13.2.2
Electrical Pole Truck	2	1,733	15	10	1.89	51,990		50%	24.57	AP-42 Section 13.2.2
Truck Mounted Drill Rig*	13	2,600	20				0.07	0%	1.10	AP-42 Table 11.9-4
Deep Well Drill Rig*	1	300	75				0.02	0%	0.00	AP-42 Table 11.9-4
Trackhoe†	1	3,120					1.66	0%	2.59	AP-42 Table 11.9-4
Backhoe†	1	5,200					1.33	0%	3.46	AP-42 Table 11.9-4
Forklift	4	2,340	5	1	0.67	46,800		50%	7.85	AP-42 Section 13.2.2
Manlift	4	1,1040	2	10	1.89	8,320		50%	3.93	AP-42 Section 13.2.2
Light Duty Pickup (onsite use)	5	2,000	15	3	1.10	150,000		50%	41.24	AP-42 Section 13.2.2
Onsite Passenger Vehicle‡	57	4	25	250	0.63	57,000		50%	9.03	AP-42 Section 13.2.2
Total Onsite PM₁₀ Emissions (tons/year)									320.53	
Offsite Passenger Vehicle‡	57	22	40	250	0.80	313,500		0%	125.70	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	2	780	25	20	2.58	39,000		0%	50.36	AP-42 Section 13.2.2
Total Offsite PM₁₀ Emissions (tons/year)									176.06	
Source: Modified from Powertech, 2010a Notes: measurements in this table are not converted to metric units (dual units used in SEIS text with metric being primary) mph = miles per hour lb/VMT = pounds per vehicle miles traveled lb/hr = pounds per hour PM ₁₀ = particles with a diameter of 10 micrometers or less *For drill rigs, "Speed (mph)" = average per hours per hole drilled †For trackhoe and backhoe, assumed 1.56 and 1.25-cubic yard buckets and specific gravity of 1.6 ‡For passenger vehicle, "Hours" column = round-trip miles; "Weight (tons)" column = trips/year § Constants for PM ₁₀ Calculations: AP-42 Industrial Unpaved Roads: k = 1.5 AP-42 Industrial Unpaved Roads: a = 0.9 AP-42 Industrial Unpaved Roads: b = 0.45 AP-42 Public Unpaved Roads: k = 1.8 AP-42 Public Unpaved Roads: a = 1.0 AP-42 Public Unpaved Roads: c = 0.2 AP-42 Public Unpaved Roads: d = 0.5 AP-42 Public Unpaved Roads: C = 0.00047 Average silt content (%): s = 8.5 Average moisture content (%): M = 10.4 Where separate factors were not given, PM ₁₀ was assumed to be 30% of total suspended particulates (TSP) (AP-42 Section 13.2.2, at 12% silt, K _{PM10} /K _{TSP} = 1.5/4.9 = 0.306										

