EPA REGION 8'S RESPONSE TO PETITION FOR REVIEW

ATTACHMENT D

Final Environmental Justice Analysis

Administrative Record Document No. 504

Environmental Justice Analysis for the U.S. EPA Region 8
Safe Drinking Water Act Underground Injection Control and Aquifer Exemption Actions
for the Dewey-Burdock Uranium In-Situ Recovery Project
in the Southern Black Hills Region of South Dakota

1.0 Introduction

This document sets forth the U.S. Environmental Protection Agency (EPA) Region 8's Environmental Justice analysis for the Safe Drinking Water Act (SDWA) Underground Injection Control (UIC) permitting and associated aquifer exemption (AE) actions for the Dewey-Burdock Uranium In-Situ Recovery (ISR) Project located in the southern Black Hills region of South Dakota.

Executive Order (E.O.) 12898, entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by President William J. Clinton in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations, with the goal of achieving environmental protection for all communities. E.O. 12898, in combination with selected environmental statutes, fosters opportunities for agencies to learn from communities about impacts on, and ways to provide protections for, minority populations, low-income populations, Indian tribes and indigenous communities.

The E.O. directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The order also directs each covered agency to develop a strategy for implementing Environmental Justice (EJ). The order is intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities access to public information and public participation. The EPA defines "environmental justice" as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

1.1 National EPA EJ in Permitting Guidance

The EPA's *Plan EJ 2014* sets forth a foundation for integrating EJ in EPA programs, policies and activities consistent with E.O. 12898. One of the nine cross-agency focus areas in *Plan EJ 2014* is *Considering Environmental Justice in Permitting*, which has the goal of enabling overburdened communities to have full and meaningful access to the permitting process and to develop permits that address EJ issues to the greatest extent practicable under existing environmental laws. The strategies identified to achieve this goal include:

1. Developing tools that will enhance the ability of overburdened communities to participate fully and meaningfully in the permitting process.
2. Concurrent with Strategy 1, developing tools to assist permitting authorities to meaningfully address EJ in permitting decisions.
3. Implementing these tools at the EPA and working with others to do the same.

As part of its efforts under Plan EJ 2014 to integrate Environmental Justice into all of its programs, the EPA published, "Actions that EPA Regional Offices Are Taking to Promote Meaningful Engagement in

the Permitting Process by Overburdened Communities and Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways to Engage Neighboring Communities," 78 FR 27220 (May 9, 2013). This notice describes actions that EPA regional offices are taking when issuing EPA permits to promote greater participation in the permitting process by communities that have historically been underrepresented in that process. The notice also describes promising practices for permit applicants that are designed to encourage and assist permit applicants to reach out to neighboring communities when applying for permits that may affect communities' quality of life, including their health and environment.

The EPA's EJ 2020 Action Agenda also contains information regarding the Agency's strategies, actions, and measures of success related to the consideration of EJ in the permitting process. Further information on the EPA's National EJ program and efforts, more generally, is available at: https://www.epa.gov/environmentaljustice.

1.2 Regional EPA EJ in Permitting Guidance

The EPA Region 8 office developed the *EPA Region 8 Regional Implementation Plan to Promote Meaningful Engagement of Overburdened Communities in Permitting Activities* (Region 8 Regional Implementation Plan) which identifies internal recommended procedures for the EPA Region 8 to follow while acting on permit applications. The EPA Region 8's general process for prioritizing permit applications for enhanced public participation is as follows:

1. Conduct a preliminary screen to assess if the area around the facility contains a potentially overburdened community;
2. Determine if the type of permit action has the potential for significant public health or environmental impacts; then
3. Based on the first two steps and any other relevant information available, decide whether enhanced public participation is warranted.

1.3 Overview of EJ Analysis Approach, Tribal Consultation and Public Participation

The EPA implemented the strategies discussed above to develop this EJ Analysis related to the Region 8 UIC permitting and associated aquifer exemption actions at the Dewey-Burdock uranium ISR Project Area located in the southern Black Hills region of South Dakota as shown in Figure 1. Using criteria described in Section 2.1, the EPA identified a Study Area comprised of a 20-mile buffer zone measured from the approximate Dewey-Burdock Project Area Boundary. The Study Area includes northwestern Fall River County and western Custer County, South Dakota and northeastern Niobrara County and southeastern Weston County, Wyoming, as shown in Figure 2. The EPA conducted a preliminary screening process based upon demographic and environmental indicators as discussed in Section 2.2 of this document. The EPA also conducted a preliminary screening on an area comprised of a 5-mile radius around Edgemont, South Dakota, which lies within the Study Area, as shown in Figure 2. Based on the preliminary screening processes, the City of Edgemont, South Dakota was identified as a community for which the EPA should conduct additional evaluation to determine if the area is a potentially overburdened community.

The screening process used by the EPA identified that the demographic indicator *Low Income Population* ranks above the South Dakota state average. Based on this ranking, the EPA conducted additional

evaluation by using readily available data to analyze environmental impacts to the community of Edgemont. The EPA also evaluated present health conditions in Fall River County, South Dakota based on *Community Health Status Indicators*, which compared Fall River County with peer counties.[1] This information is presented in Section 3.3. The next section describes the screening procedures and the additional information the EPA considered to evaluate potential impacts to Edgemont and other communities within the Study Area from the proposed uranium recovery activities at the Dewey-Burdock Project Area.

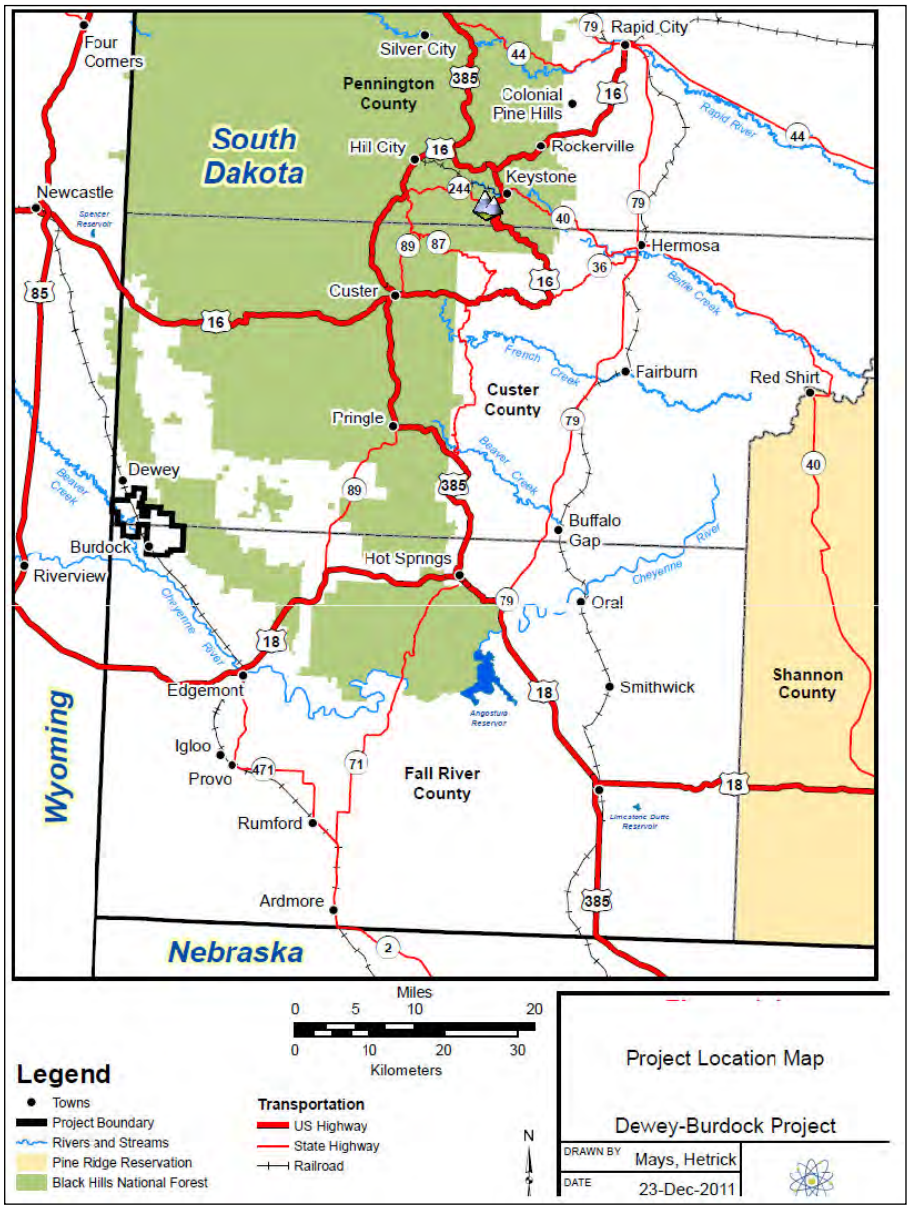

Figure 1. Location of Dewey-Burdock Project Area

[1] For more information about peer counties, see the County Health Rankings & Roadmaps website: https://www.countyhealthrankings.org/peer-counties-methodology

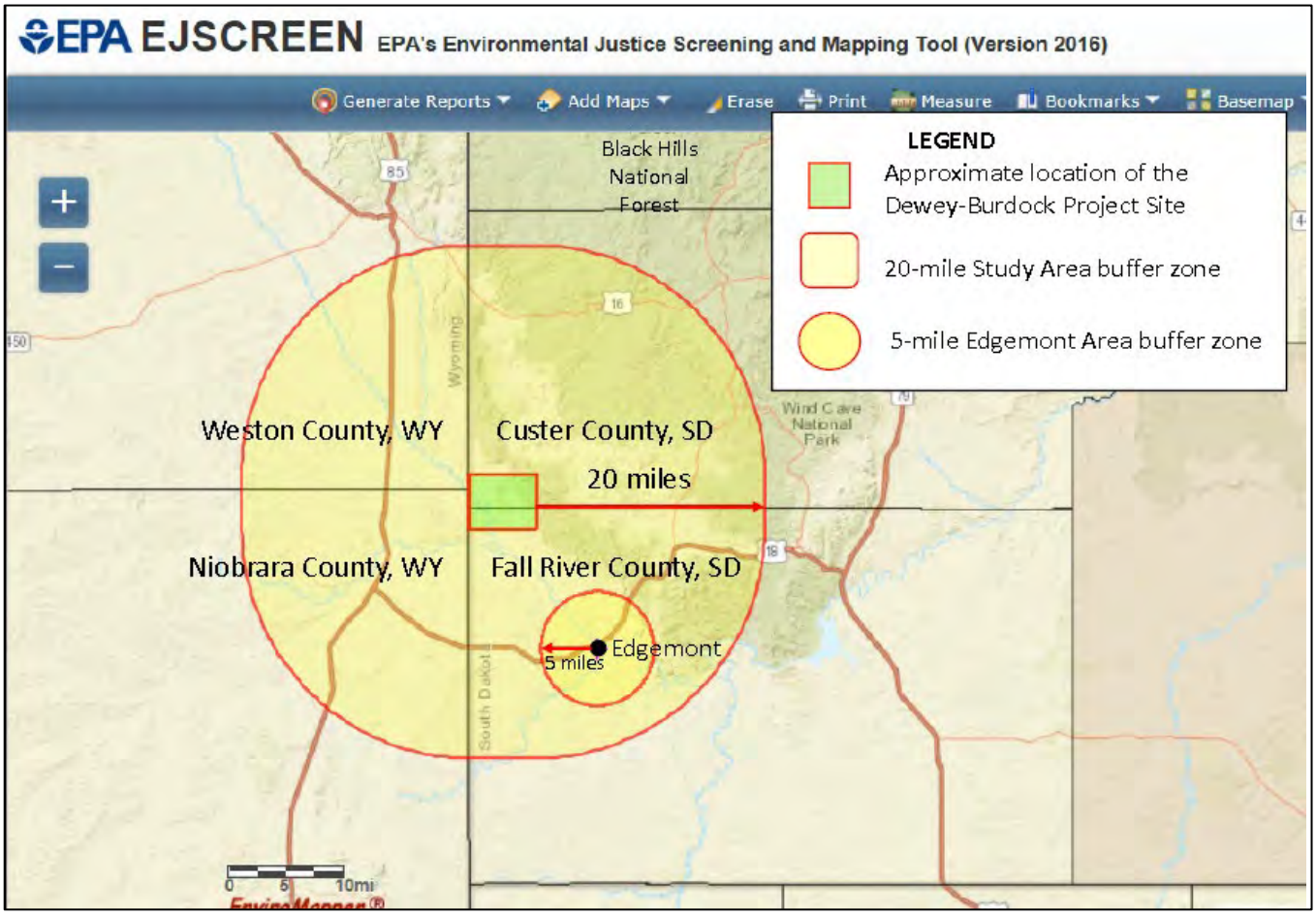

Figure 2. Location of the Study Area, which includes the Dewey-Burdock Project Area and a 20-mile buffer measured from the approximate Project Area Boundary, and the Edgemont Area, which includes a 5-mile buffer around the City of Edgemont.

As set forth in more detail in Section 9.1, consistent with the federal government's trust responsibility to federally-recognized tribes and the EPA Policy on Consultation and Coordination with Indian Tribes, the EPA Region 8 has engaged in consultation outreach and discussions with Indian Tribes that may be potentially affected by the EPA's UIC permitting and aquifer exemption actions for the Dewey-Burdock In-Situ Uranium Recovery Site. The Region has conducted outreach to Tribal governments at all stages of its process, including specifically inviting input on the 2019 Draft Revised EJ Analysis and on Tribal interests in the Black Hills as a sacred site.

As set forth in more detail in Sections 10.0 – 10.1, the agency has conducted enhanced public outreach activities for the proposed UIC permitting actions over and above the minimum public review process required under 40 CFR Part 124. In 2017, these enhanced public outreach activities included holding public hearings in Rapid City, Edgemont and Hot Springs, South Dakota, as well as in Valentine, Nebraska in order to locate a hearing venue closer to Tribal communities in southern South Dakota and northern Nebraska. The EPA held community outreach sessions in each location before every public hearing. The 2017 Draft EJ Analysis was included in the public comment process. The EPA provided additional opportunity for public comment and public hearing in 2019 when the agency issued the revised draft permits and other documents. The EPA also provided the 2019 Revised Draft EJ Analysis for comment.

Based on the Tribal consultation discussions as well as comments received during the 2017 public hearings and public comment period, in 2019, the EPA revised the EJ Analysis to consider the proximity of the proposed project to the Black Hills, an area identified as sacred to Tribes historically and presently. The 2019 Revised Draft EJ Analysis also included additional information on U.S. treaties entered into with Tribal Nations. The EJ Analysis has been further revised to reflect Tribal consultation discussions and all relevant comments received during the 2019 public comment period including information received on the spiritual, cultural, and religious interests of Tribes and Tribal members in the Black Hills as a sacred site. These topics are included in Sections 9.0 – 9.7.

2.0 Summary of EJ Preliminary Screening Process

The Dewey-Burdock Project Area is located in southwestern Custer County and northwestern Fall River County in South Dakota on the Wyoming-South Dakota state line. The Dewey-Burdock Project Area is outlined in the heavy black line in Figure 1. The Project Area east-west boundaries extend 6 miles across at the widest point and the north-south boundaries extend 5.5 miles. The EPA used EJSCREEN, an EPA-developed online screening and mapping tool, to conduct a preliminary screening to assess if the area around the Dewey-Burdock Project Site contains a potential environmental justice community. Information about EJSCREEN is included in Appendix A of this document. EJSCREEN allows the user to select a buffer area around the location of interest to include in the screening process.

The EPA used the EJSCREEN mapping and screening tool to screen for communities or areas that may be candidates for additional consideration, analysis or outreach in planning for the public participation process for the UIC draft permits. Consistent with information provided on the EPA's EJSCREEN website, the EPA *did not* use EJSCREEN for any of the following:

- as a means to identify or label an area as an "EJ community;"
- to quantify specific risk values for a selected area;
- to measure cumulative impacts of multiple environmental factors; or
- as a basis for agency decision-making or making a determination regarding the existence or absence of EJ concerns.

In addition to EJSCREEN, the EPA used other sources of information that were available at the time the screening process was completed, including known community concerns and *Community Health Status Indicators*, to perform initial EJ screening related to the UIC permitting actions, according to recommended procedures in the Region 8 Regional Implementation Plan described above.

2.1 Selection of Areas for Screening

Consistent with UIC regulation 40 CFR § 144.33, the EPA prepared a separate draft Cumulative Effects Analysis (CEA) to examine environmental impacts resulting from the drilling and operation of the injection wells authorized under the UIC area permits. The cumulative effects analysis includes consideration of potential impacts to various resources, including groundwater, surface water and air. As discussed in Section 5.0 of this document, the protective requirements in the UIC area permits are intended to ensure that there will be no USDW impacts from injection. The Class III Area Permit prohibits ISR contaminants from crossing the aquifer exemption boundary surrounding the uranium ore deposits. The EPA reviewed the results of predictive air modeling conducted at the site by the Inter-

Mountain Laboratories, Inc., Air Science division (IML) on behalf of the permit applicant. Information about the air modeling is available in the document entitled *Ambient Air Quality Final Modeling Protocol and Impact Analysis Dewey-Burdock Project Powertech (USA) Inc., Edgemont, South Dakota*, which was developed by IML[2]. Although in general the modeling results predicted air impacts below National Ambient Air Quality Standards and concentrations below the Prevention of Serious Deterioration Class I and Class II increments, air modeling results predicted detectable impacts above background levels beyond the Dewey-Burdock Project Area Boundary (see, e.g., CEA Figure 28). These measurable impacts lie within the 20-mile buffer zone.

The EPA considered the farthest potential environmental impacts from the proposed project to determine the appropriate geographic scope of this EJ Analysis. Based on the air modeling results, the EPA considered a screening area based on a 20-mile buffer measured from the approximate Dewey-Burdock Project Area Boundary to be appropriate for this EJ Analysis.

The EPA used EJSCREEN to screen the Dewey-Burdock Project Area and a 20-mile buffer measured from the approximate Project Area Boundary, which will be referred to as the *Study Area* in this document. The Study Area, shown in Figure 2, includes an area of approximately 1,723 square miles and an approximate population of 3,569. The Study Area includes portions of Weston and Niobrara Counties in Wyoming as well as portions of Custer and Fall River Counties in South Dakota.

The City of Edgemont, South Dakota is located approximately 13 miles to the southeast of the Project Area as shown in Figure 2. The EPA also used EJSCREEN to examine a 5-mile buffer around Edgemont, South Dakota, which will be referred to as the *Edgemont Area* in this document. This area includes an area of approximately 78.5 square miles, has an approximate population of 905 and lies within the Study Area boundary as shown in Figure 2. A screening process was done on the smaller Edgemont area because it is the nearest population center to the Dewey-Burdock Project Site. Screening the 5-mile radius around Edgemont separately allowed the EPA to examine the information specific to the City of Edgemont, which was otherwise masked by the screening process for the much larger Study Area encompassing the 20-mile buffer zone measured from the approximate Dewey-Burdock Project Area Boundary.

2.2 EJSCREEN Standard Reports

EJSCREEN produced standard reports showing the results from screening the Study Area and the Edgemont Area. The Study Area report is included in Appendix B of this document and the Edgemont Area report is included in Appendix C.

EJSCREEN results flagged the Edgemont Area for Superfund Proximity and Risk Management Plan (RMP) Proximity, which considers the number of facilities located in or near the area that handle a large enough volume of chemicals that the facility is required to have a Risk Management Plan to address potential chemical spills. While these flags do not necessarily indicate that there is a disproportionately high impact within the Study Area or the Edgemont Area from these EJ Index categories, they prompt the EPA to conduct further investigation of the areas. In the case of the Edgemont Area, the EPA

[2] IML (Inter-Mountain Laboratories, Inc). "Ambient Air Quality Final Modeling Protocol and Impact Analysis Dewey-Burdock Project Powertech (USA) Inc., Edgemont, South Dakota." ML13196a061, ML13196a097, ML13196a118. Sheridan, Wyoming: Inter-Mountain Laboratories, Inc., IML Air Science. 2013.

examined the Superfund Proximity and the RMP Proximity more closely. For additional explanation about *What the EJ Index Means* and *How the EJ Index Works*, please follow these links to the EPA EJSCREEN website.

2.3 Edgemont Area from the EJSCREEN Standard Report

Upon closer examination, the EPA determined that the actual number of Superfund sites in the Edgemont Area is zero. Similarly, the EPA determined that there are no RMP facilities in the area. These numbers are comparable to the state average for these categories which is also a number less than one. (EJSCREEN counts the number of facilities within 5 km (or nearest one beyond 5 km), and divides by distance in kilometers, which can lead to a number less than one in some cases.)

The EPA notes that EJSCREEN flagged ozone levels in both the Study Area and the Edgemont Area. Ozone is discussed in Section 8.0 of this document.

2.4 Demographic Indicator Results

It is EPA Region 8 policy to examine the Demographic Indicators, focusing on the *Minority Population* and *Low-Income Population* values. If either of these values is greater than the state average, the EPA conducts additional analysis to evaluate whether the impacts on the community are disproportionate by comparing the impacted community to a reference population or average (neighboring counties, state average or national average). Additional demographic indicators are considered on a case-by-case basis.

The results for the Edgemont Area showed that the *Low-Income Population* demographic indicator is above the state average (46% as compared to 33%), as are indicators for *Population with Less than a High School Education* (10% as compared to 9%) and *Population over 64 Years of Age* (24% as compared to 15%).

2.5 Consideration of Demographic Factors

According to EPA Region 8 practice, because the Edgemont Area has a *Low-Income Population* demographic indicator above the state average, the area is a candidate for additional analysis to gauge whether the impacts on the community are disproportionate.

3.0 Additional Analysis of Impacts

3.1 Cleanup Operations in the Study Area and the Edgemont Area

Table 1 shows a list of cleanup operations that have occurred in the Study Area and the Edgemont Area. The TVA Silver King Mine uranium mill was located in Edgemont. The Former Black Hills Army Depot was located in Provo, which is less than 8 miles south of Edgemont and outside of the Edgemont Area but inside the Study Area as shown in Figure 3.

Table 1. Site Cleanups within the Study Area and the Edgemont Area, South Dakota

Cleanup Name	City	State	County Name
FORMER BLACK HILLS ARMY DEPOT	PROVO	SD	FALL RIVER
TVA SILVER KING MINERS INC.	EDGEMONT	SD	FALL RIVER

3.1.1 The Edgemont Uranium Mill

The Edgemont uranium mill was constructed in 1956. The production capacity of the mill was 500 tons of ore per day. Most of the ore came from mines in the Black Hills area of southwestern South Dakota, including the Darrow, Freezeout and Triangle open pit uranium mines located within or near the Dewey-Burdock Project Area and from uranium mines in Wyoming. Milling operations ceased in 1972. The Tennessee Valley Authority (TVA) purchased the mill in 1974, along with mineral rights for uranium exploration at properties located near the Edgemont area. When the TVA decided against operating the mill, the NRC required the TVA to decommission it. According to the DOE Legacy Management (LM) Fact Sheet, decommissioning activities began in 1986 and were completed in 1989. Milling operations had produced radioactive tailings that were left behind at the mill site and some windblown tailing that had been blown off the mill site. The Edgemont uranium mill clean up did not show up under the Superfund Proximity EJ Index and Environmental Index because it was regulated by the U.S. Nuclear Regulatory Commission (NRC) under the Atomic Energy Act rather than as a Superfund site.

The *Final Environmental Statement* (FES) the TVA prepared for the decommissioning of the Edgemont uranium mill stated that there was an undetermined amount of land outside the actual mill site that would require the removal of windblown tailings. The TVA identified at least 41 acres of ponderosa pine and surficial soil east of the mill site, referred to as the Pine Area, and an unquantified, but small, area of surficial soil in the Cottonwood community, located east of Edgemont and west of the mill site, that had been contaminated by windblown tailings. Both of these areas were uninhabited.

The Department of Energy, Office of Legacy Management Fact Sheet developed after the cleanup was completed states that cleanup of the site involved excavating approximately 4 million tons of tailings, contaminated soil, building equipment and debris, and materials from 251 vicinity properties and moving them to a newly constructed disposal cell located 2 miles south of the mill site. The mill site, the Cottonwood Community, the Pine Area and the tailings disposal cell all lie within the Edgemont Area.

Amendment No. 29 to Source Material License SUA-816 for the Tennessee Valley Authority's Edgemont Project provides information about the cleanup criteria (action level) in the license: removal of material in the top 15 centimeters that exceed 5 pCi/g above background and in subsequent 15 cm layers that exceed 15 pCi/g above background. The cleanup left a small amount of windblown tailings and contaminated soil on the steep, tree-covered hillsides of the Pine Area located east of the mill as approved under Amendment 29 to the license. The low levels of windblown tailings left behind did not require any institutional controls. The valley area, where most of the windblown tailings were located in the Pine Area, was excavated and remediated to below the action level.

As mentioned earlier, the disposal site of the tailings and contaminated soil is located about 2 miles south of Edgemont. There are institutional controls in place at that site. The institutional controls are described in Section 2.3 of the DOE LM report entitled *2019 Annual Site Inspection and Monitoring Report for Uranium Mill Tailings Radiation Control Act Title II Disposal Sites*. The tailings disposal site is now regulated by the NRC under a long-term custody license as discussed in the *Long-Term Surveillance Plan for the DOE TVA Disposal Site*. Under this license the DOE LM office in Grand Junction, Colorado, conducts annual inspections of the tailings disposal area to ensure there are no impacts from the site outside the area where institutional controls are established.

3.1.2 The Former Black Hills Army Depot

Figure 3 is the map of the Study Area and the Edgemont Area with an overlay of Figure 3.3 from the TVA Final Environmental Statement for the decommissioning of the Edgemont uranium mill, which shows the boundary of the Former Black Hills Army Depot within the Study Area. An April 2014, Environmental Assessment prepared by the Bureau of Land Management for Oil and Gas leases provides the following information about the Black Hills Army Depot.

In February 1942, the Black Hills Ordnance Depot was officially established in Fall River County. The site consisted of 21,095.85 acres that was utilized for long-term storage of ammunition. In August 1962, the site was renamed the Black Hills Army Depot (BHAD). The facility was used for industrial storage, administrative buildings, housing, and related support facilities and utilities. The Depot was used for the receipt, storage, maintenance, inspection, testing, restoration, issuance and shipping of ammunition, propellants, and chemical toxics, the unpacking and functional packing of small arms ammunition, and the demilitarization of unsafe, obsolete and surplus ammunition, chemical ammunition, ammunition components, chemical toxics and general supplies.

The Department of the Army closed the BHAD in June 1967 and transferred the site to the General Services Administration (GSA). The GSA sold approximately 15,000 acres within the fenced perimeter to the City of Edgemont, South Dakota in 1968 and the remaining 6,000 acres were transferred to the U.S. Forestry Service (USFS). The 1967 Statement of Clearance designated six restricted areas. Table 2 lists the restricted areas identified, the land use restrictions and surface ownership of each area as of 2012.

Table 2. Restricted Areas within the Former BHAD, Land Use Limitations and Surface Ownership in 2012.

Restricted Area	Land Use Limitation	Surface Owner
Burning Ground 1	non-use	Privately owned.
Burning Ground 2	non-use	1,510 acres owned by USFS and managed as part of Buffalo Gap National Grassland, with about 945 acres closed to the public. 116 acres privately owned and used for grazing.
Burning Ground 3	surface use only	Privately owned.
Tracer Test Range	non-use	Owned by USFS primarily used for grazing.
Chemical Plant	non-use	Privately owned, primarily used for grazing.
Chemical Burning Pit	non-use	Owned by USFS and managed as part of Buffalo Gap National Grassland.

A number of site investigations and clean-up efforts have been conducted at the site. A list of these efforts is found in Table 1.2 of a Remedial Investigation and Feasibility Study published in 2012 for the U.S. Army Corps of Engineers. At the time this report was published, the remaining sites of concern included Burning Ground 1, Burning Ground 2, the Chemical Plant, the Chemical Burning Pit and two pits within the Chemical Plant area.

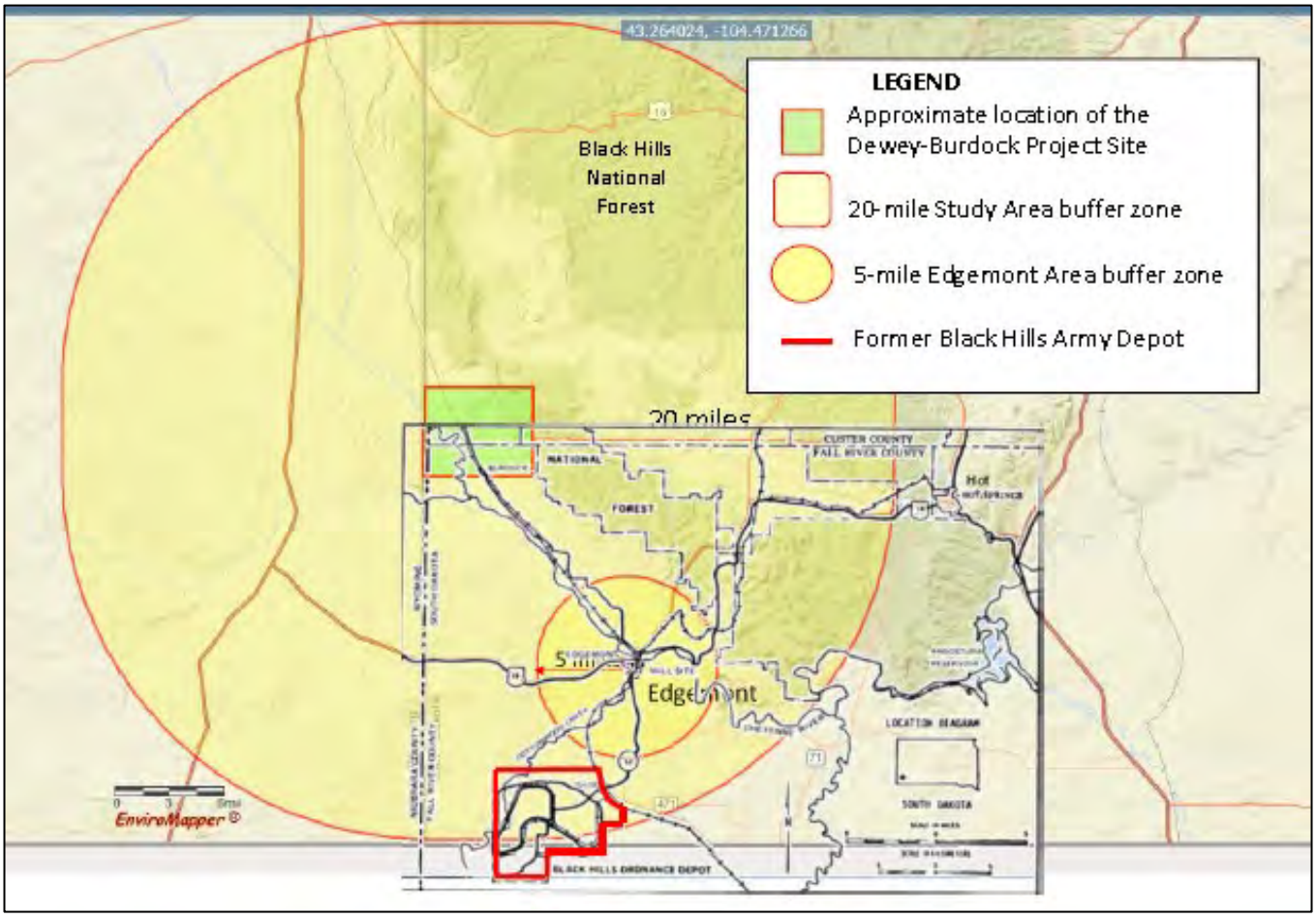

Figure 3. Map showing the locations of the Study Area, the Edgemont Area and the Former Black Hills Army Depot.

3.2 EPA Superfund Review of the Abandoned Uranium Mines located near the Dewey-Burdock Project Area

The Study Area contains abandoned uranium mines that are located within the Dewey-Burdock Project Area. These mines include the Darrow open pit mines and the Triangle open pit. Figure 4 shows the locations of the mines and spoil piles, consisting of crushed overburden and waste rock. There were underground workings associated with the open pits. The two Freezeout underground mines are located to the northeast just outside of the Project Area and are not shown in Figure 4. The public has expressed concerns about the potential impacts from the un-reclaimed areas of these abandoned mines. Edgemont is the nearest population center along the Cheyenne River downgradient from the Dewey-Burdock Site and the abandoned uranium mines.

On August 1, 2013, the non-profit Institute of Range and the American Mustang (IRAM), owner of the Black Hills Wild Horse Sanctuary requested an assessment of the abandoned open pit uranium mines in the vicinity of the Dewey-Burdock Uranium ISR Project Area. Included within the scope of this request are seven open pit mines, four shallow underground mines, and two underground adits (tunnels) leading out of the open pits associated with the Darrow, Freezeout and Triangle (DFT) uranium mine sites.

In August 2013, citizens submitted to EPA Region 8, a Preliminary Assessment (PA) Petition under Section 105(d) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In response to a citizen's PA petition, generally, the EPA queries whether there is reason to believe that an actual/potential site exists, and whether the Agency has the legal authority under Superfund to respond to the site. If the EPA answers these two questions in the affirmative, the Agency conducts a PA within 12 months; if the EPA determines that a PA is not needed, it provides a rationale for that determination. The citizens raised concerns that the DFT mines, as well as the proposed ISR project, would destroy the land and water in the area and jeopardize public health and wildlife. The EPA completed the PA and concluded that further investigation was warranted. These results were communicated to the petitioner and other stakeholders in September 2014.

The EPA conducted a Site Inspection (SI) in September 2015 to evaluate potential impacts to sensitive environments and fisheries. Sampling was limited to surface water and sediments since access was not granted to mine source areas. However, the SI included evaluation of data submitted to the NRC that Powertech collected in the mine source areas. The SI report was completed in March 2016. Analytical results of the surface water samples showed that concentrations of total metal uranium, uranium-238, and radium-226 did not exceed three times background concentrations, which is the threshold the EPA uses for indication of a contaminant release. A release of metals and radionuclides to the surface water pathway could not be documented for the Site. The EPA made a *no further remedial action planned* (NFRAP) decision, since the Site does not qualify for the National Priorities List (NPL) based on existing information as of March 2016. If conditions change or if there is a change in land use in this area, the EPA can reassess the site in the future. Only a few of the site-related contaminants analyzed (aluminum, chromium, iron, and lead) have concentrations above three times background concentrations in the surface water. No health based or ecological standards were exceeded for these constituents. Therefore, further remedial response actions are not warranted at this time. The *Remedial Site Assessment Decision* form is included in Appendix D of this document.

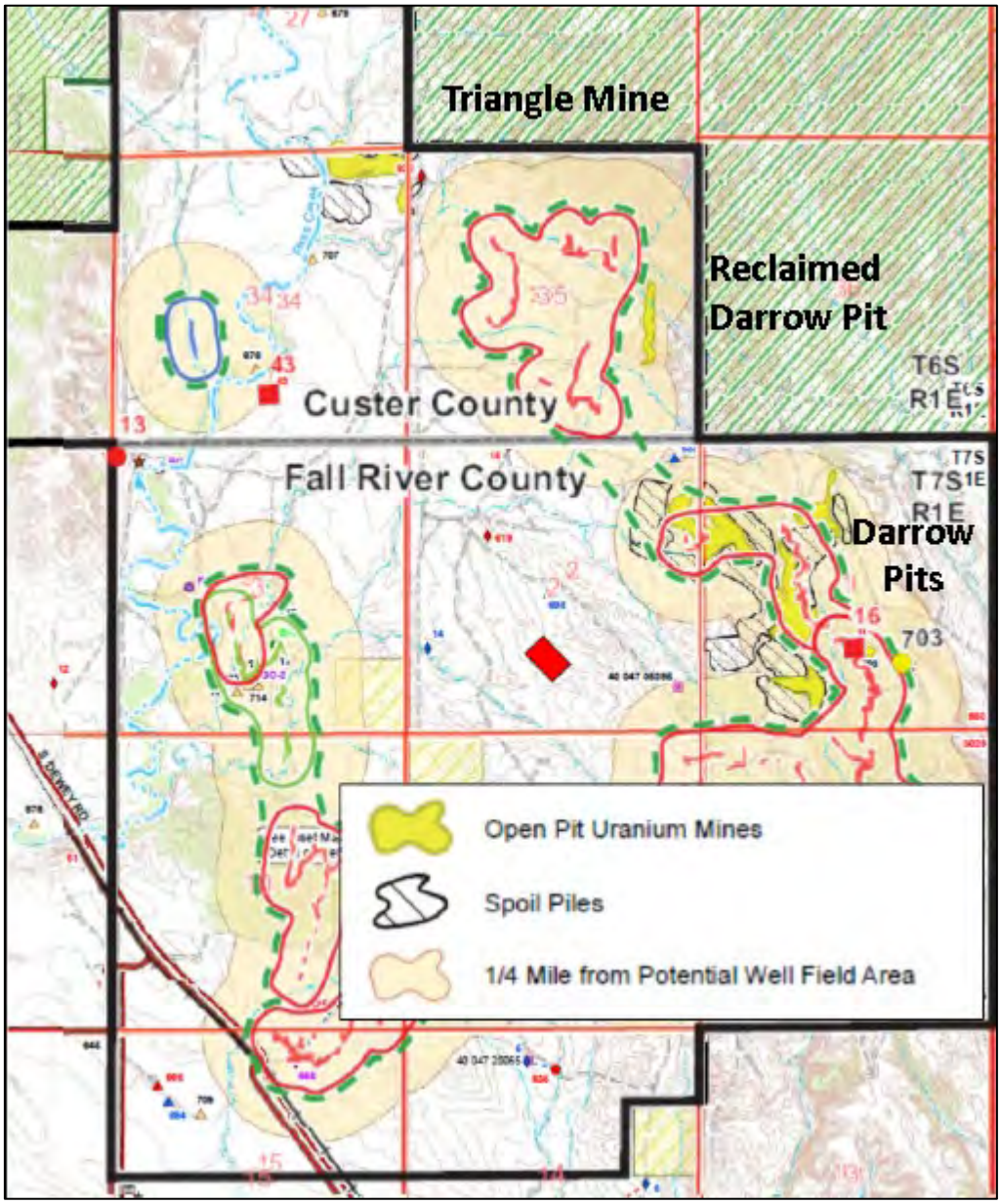

Figure 4. Locations of the Abandoned Uranium Mines at the Dewey-Burdock Project Area

3.3 Community Health Status Indicators

The EPA examined *Community Health Status Indicators* (CHSI**)** for Fall River County for further information about the Edgemont community within the Study Area. Based on the direction of groundwater flow, surface water flow and prevailing wind direction, Fall River County will receive any down-gradient impacts from the Dewey-Burdock Project Area. The EPA conducted this analysis to identify how Edgemont and Fall River County ranked in comparison to peer communities and the U.S. average for the CHSI.

The CHSI 2015 was an online web application developed by the U.S. Department of Human Health and Services and the Centers for Disease Control and Prevention. The CHSI web application produced health status profiles for each of the 3,143 counties in the United States and the District of Columbia. Each county profile contained indicators of health outcomes (mortality and morbidity); indicators on factors

selected based on evidence that they potentially have an important influence on population health status (e.g., health care access and quality, health behaviors, social factors, physical environment); health outcome indicators stratified by subpopulations (e.g., race and ethnicity); important demographic characteristics; and Healthy People 2020 (HP 2020) leading health indicators. Because the CHSI website is no longer available, the EPA was not able to update this information. Therefore, this section provides a snapshot of the Fall River community health status based on data available on the CHSI website in October 2016.

The CHSI application produced a Summary Comparison Report, which provided an "at a glance" summary of how Fall River County compared with peer counties on the full set of Primary Indicators. Peer county values for each indicator were ranked and then divided into quartiles. The CHSI ranked the percentiles into three groups. The "most favorable" or "better" level was the 25th percentile (or quartile). The second level was the "moderate" or the middle two quartiles and included the percentiles between the 25th and 75th percentiles. The third level was the "worse" or "least favorable" quartile, which was the 75th percentile (or quartile).

3.3.1 Mortality Indicators

Mortality indicators provided measures of how long people live and the number of deaths in a population within a defined time span. To enable comparisons among peer counties, the CHSI 2015 mortality indicators were age-adjusted, meaning that the indicators showed what the mortality rate would be if all counties had the same age distribution. The mortality indicators included stroke deaths, Alzheimer's disease deaths, unintentional injury (including motor vehicle accidents), cancer deaths, chronic lower respiratory disease deaths, coronary heart disease deaths, diabetes deaths, female life expectancy and male life expectancy.

Table 3 shows the distribution of all the Mortality Indicators across the three percentile groups from the Summary Comparison Report for Fall River County based on information available in 2016.

Table 3. The Distribution of Mortality Indicators across the Three Percentile Groups

	Better (most favorable quartile)	Moderate (middle two quartiles)	Worse (least favorable quartile)
Mortality	Stroke deaths	Alzheimer's disease deaths Unintentional injury (including motor vehicle)	Cancer deaths Chronic lower respiratory disease (CLRD) deaths Coronary heart disease deaths Diabetes deaths Female life expectancy Male life expectancy

For Fall River County the number of deaths due to stroke ranked within the “most favorable” or “better” quartile. The death rate due to stroke in Fall River County was 32.7 per 100,000 people. The population of Fall River County was 6,957 at the last census. The death rate due to stroke in Fall River per the population of 6,957 people was 2.3. During that time period, the U.S. mean death rate due to stroke per 100,000 people was 46.0. Table 4 summarizes this information.

Table 4. Number of Deaths in Fall River County from Morbidity Indicator Stroke Deaths

Mortality Indicator	Number per 100,000	Number per 6,957	U.S. Median (per 100,000)
Stroke Deaths	32.7	2.3	46.0

The number of deaths in Fall River County due to Alzheimer's disease and unintentional injury (including motor vehicle accidents) ranked within the “moderate” or two middle quartiles. The death rate due to Alzheimer's disease in Fall River County was 22.4 per 100,000 people. The death rate due to Alzheimer's disease in Fall River per the population of 6,957 people was 1.6. During that time period, the U.S. mean death rate per 100,000 people due to Alzheimer's disease was 27.3. The death rate due to unintentional injury (including motor vehicle) in Fall River County was 74.2 per 100,000 people. The death rate due to unintentional injury in Fall River per the population of 6,957 people was 5.2. The U.S. median death rate per 100,000 people due to unintentional injury was 50.8. Table 5 summarizes this information.

Table 5. Number of Deaths in Fall River County from Alzheimer's disease and unintentional injury (including motor vehicle accidents)

Mortality Indicator	Number per 100,000	Number per 6,957	U.S. Median
Alzheimer's disease deaths	22.4	1.6	27.3
Unintentional injury (including motor vehicle)	74.2	5.2	50.8

For Fall River County, cancer deaths, chronic lower respiratory disease deaths, coronary heart disease deaths and diabetes deaths fell into the "worse" or "least favorable quartile" quartile. Table 6 shows the number of deaths per 100,000, per 6,957 and the U.S. Mean per 100,000 people for each of the mortality indicators that fell within the “worse” or “least favorable” quartile.

Table 6. Number of Deaths in Fall River County from Each Morbidity Indicator Ranked in the “Least Favorable” or “Worse” Quartile Compared to Peer Counties

Mortality Indicator	Number per 100,000	Number per 6,957	U.S. Median
Cancer deaths	203.6	14.2	185
Chronic lower respiratory disease deaths	67.6	4.7	49.6
Coronary heart disease deaths	177.4	12.3	126.7
Diabetes deaths	38.7	2.7	24.7

Life expectancy in Fall River County also fell within the "worse" or "least favorable quartile" quartile. Table 7 shows the information about life expectancy in Fall River County that was available in 2016.

Table 7. Life Expectancy in Fall River Ranked in the “Least Favorable” or “Worse” Quartile Compared to Peer Counties

Life Expectancy	Number of Years	U.S. Median
Female life expectancy	78.4 years	79.8
Male life expectancy	68.8 years	75.0

3.3.2 Morbidity Indicators

Morbidity indicators provide measures of any departure, subjective or objective, from a state of physiological or psychological well-being at a point in time or within a defined time span. Morbidity is usually measured as the percentage of the population with a given condition or the rate of new cases within the population. Table 8 shows the distribution of all the Morbidity Indicators across the three percentile groups from the Summary Comparison Report for Fall River County.