Table C-17. Well Field Construction Phase

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	Lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor Reference§
Motor Grader	1	347	10		3.06	3,470		50%	2.65	AP-42 Table 11.9-1
Water Truck (1,500 gallon)	13	1,040	15	16	2.34	202,800		50%	118.43	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	1	133	15	20	2.58	1,995		50%	1.29	AP-42 Section 13.2.2
Logging Truck	4	2,080	15	10	1.89	124,800		50%	58.99	AP-42 Section 13.2.2
Electrical Pole Truck	2	1,733	15	10	1.89	51,990		50%	24.57	AP-42 Section 13.2.2
Truck Mounted Drill Rig*	13	2,600	20				0.07	0%	1.10	AP-42 Table 11.9-4
Deep Well Drill Rig*	1	75	75				0.2	0%	0.00	AP-42 Table 11.9-4
Trackhoe†	1	3,120					1.66	0%	2.59	AP-42 Table 11.9-4
Backhoe†	2	2,600					1.33	0%	3.46	AP-42 Table 11.9-4
Forklift	4	1,820	5	1	0.67	36,400		50%	6.10	AP-42 Section 13.2.2
Light Duty Pickup (onsite use)	13	500	15	3	1.10	97,500		50%	26.81	AP-42 Section 13.2.2
Onsite Passenger Vehicle‡	42	4	25	250	0.63	42,000		50%	6.66	AP-42 Section 13.2.2
Total Onsite PM₁₀ Emissions (tons/year)									252.66	
Offsite Passenger Vehicle‡	42	22	40	250	0.80	231,000		0%	92.62	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	1	387	25	20	2.58	9,675		0%	12.46	AP-42 Section 13.2.2
Total Offsite PM₁₀ Emissions (tons/year)									105.11	
Source: Modified from Powertech, 2010a Notes: measurements in this table are not converted to metric units (dual units used in SEIS text with metric being primary) mph = miles per hour lb/VMT = pounds per vehicle miles traveled lb/hr = pounds per hour PM ₁₀ = particles with a diameter of 10 micrometers or less *For drill rigs, "Speed (mph)" = average per hours per hole drilled †For trackhoe and backhoe, assumed 1.56 and 1.25-cubic yard buckets and specific gravity of 1.6 ‡For passenger vehicle, "Hours" column = round-trip miles; "Weight (tons)" column = trips/year § Constants for PM ₁₀ Calculations: AP-42 Industrial Unpaved Roads: k = 1.5 AP-42 Industrial Unpaved Roads: a = 0.9 AP-42 Industrial Unpaved Roads: b = 0.45 AP-42 Public Unpaved Roads: k = 1.8 AP-42 Public Unpaved Roads: a = 1.0 AP-42 Public Unpaved Roads: c = 0.2 AP-42 Public Unpaved Roads: d = 0.5 AP-42 Public Unpaved Roads: C = 0.00047 Average silt content (%): s = 8.5 Average moisture content (%): M = 10.4 Where separate factors were not given, PM ₁₀ was assumed to be 30% of total suspended particulates (TSP) (AP-42 Section 13.2.2, at 12% silt, K _{PM10} /K _{TSP} = 1.5/4.9 = 0.306										

Table C–18. Operation Phase

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor Referencet
Motor Grader	1	416	10		3.06	4,160		50%	3.18	AP-42 Table 11.9-1
Logging Truck	1	2,080	15	10	1.89	31,200		50%	14.75	AP-42 Section 13.2.2
Resin-haul Semi Truck	1	1,040	15	20	2.58	15,600		50%	10.07	AP-42 Section 13.2.2
Water Truck (1,500 gallon)	1	1,040	15	16	2.34	15,600		50%	9.11	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	1	133	15	20	2.58	1,995		50%	1.29	AP-42 Section 13.2.2
Pump Pulling Truck	4	1,560	15	10	1.89	93,600		50%	44.24	AP-42 Table 11.9-4
Forklift	1	2,132	5	1	0.67	10,660		50%	1.79	AP-42 Section 13.2.2
Manlift	1	208	2	10	1.89	416		50%	0.20	AP-42 Section 13.2.2
Product Transport Truck	1	27	15	40	0.49	405		0%	0.10	AP-42 Section 13.2.2
Light Duty Pickup (onsite use)	12	1,561	15	3	1.10	281,040		50%	77.27	AP-42 Section 13.2.2
Onsite Passenger Vehicle*	60	4	25	250	0.63	60,000		50%	9.51	AP-42 Section 13.2.2
Total Onsite PM₁₀ Emissions (tons/year)									171.50	
Offsite Passenger Vehicle*	60	22	40	250	0.80	330,000		0%	132.31	AP-42 Section 13.2.2
Product Transport Truck	1	181	25	40	0.63	4,525		0%	1.43	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	1	387	25	20	2.58	9,675		0%	12.49	AP-42 Section 13.2.2
Total Offsite PM₁₀ Emissions (tons/year)									146.24	
Source: Modified from Powertech, 2010a										
Notes: measurements in this table are not converted to metric units (dual units used in SEIS text with metric being primary)										
mph = miles per hour										
lb/VMT = pounds per vehicle miles traveled										
lb/hr = pounds per hour										
PM ₁₀ = particles with a diameter of 10 micrometers or less										
*For passenger vehicle, "Hours" column = round-trip miles; "Weight (tons)" column = trips/year										
†Constants for PM ₁₀ Calculations:										
AP-42 Industrial Unpaved Roads: k = 1.5										
AP-42 Industrial Unpaved Roads: a = 0.9										
AP-42 Industrial Unpaved Roads: b = 0.45										
AP-42 Public Unpaved Roads: k = 1.8										
AP-42 Public Unpaved Roads: a = 1.0										
AP-42 Public Unpaved Roads: c = 0.2										
AP-42 Public Unpaved Roads: d = 0.5										
AP-42 Public Unpaved Roads: C = 0.00047										
Average silt content (%): s = 8.5										
Average moisture content (%): M = 10.4										