Table 8. The Distribution of Morbidity Indicators across the Three Percentile Groups

	Better (most favorable quartile)	**Moderate** (middle two quartiles)	**Worse** (least favorable quartile)
Morbidity	Gonorrhea Older adult asthma Syphilis	Adult obesity Adult overall health status Alzheimer's diseases/dementia Older adult depression Preterm births	Adult diabetes Cancer

Fall River County ranked in the "worse" or "least favorable" quartile for adult diabetes and cancer. The percent of adults living with diagnosed diabetes for Fall River County, SD was 8.3%. The U.S. Median was 8.1 percent at that time. The incidence rate for cancer based on the Fall River population of 6,957 was 35.7. The incidence rate for cancer in Fall River County, SD was 512.5 per 100,000, compared to the U.S. median was 457.6 per 100,000 people.

3.3.3 Physical Environment Indicators

In order to provide another type of indication of general health in Fall River County, the EPA also examined the Physical Environment indicators. Physical Environment includes the natural environment (air, water, and soil) and the built environment (safe and affordable housing, transportation and access to nutritious and affordable food). The physical environment may directly affect health as well as influence choices and health behaviors.

Physical Environment Indicators that ranked in the "better" or "most favorable" quartile included:

- The annual average (or mean) concentration of Particulate Matter less than 2.5 micrometers ($PM_{2.5}$) in Fall River County, SD was 6.0 ($\mu g/m^3$), the US mean was 8.5 ($\mu g/m^3$).[3]
- Housing Stress: The percent of housing defined as stressed in Fall River County was 24.9%. The U.S. Median was 28.1%.

A house was defined as stressed if one or more of the following criteria was met:
1) housing unit lacked complete plumbing;
2) housing unit lacked complete kitchens;
3) household was overcrowded; and
4) household was cost burdened.

Severe overcrowding was defined as more than 1 person per room. Severe cost burden was defined as monthly housing costs (including utilities) that exceed 30% of the monthly income.

[3] From the EPA Air Trends website: https://www.epa.gov/air-trends/particulate-matter-pm25-trends.

Physical Environment Indicators that ranked in the "moderate" or middle two quartiles included:

- Limited Access to Healthy Food: The percent of individuals who were low-income and do not live close to a grocery store in Fall River County, SD was 14.6%. The U.S. median was 6.2%.

Physical Environment Indicators ranked in the "worse" or "least favorable" quartiles included:

- Access to parks: The percent of individuals living within a half mile of a park in Fall River County, SD was 1.0 %. The U.S. median was 14%.
- Living near highways: The percent of the population living near a highway in Fall River County, SD was 2.5 %. The U.S. Median was 1.5%.

3.3.4. Summary of Information on Fall River County Health

Based on this review of the CHSI, it appears that Fall River County exhibited a number of mortality rank indicators ranking in the "worse" or "least favorable" quartile when compared to its peer counties. Although the *Low Income Population* demographic indicator was higher than the state average and the environmental indicator for lead paint, which was based on the percentage of houses constructed before 1960, ranked in the 66th percentile for the state (see tables in Appendices B and C), the CHSI housing stress indicator for Fall River County was 24.9%, which was ranked in the "better" or "more favorable" quartile.

4.0 The EPA SDWA Actions

The EPA Region 8 permitting actions are taken pursuant to the SDWA UIC Program. The UIC Program is intended to protect underground sources of drinking water (USDWs)[4] from contamination related to underground injection activities. The UIC Program is implemented through regulations found at 40 CFR parts 124, 144, 145, 146 and 147.

The EPA Region 8 UIC Program received two permit applications and an associated aquifer exemption application from Powertech (USA) Inc. (Powertech) related to uranium ISR at the Dewey-Burdock Project Site. The Dewey-Burdock uranium ISR site is located in the southern Black Hills region in South Dakota on the South Dakota-Wyoming state line in southwest Custer and northwest Fall River Counties. The site is located approximately 13 miles northwest of Edgemont, South Dakota and 46 miles west of the western border of the Pine Ridge Indian Reservation. The Project Area Boundary is shown in Figure 1.

4.1 The Approved Underground Injection Control Program Permits

The EPA has approved Powertech's application for two UIC permits for injection activities related to uranium recovery. One is a UIC Class III Area Permit for injection wells used in the ISR of uranium; the second is a UIC Class V Area Permit for deep injection wells that will be used to dispose of ISR process waste fluids into the Minnelusa Formation after treatment to meet radioactive waste limits. If

[4] "Underground Source of Drinking Water" or "USDW" means: an aquifer or its portion
(a)(1) which supplies any public water system; or
(2) which contains a sufficient quantity of ground water to supply a public water system; and
(i) currently supplies drinking water for human consumption; or
(ii) Contains fewer than 10,000 mg/l total dissolved solids; and
(b) is not an exempted aquifer.

concentrations for arsenic, barium, cadmium, chromium, lead, mercury, selenium or silver exceed the EPA allowable limits for toxicity, the injectate must be treated to bring the concentrations down below these limits.

The Region 8 Regional Implementation Plan identifies certain permits that are considered a priority for enhanced participation due to the potential for significant public health or environmental impacts. Certain types of UIC permits have been identified as priority permits, including Class III permits for uranium recovery and deep injection wells with injection zones above a regional USDW. Although UIC permits for Class V injection wells are not specifically included as high priority permits in the EPA Region 8 Implementation Plan, EPA considers the Dewey-Burdock deep Class V injection wells to be a priority for enhanced participation due to the potential for significant public health or environmental impacts because the injection zone for the deep Class V wells is above the Madison aquifer, an important source of drinking water in western South Dakota. For this reason, the EPA has included more stringent Class I well construction and monitoring requirements in the Class V Area Permit. Thus, the EPA considers both the Class III and Class V Area permits as appropriate for identifying these permit actions as priorities for enhanced outreach under the EPA Region 8 Regional Implementation Plan.

4.2 The Aquifer Exemption of the Uranium Ore-Bearing Portions of the Inyan Kara Aquifers

The EPA is also approving an aquifer exemption in connection with the UIC Class III Area Permit to exempt the uranium-bearing portions of the Inyan Kara Group aquifers from protection as USDWs. Because the Inyan Kara aquifers contain a sufficient quantity of ground water to supply a public water system and contain fewer than 10,000 mg/l total dissolved solids, the aquifers meet the definition of USDW set forth in the UIC regulations. The UIC regulations do not allow Class III injection into a USDW; therefore, in order to inject into the Inyan Kara aquifers for uranium recovery, an aquifer exemption is necessary. The UIC regulations allow the EPA to approve the exemption of an aquifer, or a portion of an aquifer, from protection under the SDWA as a USDW if it meets certain criteria. In this case, Powertech provided information to demonstrate that the portions of the Inyan Kara aquifers the EPA is now approving for exemption are not a current source of drinking water per 40 CFR § 146.4(a) and cannot now and will not in the future be a source of drinking water because they contain minerals in commercially producible quantities per 40 CFR § 146.4(b)(1). The EPA is approving the aquifer exemption request based on these criteria. The EPA is approving the exemption of Inyan Kara aquifers 1,020 feet from the currently defined ore deposit boundaries for Burdock Wellfields 1 through 5 and 9 as shown by the blue-dashed line in Figure 5. The EPA is also approving the exemption of Inyan Kara aquifers 520 feet from the currently defined ore deposit boundaries for Burdock Wellfield 10 and Dewey Wellfields 1 through 4 as represented by the green dashed line in Figure 5. The exempted area for Burdock Wellfields 1 through 5 and 9 was increased based on an increase in the area of commercially producible uranium ore identified by Powertech. For more information about the determination of commercially producible ore, see page 15 of the Aquifer Exemption Record of Decision. Although these portions of the Inyan Kara aquifers have been exempted from protection as USDWs under the SDWA, note that the NRC license and the South Dakota Department of Environment and Natural Resources (DENR) proposed Large Scale Mine Permit will require these portions of the exempted aquifer to be restored after uranium recovery has been completed.

The project will involve the injection of lixiviant, consisting of injection-interval groundwater with added oxygen and carbon dioxide, into the uranium ore deposits targeted by 14 wellfields (shown in Figure 5) containing approximately 1,461 Class III injection wells and 869 production wells. Class III injection wells will be used for introducing the lixiviant into the uranium ore zones. The lixiviant will mobilize uranium from the ore deposits and allow production wells to pump the uranium-bearing lixiviant out of the ground to a processing unit where the uranium will be removed from solution using an ion exchange resin. The barren lixiviant will be pumped from the processing unit back to the wellfield locations where oxygen and carbon dioxide will be added before injection back into uranium ore deposits through the wellfield injection wells. Note that the 14 wellfields will not all be active at one time. It is the EPA's understanding that while one wellfield will be active, another wellfield may be undergoing groundwater restoration and another may be undergoing construction.

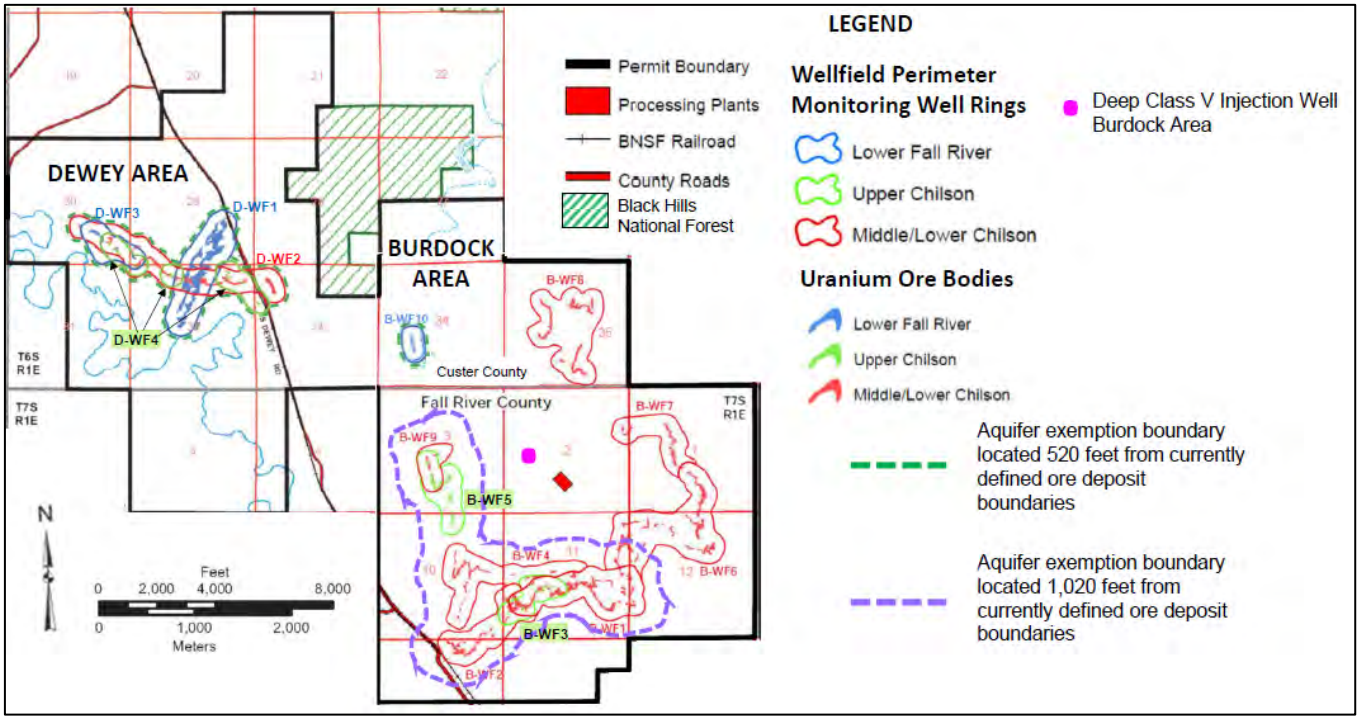

Figure 5. The Dewey-Burdock Project Area map showing the locations of the approved aquifer exemption boundary: the purple dashed line around Burdock wellfields 1 through 5 and 9 and the green-dashed line around Burdock Wellfield 10 and Dewey Wellfields 1 through 4.

4.3 Other Regulatory Programs at the Dewey-Burdock Site

In addition to the EPA UIC permits and aquifer exemption, Powertech must obtain the additional state and federal permits listed in Table 9 in order to proceed with ISR operations at the Dewey-Burdock Site.

The NRC has issued a radioactive materials handling license for the Dewey-Burdock that covers all activities at the site; however, the NRC does not have the regulatory authority to authorize the injection of lixiviant into the uranium ore-bearing aquifers. That authority resides with the EPA because the EPA has not authorized the State of South Dakota to regulate UIC Class III and Class V injection wells under the Safe Drinking Water Act.

Table 9. Additional State and Federal Permits Powertech is required to obtain.

Issuing Agency	Description	Status
South Dakota Department of Environment and Natural Resources (SDDENR)	Uranium Exploration Permit	Application submitted July 2008; approved by South Dakota Board of Minerals and Environment November 2008
	Scenic and Unique Lands Designation	Submitted August 2008; SDDENR determined lands described by applicant do not constitute special, exceptional, critical, and unique; February 2009.
	Large-Scale Mine Permit	Application submitted September 2012; deemed procedurally complete January 2013; recommended for approval April 2013; hearing held Fall 2013; further hearings and process postponed until the NRC and the EPA have completed their actions and the State Water Management Board has decided the water rights.
	Water Appropriation Permits • Madison • Inyan Kara	Applications submitted June 2012; recommended for approval November 2012; hearing held Fall 2013; further hearings and process postponed until the NRC and the EPA have completed their actions.
	Air Quality Permit	Application submitted November 2012; SDDENR determined that a Clean Air Act operating permit will not be required, February 2013.
	Groundwater Discharge Plan	Application submitted March 2012; recommended for approval December 2012; hearing held Fall 2013; further hearings and process postponed

		until the NRC and the EPA have completed their actions.
	National Pollutant Discharge Elimination System Water Discharge Permit (Stormwater Discharge)	Application not yet submitted.
U.S. Environmental Protection Agency, Region 8	Construction Approval for the treatment and storage ponds under the Clean Air Act, 40 C.F.R. Part 61, Subparts A & W.	Application not yet submitted.
U.S. Nuclear Regulatory Commission	Source and Byproduct Material License (10 CFR Part 40)	Submitted August 10, 2009. Final license issued April 8, 2014. License amended November 1, 2016
U.S. Bureau of Land Management	Plan of Operations	Application submitted August 2009; Plan of Operations released for public comment on July 28, 2020; public comment period deadline August 26, 2020.
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit	Application not yet submitted.

5.0 Potential Impacts to USDWs

5.1 Class III Area Permit Requirements for protection of USDWs

5.1.1 Vertical Containment of Class III Injection Interval Fluids

The Class III injection interval confining zones consist of the Graneros Shale, the Fuson Shale and the Morrison Formation. The Graneros Shale is the overlying confining zone for the Inyan Kara, the Fuson Shale is the confining zone between the two major Inyan Kara aquifer units, the Fall River Formation above the Fuson Shale and the Chilson Sandstone below the Fuson Shale. The Morrison Formation is the underlying confining zone for the Inyan Kara. In the Class III UIC permit application, the Permittee demonstrated the horizontal and vertical extent of these confining zones using data from thousands of exploration drillholes located in and around the Dewey-Burdock Project Site to verify the presence and thickness of the confining zones for the Inyan Kara. Within the Fall River and Chilson aquifers, local confining zones separate the Upper and Lower Fall River and the Upper, Middle and Lower Chilson. These local confining units are discussed in more detail in Section 3.4.4 of the Class III Draft Area Permit Fact Sheet.

The Class III Area Permit includes two types of requirements to maintain vertical containment of ISR injection interval fluids, preventing them from migrating out of the injection interval. The Class III Area

Permit requires corrective action for any existing breaches in confining zones and mechanical integrity requirements for injection, recovery and monitoring wells at Class III ISR wellfields to prevent breaches in confining zones from improper well construction.

The Class III Area Permit requires the Permittee to identify and perform corrective action on any breaches in confining zones in Class III ISR wellfield areas, including improperly plugged historic exploration boreholes and private wells, that could serve as pathways for Class III injection zone fluids to reach USDWs or the ground level. If a confining zone breach is not able to be located or repaired, the Permittee must demonstrate that Class III injection zone fluids are contained through operational controls and monitoring. These requirements are found in Part III of the Class III Area Permit and discussed in Section 6.0 of the Fact Sheet for the Draft Class III Area Permit.

Part VII, Section B of the Class III Area Permit requires the Permittee to demonstrate initial mechanical integrity of all injection and production wells and maintain mechanical integrity through the life of each injection well. Part II, Section D.4.e. of the Class III Area Permit requires demonstration of initial mechanical integrity for monitoring wells. External mechanical integrity is demonstrated through evaluation of well cementing records demonstrating there are no pathways through the cement between the well casing and borehole for injection interval fluids to travel through to reach USDWs or the ground level.

5.1.2 Horizontal Containment of Class III Injection Interval Fluids

The Class III Area Permit also requires the Permittee to maintain and demonstrate horizontal control of injection interval fluids within each wellfield during ISR operations and groundwater restoration. This requirement is intended to prevent ISR contaminants from impacting the USDW outside the aquifer exemption boundary. Horizontal control is maintained by injecting a smaller volume of water into the wellfield than is being removed by the production wells. Horizontal control is demonstrated through excursion monitoring as discussed in Section 12.5 of the Fact Sheet for the Draft Class III Area Permit and by continuous monitoring of the injectate flow volume and the recovery flow volume for each wellfield as required in Part IX, Section B, Table 14.A of the Class III Area Permit.

After ISR operations, and groundwater restoration and post-restoration stability monitoring of the injection interval groundwater have been completed, the UIC Class III Area Permit requires the Permittee to demonstrate in a Wellfield Closure Plan that ISR contaminants will not cross the downgradient aquifer exemption boundary and impact USDWs within the Dewey-Burdock Project Site.

Based on the protective requirements of the Class III Area Permits, EPA has concluded there will be no impacts to USDWs from Class III injection activity.

5.2 Class V Area Permit Requirements for protection of USDWs

5.2.1 Vertical Containment of Class V Injection Interval Fluids

For the Class V injection zone, the Opeche Shale is the overlying confining zone for the Minnelusa injection zone separating it from overlying aquifers, and the Lower Minnelusa Formation is the underlying confining zone which separates the Minnelusa Class V injection zone from the underlying Madison Formation. In the Class V UIC permit application, the Permittee demonstrated the horizontal

and vertical extent of these confining zones using data from oil and gas test wells surrounding the Dewey-Burdock Project Site to verify the presence and thickness of the confining zones for the Minnelusa injection zone.

Similar to the Class III Permit, the Class V Area Permit at Part II, Section A.1 requires additional testing to verify the presence and thickness of confining zones. Part II, Section B contains requirements for drillhole logs, confining zone core collection and laboratory evaluation of core to verify the thickness and adequacy of the upper confining zone, the Opeche Shale. Sections 3.3.2 and 3.3.3 of the 2019 Draft Class V Area Permit Fact Sheet discuss EPA's evaluation of the Lower Minnelusa confining zone that separates the overlying Minnelusa injection zone from the underlying Madison aquifer. These sections also discuss the Class V Area Permit requirements for verification of the Lower Minnelusa confining zone.

EPA has reviewed logs for the oil and gas test wells located within the Class V Permit Area of Review. Although only one well was drilled completely through the Minnelusa Formation into the Madison Formation, eight other oil and gas test wells near the Dewey-Burdock Project Site do penetrate some distance into the Lower Minnelusa Formation and provide evidence of the presence and thickness of the Lower Minnelusa confining zone at the Dewey-Burdock Project Site. The locations of the oil and gas test wells are shown in Class III Permit Application Plate 3.1. Information on the depth each well was drilled and how far into the Minnelusa Formation each well extends is included in Table 10 of the Fact Sheet for the Draft Class III Area Permit. In addition, the Class V Area Permit contains logging and testing requirements to verify the presence and thickness of the upper and lower confining zones for the Minnelusa injection zone at the Dewey-Burdock site.

5.2.2 Horizontal Containment of Class V Injection Interval Fluids

The Class V permit requires the Permittee to test Minnelusa injection zone aquifer fluids to demonstrate that the proposed injection zone is not a USDW before EPA will issue Authorization to Commence Injection. If the Minnelusa injection zone is determined to be a USDW based on further testing, EPA will not authorize injection. Therefore, EPA has concluded there will be no impacts to USDWs from Class V injection activity.

Because injection into the Minnelusa would occur only if is it not a USDW and the SDWA does not protect non-USDW aquifers, the Class V Area Permit does not place any restrictions on horizontal flow in the Minnelusa aquifer. However, as discussed in the following section, EPA analyzed the groundwater flow in the Minnelusa aquifer and evaluated the potential for Class V injectate at the Dewey-Burdock Project Site to reach the locations where Minnelusa groundwater flows to the ground surface at springs near the Minnelusa outcrop around the Black Hills or downgradient of the Dewey-Burdock Project Area. EPA's response to comment #239 in the Response to Public Comments document discusses EPA's analysis of Minnelusa groundwater flow toward the Pine Ridge and Cheyenne River Indian Reservations. Based on this analysis, EPA concluded that Minnelusa injection activities will not affect USDWs downgradient of the Dewey-Burdock Project Area.

6.0 Potential Impacts to Surface Water

The Dewey-Burdock Project Area is located near the Cheyenne River and tributaries to the Cheyenne River flow through the Project Area. The Cheyenne River has previously been identified as having areas with impaired water quality. The *2020 South Dakota Integrated Report for Surface Water Quality Assessment* states:

> *The Cheyenne River basin is home to deposits of natural uranium, historic uranium mining, and current exploration drilling. DENR maintains three water quality monitoring locations within the basin to monitor for uranium and other associated parameters. For this 2020 reporting cycle, there are no exceedances to surface water quality standards for any parameters associated with past uranium mining or current explorations.*
>
> *The Cheyenne River water quality continues to be generally poor due to both natural and agricultural sources. Most of the Cheyenne River drainage basin contains highly erodible soils. The landscape contributes considerable amounts of eroded sediment during periods of heavy rainfall. During normal or lower flow periods, the upper Cheyenne often exceeds irrigation water quality standards for specific conductance and sodium adsorption ratio. Most segments of the Cheyenne River are nonsupporting for E. coli bacteria and TSS. Segments below the Fall River have approved TMDLs for bacteria.*

UIC regulations are designed to protect USDWs. The Class III Area Permit requirements for vertical and horizontal containment of injection interval fluids also protect surface water from impacts. The prohibition of contaminants from migrating into USDWs is linked to evaluation of confining zones, or low permeability geologic units overlying and underlying the injection zone that will ensure that injection zone fluids do not migrate vertically out of the injection zone. The UIC Class III Area Permit for uranium recovery injection wells requires thorough characterization of injection zone confining zones before ISR operation can begin. Characterization efforts are designed to identify any breaches in confining zones such as improperly plugged historic exploration drillholes, which could potentially impact surface water within the Study Area. Part II of the UIC Class III Area Permit lists the characterization requirements; Sections 4.0 and 5.0 of the Class III Draft Area Permit Fact Sheet discuss the basis for these requirements in more detail.

The Class III Area Permit requires the Permittee to identify and perform corrective action on any breaches in confining zones in Class III ISR wellfield areas, including improperly plugged historic exploration boreholes and private wells, that could serve as pathways for Class III injection zone fluids to reach the ground level. If a confining zone breach is not able to be located or repaired, the Permittee must demonstrate that Class III injection zone fluids are contained through operational controls and monitoring. These requirements are found in Part III of the Class III Area Permit and discussed in Section 6.0 of the Class III Draft Area Permit Fact Sheet.

Part VII, Section B of the Class III Area Permit requires the Permittee to demonstrate initial mechanical integrity of all injection and production wells and maintain mechanical integrity through the life of each injection well. Part II, Section D.4.e. of the Class III Area Permit requires demonstration of initial mechanical integrity for monitoring wells. External mechanical integrity is demonstrated through

evaluation of well cementing records demonstrating there are no pathways through the cement between the well casing and borehole for injection interval fluids to travel through to reach USDWs or the ground surface.

The Class III Area Permit also requires the Permittee to maintain and demonstrate horizontal control of injection interval fluids within each wellfield during ISR operations and groundwater restoration. This requirement is intended to prevent ISR contaminants from impacting the USDW outside the aquifer exemption boundary. Horizontal control is maintained by injecting a smaller volume of water into the wellfield than is being removed by the production wells. Horizontal control is demonstrated through excursion monitoring as discussed in Section 12.5 of the Class III Fact Sheet and by continuous monitoring of the injectate flow volume and the recovery flow volume for each wellfield as required in Part IX, Section B, Table 14.A of the Class III Area Permit.

After ISR operations, groundwater restoration and stability monitoring of the injection interval groundwater has been completed, the UIC Class III Area Permit requires the Permittee to demonstrate in a Wellfield Closure Plan that ISR contaminants will not cross the downgradient aquifer exemption boundary and impact USDWs within the Dewey-Burdock Project Site. Therefore, no ISR contaminants will impact any downgradient portions of the Inyan Kara aquifer where Inyan Kara groundwater may recharge the Cheyenne River.

Based on the protective requirements of the Class III Area Permits, the EPA has concluded that Class III injection activities will not impact surface water, including on the Cheyenne River, the Cheyenne River Indian Reservation, the Pine Ridge Indian Reservation, or other downstream communities.

In addition to these EPA UIC permit requirements, the NRC license requires Powertech to develop a Water Management and Erosion Control Plan, which will include mitigation measures to control drainage, erosion, and sedimentation. This plan must be implemented during and after ISR operations to reduce soil loss within the permit area. Powertech is required to obtain both construction and industrial stormwater Clean Water Act National Pollutant Discharge Elimination System (NPDES) permits. The NPDES permit requirements for discharges to surface water will control the amount of pollutants that can enter surface water bodies, such as streams, wetlands, and lakes or ponds. Powertech has not yet submitted any NPDES permit applications or Notices of Intent to the South Dakota DENR but must do so before any construction work is initiated on the site. The point source discharges from the project to surface waters will be from construction and industrial stormwater flows and must comply with South Dakota DENR's construction and industrial stormwater NPDES permits. Under Section 402 of the Clean Water Act and its implementing regulations, those permits must ensure that permitted discharges do not cause or contribute to exceedances of South Dakota's surface water quality standards. Under Section 303(c) of the Clean Water Act, water quality standards must "protect the public health or welfare, enhance the quality of water and serve the purposes of [the Act]." Moreover, those standards reflect EPA's Section 304(a) national recommended water quality criteria, which themselves reflect the latest scientific knowledge of the identifiable effects on health and welfare of pollutants in water. As the surface water discharges flow downstream from the regulated point of discharge, they will be subject to dispersion, dilution and other forms of natural attenuation. Under the NPDES permits, Powertech must develop a Stormwater Pollution Prevention Plan (SWPPP). The construction stormwater SWPPP must identify, and Powertech must implement, erosion and sediment controls to minimize soil erosion and the

discharge of pollutants during earth-disturbing activities, and those controls must be designed to function properly and withstand a 2-year, 24-hour precipitation event. The industrial stormwater SWPPP must identify specific conditions at the permitted site, with the goal of eliminating or minimizing contact of storm water with materials or activities that may result in pollution of the runoff. If contact cannot be eliminated or reduced, Powertech must treat this industrial storm water before it is discharged from the site. The SWPPPs will be very similar to, and complement, the proposed Water Management and Erosion Control Plan. In addition to the EPA UIC and South Dakota DENR permits, the NRC license requires Powertech to monitor 24 impoundments and 10 stream sampling sites as part of the operational monitoring program during ISR operations, as described in NRC Safety Evaluation Report, Section 5.7.9.4.5. With these protective requirements, there will be no impacts to surface water above regulatory/health standards both within and beyond the Dewey-Burdock Project Area Boundary resulting from the injection activities at the Dewey-Burdock Project Site.

EPA analyzed the groundwater flow in the Minnelusa aquifer and evaluated the potential for Class V injectate at the Dewey-Burdock Project Site to reach the locations where Minnelusa groundwater flows to the ground surface at springs near the Minnelusa outcrop around the Black Hills. Figure 6 shows the elevation of the top of the Minnelusa Formation from the Sheet 2 map from Carter and Redden, 1999. (Carter and Redden, 1999, *Altitude of the Top of the Minnelusa Formation in the Black Hills Area, South Dakota*, Hydrologic Investigations Atlas HA-744-C, Sheet 2) The springs are located in the green circle in Figure 6; the Dewey-Burdock Project Area is located inside the blue square. The Minnelusa Formation top occurs at a higher elevation where the springs are located than the Minnelusa injection zone in the Dewey-Burdock Project Area. Although the Minnelusa Formation top elevation is not the same as the aquifer groundwater level and the direction of the Minnelusa Formation dip is not exactly the same as the groundwater flow direction, relative formation top elevation and direction of formation dip is a good approximation in this case. Therefore, EPA is able to conclude that injectate flowing from the Dewey-Burdock Project Site would have to flow uphill/upgradient to reach these springs and would not reach the locations of these springs In addition, the Cottonwood, Chilson and Cascade anticlines located south of the Black Hills are like hills raising the elevation of the Minnelusa Formation top to a higher elevation and deflect Minnelusa groundwater flow further south away from the locations of these springs.

Based on this analysis, EPA concludes the Class V disposal well injectate will not travel to the locations of Minnelusa springs to be discharged to the ground surface; therefore, Class V injection activities will not impact surface water, including on the Cheyenne River, the Cheyenne River Indian Reservation, the Pine Ridge Indian Reservation, or other downstream communities. For additional information on potential surface water impacts, see CEA Section 4.0.

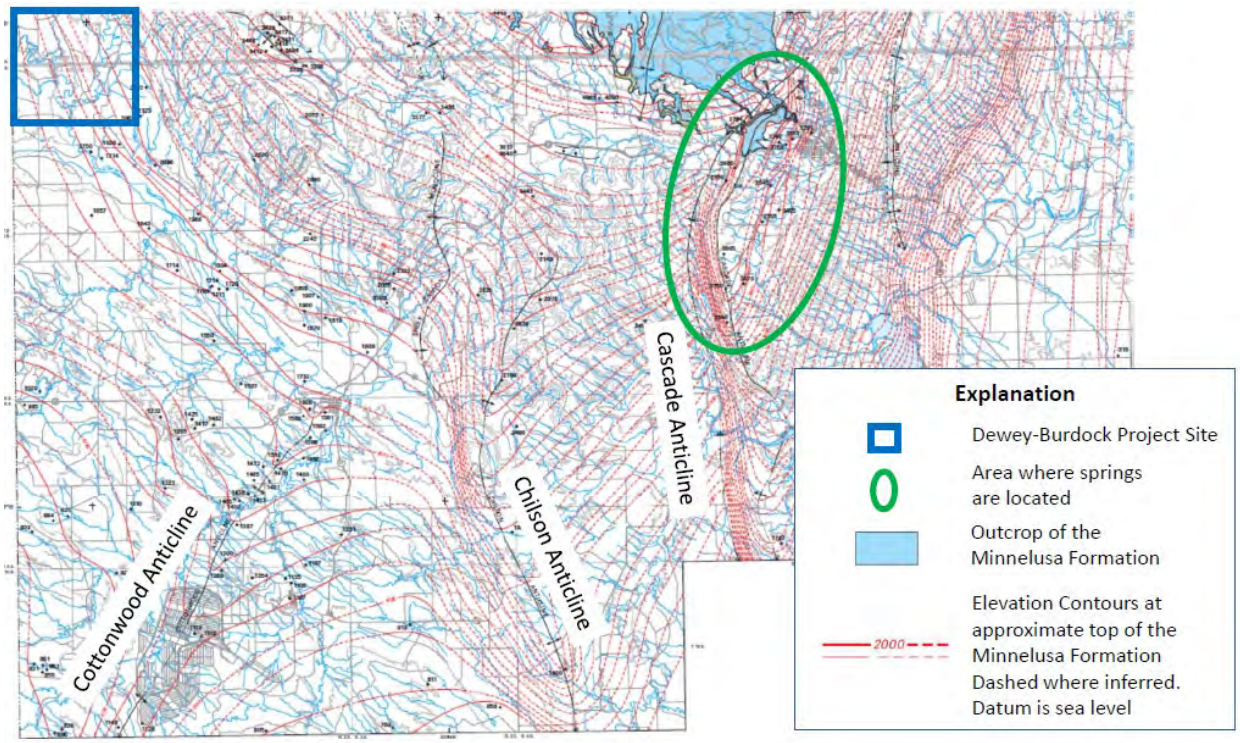

Figure 6. Elevation of the Minnelusa Formation top surface (Source: Carter and Redden, 1999, Sheet 2)

7.0 Potential Radiological Impacts

The analysis of radiological impacts is under the regulatory purview of the NRC. Consistent with the geographic scope of the CEA which is based upon the furthest potential environmental impacts associated with the EPA's SDWA action, this EJ Analysis does not include an EJ assessment of the potential impacts of EPA's actions on the communities near the White Mesa facility. The CEA and EJ Analysis appropriately assess potential environmental effects at or near the project site that occur close in time with the drilling and operation. However, because commenters raised questions about this topic, this EJ Analysis includes a summary discussion of radiological impacts for informational purposes only. The NRC addressed radiological effects in the Supplemental Environmental Impact Statement (SEIS) developed for the Dewey-Burdock Project stating that radiation doses from ISR facility operations are expected to be well below regulatory limits. The NRC discusses potential radiological impacts in detail under Section 4.13 of the SEIS Vol 1.

The NRC License requires Powertech to have an approved waste disposal agreement in place for 11e.(2) byproduct material disposal at an NRC or NRC Agreement State licensed disposal facility before operations commence, but does not require disposal at a specific facility nor must the facility be specified in the License application. Powertech has not yet entered into such an agreement with any disposal facility. Powertech has also indicated to the NRC that there are other, alternate 11e.(2) byproduct material disposal facilities that are a similar or shorter distance away from the Dewey-Burdock ISR

facility.[5] Because the NRC SEIS (SEIS Vol 2[6]) indicates that Powertech proposes to pursue an agreement with the White Mesa site in San Juan County, Utah, for disposal of solid byproduct material, for information purposes only, the EPA cumulative effects and EJ analyses include information on the NRC's assessment of potential environmental impacts at the White Mesa Mill site. NRC states that San Juan County's population is comprised of 49 percent American Indian and Native Alaska persons. The White Mesa site in Blanding, Utah is an existing conventional mill site that has a tailings disposal area licensed by the State of Utah to accept 11e.(2) byproduct wastes. In accordance with its license, Powertech must obtain approval from Utah Department of Environmental Quality (UDEQ) to bury ISR waste. NRC states in Section 3.13.2 of the SEIS, that the Utah DEQ prohibits White Mesa from receiving more than 3,823 m3 [5,000 yd3] of ISR wastes from any single source. The NRC stated that the amount of solid byproduct material generated by an ISR facility, such as the proposed Dewey-Burdock ISR Project, is only a small fraction of the tailings generated and disposed of at a conventional mill site. In addition, the proposed Dewey-Burdock ISR project would be one of many ISR projects disposing of solid byproduct material at the White Mesa site if waste is disposed of there. The NRC concluded that the addition of ISR byproduct material from the proposed Dewey-Burdock ISR Project to the White Mesa disposal site would not be considered significant.

The information herein on yellowcake packaging, shipping and processing is included for informational purposes. It is the EPA's understanding that the yellowcake will be packaged in approved 55-gallon steel drums that will be shipped offsite via truck to licensed uranium conversion facilities for further processing. Conversion facilities are currently located in Metropolis, Illinois, and Port Hope, Ontario, Canada. The applicant projects an annual production of 1 million lb/yr of yellowcake, which would result in approximately one truckload transported every two weeks. A specialized, appropriately licensed transportation company will transport the yellowcake to a conversion facility. Offsite radiological impacts could result from the shipment of the uranium yellowcake to a licensed uranium conversion facility for further processing or during the shipment of 11e.(2) byproduct material. The CEA discusses NRC's assessment of transportation impacts, including, transportation accidents and spills in Sections 5.5 (Overview of types of Transportation Accidents), 5.5.1 through 5.5.4 (describing impacts of each type of spill, such as yellowcake shipments, process chemicals and fuel, byproduct material, etc.), 13.1.1 (accidents involving yellowcake shipments), 13.1.2 (accidents involving resin-hauling trucks), 13.2 (Other Types of Potential Accidents). As described in these CEA sections, the U.S. NRC and U.S. DOT have applicable guidelines and regulations, as do the South Dakota Department of Environment and Natural Resources (DENR) and South Dakota Department of Transportation, to ensure the safe transport of hazardous materials. See e.g., SEIS Section 4.3.1.1.2. Further, the NRC's analysis considered previous accidents involving yellowcake releases that resulted in up to 30 percent of shipment contents being released and took into consideration Powertech's proposed measures to limit the risk of such accidents during transportation. Such measures include Powertech's proposal to transport all such materials in accordance with U.S. DOT and NRC regulations, handling as low specific-activity materials, and shipped

[5] According to NRC's Request for Additional Information (RAI), Powertech has not entered into an agreement with a facility for disposal of 11e.(2) wastes. In response to NRC's May 19, 2010 and May 28, 2010 RAIs, Powertech identified the following facilities as possible locations for disposal of Dewey-Burdock 11e.(2) byproduct waste: White Mesa facility near Blanding, UT, Pathfinder Mines Corporation Shirley Basin Facility, the Energy Solutions LLC Clive Disposal Site near Clive, UT and the Waste Control Specialists LLC facility near Andrews, TX in response to RAI TR RAI MI-4(c).
[6] NRC SEIS, Volume 2, Appendix E, Comments: 127-000032; 136-000007, pages E–198 through E–199.

with exclusive-use-only vehicles. NRC concluded that the consequences of such accidents would also be limited due to Powertech's proposal to develop emergency response procedures that its personnel and carriers will receive training on, should any transportation accidents occur during shipment to or from the proposed Dewey-Burdock ISR Project. Powertech also plans to provide these procedures to state and local agencies. SEIS Section 4.3.1.1.2, at 4-18 (citing Powertech, 2009a).

The NRC license and the proposed South Dakota DENR Large Scale Mine Permit require Powertech to develop an Emergency Preparedness Program, as part of the Environmental Management Plan, which will be implemented should a transportation accident occur. The primary potential impact associated with an accident involving the spill of yellowcake would be potential impacts to soil in the immediate spill area. The potential impacts will be minimized by implementing the Emergency Preparedness Program and excavating and removing or remediating affected soils. The Emergency Preparedness Program required under the NRC license and the proposed South Dakota DENR Large Scale Mine Permit will help prevent radiological exposures to the general public.

The NRC license requires a Powertech to develop a decommissioning plan subject to NRC approval that ensures that the site meets regulatory standards. As discussed in Section 6.0, Impacts to Land Use, in the EPA CEA document, Powertech intends to return the Project Area to its original use, which is rangeland for cattle grazing and agricultural cropland. The NRC-approved decommissioning plan is intended to ensure that the Dewey-Burdock Project Area will meet the regulatory/health standards required to return the land to its pre-ISR use.

8.0 Potential Air Quality Impacts

As discussed earlier, the ozone Environmental Indicator ranked in the 99th percentile for the state for both the Study Area and the Edgemont Area as shown in the Environmental Indicator portion of the tables in Appendices B and C. The EPA examined the ozone Environmental Indicator more closely. The summer seasonal average of daily maximum 8-hour concentration value for the Study Area is 53.5 parts per billion (ppb). The South Dakota average value is 50.3 ppb, which would be the 50th percentile ranking level for the state. Overall, the South Dakota has such good air quality that a small increase in the ozone concentration from the average concentration of 50.3 ppb to 53.5 ppb results in an artificially high percentile increase. As shown in the tables in Appendices B and C, 53.5 ppb ozone concentration ranks in the 25th percentile for EPA Region 8 and in the 82nd percentile for the US. The EPA Regional average for ozone is 54.6 ppb and the national average is 47.4 ppb.

To gauge this ozone concentration in a different context, the EPA evaluated where this ozone concentration would rank relative to the Air Quality Index (AQI), which is an index for reporting daily air quality. The AQI is an indicator of how clean or polluted the air is and ranges in value from 1 to 500, with lower numbers representing better air quality and higher numbers indicating poorer air quality. The EPA and its federal, tribal, state, and local partners have developed the AirNow web site to provide the public with easy access to national air quality information for five major air pollutants regulated under the Clean Air Act, including ground-level ozone. The Air Quality Index Scale shows that an AQI of 50 or less is considered to be "good." The AQI Calculator converts a concentration of a pollutant to an AQI value, for example the ozone concentration of 53.5 ppb converts to an AQI of 49, which is in the "good" range. Based on this evaluation, the EPA concludes the ozone concentration of 53.5 ppb does not present

a health risk in the Study Area or the Edgemont Area. For more information on air quality impacts generally, see CEA Section 10.0.

9.0 The Black Hills

During Region 8's consultation discussions with Tribal governments, as well as the public hearings and public comment periods, the EPA received numerous comments asserting Tribal treaty interests and raising concerns about the proximity of the project to the Black Hills, which is a sacred site to many Tribal nations and Tribal members. More specifically, several commenters recommended that the EPA's EJ analysis includes discussion of historical treaty information and the Black Hills as a sacred site. Commenters emphasized the historic and present-day religious, cultural and spiritual significance of the Black Hills and suggested that the EJ analysis consider the potential impacts from the EPA's action, together with past and ongoing mining and other activities, on Tribal interests in the Black Hills. In response, the EPA has revised this EJ Analysis to include information on the Fort Laramie Treaties and the Black Hills as a sacred site.

9.1 Tribal Consultations

Consistent with the federal government's trust responsibility to federally-recognized tribes and the EPA Policy on Consultation and Coordination with Indian Tribes, as summarized below, the EPA Region 8 has engaged in consultation outreach and discussions with tribes that are potentially affected by the EPA's UIC and aquifer exemption actions for the Dewey-Burdock In-Situ Uranium Recovery Site. See, Appendix F for more detailed information on Tribal consultation and additional outreach activities.

- In May 2013, the EPA Region 8 sent letters inviting 35 Indian Tribes to participate in consultation discussions with the EPA pursuant to section 106 of the National Historic Preservation Act (NHPA). The letters also provided information about the proposed Dewey-Burdock site and about webinars the EPA was planning to conduct as informational outreach sessions on topics requested by Tribes.

- Shortly thereafter, the EPA conducted three informational webinars on topics requested by Tribes: Cheyenne River water quality, impacts of radiation at uranium ISR sites, and the EPA UIC program's review of Powertech's permit applications. Although a number of Tribes participated in the EPA webinars, the EPA did not receive any requests for consultation at that time.

- In June 2015, the EPA Region 8 Regional Administrator requested a meeting with the Oglala Sioux Tribe to initiate conversations between the EPA and the Tribe because the Pine Ridge Indian Reservation is the nearest Reservation to the Dewey-Burdock site. Later in 2015, the EPA attended regional meetings of Tribal leaders to present information about the EPA's then-proposed activities at the Dewey-Burdock site and to encourage Tribal leaders to enter into consultation discussions with the EPA.

- In November 2015, the EPA sent consultation invitation letters to 38 federally-recognized Indian Tribes (see Table 10 for list of Tribes). The letters invited Tribes to participate in consultation discussions consistent with the EPA's Policy for Consultation and Coordination with Indian

Tribes and NHPA section 106. In response to the invitation letter, the EPA received requests for consultation from the following Tribes:

- Cheyenne River Sioux Tribe
- Crow Tribe
- Fort Belknap Indian Community
- Northern Arapaho Tribe
- Oglala Sioux Tribe
- Santee Sioux Nation
- Standing Rock Sioux Tribe
- Upper Sioux Community

- Between February and June 2016, the EPA Region 8 attended meetings with the Crow Tribe, Fort Belknap Indian Community, the Northern Arapaho Tribe, the Oglala Sioux Tribe, the Santee Sioux Nation, the Standing Rock Sioux Tribe and the Upper Sioux Community.

- After the first draft permits were issued in March 2017, the Ponca Tribe requested a consultation meeting which was held in August 2017.

- On July 8, 2019, the EPA Region 8 sent letters to 38 potentially affected Tribal governments with information about, and inviting consultation on, the revised draft proposed UIC permitting and aquifer exemption actions. The letters specifically invited input on this draft revised EJ analysis and on Tribal interests in the Black Hills as a sacred site.

- After the July 2019, letter, EPA held meetings with the Cheyenne River Sioux Tribe, the Oglala Sioux Tribe, the Cheyenne and Arapaho Tribes, and two meetings with the Santee Sioux Nation.

- EPA provided written responses to each Tribe that met with EPA discussing how EPA took comments and concerns discussed during the meeting into consideration during the permitting process.

Table 10. List of Tribes Identified as Potential Consulting Parties.