Table C–19. Aquifer Restoration Phase

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor Referencet
Light Duty Pickup (onsite use)	1	2,912	15	3	1.10	43,680		50%	12.01	AP-42 Section 13.2.2
Onsite Passenger Vehicle*	6	4	25	250	0.63	6,000		50%	0.95	AP-42 Section 13.2.2
Total Onsite PM₁₀ Emissions (tons/year)									12.96	

Table C–19. Aquifer Restoration Phase (continued)

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor Reference†
Offsite Passenger Vehicle*	6	22	40	250	0.80	33,000		0%	13.23	AP-42 Section 13.2.2
Total Offsite PM₁₀ Emissions (tons/year)									13.23	
Source: Modified from Powertech, 2010a Notes: measurements in this table are not converted to metric units (dual units used in SEIS text with metric being primary) mph = miles per hour lb/VMT = pounds per vehicle miles traveled lb/hr = pounds per hour PM ₁₀ = particles with a diameter of 10 micrometers or less *For passenger vehicle, "Hours" column = round-trip miles; "Weight (tons)" column = trips/year †Constants for PM ₁₀ Calculations: AP-42 Industrial Unpaved Roads: k = 1.5 AP-42 Industrial Unpaved Roads: a = 0.9 AP-42 Industrial Unpaved Roads: b = 0.45 AP-42 Public Unpaved Roads: k = 1.8 AP-42 Public Unpaved Roads: a = 1.0 AP-42 Public Unpaved Roads: c = 0.2 AP-42 Public Unpaved Roads: d = 0.5 AP-42 Public Unpaved Roads: C = 0.00047 Average silt content (%): s = 8.5 Average moisture content (%): M = 10.4										

Table C–20. Decommissioning Phase

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor Reference†
Scraper	3	867	15	30	3.10	39,015		50%	30.23	AP-42 Section 13.2.2
Bulldozer	1	867					0.70	0%	0.00	AP-42 Table 11.9-1
Compactor	1	867	5	5	1.38	4,335		50%	1.50	AP-42 Section 13.2.2
Motor Grader	1	867	10		3.06	8,670	30.60	50%	6.63	AP-42 Table 11.9-1
Water Truck (1,500 gallon)	1	867	15	16	2.34	13,005		50%	7.59	AP-42 Section 13.2.2
Fueling Truck	1	520	15	10	1.89	7,800		50%	3.69	AP-42 Section 13.2.2
Loader	1	65					17.76	0%	0.00	AP-42 Table 11.9-4
Heavy Duty Diesel Truck	4	87	15	20	2.58	5,205		50%	3.36	AP-42 Section 13.2.2
Pump Pulling Truck	1	2,130	15	10	1.89	31,950		50%	15.10	AP-42 Table 11.9-4
Trackhoe*	2	650					1.66	0%	0.00	AP-42 Table 11.9-4
Backhoe*	2	650					1.33	0%	0.00	AP-42 Table 11.9-4

Table C–20. Decommissioning Phase (continued)