1	Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
2	Apache Tribe of Oklahoma
3	Arapaho Tribe of the Wind River Reservation
4	Blackfeet Tribe of Blackfeet Indian Reservation
5	Cheyenne and Arapaho Tribes Oklahoma
6	Cheyenne River Sioux Tribe of the Cheyenne River Reservation
7	Chippewa-Cree Tribe of Rocky Boy's Reservation
8	Confederated Salish and Kootenai Tribes of the Flathead Reservation
9	Crow Creek Sioux Tribe of the Crow Creek Reservation
10	Crow Tribe of the Montana
11	Eastern Shoshone Tribe of the Wind River Reservation
12	Flandreau Santee Sioux Tribe of South Dakota
13	Fort Belknap Indian Community of the Fort Belknap Reservation
14	Kiowa Indian Tribe of Oklahoma
15	Lower Brule Sioux Tribe of the Lower Brule Reservation
16	Lower Sioux Indian Community
17	Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation
18	Northwestern Band of the Shoshone Nation
19	Oglala Sioux Tribe
20	Omaha Tribe of Nebraska[7]
21	Paiute Indian Tribe of Utah
22	Ponca Tribe of Indians of Oklahoma[1]
23	Ponca Tribe of Nebraska[1]
24	Prairie Island Indian Community
25	Rosebud Sioux Tribe of the Rosebud Indian Reservation
26	Santee Sioux Nation
27	Shakopee Mdewakanton Sioux Community
28	Sisseton-Wahpeton Oyate of The Lake Traverse Reservation
29	Skull Valley Band of Goshute Indians
30	Southern Ute Indian Tribe of the Southern Ute Reservation
31	Spirit Lake Tribe
32	Standing Rock Sioux Tribe
33	Three Affiliated Tribes of Fort Berthold Reservation
34	Turtle Mountain Band of Chippewa Indians
35	Upper Sioux Community
36	Ute Indian Tribe of the Uintah and Ouray Reservation
37	Ute Mountain Ute Tribe
38	Yankton Sioux Tribe

[7] The Omaha Tribe of Nebraska, the Ponca Tribe of Indians of Oklahoma and the Ponca Tribe of Nebraska did not receive the May 2013 letter from EPA but were sent letters in 2015 and 2019.

9.2 The Fort Laramie Treaties

Treaties were entered into between the United States government and Indian Tribes in attendance at Fort Laramie in 1851 and 1868. Among other things, the treaties sought to end conflicts among the Tribes and the United States and resulted in the boundaries shown in Figure 7. According to its terms, the 1851 Treaty was signed by representatives of the Sioux, Cheyennes, Arapahoes, Crows, Assinaboines, Mandans and Gros Ventres, and Arickarees. 11 Stat. 749 (1851).[8] The 1868 Treaty was signed by representatives of the Brule band of Sioux, the Ogallalah band of Sioux, the Minneconjon band of Sioux, the Yanctonais band of Sioux, Arapahoes, the Uncpapa band of Sioux, the Blackfeet band of Sioux, the Cutheads band of Sioux, the Two Kettle band of Sioux, the Sans Arch band of Sioux, and the Santee band of Sioux. 15 Stat. 635 (1868).

The United States Court of Claims briefly summarized the history of Fort Laramie Treaty of 1851 as follows:

> "When the Treaty of Fort Laramie was signed in 1851, gold had recently been discovered in California. Increasing numbers of people journeying westward were crossing the lands of the Indians. Buffalo and other game fell prey to the travelers' need for food (and sometimes to their need for sport)… Timber and forage were consumed in increasing quantities. The Indians resented these inroads, and their resistance often made the westward journey a perilous one." Crow Tribe of Indians v. United States, 284 F.2d 361, 364 (Ct. Cl. 1960).

The United States Supreme Court briefly summarized the history of the Fort Laramie Treaty of 1868 as follows:

> "The Fort Laramie Treaty [of 1868] was concluded at the culmination of the Powder River War of 1866–1867, a series of military engagements in which the Sioux tribes, led by their great chief, Red Cloud, fought to protect the integrity of earlier-recognized treaty lands from the incursion of white settlers."
>
> ….
>
> "The Fort Laramie Treaty [of 1868] … established the Great Sioux Reservation, a tract of land bounded on the east by the Missouri River, on the south by the northern border of the State of Nebraska, on the north by the forty-sixth parallel of north latitude, and on the west by the one hundred and fourth meridian of west longitude, in addition to certain reservations already existing east of the Missouri. The United States 'solemnly agree[d]' that no unauthorized persons 'shall ever be permitted to pass over, settle upon, or reside in [this] territory.'"
>
> ….

[8] The names and spellings of the Tribes' names in this section may be outdated but reflect the language used in the treaty documents.

> "[I]n exchange for the benefits conferred by the treaty, the Sioux agreed to relinquish their rights under the [1851 Treaty], to occupy territories outside the reservation…. The Indians also expressly agreed to withdraw all opposition to the building of railroads that did not pass over their reservation lands, not to engage in attacks on settlers, and to withdraw their opposition to the military posts and roads that had been established south of the North Platte River." United States v. Sioux Nation of Indians, 448 U.S. 371, 374–76 (1980) (footnotes and internal citations omitted).

The boundaries of treaty lands were further revised by the Congressional Act of February 28, 1877. 19 Stat. 254 (1877). The revised boundaries are shown in Figure 7. In describing the statute, the Supreme Court stated, in *United States v. Sioux Nation of Indians*, 448 U.S. 371, 382-83, 423 (1980): "[t]he Act had the effect of abrogating the earlier Fort Laramie Treaty, and of implementing the terms of the Manypenny Commission's 'agreement' with the Sioux leaders," and that "the 1877 Act, in addition to removing the Black Hills from the Great Sioux Reservation, also ceded the Sioux' hunting rights in a vast tract of land extending beyond the boundaries of that reservation." See n. 14, *supra*." *Id*. at 422-23.

The United States Supreme Court briefly summarized the history of the 1877 Act as follows:

> "The years following the [1868] treaty brought relative peace to the Dakotas, an era of tranquility that was disturbed, however, by renewed speculation that the Black Hills, which were included in the Great Sioux Reservation, contained vast quantities of gold and silver… The discovery of gold was widely reported in newspapers across the country. [F]lorid descriptions of the mineral and timber resources of the Black Hills, and the land's suitability for grazing and cultivation, also received wide circulation, and had the effect of creating an intense popular demand for the 'opening' of the Hills for settlement. The only obstacle to 'progress' was the Fort Laramie Treaty that reserved occupancy of the Hills to the Sioux."
>
> ….
>
> "The Government concluded that the only practical course was to secure to the citizens of the United States the right to mine the Black Hills for gold."
>
> ….
>
> "Congress requested the President to appoint another commission to negotiate with the Sioux for the cession of the Black Hills…. The principal provisions of this treaty were that the Sioux would relinquish their rights to the Black Hills and other lands west of the one hundred and third meridian, and their rights to hunt in the unceded territories to the north, in exchange for subsistence rations for as long as they would be needed to ensure the Sioux' survival. In setting out to obtain the tribes' agreement to this treaty, the commission ignored the stipulation of the Fort Laramie Treaty that any cession of the lands contained within the Great Sioux Reservation would have to be joined in by three-fourths of the adult males. Instead, the treaty was presented just to Sioux chiefs and their leading men. It was signed by only 10% of the adult male Sioux population. Congress resolved the impasse by enacting the 1876 'agreement' into law as the Act of Feb. 28, 1877 (1877 Act), 19 Stat. 254. The Act had the effect of abrogating the earlier Fort

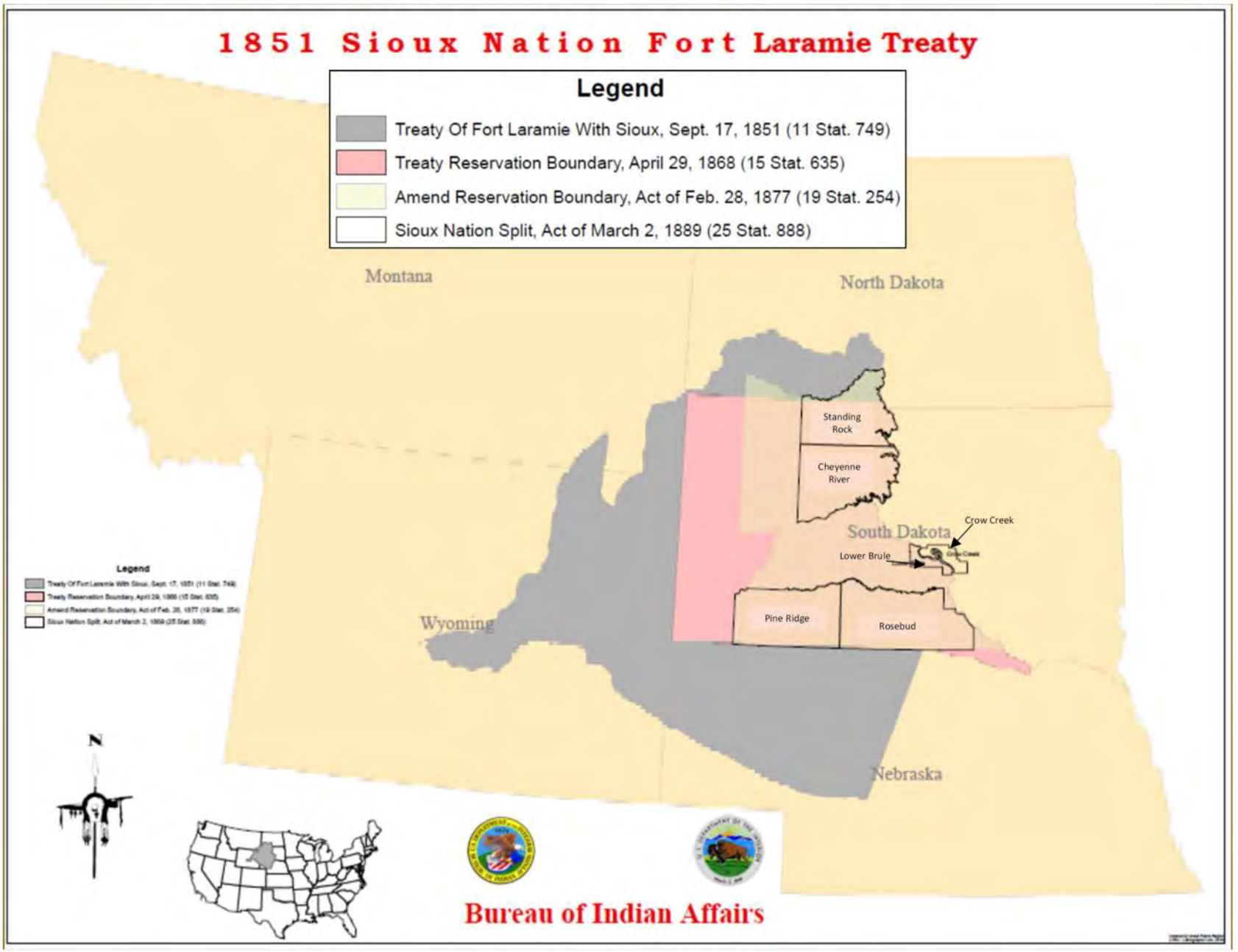

Figure 7. Map Showing Historic Boundaries of the Sioux Nation

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Laramie Treaty, and of implementing the terms of the Manypenny Commission's 'agreement' with the Sioux leaders." United States v. Sioux Nation of Indians, 448 U.S. 371, 376–83 (1980) (footnotes and internal citations omitted).

Finally, the Reservation boundaries were adjusted into specific Reservations for individual Tribes by the Act of March 2, 1889 (25 Stat. 888). These areas are depicted on the map in Figure 7 as the specific Reservations for the Standing Rock, Cheyenne River, Crow Creek, Lower Brule, Pine Ridge, and Rosebud Sioux Tribes.

The EPA is aware of the Sioux Nation's continued claim to the lands subject to the Fort Laramie Treaty of 1868, the Supreme Court's ruling cited above, as well as the longstanding treaty disputes between Native American tribes and the United States. In its role as a regulatory agency, the EPA lacks the authority to resolve these disputes.

9.3 Expansion of the Geographic Scope of the Environmental Justice Analysis

The geographic scope of the 2017 Draft Environmental Justice analysis encompasses a 20-mile radius around the proposed Dewey-Burdock Project Area. This 20-mile radius accounts for the furthest potential environmental impacts which are the predicted detectable air impacts above background areas based on the air modeling described in the document entitled *Ambient Air Quality Final Modeling Protocol and Impact Analysis Dewey-Burdock Project Powertech (USA) Inc., Edgemont, South Dakota.*

Generally, utilizing the EJSCREEN tool, the EPA screens communities within the geographic scope of the EJ analysis and compares the demographic and environmental indicators for those communities to the rest of the state, EPA region, or the nation. Based on comments received on the 2017 draft, the EPA is revising the EJ Analysis in two ways: 1) the geographic scope of the analysis is expanded to include consideration of tribal spiritual and cultural interests in the Black Hills which, in its entirety, extends beyond 20 miles from the Project Area; and 2) although the formal Indian Reservations of potentially affected Indian tribes are located well beyond the 20-mile radius, this revised analysis considers tribal spiritual and cultural interests in the Black Hills regardless of where the tribal members may permanently reside. The EPA recognizes that many tribes and tribal members hold spiritual and cultural interests in the Black Hills, and EPA thus revised the EJ Analysis to include consideration of those tribal cultural and spiritual interests in the Black Hills as a sacred site. While the EPA does not have a NEPA compliance obligation with respect to its proposed SDWA actions, these revisions acknowledge the approach set forth in the document entitled *Promising Practices for Environmental Justice Methodologies in NEPA Reviews* developed by the Federal Interagency Working Group on Environmental Justice.

The Dewey-Burdock Project Site intersects with the southwestern portion of the Black Hills. See map at Figure 8. Since it would not seem reasonable to consider tribal interests in only the portion of the Black Hills that falls within the 20-mile radius of the project area, the revised analysis addresses tribal interests in the entirety of the Black Hills.

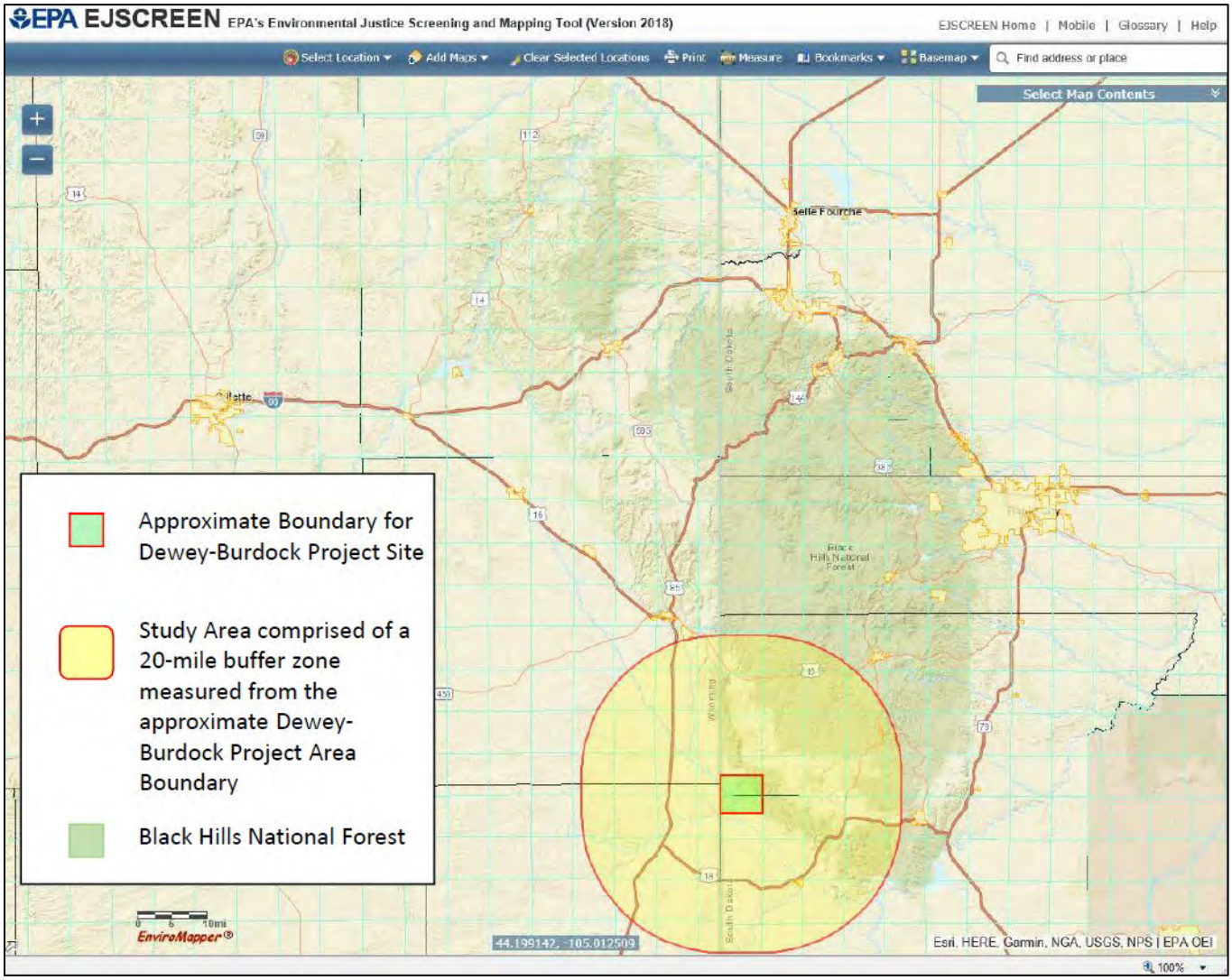


Figure 8. Screenshot from EJ Screen showing the Dewey-Burdock Project Site, the Study Area and the Black Hills.

Once the EPA decided to expand the geographic scope of the revised EJ analysis to include consideration of Tribal spiritual and cultural interests in the Black Hills, the Agency's approach would typically have been to first identify communities that are transient or geographically dispersed populations residing seasonally within the affected area, or that may reside elsewhere but come within the affected area (e.g., for subsistence fishing or to collect traditional medicines); and then to consider their demographic and environmental indicators. Here, the formal Indian Reservations of potentially affected Indian tribes are located well beyond the Project Area (the nearest Indian Reservation is the Pine Ridge Indian Reservation located approximately 46 miles away). However, we recognize that Tribal spiritual and cultural interests in the Black Hills as a sacred site exist regardless of where the Indian Reservations are located or where Tribal members may reside.

9.4 Historic Mining Activities in the Black Hills

This section provides information on historic and current mining activities in the Black Hills. The summary of mining activities and their associated environmental and health impacts is relevant to the

consideration of mining impacts on Tribal spiritual and cultural interests in the Black Hills as a sacred site.

A wide variety of mineral resources have been extracted from rocks within the Black Hills. Since the mid-1800's, gold has been, and continues to be, the most sought-after metallic mineral resource of South Dakota. The discovery of gold provided the impetus to rapid settlement of the Black Hills and has undergone numerous boom and bust cycles during that past 150 years. Precious metal mining districts of South Dakota are concentrated in a small area in the central part of the Black Hills. Gold is the principal commodity, most of which has come from the Homestake Mine in the Lead district. Silver has been more or less a byproduct of gold mining. Uranium and vanadium are latecomers to the South Dakota mining economy; first shipments of these metals were made to a buying station at Edgemont in 1952. A uranium processing plant began operation in 1956, which had a stimulating effect on uranium ore production in the area. (South Dakota State Geologic Survey Bulletin 16, 1964).

U.S. Geological Survey, Miscellaneous Investigations Series Map I-2445, *Maps Showing Metallic Mineral Districts and Mines in the Black Hills, South Dakota and Wyoming*, identifies 85 metallic mining districts in the Black Hills region (USGS 1995). Within those 85 districts, the publication identifies 1084 mines, including locations and principal commodities and mineral deposit types. The maps (Plate 1) and the narrative portion of the publication are included in Appendix E of this document. A variety of non-metallic mineral resources such as limestone, gemstones, gypsum, sand and gravel are relatively common throughout the Black Hills (SD DENR 2011). Those extractive sites are not identified on the maps in Appendix E because of their relative abundance. The non-metallic mineral sites in the South Dakota Black Hills are shown in Figure 9. Bentonite is the non-metallic mineral extracted from the Black Hills in Wyoming. Figure 10 shows where bentonite is extracted from the Black Hills in Weston and Crook Counties in Wyoming.

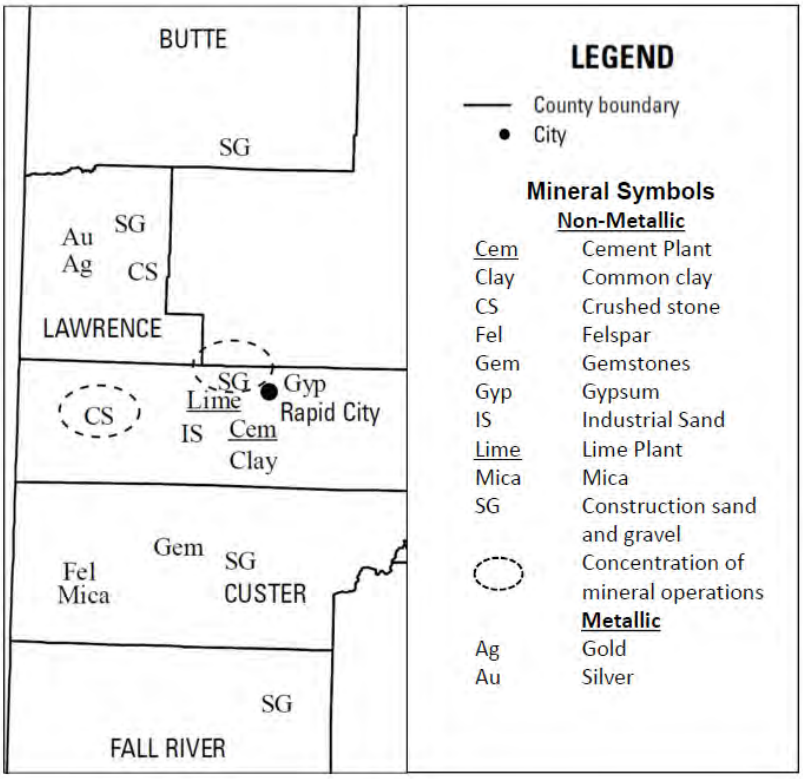


Figure 9. Locations of non-metallic mineral production areas in the Black Hills, South Dakota. (from *The Mineral Industry of South Dakota 2012-2013*, USGS 2016).