Equipment Item	Quantity	Hours	Speed (mph)	Weight (tons)	lb/VMT	VMT	Lb/Hr	Control Efficiency	PM ₁₀ Tons/yr	Emission Factor Reference†
Forklift	3	693	5	1	0.67	10,395		50%	1.74	AP-42 Section 13.2.2
Manlift	4	693	2	10	1.89	5,544		50%	2.62	AP-42 Section 13.2.2
Tractor	1	650	5	1.38	3,250			0%	2.25	AP-42 Section 13.2.2
Light Duty Pickup (onsite use)	2	2,000	15	3	1.10	60,000		50%	16.50	AP-42 Section 13.2.2
Onsite Passenger Vehicle†	15	4	25	250	0.63	15,000		50%	2.38	AP-42 Section 13.2.2
Total Onsite PM₁₀ Emissions (tons/year)									93.59	
Offsite Passenger Vehicle†	15	22	40	250	0.80	82,500		0%	33.08	AP-42 Section 13.2.2
Heavy Duty Diesel Truck	4	260	25	20	2.58	26,025		0%	33.61	AP-42 Section 13.2.2
Total Offsite PM₁₀ Emissions (tons/year)									66.69	
Source: Modified from Powertech, 2010a Notes: measurements in this table are not converted to metric units (dual units used in SEIS text with metric being primary) mph = miles per hour lb/VMT = pounds per vehicle miles traveled lb/hr = pounds per hour PM ₁₀ = particles with a diameter of 10 micrometers or less *For trackhoe and backhoe, assumed 1.56 and 1.25-cubic yard buckets and specific gravity of 1.6 †For passenger vehicle, "Hours" column = round-trip miles; "Weight (tons)" column = trips/year ‡Constants for PM ₁₀ Calculations: AP-42 Industrial Unpaved Roads: k = 1.5 AP-42 Industrial Unpaved Roads: a = 0.9 AP-42 Industrial Unpaved Roads: b = 0.45 AP-42 Public Unpaved Roads: k = 1.8 AP-42 Public Unpaved Roads: a = 1.0 AP-42 Public Unpaved Roads: c = 0.2 AP-42 Public Unpaved Roads: d = 0.5 AP-42 Public Unpaved Roads: C = 0.00047 Average silt content (%): s = 8.5 Average moisture content (%): M = 10.4 Where separate factors were not given, PM ₁₀ was assumed to be 30% of total suspended particulates (TSP) (AP-42 Section 13.2.2, at 12% silt, K _{PM10} /K _{TSP} = 1.5/4.9 = 0.306										

APPENDIX D
DOCUMENTS RELATED TO HISTORIC AND CULTURAL RESOURCES

Rapid City 026642.

4-1003-R.

The United States of America,

To all to whom these presents shall come, Greeting:

WHEREAS, a Certificate of the Register of the Land Office at **Rapid City, South Dakota,** has been deposited in the General Land Office, whereby it appears that, pursuant to the Act of Congress of May 20, 1862, "To Secure Homesteads to Actual Settlers on the Public Domain," and the acts supplemental thereto, the claim of **Emaline Richardson** has been established and duly consummated, in conformity to law, for the **west half of the southeast quarter of Section ten and the west half of the northeast quarter of Section fifteen in Township seven south of Range one east of the Black Hills Meridian, South Dakota, containing one hundred sixty acres,**

according to the Official Plat of the Survey of the said Land, returned to the GENERAL LAND OFFICE by the Surveyor-General:

NOW KNOW YE, That there is, therefore, granted by the UNITED STATES unto the said claimant the tract of Land above described; TO HAVE AND TO HOLD the said tract of Land, with the appurtenances thereof, unto the said claimant and to the heirs and assigns of the said claimant forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

IN TESTIMONY WHEREOF, I, **Woodrow Wilson**

President of the United States of America, have caused these letters to be made Patent, and the seal of the General Land Office to be hereunto affixed.