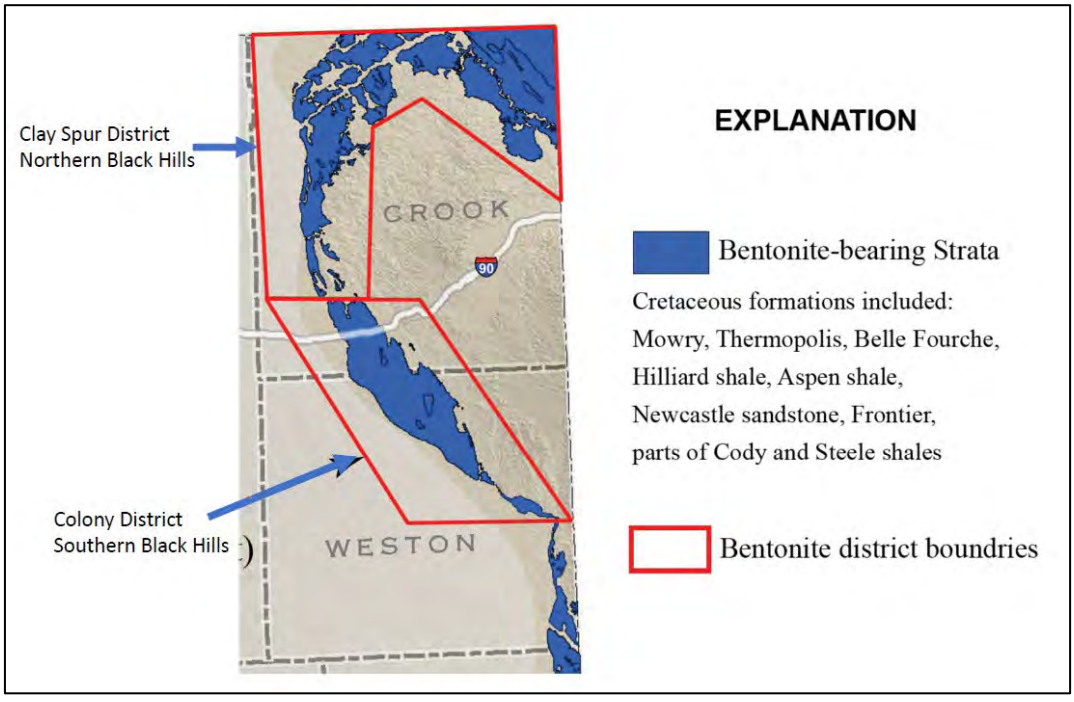


Figure 10. Locations of bentonite production areas in the Black Hills, Wyoming. (from Wyoming State Geologic Survey, 2014)

The principal metallic mineral commodities that have been mined in the Black Hills are closely related to economic issues (supply and demand) associated within the expansion of the United States and development of the local economy. Besides gold and silver, other metallic minerals produced in the Black Hills include uranium, vanadium, tungsten, iron ore, lead, zinc, molybdenum, tin, antimony, arsenic, bismuth, sulfur and tellurium. (South Dakota State Geologic Survey Bulletin 16, 1964). Many mines that exist within the Black Hills may be closed or abandoned since, over the years, the commodity has not been in demand and production costs may exceed their value, and they are therefore not economically viable.

Environmental effects from mining activities have varied throughout history. Extractive technologies to develop mineral resources have changed over the years. Environmental effects from mining activities have also varied depending on the processes that have been used to extract the commodity being mined. Many mining-related water quality concerns are associated with abandoned gold mines in the northern and central Black Hills. Most of the mining is associated with gold veins and placers in the northern Black Hills near Lead and Deadwood. (Rahn et al., 1996).

Placer Mining

Much of the early gold mining activities in the Black Hills relied on a relatively simple process of separating the denser gold from the less dense sediment in the stream alluvium in which it was contained. This was accomplished by washing the gold bearing sediments with water and running the combined mixture through sluice boxes that separated and concentrated the denser material (e.g. gold) from the less dense material.

Much of this activity was very labor intensive. It was also relatively common to use high pressure jets of water (hydraulic gold mining) to break up unconsolidated gold bearing sands and gravel and convey them to sluice boxes for concentrating. To recover very fine gold or silver it was not uncommon to add mercury to the sluice box to amalgamate the gold and/or silver with for further processing and concentrating. Other commodities have been extracted using placer methods including tin, garnet, magnetite, etc. In the Black Hills, however, gold would likely have been the primary mineral commodity that was extracted by this method. Placer mining has been often used to trace commodities such as gold from particles in sediments to upstream richer sources that may occur in veins or other bedrock ore deposits in the region.

Environmental issues associated with placer mining operations consisted primarily of surface destruction from hydraulic mining and dredging and release of sediment to streams and contamination of water and sediments by additives, such as mercury, that may have been used to improve fine gold or silver recovery.

Open Pit Mining and Quarries

Open Pit mining is viable for a wide variety of commodities in the Black Hills. Aside from historical gold mining operations in the Lead – Deadwood area, mining of dimension stone, sand and gravel, gypsum, clay, rare earth elements, lime, pegmatite minerals and historic uranium mining operations have occurred.

Environmental issues associated with open pit mining operations and quarries may be related to exposure to dust that may contain contaminants, sedimentation of nearby streams, erosion of waste piles and stockpiles, accumulation of contaminated surface water in ponds, radiation and radon exposure related to uranium mining and groundwater contamination. The specific impacts from open pit mining and quarries would be dependent upon the characteristics of the minerals being extracted, the location of the mining operations, mining methods and other environmental considerations. For example, the impacts to surface waters from mining of pegmatites in the central Black Hills are negligible because pegmatites are essentially granitic in composition and they consist largely of silicate minerals of very low solubility. (Rahn et al., 1996)

Underground Mining

Underground mining operations may be combined with open pit mining operations as a mine may expand into vein or disseminated ore deposits with depth. The former Homestake Mine in the northern Black Hills is an example of such a mine development. Drilling and blasting operations are used to trace valuable ore at depth into a complex of tunnels, stopes and other features where ore can be removed. The ore is typically then brought to the surface and further processed by various physical and chemical methods to extract the valuable mineral commodities.

Waste rock developed by these underground operations is typically stored above ground and may be exposed to the elements. As the waste rock is exposed to the elements the minerals in the rock may decompose releasing potential contaminants that could be mobilized by snowmelt or precipitation and be discharged to adjacent drainages contaminating surface water and sediment.

In addition, ore from the underground workings can be treated by both physical (crushing) and chemical processing (e.g., cyanide leaching, smelting operations) to extract the more desirable commodities such as gold and silver once it is moved to surface processing facilities. Waste materials from these surface operations may be disposed of in tailing ponds behind constructed tailings dams. These processes may generate contaminants such as cyanide, lead, zinc and other, undesirable metals or chemicals used in the enrichment process impacting the surface environment. Tailings dams may become unstable once maintenance activities cease and the mine closes without reclamation or stabilization. Fine tailings sediments can readily be mobilized by wind or water impacting the environment.

As in many underground mines, groundwater that can accumulate in the mine is pumped to maintain the stability of the underground workings during operations. Once the mines are closed or abandoned, pumping activities typically cease. Contaminated groundwater can build up in the workings and can discharge to the surface through fractures and open adits as acid mine drainage contaminating surface sediment, surface water and groundwater.

Impacts from Gold Mining

According to the *Mining History of South Dakota* https://denr.sd.gov/des/mm/History.aspx the first state laws that regulated surface mining were enacted in 1971. In 1977, the Homestake gold mine completed construction of the Grizzly Gulch Tailings Impoundment facility which allowed the company to cease the discharge of mine tailings into Gold Run and Whitewood Creeks. Since the 1870s, area gold mining operations included the discharge of millions of tons of mine tailings into Whitewood Creek. These mine

tailings contaminated soil, groundwater and surface water. The EPA added the site to the National Priorities List (NPL) in 1983. The Whitewood Creek Superfund site covers an 18-mile stretch of Whitewood Creek in Lawrence, Meade and Butte Counties, South Dakota. The long-term remedy included excavation of 4,500 cubic yards of contaminated soil from 16 residential yards, disposal of the contaminated soil in an on-site landfill, institutional controls and surface water monitoring. Remedy construction took place between 1991 and 1993. Butte, Meade and Lawrence counties adopted ordinances in late 1993 and early 1994 that prohibited construction of new residential or commercial structures on the tailings, restricted future development in tailings-impacted areas of the site, and prohibited removal and use of tailings outside the tailings areas. Surface water monitoring is ongoing. The EPA took the site off the NPL in 1996. PA has conducted several five-year reviews of the site's remedy. These reviews ensure that the remedies put in place protect public health and the environment, and function as intended by site decision documents. The most recent review concluded that response actions at the site are in accordance with the remedy selected by the EPA and that the remedy continues to be protective of human health and the environment in the short term. Continued protectiveness of the remedy requires revegetation of the disposal area and remediation of properties with geofabric breaches. (EPA Region 8 Superfund website for Whitewood Creek). The EPA issued the fourth Five Year Review Report for the site in September 2017 to evaluate the performance of the remedies selected in the Record of Decision. The conclusion of the review is that the remedy at the site remains protective of human health and the environment. Contaminated soils at residences were removed or covered and access to remaining contaminated tailings is restricted. Institutional controls are in place to prevent future land uses that could damage the remedial components and to prohibit installation of groundwater wells on the site or in the immediate vicinity of the site. The next five-year review is required to be completed by September 2022.

The Gilt Edge Mine is a 360-acre site is located about 6.5 miles east of Lead, South Dakota. The primary mine disturbance area encompasses a former open pit and a cyanide heap-leach gold mine, as well as prior mine exploration activities from various companies. Mining and mineral processing at the site began in 1876 when the Gilt Edge and Dakota Maid mining claims were located. Sporadic mining by numerous operators took place at the site until the early 1920s. Early gold miners developed extensive underground workings that wind through the central portion of the site and also engaged in some surface mining as well. From 1935 to 1941, the mines at the site were in steady production and the underground workings were expanded. Beginning in 1976, an extensive mine development program investigated potential production of gold or other minerals. In 1986, Brohm Mining Company (BMC) commenced development of a large-scale open pit, cyanide heap leach gold mine operation. In July 1999, BMC abandoned the site and their on-going water treatment responsibilities to address acidic heavy-metal-laden water (acid rock drainage) that is constantly generated from the exposed highwalls of the three open mine pits and from the millions of cubic yards of acid-generating spent ore and waste rock remaining at the site. Historical operations at the site contaminated surface water and groundwater with acidic heavy-metal-laden water. The State of South Dakota immediately took over emergency operation of the abandoned water treatment plant. The site was listed on the National Priority List (Superfund) in December 2000. Investigation and cleanup activities at the site are ongoing. Interim remedies are currently in place for two of the site's three areas. Remedial action construction is in progress for the

third area. (The EPA Region 8 Superfund website for the Gilt Edge Mine.) The EPA has completed the third five-year review of remedy implementation and performance at the site.

Impacts from Uranium Mining

There are many abandoned uranium mines and prospects in the Black Hills. Uranium deposits in the Black Hills are associated with the Inyan Kara outcrop that surrounds the Black Hills as shown in Figure 11. (Waage, 1959) The majority of these mines are in the Edgemont Uranium District in Fall River County, South Dakota, shown in Figure 11. Uranium was also mined from the Inyan Kara in the northern Black Hills in Crook County, Wyoming.

Uranium mining in the Black Hills began in the early 1950s and continued through the late 1960s. The mining methods were open pits and underground workings. Renewed exploration began in the early 1970s resulting in thousands of drill holes to identify the extent of uranium roll-front ore deposits. The mining and drilling took place before the current protective regulations were in place for mining and drill hole plugging. As a result, there are un-reclaimed open pits and improperly plugged exploration drill holes in historic uranium mining areas. (Jarding, 2011[9]). It is the EPA's understanding that historic mines in the Black Hills National Forest near the Dewey-Burdock Project Site have been reclaimed, but open pits and tailings piles on private lands are largely un-reclaimed.

Historic Mining Drillholes

As discussed in Section 4.2.3 of the Class III Draft Area Permit Fact Sheet, Part II of the Class III Area Permit requires the Permittee to take steps to identify leaky historic drillholes near the wellfield areas during the design and implementation of the wellfield pump tests (Section C), during the design of the wellfield monitoring system (Section D), during the implementation of formation testing (Section E), and during the implementation of the corrective action requirements in Part III. The Permittee must complete these actions prior to receiving authorization to inject, to prevent these drillholes, or any other type of confining zone breach, from acting as pathways for contamination of USDWs. As discussed in Section 4.6 the Class III Draft Area Permit Fact Sheet, the Permittee will not be able to begin injection activity until any breaches in injection interval confining zones are resolved. Corrective action allowed under the Class III Area Permit includes locating and plugging of improperly plugged historic drillholes when they are able to be located. If there is a confining zone breach that cannot be located or physically corrected, UIC regulations and Class III Area Permit requirements also allow the Permittee to implement operational controls such as balancing flow and pressure in well patterns around a breach. If operational controls are used as the corrective action method, the Permittee must design and implement monitoring plan capable of demonstrating control of lixiviant in the areas where any breaches in the confining zone have been identified.

The EPA is aware that the Atomic Safety and Licensing Board added a requirement to the NRC License requiring Powertech to attempt to locate and properly abandon all historic drill holes located within the perimeter well ring for the wellfield prior to conducting tests for a wellfield data package. [Atomic Safety and Licensing Board, 2015, LBP-15-16 at 73]. The EPA has determined that Powertech conducted an

[9] Lilian Jones Jarding, *Uranium Activities' Impacts on Lakota Territory*, Indigenous Policy Journal Vol. XXII, No. 2 (Fall 2011).

adequate investigation to identify improperly plugged historic exploration drillholes in the Class III Permit Application and provided documentation in the Class III Permit Application. Section 4.0 of the

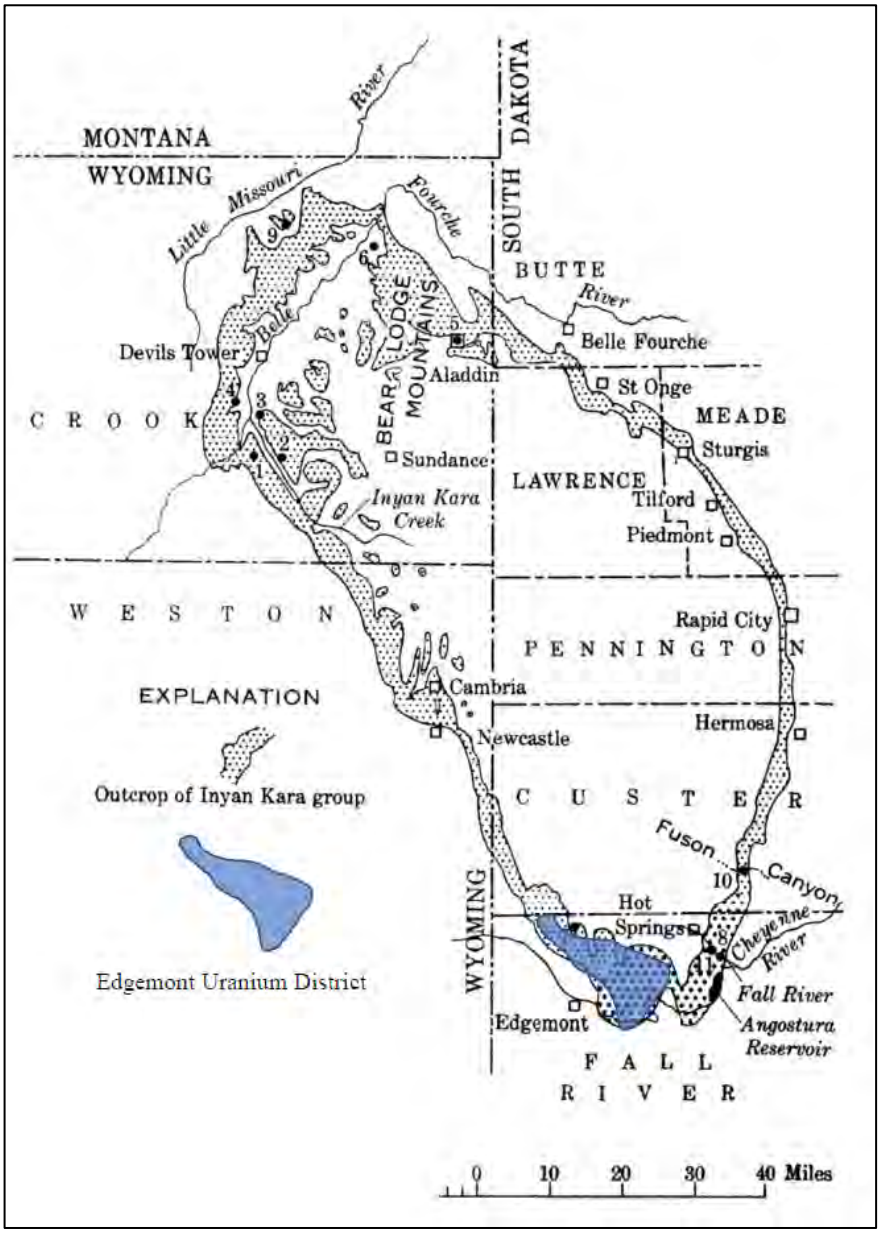


Figure 11. Inyan Kara outcrop in the Black Hills of South Dakota and Wyoming (from Figure 7, Waage, 1959)

Class III Draft Area Permit Fact Sheet discusses the Area of Review requirements Powertech had to meet in the Class III Permit Application. These investigations include an exploration drillhole inventory discussed in Section 4.2.3, an alluvial drilling program discussed in Section 4.3, evaluation of Chilson and Fall River potentiometric surface data discussed in Section 4.4 and a color-infrared (CIR) imagery analysis discussed in Section 4.5. The Class III Area Permit lists additional characterization requirements Powertech must conduct to identify improperly plugged historic exploration drillholes. However, the EPA must issue the Class III Area Permit before the requirements to conduct this characterization are enforceable.

The EPA conducted an analysis of the potential for abandoned uranium mines to impact ISR operations in a manner that would endanger USDWs and determined that this potential is minimal. See, Responses to Comments # 247 and 296. 6). The Class III Draft Area Permit Fact Sheet, at Section 4.8 discusses the details of the review. The Class III Area Permit requires the operation monitoring wells listed in Table 16 downgradient of the Triangle and Darrow pits to evaluate any impacts from the abandoned uranium mines during ISR operations.

Historic Mining and Environmental Justice Considerations

During the Tribal consultation and public comment processes, several commenters provided information regarding the impacts of contamination from historic uranium mining activities in the Black Hills region and the significance of those impacts to historical and present-day Environmental Justice. Commenters expressed that potential environmental harm from the Dewey-Burdock mining project is made more significant by past and ongoing experiences of contamination from historic uranium and other mining activities. The cumulative effects of past uranium mining, in particular, are cited as a reason that contemporary uranium mining is seen as an environmental injustice. The EPA recognizes the long history of mining in the Black Hills and associated environmental impacts; the resulting activism and Environmental Justice movements; and the effects of historic mining on Tribal cultural and spiritual interests, all contribute to concerns with this project, including concerns related to spiritual and cultural interest in the Black Hills as a sacred site. The EPA has meaningfully considered these concerns in this EJ Analysis.

9.5 Ethnographic Information on Sacred Sites and the Black Hills

The EPA has gathered information from Tribal governments, Tribal members, commenters, published studies and analyses by other federal agencies regarding the spiritual, religious and cultural significance of the Black Hills as a sacred site. The following excerpts include some background information on Native American sacred sites generally, as well as information on the Black Hills as an important sacred site to numerous Tribal Nations and members.

> History connects the dots of our identity, and our identity was all but obliterated. Our land was taken, our language was forbidden. Our stories, our history, were almost forgotten. What land, language, and identity remains is derived from our cultural and historic sites… Sites of cultural and historic significance are important to us because they are a spiritual connection to our ancestors. Even if we do not have access to all such sites, their existence perpetuates the connection. When such a site is destroyed, the connection is lost.

Chairman Dave Archambault, II, Standing Rock Sioux Tribe

"[Land] is important to Indian people in a multitude of ways; beyond subsistence, land is the source of spiritual origins and sustaining myth which in turn provides a landscape of cultural and emotional meaning. The land often determines the values of [their] human landscape."[10]

"Please understand that the places we are writing about are not just natural areas, however they may be valued as such. They are holy places – lands associated with particular origin myths, or considered to be

[10] Frank Pommersheim, *The Reservation as Place: A South Dakota Essay,* 34 S.D. L. Rev. 246, 250 (1989).

portals to the spirit world, or revered as traditional cultural sites. Sometimes a place is all three of these. What is more, they are not remnants of bygone days. They are all places presently used by Native Americans for ceremonial purposes. They are, therefore, religious sites, sanctuaries in a very real sense."[11]

The NRC's analysis associated with its separate license decision for the Dewey-Burdock project includes further information on places of religious, spiritual and cultural significance associated with Native American cultural practices and beliefs. "A sense of connectedness and duality between the spiritual and earthly works in part illustrates the tribal worldview. What is important from a tribal perspective is the interconnectedness between the physical world and spiritual world. For example, in Lakota cosmology, there exists a spiritual realm and earthly realm and what happens in one realm is reflected in the other; the two worlds are interconnected and inform the other . . . Some tribal members are able to interpret a 'sacred' landscape or feature and recognize the same spiritual and physical features that made the place sacred to their ancestors. By extension, sacred places are considered sacred to tribal groups today visiting the sacred places and retelling stories through oral tradition reinforces beliefs."[12]

"Lakota medicine man Pete Catches described Paha Sapa in 1993: 'To the Indian spiritual way of life, the Black Hills is the center of the Lakota people. There ages ago, before Columbus came over the sea, seven spirits came to the Black Hills. They selected that area, the beginning of sacredness to the Lakota people . . . . The seventh spirit brought the Black Hills as a whole—brought it to the Lakota forever, for all eternity, not only in this life, but in the life hereafter. The two are tied together. Our people that have passed on, their spirits are contained in the Black Hills. This is why it is the center of the universe, and this is why it is sacred to the Oglala Sioux. In this life and the life hereafter, the two are together.'"[13]

"The Government granted the Black Hills of South Dakota to the Indians in 1868. To the Sioux, Cheyenne, and Arapaho Indians, the Black Hills, Paha Sapa, was the center of the world, a place of holy mountains. Four years after the signing of the treaty of the Black Hills, white miners considered the Black Hills sacred for another reason: gold. By 1876, Indian tribes were driven from this region promised to them forever."[14]

In 2018, the NRC contracted for a literature review report of existing information about historic, cultural, and religious resources of significance to Tribes for purposes of its National Environmental Policy Act analysis for the Dewey-Burdock project. The Report includes information on the historical and present-day significance of the Black Hills to many Tribes. "Indeed, Wind Cave National Park (*Makha Ohloka*) in the southeastern Black Hills is believed to be *the* place of the Lakota Oglala creation story, as initially told by Oglala Sioux historian and influential spiritual leader Wilmer 'Stampede' Mesteth (*Wanapeye Najica*) (1957-2015), a member of the *Wakpa Waste Tiospaye* (Good River People), who reside at the Cheyenne Creek community on the Oglala Sioux Pine Ridge Indian Reservation, can be found at the

[11] Charles E. Little, Jake Page, *Sacred Lands of Indian America*, 8 (2001).
[12] Environmental Impact Statement for the Dewey-Burdock Project in Custer and Fall River Counties, South Dakota Supplement to the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities (2014) at 3-85.
[13] Alexandra New Holy, *The Heart of Everything That Is: Paha Sapa, Treaties, and Lakota Identity*, 23 Okla. City. U. L. Rev. 317, 318 (1998), citing Mario Gonzales, *The Black Hills*, 19 Cultural Survival Q. 63, 67 (1996).
[14] Kristen L. Boyles, *Saving Sacred Sites: The 1989 Proposed Amendment to the American Indian Religious Freedom Act*, 76 Cornell L. Rev. 1117, 1120 (1991).