GIVEN under my hand, at the City of Washington, the **TWENTY-THIRD**

(SEAL)

day of **JANUARY** In the year of our Lord one thousand
nine hundred and **FIFTEEN** and of the Independence of the
United States the one hundred and **THIRTY-NINTH.**

By the President:

By

Woodrow Wilson
M. O. Le Roy Secretary,
L. L. Lamar
Recorder of the General Land Office.

RECORD OF PATENTS: Patent Number **455381**

B-0177



In Reply Refer To:

8100-R
BAS

12-MT040-15

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
South Dakota Field Office
310 Roundup Street
Belle Fourche, South Dakota 57717-1698
<http://www.blm.gov/mt>



Date: July 20, 2012

Mr. Richard E. Blubaugh
Vice President – Environmental Health & Safety Resources
Powertech (USA) Incorporated
5575 DTC Parkway, Suite 140
Greenwood Village, CO 80111

RE: Cultural Resource review of Evaluative Testing of 20 Sites in the Powertech (USA) Inc. Dewey-Burdock Uranium Project Impact Areas: Volumes 1 and 2. For the Dewey-Burdock Uranium Recovery Project, Fall River and Custer Counties, South Dakota.

Dear Mr. Blubaugh:

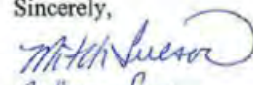
We have reviewed the appropriate volumes of the National Historic Preservation Act, Section 106 cultural compliance reports presented by Archeology Laboratory, Augustana College, for evaluation of cultural resource sites inside areas of potential effect for the proposed Dewey-Burdock project area. The reports reviewed document formal evaluation of 20 cultural resource sites inside areas proposed for the project that could have effect. Of these 20 sites, one site is located in part on BLM administered surface land.

Site 39FA96 was found to be significantly affected by natural erosion and therefore does not possess adequate integrity, does not display workmanship or feeling, and it is not associated with an important historic event. Based on the information provided in the report the Bureau of Land Management (BLM) recommends adequate testing was completed on site 39FA96, the site's integrity has been severely affected by deflation. The portion on BLM administered land does not possess enough information to meet the National Register of Historic Places criteria for an eligible archaeological site; therefore, the BLM is in agreement with the determination for site 39FA96 on this portion, in that it is considered not eligible for nomination to the National Register of Historic Places. Information provided for the remaining 19 sites should be sufficient for the lead Federal Agency to make informed recommendations of eligibility on the historic properties.

Mr. Richard E. Blubaugh
July 20, 2012
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Please let us know if you should need any additional information. I can be reached as Mr. Mitch Iverson (acting South Dakota Field Manager), (605) 892-7001 or email at Mitchell_Iverson@blm.gov or contact our archaeologist, Brenda Shierts at (605) 723-8712 or Brenda_Shierts@blm.gov.

Sincerely,


Acting For
Marian M. Atkins
South Dakota Field Manager

cc: Paige Olson, SD SHPO
Gary Smith, BLM MSO Historic Preservation Officer
Mark Sant, BLM MSO Tribal Coordinator
Mr. Greg R. Fesko, P.G., BLM MSO Solid Minerals
Haimanot Yilma, NRC, Project Manager Environmental Review Branch

SOUTH DAKOTA STATE HISTORIC PRESERVATION OFFICE
HISTORIC SITES SURVEY STRUCTURE FORM 06-01-2012



SHPOID CU00000050
SiteID 9202
StructureID 13997

SITE INFORMATION

*Survey Date: 6/20/1988 12:00:00 AM
*Surveyor: Unknown
*Property Address: Unknown
*County: cu
*City: Dewey
*Quarter1: SE
*Quarter2: SE
*Township: 6S
*Range: 1E
*Section: 31
Acres: 12.000
Quadname: Twenty-one Divide

Legal Description:

Location Description: approx. 3 miles south of Dewey

Owner Code1: P
Owner Code2:
Owner Code3:
Owner Name: Andes, Clark
Owner Address: PO Box 560
Owner City: Black Hawk
Owner State: SD
Owner Zip: 57718