NPS Wind Cave National Park Web site, in both video and text formats https://www.nps.gov/wica/learn/historyculture/the-lakota-emergence-story.htm (NPS, 2018a)."[15]

9.6 Comments Received on the Black Hills as a Sacred Site

During the Tribal consultation meetings as well as the public hearing and comment processes, the EPA Region 8 received comments describing the Black Hills as a sacred site with important religious, cultural and spiritual significance to many Tribal Nations and members. Included below are selected excerpts from several written comments that reflect the information submitted and concerns raised about this topic by a number of commenters.

> The Black Hills of South Dakota constitute among the most sacred lands to the Lakota people from time immemorial. We call the Black Hills *Wamaka Og'naka I'Cante* or 'the heart of everything that is.' It is called this because the Black Hills contain the most important religious sites of the Lakota people, including the site where Lakota people believe that our people emerged onto this earth, and sites where the Lakota people have performed annual religious ceremonies and pilgrimages since before recorded history and through today. In addition, the Lakota people lived, hunted, buried our dead, and performed our religious sacraments, including *inipi* (sweatlodge), *hanbleca* (vision questing), and other rites throughout our long history in the region. We still use the Black Hills in this way. In light of our long and rich history in this region, as well as our use and occupation of this area through the present day, there are untold sites of historical, cultural, and spiritual significance throughout the Black Hills that require careful consideration. Furthermore, the Tribe's reserved water rights themselves ·constitute a spiritual and cultural resource in light of the primary role that water plays in Lakota religious sacraments, which require environmentally and ritually pure water.

Cheyenne River Sioux Tribe comments at 2-3 (June 19, 2017).

> This is sacred land. The Black Hills are integral to our creation story, and remain an important place for pilgrimage and ceremony by our Tribal members. They are the spiritual center for the Lakota and Dakota Nation. The late David Blue Thunder, a prominent Sicangu ceremonial leader, explained that "The Black Hills are the heart of our home, and the home of our heart." (S. Hrg. 99-844, p. 234, statement of David Blue Thunder). It is akin to Jerusalem or Bethlehem, for Christianity and Judaism. It is unlikely that EPA would suggest that uranium mining waste be permitted to be injected into disposal wells at those sacred places. EPA should not permit injection wells for uranium mining wells at the Dewey Burdock project location in the Black Hills.

Standing Rock Sioux Tribe comments at 2-3 (June 18, 2017).

> The sacred nature of the Black Hills to the *Oceti Sakowin Oyate* is well documented – these are sacred lands that should not be desecrated in the manner described in the draft UIC permit. The Black Hills are integral to our creation story, and remain an important place for pilgrimage and ceremony by our Tribal members.

[15] *Compilation and Evaluation of Existing information for the National Environmental Policy Act Review of Lakota Historic, Cultural, and Religious Resources for the Dewey-Burdock In Situ Uranium Recovery Project* at 19 (June 2018) (ADAMS Accession No. ML18159A192).

Oglala Sioux Tribe comments at 3 (June 19, 2017).

In 2017, the EPA Region 8 also received comments both in writing and during Tribal consultation discussions from the following Tribes, some of which raised concerns about the proximity of the project to the Black Hills as a sacred site: the Cheyenne & Arapaho Tribes; the Crow Tribe; the Fort Belknap Indian Community; the Ponca Tribe; the Northern Arapaho Tribe; the Prairie Island Indian Community; the Shakopee Mdewakanton Sioux Community and the Upper Sioux Community. Other, non-Tribal government commenters, including organizations and individuals, also raised concerns in writing and during the public hearings describing the sacred nature of the Black Hills.

> Many sites are sacred because it is a location where an event of great spiritual significance occurred. The late Native American scholar Vine Deloria, Jr. writes, 'Tradition tells us that there are, on this earth, some places of inherent sacredness, sites that are Holy in and of themselves.'[16] Vine Deloria, Jr. writes, 'Every society needs these kinds of sacred places. They help to instill a sense of social cohesion in the people and remind them of the passage of the generations that have brought them to the present. A society that cannot remember its past and does not honor it is in peril of losing its soul.'[17]
>
> The EPA should deny the permits because environmental justice policy requires nothing less. The EPA should deny these permits in order to restore relationships with tribal communities and in recognition of the long history of environmental racism towards Native American communities as they have endured the burdens of energy production for this country.

Native Research Solutions comments, May 19, 2017 at 5-6.

> The Black Hills are sacred to the Lakota, much like Jerusalem is to the Jews or the Vatican is to Catholics. Sacred cultural and historical resources must be fully protected, and doing this relies on the involvement of knowledgeable Lakota people, plenty of time, adequate finances, and the willingness to put the sacred above the dollar. Some places should not be subjected to uranium mining. Lakota people who are sharing their ancient knowledge, which they have spent a lifetime learning, should be offered compensation for their efforts and given credit for resulting information. . . . Lakota people say "Mni Wiconi" which roughly translates to "Water is Life." Anything that threatens our water in any form in this semi-arid region is of immediate concern due to the need for water, our spiritual connection to water, and the status of the area's water under treaty law. Lakota people and their allies have a history of protecting water resources from uranium mining, and we will continue to do so.

Thunder Valley Community Development Corporation comments, June 16, 2017.

During the subsequent 2019 Tribal consultation meetings and public comment process, EPA Region 8 sought additional input to assist the EPA in its consideration of Tribal interests in the Black Hills as a sacred site with important religious, cultural and spiritual significance to many Tribal Nations and members. Many comments were received that helped enhance the EPA's understanding of the

[16] Vine Deloria, Jr., The Sacred Land Reader 18 (2003).
[17] *Id*. at 19.

significance of the Black Hills and related uses. The following are some excerpts from the comments received.

- "[T]he importance of the Black Hills to the Lakota Nation, that is our birthplace, that is our creation story, that is where we come from."

- "The Black Hills are sacred to the Lakota, much like Jerusalem is to the Jews or the Vatican is to Catholics."

- "And in that area there's sacred sites, traditional Lakota burial sites as well as different parts of, you know, where you would find historical petroglyphs and different sacred sites like that."

- "[T]he Black Hills are considered in a historic context, rather than in a modern context that recognizes their continuing importance to the Lakota people."

- "To Indigenous peoples, contamination of water also raises cultural concerns. To Indigenous peoples, water, in particular, holds special meaning and is regarded as a sacred element. Indigenous cultures all over the world recognize a simple predicate: water is life. Water is identified as the first medicine. It is the first environment in which we live while we are being carried in our mothers. It is an offering made in prayer ceremonies and is a spiritual being in and of itself."

- "[T]he water that you found underneath is undrinkable. Yeah, maybe undrinkable to humans, but it's not undrinkable to the earth. It's not undrinkable to the soil. It's not undrinkable to the plants or the rivers that it will be flowing into. We need water."

- "The Black Hills, known as Paha Sapa to the Lakota, are the center of their spiritual and cultural universe. To the Lakota, throughout all of Creation, Paha Sapa has been "The Heart of Everything That Is." Lakota medicine man Pete Catches, describes the relationship between Papa Sapa and the Lakota. 'To the Indian spiritual way of life, the Black Hills is the center of the Lakota people. There ages ago, before Columbus came over the sea, seven spirits came to the Black Hills. They selected that area, the beginning of sacredness to the Lakota people… The seventh spirit brought the Black Hills as a whole--brought it to the Lakota forever, for all eternity, not only in this life, but in the life hereafter. The two are tied together. Our people that have passed on, their spirits are contained in the Black Hills. This is why it is the center of the universe, and this is why it is sacred to the Oglala Sioux. In this life and the life hereafter, the two are together.'"

- "The Black Hills or the HeSapa are very sacred for us as they tell of our creation, our traditional teachings, it holds spaces for our spiritual ceremonies, and it provides our natural foods and plant medicines. It is also home to wildlife. This land is our "Church" and where we put our prayer altars -- it is known to us as "The Heart of Everything That Is." The HeSapa holds eons of memory in our DNA and Water is our main entity - Mni

Wicozani; Water is Life. Water is Alive. Water is Sacred. Says so in the Christian Bible, too."

- "Crazy Horse told his people he wanted them to remember him whenever they saw the Black Hills. This is sacred land. Visitors to this area come for contemplation, rejuvenation, and inspiration. I believe strongly in the value of our natural environment. These treasures must be protected as unique and important to our history, the people who live in the Black Hills, travelers to the area, the larger environment, and the people of the world."

During consultation discussions with Tribal government and the 2017 and 2019 public comment periods, the EPA also received many comments describing Tribal historic and present-day uses of the Black Hills as a sacred site. Some expressed concern that specific environmental resources and Tribal member uses of those resources may be adversely impacted by the EPA's action. Several of the comments from Tribal governments, Tribal members and other interested stakeholders capture common themes and are quoted below.

- "[T]he Lakota people lived, hunted, buried our dead, and performed our religious sacraments, including *inipi* (sweatlodge), *hanbleca* (vision questing), and other rites throughout our long history in the region. We still use the Black Hills in this way. In light of our long and rich history in this region, as well as our use and occupation of this area through the present day, there are untold sites of historical, cultural, and spiritual significance throughout the Black Hills that require careful consideration. Furthermore, the Tribe's reserved water rights themselves ·constitute a spiritual and cultural resource in light of the primary role that water plays in Lakota religious sacraments, which require environmentally and ritually pure water."

- "The site of the proposed Dewey-Burdock Uranium Mine is within the Tribe's 1851 territory. Specifically, it is in the vicinity of the Black Hills, among the most sacred sites to the Lakota people. Our people lived in this area, hunted in this area, and made religious pilgrimages in this area from time immemorial."

- "Water is an essential component of one of our most important religious sacraments – the inipi ceremony or sweat lodge. This sacrament requires that we use only water that is both environmentally and ritually pure. As noted above, the Tribe has very limited access to water on the Reservation and relies solely on water drawn from the confluence of the Cheyenne River and the Missouri River at Lake Oahe for its drinking water and which represents reserved water rights of the Tribe. Upstream contamination of these waters in which the Tribe owns reserved water rights has the very serious potential to affect the Tribe's and its members' religious exercise in violation of the Religious Freedom Restoration Act."

- "Sacred site wisdom tied to star knowledge and ongoing spiritual practice intellectually, culturally, and spiritually belongs to the Lakota people. Lakota people have ancient connections to the Black Hills, including the Dewey Burdock winter camp area: sacred

sites above and below ground, caves, fault lines, and ancient migration sites. Elders and spiritual practitioners have vast knowledge far beyond the comprehension of the Western education system, and this knowledge cannot be appropriated, diminished, or dismissed.

- "The Tribe's reserved water rights themselves constitute a spiritual and cultural resource in light of the primary role that water plays in Lakota religious sacraments, which require environmentally and ritually pure water."

- "Traditional ceremonial activities which demonstrate the sacred nature of Black Hills to tribes include: Personal Rituals: Prayer offerings (bundles and cloths), sweatlodge ceremonies, vision quests, funerals. Group Rituals: Sun Dance. Sacred Narratives: Origin legends, legends of culture heros, and legends of the origins of ceremonies and sacred objects. Today we are seeking to: (1) continue our religious practice as we have traditionally (2) maintain the land that has ancestral significance and provides deep ties to our culture that has been severely affected by colonization and American expansion, (3) preserve the land in its natural state and maintaining its deep, religious connections, and finally, (4) protect and preserve the soil – it is the foundation of healthy land and water."

- "This is our church, this whole Black Hills area, from the top to the bottom. And the reason I know this is because my grandmas, we come from Oglala, and we gather -- we gather our plants and fruits and vegetables, and everything is provided for us here. and we still make our trek here and gather our fruits and our vegetables, our food and our medicines. And you know what? Whew. I -- I have a friend that lives in this area, and I gathered some tipsila, which is our fruit. They are all deformed. They are all sick. So we can't come here and gather our food there. They destroyed it, and they want to keep destroying it. That we got this water over here in Hot Springs. They call it kidney water, and it comes right from this aquifer, Inyan Kara, and this is sought-after water. It's healing water. And this is the same water these guys here want to contaminate and claim."

- "I do a lot of medicinal herbs, like a botanist, but I brought some plants and herbs here that I study. And through my great-grandfather and some uncles of mine, they taught me the study of plant life.

  I have five plants here that grow within the Black Hills and the reservation lands. And one time out of every year, we go to harvest these. This is -- it's called -- you call it kinnikinnick. It's the bark and the inner layer of the chokecherry tree that we dry and we smoke in our pipes. It's nonchemical. There's no chemicals in it. It's natural. And my grandfather used to say when you smoke that, you smoke it with reverence and respect to Mother Earth. And there's actually healing properties in all these plants. And he says, the kinnikinnick, if you smoke it without the medicinal -- without the chemicals in it, it has a healing power for your lungs and your upper gastric system."

> And I also have sage. And a lot of you do use sage, I know, a lot of cooking. For us, we make tea out of it, and that's also good for your upper gastric and your gastrointestinal.
>
> If you allow this injection or the pollution of our land to continue, you will make our plants sick also. And with that, it won't work for us because plants are our powerful medicine. You have to believe in it, and that's where the pharmaceutical people get their knowledge from, is our plants."

9.7 EPA SDWA Actions and Tribal Interests in the Black Hills

The EPA has considered and acknowledges the impacts on Tribal spiritual and cultural interests in the Black Hills as a sacred site described during EPA consultation discussions with Tribal governments and in comments received on this topic from Tribal governments, Tribal members and other interested parties during the public comment processes. While recognizing these interests, the EPA's authorities to address potential impacts from its SDWA actions are limited to the protection of underground sources of drinking water. More specifically, the EPA may regulate to protect groundwater that supplies or can reasonably be expected to supply any public water system from any contaminant that may be present as a result of underground injection activities. SDWA § 1421(d)(2); see also 40 C.F.R. § 144.12(a). The purpose of the UIC regulations is to prevent the movement of fluids containing contaminants into USDWs if the presence of those contaminants may cause a violation of a primary drinking water regulation or otherwise adversely affect human health. See 40 C.F.R. § 144.12(a). This section provides further information below to address the concerns raised by Tribal governments, Tribal members and other interested parties.

Water Resources

Within the scope of the SDWA authorities, in developing the Class III and Class V Area Permits, the EPA took into consideration that the Dewey-Burdock Project Site is located in the southern Black Hills, an area sacred to a number of Tribal Nations, and that the deep well injection zone is located just above the Madison Formation, which serves as a source for public drinking water systems. The extensive permit requirements in the Area Permits ensure the protection of underground sources of drinking water, including those on which commenters place special importance. Specifically, the permits contain protective requirements, including: extensive evaluation and characterization of injection zone and confining zone hydrogeologic conditions; protective injection well construction and operating requirements; and extensive monitoring programs that are designed to detect any threat to USDWs in a timely manner so that the Permittee can implement corrective measures, if necessary, before USDWs are affected. The Permittee must demonstrate in a Wellfield Closure Plan that no ISR contaminants will cross the aquifer exemption boundary. The UIC permit conditions prevent the migration of fluids to the Inyan Kara USDW outside the aquifer exemption area, thus protecting against endangerment of the USDW with respect to all potentially-affected communities. Section 10.2 of this EJ Analysis provides additional information on the UIC permit requirements.

EPA Region 8 leadership traveled to a number of locations to meet with Tribes, including the Oglala Sioux Tribe (OST) and the Standing Rock Sioux Tribe (SRST) as summarized in Appendix F. Tribes expressed concerns about the potential impacts of ISR activities on the water quality of the Cheyenne

River, the Madison aquifer specifically and on groundwater quality in general. The OST, CRST and other Tribes expressed concerns about potential surface water and groundwater impacts from the ISR operation, as it pertains to the EPA's proposed UIC permitting and aquifer exemption actions. Tribes noted that the proposed Minnelusa injection zone for the Class V deep injection wells lies above the Madison Formation aquifer, which is an important drinking water supply in western South Dakota. Tribes were concerned that several ISR contaminant concentrations remained elevated after groundwater restoration has been completed in every Class III uranium ISR wellfield. This caused additional concern that migration of these contaminants has not been tracked by post-restoration monitoring outside the wellfield.

The EPA responded to these concerns by conducting an analysis of the confining zone between the Minnelusa injection zone and the Madison aquifer, which is the confining zone underlying the injection zone, to verify the effectiveness of this confining zone to prevent fluid movement from the Minnelusa injection zone into the Madison aquifer. The EPA examined the underlying confining zone in a number of oil and gas well logs to verify the presence of approximately 400 feet of low permeability geologic units. If water supply wells completed in the Madison aquifer are constructed at the site, the Class V Area Permit requires Powertech to verify the presence of this confining zone during the drilling of Madison water supply wells. The Class V Area Permit also requires characterization of the confining zone overlying the injection interval. These measures will help ensure that overlying aquifers will not be impacted by injection zone fluids migrating across confining zones into aquifers outside of the intended injection zone. The Class III Area Permit requires characterization of confining zone to help ensure that injection zone fluids do not flow upwards to the surface along breaches in confining zones and to minimize potential impacts to surface water.

To address concerns about migration of elevated ISR contaminants in restored wellfields, EPA requires a Wellfield Closure Plan in Part IV, Section D of the Class III Area Permit. The purpose of the Wellfield Closure Plan is to demonstrate that no ISR contaminants will cross the aquifer exemption boundary into the USDW. The Wellfield Closure Plan must include data collection to develop a Conceptual Site Model (Part IV, Section A) to support development of geochemical model (Part IV, Section B) to evaluate the fate and transport of ISR contaminants with elevated concentrations in the restored wellfield. Part IV, Section C of the Class III Area Permit requires the Permittee to conduct monitoring, laboratory testing, and/or other field investigations in order to calibrate the geochemical model with site-specific data to minimize uncertainty concerning the potential for ISR contaminants to cross the aquifer exemption boundary.

Past mining and mineral beneficiation activities involved excavation of open pits, underground working, generation of waste rocks piles, heap leaching units and tailings piles. Although the ISR process involves the drilling and construction of hundreds of wells for injection of lixiviant and recovery of uranium-bearing solutions, the process is much less invasive compared with the historic mining methods. The impacts to the surface are temporary and will be restored to pre-mining uses after site decommissioning. Impacts to groundwater will also be restored, if not to pre-mining conditions, to the levels of alternative concentrations limits as approved by the NRC based on determination that these levels are protective to human health and the environment. The EPA UIC Class III Area Permit requires Powertech to demonstrate through geochemical modeling, calibrated by monitoring in the field, that no ISR

contaminants will cross the aquifer exemption boundary into USDWs. The Class III Area Permit also contains requirements designed to prevent impacts to surface water at the site, such as characterization of the effectiveness of confining zones and identification and plugging of improperly plugged historic boreholes.

EPA Region 8 has included permit conditions to prevent the migration of fluids to the USDW, thus protecting against endangerment of the USDW with respect to all potentially-affected communities, including minority, low-income and/or indigenous communities. The aquifer exemption is similarly protective of all potentially affected communities because it includes a determination that the portion of the aquifer being exempted for mining is not a current source of drinking water and cannot and will not serve as a source of drinking water in the future.

Water and Land Uses and Activities

Many of the comments raise concerns about impacts from the EPA's actions on present-day activities and uses of the water resources in the Black Hills - including religious pilgrimage and ceremonies, personal prayer, camping, hunting, funerals, burial of the dead, Sun Dance, performing religious sacraments (including sweatlodges and vision questing) and other rites, use of water to grow fruits and vegetables for human consumption as well as plants and herbs for medicinal purposes and sacred narratives (including Origin legends, legends of culture heros, and legends of the origins of ceremonies and sacred objects).