HISTORIC SIGNIFICANCE

*DOE: NR Eligible
*DOE Date: 7/5/1990 12:00:00 AM
Nomination Status: NR listed
Listed Date: 7/5/1990 12:00:00 AM
Ref Num: 90000949
Period: 1912-40
Category: District
Historic District Rating:
Register Name: Young, Edna, and Ernest, Ranch
Multiple Property Name: Ranches of Southwestern Custer County
SignificanceLevel1: Local
SignificanceLevel2: Local
NR Criteria 1: A
NR Criteria 2:
NR Criteria 3:
NR Criteria 4:

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Significance Notes: Significant in the area of Exploration/Settlement, because it represents the development of the legal homestead rancher in the southwestern corner of Custer County, SD. In particular, this ranch represents homesteading on more than one claim.

STRUCTURE DETAILS

***Structure Name:** Bakewell Ranch

Other Name: Andes, Clark

Date Of Construction: 1912

Cultural Affiliation:

Type:

Style:

Roof Shape: Gambrel

Roof Material: Metal

Occupied:

Accessible:

Structural System:

Altered/Moved Notes:

Significant Person: Young, Ernie

Walls: Stone

Stories:

Foundation:

***UTM Zone:** 14

***UTM Easting:** 92020.0106

***UTM Northing:** 4827170.3755

Restricted: N

Interior Notes:

SOUTH DAKOTA STATE HISTORIC PRESERVATION OFFICE
HISTORIC SITES SURVEY STRUCTURE FORM 06-01-2012



Physical Notes: House (contributing) 1912. A sandstone masonry house, the material quarried from the nearby "racetrack" of the Black Hills formation. The gable ends are sheathed with white asphalt shingles, two shed roofed dormers, wood frame summer kitchen is attached to the NW, fenestrations irregular, a replica of an early shed roof porch was recent added. Bunkhouse (contributing) Stucco-covered wood frame, with a tin-clad gable roof.
Small House (contributing) One story, rectangular pen building, on a wood sill, sided in clapboard and tar paper, gable roof covered in tar paper. Privy (contributing) Wood frame, wood sill capped by a board-covered gable roof.
Granary (contributing) Rectangular pen wood frame, on stone piers, capped by a tin-covered shed roof.
Granary (noncontributing) A modern round metal bin with a conical metal roof.
Sheep wagon (contributing) Small frame building, with a segmental arch roof clad with tar paper. Once mounted on wheels, it was moved to pasture ranges to provide domestic shelter for persons who tended grazing sheep herds.
Garage (contributing) Wood frame building clad with stucco, resting on a stone foundation, capped by a tar paper-covered gable roof.
Small Garage (contributing) One- car garage, wood frame covered with stucco and capped by a tin-clad segmental arch roof.
Livestock Building (contributing) Wood frame, gable roof.
Oil Storage Building (contributing) Wood frame, gable roof.
Log Outbuilding (contributing) Rectangular outbuilding constructed of rough hewn logs with double vertical corner notches, chinked with plaster and cement, gable roof covered with sod.
Three Sheds (contributing) Rectangular pen, wood frame with shed roofs. Used for working livestock. Rectangular pen,

Other Notes: The Young Ranch illustrates the common western SD practice of creating a larger, more economically productive ranch by various family members homesteading several adjacent parcels. In 1908, Edna Petty Young received a patent for a parcel in the SW quarter of section 31. Four years later, her husband Ernest Young received a patent to the adjoining NE quarter. Throughout the 1920s, the two homesteaders continued to prove up contiguous and discontinuous claims in Custer County and in Niobrara County, WY. As late as 1942, Ida Kirby Young (Ernest's mother) received a patent to land in Wyoming. However, all of the permanent domestic and agricultural operations of the ranch took place on the nominated ranch site in Section 31. Originally from nearby Pringle, SD, the Youngs were principally cattle and sheep ranchers. Although with generally little success, they attempted to irrigate some of their land with overflow from Beaver Creek. In later years, Ernest Young also raised Appaloosa horses. Edna and Ernest Young's one daughter, Lena, earned a teaching certificate at the normal school in Spearfish, SD. Upon graduation, she returned to her parent's ranch and taught in the local schools. In 1965, the Young family sold the ranch to Robert and Lois Bakewell, who operated it on a nonresident basis for 15 years. Between 1980 and 1985, John Holmes leased the property. In 1985, Clark Andis purchased the property from the Bakewells.

SOUTH DAKOTA STATE HISTORIC PRESERVATION OFFICE
HISTORIC SITES SURVEY STRUCTURE FORM 06-01-2012



Link to National Register Nomination:

<http://pdfhost.focus.nps.gov/docs/NRHP/Text/90000949.pdf>

NRC FORM 335 (12-2010) NRCMD 3.7		U.S. NUCLEAR REGULATORY COMMISSION		1. REPORT NUMBER (Assigned by NRC, Add Vol., Supp., Rev., and Addendum Numbers, if any.) NUREG-1910, Supplement 4, Volume 2	
BIBLIOGRAPHIC DATA SHEET (See instructions on the reverse)					
2. TITLE AND SUBTITLE Environmental Impact Statement for the Dewey-Burdock In-Situ Recovery Project in Fall River and Custer Counties, South Dakota Supplement to the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities				3. DATE REPORT PUBLISHED	
				MONTH November	YEAR 2012
				4. FIN OR GRANT NUMBER	
5. AUTHOR(S)				6. TYPE OF REPORT Technical	
				7. PERIOD COVERED (Inclusive Dates)	
8. PERFORMING ORGANIZATION - NAME AND ADDRESS (If NRC, provide Division, Office or Region, U. S. Nuclear Regulatory Commission, and mailing address; if contractor, provide name and mailing address.) Division of Waste Management and Environmental Protection Office of Federal and State Materials and Environmental Management Programs U.S. Nuclear Regulatory Commission Washington, DC 20555-001					
9. SPONSORING ORGANIZATION - NAME AND ADDRESS (If NRC, type "Same as above", if contractor, provide NRC Division, Office or Region, U. S. Nuclear Regulatory Commission, and mailing address.) Same as above					
10. SUPPLEMENTARY NOTES					
11. ABSTRACT (200 words or less) By letter dated August 10, 2009, Powertech (USA), Inc. (Powertech, the applicant) submitted a source material license application to the U.S. Nuclear Regulatory Commission (NRC) for the Dewey-Burdock in-situ recovery (ISR) Project. Powertech is proposing to construct, operate, conduct aquifer restoration, and decommission an ISR facility at the Dewey-Burdock ISR Project site, located in Fall River and Custer Counties, South Dakota. The NRC staff evaluated site-specific data and information to assess whether the applicant-proposed activities were consistent with activities considered in NUREG-1910, "Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities" (GEIS) and determined which GEIS data and analyses could be incorporated by reference and what resource areas required site-specific review. The draft SEIS describes the environment potentially affected by the proposed site activities, describes the potential environmental impacts, and describes Powertech's environmental monitoring program and proposed mitigation measures. The NRC staff will respond to public comments received on the draft SEIS in the final SEIS.					
12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.) Uranium Recovery In-Situ Recovery Process Uranium Environmental Impact Statement Supplemental Environmental Impact Statement				13. AVAILABILITY STATEMENT unlimited	
				14. SECURITY CLASSIFICATION (This Page) unclassified	
				(This Report) unclassified	
				15. NUMBER OF PAGES	
				16. PRICE	



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NUCLEAR REGULATORY COMMISSION**
WASHINGTON, DC 20555-0001
OFFICIAL BUSINESS

**NUREG-1910
Supplement 4, Vol. 2
Draft**

**Environmental Impact Statement for the Dewey-Burdock Project in
Custer and Fall River Counties, South Dakota**

November 2012