The EPA does not agree that its actions would have an effect on these activities and uses of the water in the Black Hills outside the Project Area. Within the Project Area, the land is privately-owned and these activities and water uses could not occur without permission from the land owner. In addition, at the Project Site, the impacted areas of the Inyan aquifers are 200 to 900 feet below the surface and based on the permit conditions, contaminants are not projected to affect the groundwater beyond the horizontal extent of the aquifer exemption boundary. Surface impacts within the Project Area will be temporary and restored to pre-mining conditions after site decommissioning. Potential effects on cultural resources in the Area of Potential Effects for the Project are be addressed through the NHPA section 106 consultation and review process. The EPA's action does not authorize land impacts outside the Project Area. With respect to potential surface water impacts outside the Project Area, as discussed in section 6.0 of this Analysis the Permittee must demonstrate adequate confining zones above and below the injection intervals and external mechanical integrity of injection, production and monitoring wells through the confining zones before EPA will issue authorization to inject. Therefore, no contaminants will affect downgradient surface waters. The depth of the Minnelusa aquifer ranges between 1530 to 1840 feet at the Project Site and does not flow to ground level in this area. Thus, the groundwater affected by the EPA's UIC permits will not impact surface water currently being utilized outside the Project Area for the activities described above; including for the growth of fruits, vegetables, herbs or other plants, or for ingestion by animals or for any present-day sweatlodge or other ceremonial activities occurring in the Black Hills. With respect to groundwater, any ceremonial activities that require 'pure' water or other uses described above, would not be utilizing the portions of the Inyan Kara and Minnelusa aquifers affected by the EPA's action due to depth and water quality in these underground aquifers. The Minnelusa aquifer has high concentrations of total dissolved solids, sulfate, arsenic, selenium and strontium and the ore-

bearing portions of the Inyan Kara aquifers have high radium, gross alpha and radon. (EPA Memorandum Documenting Inyan Kara and Minnelusa Aquifer Groundwater Quality)

With respect to potential impacts to water resources in the Black Hills, because there will be no impacts to USDWs outside the aquifer exemption boundary within the Inyan Kara aquifers and no injection can occur under the Class V Area Permit unless the Minnelusa aquifer is *not* an underground source of drinking water (USDW), the EPA has determined that there will be no adverse impacts to USDWs from its UIC permit authorizations and potential surface water impacts would be limited to the Project Area. Please refer to Sections 5.0 and 6.0 of this EJ Analysis, Sections 3.0 and 4.0 of the Cumulative Effects Analysis and Response #239 in the Response to Comments document for additional detailed information on the extent of potential surface and groundwater impacts.

10.0 EPA Enhanced Public Participation and Exercise of Discretion in Considering Environmental Justice Concerns

Executive Order 12898 acknowledges federal agencies' discretion in determining how to best implement this order, but only "to the extent permitted by existing law." Exec. Order No. 12,898 § 6-608, 59 Fed. Reg. at 7632. Thus, the Executive Order does not dictate a particular outcome in a permit decision. The Environmental Appeals Board has identified two areas where the Region may – in the exercise of its discretion – address EJ concerns in considering a proposed UIC permit. *See In re Jordan Dev. Co.* UIC Appeal No. 18-6, 18-07, 18-08, 18-09, *Slip op.* at 14 (August 8, 2019), citing *In re Envotech*, 6 E.A.D 260 (1996). One area is public participation, "to assure early and ongoing public involvement in the permitting process." The second area is the possible exercise of UIC regulatory omnibus authority, which states that permit issuers "shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water." 40 CFR 144.52(a)(9). However, the omnibus authority is "limited to ensuring the protection of the USDWs upon which the minority or low-income community may rely." *Envotech*, 6 E.A.D. at 281. It does not include "authority to redress impacts unrelated to the protection of underground sources of drinking water, such as alleged negative economic impacts on the community, diminution in property values, or alleged proliferation of undesirable land uses." *Id*. at 281-82.

10.1 Enhanced Public Participation

Generally, when a commenter submits at least a superficially plausible claim that a proposed underground injection well may disproportionately impact the drinking water of a minority or low-income population, the Region may exercise its discretion to assure early and ongoing opportunities for public involvement in the permitting process. In this instance, Region 8 determined early on, that it is important to its decision-making process to conduct enhanced public participation and outreach activities with the aim of encouraging public involvement in the Dewey-Burdock UIC permitting process. We note that while the Tribal consultation efforts described in Section 9.1 are a separate process from, and in addition to, the public participation process, all input received on this EJ Analysis through the Tribal consultation and public participation processes have been considered.

UIC regulations at 40 CFR § 124.10 require a 30-day period for public comment on the draft UIC permitting actions and state that the EPA will conduct a public hearing upon request from the public.

During the 2017 public comment period, the EPA Region 8 exercised its discretion to enhance the public participation process beyond this regulatory requirement, in the following manner:

- extended the 2017 draft permit public comment period by 76 days (for a total of 106 days);
- preemptively scheduled public hearings without requiring the public to request them;
- held public hearings in the City of Edgemont, Rapid City, and Hot Springs, South Dakota and in Valentine, Nebraska:
    - the City of Edgemont was selected as a public hearing site in consideration of the information developed in the EJSCREEN process;
    - the Rapid City, South Dakota location was selected because it is closer to the Cheyenne River Sioux Tribe than the two public hearings in Edgemont and Hot Springs;
    - the hearing in Hot Springs was intended to provide a venue closer to the western portion of the Pine Ridge Reservation so that Oglala Sioux Tribal members and others could more easily participate;
    - the hearing in Valentine, Nebraska was intended to provide a venue closer to the eastern portion of the Pine Ridge Reservation, the Rosebud Sioux Tribe, the Santee Sioux Tribe and the Ponca Tribe of Nebraska so that Tribal members and others could more easily participate; and
- held public informational meetings and outreach sessions prior to each public hearing in order to provide the local communities the opportunity to receive additional information about the EPA's proposed actions.

During the 2019 public comment period, EPA Region 8 exercised its discretion to enhance the public participation process beyond the regulatory requirement of 40 CFR § 124.10 in the following manner:

- EPA preemptively scheduled a public hearing without waiting for a request from the public as set forth in the regulations. The public hearing was held in Hot Springs, South Dakota on Saturday, October 5, 2019. Hot Springs was selected because of its central location to the interested parties that attended the previous public hearings;
- EPA originally allowed 45 days, rather than 30 days, for the 2019 public comment period; and
- EPA also used its discretion to extend the public comment period for an additional 63 days response to requests from the public. The total extent of the 2019 public comment period was 108 days.

EPA invited the public to review and comment on both the 2017 and 2019 draft EJ Analysis and received additional comments on impacts from mining within the Black Hills, sacred aspects of the Black Hills and impacts to Native Americans and Native American communities.

10.2 Exercise of Discretion in Considering EJ Concerns

Within the scope of its SDWA authorities, the EPA has considered the concerns raised by Tribal governments and other commenters regarding potential impacts of the EPA's actions on the water quality of the Cheyenne River, the Madison aquifer specifically and on groundwater quality in general. For example, in response to concerns raised by Tribal governments and other interested parties, and consistent with the goals of Executive Order 12898, the Region conducted additional analysis and incorporated conditions into the permit that are not mandated by the UIC regulations but are within the Region's discretion to require. More specifically, in response to Tribal concerns and other comments received on the first draft Class V Area Permit, the EPA conducted additional analysis of the confining zone between the Minnelusa injection zone and the Madison aquifer (which is the confining zone underlying the injection zone) and verified the presence of approximately 400 feet of low-permeability geologic units in the Lower Minnelusa Formation. In the exercise of the EPA's UIC regulatory omnibus authorities under the SDWA, the Class V Area Permit requires Powertech to verify the presence of Minnelusa confining zones during the drilling of any Madison water supply wells and requires characterization of the lower confining zone underlying the Minnelusa injection interval. These measures will help verify that overlying and underlying aquifers will not be impacted by injection zone fluids migrating across confining zones and into aquifers outside of the intended injection zone. In response to commenters' concerns that Powertech would inject waste fluids from other sites into the Class V wells, the Class V Area Permit limits injection fluids to waste fluids from the ISR process generated by the Dewey-Burdock Project: injection of waste fluids produced at any other sites is prohibited. Limiting the Class V injectate to only waste fluids generated at the Dewey-Burdock Project Site will help ensure the waste fluid volume is manageable, so injection rates are able to be maintained below permit limits. These permit requirements are in response to concerns raised by Tribal governments and other interested parties about potential adverse impacts to the Madison Formation aquifer.

EPA utilized its discretionary authority to require additional scrutiny of confining zones under the Class III Area Permit requirements to protect alluvial aquifers and prevent leakage from injection intervals to the surface. This additional scrutiny is in response to concerns from Tribes about impacts to the Cheyenne River expressed early in EPA's Tribal consultation process (note March 2013 web conference on impacts to the Cheyenne River in Table 1). The Class III Area Permit requires the Permittee to: 1) develop detailed wellfield cross sections showing thickness and continuity of confining zones through each wellfield; 2) identify known or suspected locations of exploration drillholes within the wellfield area and adapt the pump test design to detect evidence of inter-aquifer communication at drillhole locations; and 3) demonstrate external mechanical integrity testing of monitoring wells that penetrate confining zones to verify these wells do not create pathways for lixiviant to move out of the injection interval. The Permittee must plug and abandon and replace any monitoring well for which external mechanical integrity cannot be demonstrated.

UIC regulations allow ISR operations in areas where well pump test results indicate the presence of a breach in a confinement zone that the Permittee cannot precisely locate in order to perform corrective action or cannot eliminate through the application of best available technology, but requires operational controls and monitoring as the corrective action plan. The Class III Area Permit specifies that the Director may require the Permittee to perform groundwater modeling or additional pump testing to

demonstrate that the wellfield design and monitoring systems are sufficient to control and detect any potential excursions in this area before EPA authorizes injection into the wellfield. Under Part III Correction Action requirements, if a vertical excursion cannot be controlled in one of these breach areas during ISR operations because operational controls are not effective, the Class III Area Permit requires the Permittee to cease further injection activity in this location. The Permittee must remediate any vertical excursions that have occurred in this area. The Permittee must continue excursion monitoring in this area even though there is no longer any injection activity occurring.

The Class III Area Permit requires the Permittee to demonstrate in a Wellfield Closure Plan that no ISR contaminants will cross the aquifer exemption boundary and impact the Inyan Kara USDW. The Class III Area Permit also requires the Permittee to monitor for expanding excursion plumes and to develop a geochemical model to determine if a confirmed expanding excursion plume would result in ISR contaminants crossing the AE boundary. These requirements will prevent ISR contaminants from impacting downgradient users of Inyan Kara aquifers and downgradient areas where Inyan Kara aquifer may recharge the Cheyenne River. Finally, in the exercise of its omnibus authorities, the UIC permits require the permittee to submit to the EPA, an Application for Construction Approval for the treatment and storage ponds under the Clean Air Act, 40 C.F.R. Part 61, Subparts A & W before the EPA would issue an authorization to inject.

Thus, the EPA has considered all relevant comments, including those asserting impacts on Tribal spiritual and cultural interests, in exercising its discretion within the scope of the Agency's SDWA UIC authorities to include permit conditions to protect against endangerment of the USDW with respect to all potentially-affected communities..

In summary, Region 8 has included the following Class III and Class V Area permit conditions to prevent the migration of fluids to the USDW, thereby protecting against the endangerment of the USDW with respect to potentially-affected communities:

- consider the downgradient underground sources of drinking water and private wells completed in the Class III injection zone by requiring Powertech to develop a Wellfield Closure Plan including a geochemical model and targeted monitoring requirements to verify that no ISR contaminants cross the aquifer exemption boundary;
- consider the deep Class V well injection zone located just above the Madison Formation by additional EPA analysis of the lower Minnelusa confining zone and a requirement for the Permittee to verify the integrity of the Minnelusa confining zones in the Madison water supply wells, if they are drilled, thus protecting the Madison aquifer and other USDWs;
- impose requirements for additional hydrogeologic characterization and monitoring that must be met before the EPA will authorize operation of the injection wells, including:
    - extensive evaluation and characterization of injection zone and confining zone hydrogeologic conditions for both the Class III ISR and Class V deep injection wells;
    - protective construction and operating requirements for injection wells; and

- demonstration that extensive excursion monitoring programs are in place for the Class III wellfields that are designed to detect any threat to USDWs in a timely manner enabling Powertech to implement recovery measures before USDWs are impacted;

- include in the Class III permit, a robust conceptual site model designed to support geochemical models calibrated by field sampling and monitoring programs that will lead to a Wellfield Closure Plan designed to protect USDWs;

- impose on EPA an additional notification requirement to the public and Tribal governments identified in Table 1 of the EPA NHPA document on violations of permit requirements in order to improve transparency to the public in the event that permit conditions are violated; and

- require the written reports that are due 5 days after the 24-hour notification of a permit violation per UIC regulation 40 CFR § 144.51(l)(6) be provided to the Director in electronic format, as well as in writing, for release to the public and tribal governments on the EPA Region 8 UIC website. The report must contain a description of the noncompliance and its cause, the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue and the steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

11.0 Conclusion

The EPA Region 8 has prepared this EJ Analysis consistent with Executive Order 12898 which directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. Consistent with the EPA Region 8 Guidance on Regional Implementation Plan to Promote Meaningful Engagement of Overburdened Communities in Permitting Activities, where the EPA Region 8 identifies a significant federal permit application in a potentially overburdened community, the Region will evaluate the need to take enhanced action to ensure meaningful public involvement in that permitting process. Identifying a potentially overburdened community is not a determination on whether or not the proposed federal programs, policies or activities may have disproportionately high and adverse human health or environmental effects on minority or low-income communities.

The EJ Analysis includes a Study Area comprised of a 20-mile buffer zone measured from the approximate Dewey-Burdock Project Area Boundary. The EPA conducted a preliminary EJ screening process of the Study Area based upon demographic and environmental indicators, as well as a more targeted preliminary screening of an area comprised of a 5-mile radius around Edgemont, South Dakota, which lies within the Study Area. Based on the preliminary screening processes and additional evaluation, the EPA Region 8 considers the City of Edgemont, South Dakota to be a potentially overburdened community.

This EJ Analysis reflects EPA's decision in 2019 to expand the scope of the EJ analysis in two ways: 1) to include consideration of tribal spiritual and cultural interests in the Black Hills which, in its entirety, extends beyond 20 miles from the project area; and 2) although the formal Indian Reservations of potentially affected Indian tribes are located well beyond the 20-mile radius, this revised analysis

considers tribal spiritual and cultural interests in the Black Hills regardless of where the tribal members may permanently reside. The EPA recognizes that many tribes and tribal members hold spiritual and cultural interests in the Black Hills, and EPA thus revised the EJ Analysis to include consideration of those interests in the Black Hills as a sacred site to many Native American tribes. However, the EJ Analysis maintains the 20-mile radius for the EJSCREEN analysis of demographic, socioeconomic and environmental indicators, because the analysis is based upon the farthest potential environmental impacts from EPA's action.

This EJ Analysis includes information on the Black Hills that the EPA received during Tribal consultation discussions as well as the public participation processes and describes historic and current information on mining activities in the Black Hills. Based on this information, the EPA has identified Tribal Nations, and Tribal members, with interests in the Black Hills as a sacred site as potentially overburdened populations. Consistent with the federal government's trust responsibility to federally-recognized tribes and the EPA Policy on Consultation and Coordination with Indian Tribes, the EPA Region 8 has engaged in consultation outreach and discussions with numerous Tribal governments.

As described above, in consideration of the EJSCREEN information relevant to the Edgemont Area and the Tribes' interests in the Black Hills as a sacred site, Region 8 determined that it was important to its decision-making process to exercise its discretion to conduct enhanced public participation and outreach activities with the aim of encouraging public involvement in the Dewey-Burdock UIC permitting process. The EPA has also considered all relevant comments, including those asserting impacts on Tribal spiritual and cultural interests, in exercising its discretion within the scope of the Agency's SDWA UIC authorities to include permit conditions to protect against endangerment of the USDW with respect to all potentially-affected communities.

Region 8 is including the permit conditions described herein, based on its findings that the conditions in the permits are sufficient to prevent the migration of fluids to the USDW, and thus protect against endangerment of the USDW with respect to all potentially-affected communities, including minority, low-income and/or indigenous communities. The aquifer exemption decision is similarly protective of all potentially affected communities because it includes a determination that the portion of the aquifer being exempted for mining is not a current source of drinking water and cannot now and will not in the future serve as a source of drinking water. Based on these findings, the Region concludes that its UIC permit and aquifer exemption actions will not result in disproportionately high and adverse impacts to minority, low-income and/or indigenous populations. Notwithstanding this conclusion, the Region has engaged in enhanced public outreach and participation in the permitting process and has exercised its discretion consistent with its UIC regulations, to include permit conditions to protect against endangerment of the USDW with respect to all potentially-affected communities.

APPENDIX A

EJSCREEN INFORMATION

(from the EPA website: https://www.epa.gov/ejscreen)

EJSCREEN is an environmental justice mapping and screening tool that provides the EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. EJSCREEN users choose a geographic area; the tool then provides demographic and environmental information for that area. All of the EJSCREEN indicators are publicly-available data. EJSCREEN simply provides a way to display this information and includes a method for combining environmental and demographic indicators into EJ indexes.

EJSCREEN includes:

- 11 environmental indicators
- 6 demographic indicators
- 11 EJ indexes

Each of these items are discussed in more detail below.

Overview of the 11 Environmental Indicators in EJSCREEN

Key Medium	Indicator	Details	Source	Data Year
Air	National-Scale Air Toxics Assessment (NATA) air toxics cancer risk	Lifetime cancer risk from inhalation of air toxics	EPA NATA	2011
Air	NATA respiratory hazard index	Air toxics respiratory hazard index (ratio of exposure concentration to health-based reference concentration)	EPA NATA	2011
Air	NATA diesel PM	Diesel particulate matter level in air, µg/m^3	EPA NATA	2011
Air	Particulate matter	$PM_{2.5}$ levels in air, µg/m^3 annual avg.	EPA, Office of Air and Radiation (OAR) fusion of model and monitor data	2012
Air	Ozone	Ozone summer seasonal avg. of daily maximum 8-hour concentration in air in parts per billion	EPA, OAR fusion of model and monitor data	2012
Air/other	Traffic proximity and volume	Count of vehicles (AADT, avg. annual daily traffic) at major roads within 500 meters, divided by distance in meters (not km)	Calculated from 2014 U.S. Department of Transportation (DOT) traffic data, retrieved 2016	2014

Key Medium	Indicator	Details	Source	Data Year
Dust/ lead paint	Lead paint indicator	Percent of housing units built pre-1960, as indicator of potential lead paint exposure	Calculated based on Census/American Community Survey (ACS) data, retrieved 2015	2010-2014
Waste/ air/ water	Proximity to Risk Management Plan (RMP) sites	Count of RMP (potential chemical accident management plan) facilities within 5 km (or nearest one beyond 5 km), each divided by distance in kilometers	Calculated from EPA's RMP database, retrieved 12/01/2015	2015
Waste/ air/ water	Proximity to Treatment Storage and Disposal Facilities (TSDFs)	Count of TSDFs (hazardous waste management facilities) within 5 km (or nearest beyond 5 km), each divided by distance in kilometers	Calculated from EPA's Resource Conservation and Recovery Act (RCRA) Info database, retrieved 12/08/2015	2015
Waste/ air/ water	Proximity to National Priorities List (NPL) sites	Count of proposed or listed NPL - also known as superfund - sites within 5 km (or nearest one beyond 5 km), each divided by distance in kilometers	Calculated from EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database, retrieved 10/30/2015	2015
Water	Proximity to major direct water dischargers	Count of National Pollutant Discharge Elimination System (NPDES) major direct water discharger facilities within 5 km (or nearest one beyond 5 km), each divided by distance in kilometers	Calculated from EPA's Permit Compliance System/ Integrated Compliance Information System (PCS/ICIS) database, retrieved 11/30/2015	2015

Note: EJSCREEN's EJ Indexes also include demographic information that is obtained from the U.S. Census Bureau's American Community Survey (ACS). The 2016 version of EJSCREEN includes 2010-2014 ACS 5-year summary file data, which is based on 2012 Census boundaries.

It is important to understand what each of these is measuring or indicating, in order to use EJSCREEN appropriately. There are important caveats and limitations to these screening-level indicators and anyone using EJSCREEN is encouraged to read these carefully.

Read more information about Environmental Indicators (PDF)(123 pp, 1 MB), including documentation of data sources.

Some of these environmental indicators quantify proximity to and the numbers of certain types of potential sources of exposure to environmental pollutants, such as nearby hazardous waste sites or traffic.

The lead paint indicator indicates the presence of older housing, which often, but not always, indicates the presence of lead paint, and therefore the possibility of exposure. In some cases, the term "exposure" is used very broadly here to refer to the potential for exposure. Other indicators in EJSCREEN are estimates of ambient levels of air pollutants, such as $PM_{2.5}$, ozone and diesel particulate matter. Still others are actual estimates of air toxics-related cancer risk or a hazard index, which summarizes the ratios of ambient air toxics levels to health-based reference concentrations. In other words, these environmental indicators vary widely in what they indicate

Overview of the 6 Demographic Indicators in EJSCREEN

EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors included in this screening tool, as explained further in the EJSCREEN Technical Documentation. EJSCREEN has been designed in the context of EPA's EJ policies, including EPA's Final Guidance on Considering Environmental Justice During the Development of an Action (U.S. EPA, 2010) (PDF)(56 pp, 594 K). That guidance document explained EPA's focus on demographics as an indicator of potential susceptibility to environmental pollution.

There are six demographic indicators:

1. **Percent Low-Income**:
    - The percent of a block group's population in households where the household income is less than or equal to twice the federal "poverty level."
2. **Percent Minority**:
    - The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial.
3. **Less than high school education**:
    - Percent of people age 25 or older in a block group whose education is short of a high school diploma.
4. **Linguistic isolation**:
    - Percent of people in a block group living in linguistically isolated households. A household in which all members age 14 years and over speak a non-English language and also speak English less than "very well" (have difficulty with English) is linguistically isolated.
5. **Individuals under age 5**:
    - Percent of people in a block group under the age of 5.
6. **Individuals over age 64**:
    - Percent of people in a block group over the age of 64.

EJSCREEN provides two indexes that are based on the above demographic indicators:

- **A Demographic Index** is based on the average of two demographic indicators; Percent Low-Income and Percent Minority.
- **A Supplementary Demographic Index** is based on the average of the all six demographic indicators.

Read more detailed information about Demographic Indicators in the EJSCREEN Technical Documentation, including data sources.

The Environmental Justice Indexes in EJSCREEN

The EJ index is a combination of environmental and demographic information. There are twelve EJ Indexes in EJSCREEN reflecting the 11 environmental indicators. The 11 EJ Index names are:

1. National Scale Air Toxics Assessment Air Toxics Cancer Risk
2. National Scale Air Toxics Assessment Respiratory Hazard Index
3. National Scale Air Toxics Assessment Diesel PM (DPM)
4. Particulate Matter (PM2.5)
5. Ozone
6. Lead Paint Indicator
7. Traffic Proximity and Volume
8. Proximity to Risk Management Plan Sites
9. Proximity to Treatment Storage and Disposal Facilities
10. Proximity to National Priorities List Sites
11. Proximity to Major Direct Water Dischargers

Each EJ index combines demographic indicators with a single environmental indicator. This tool uses provides a number of capabilities including:

- Color coded mapping
- The ability to generate a standard report for a selected area
- Comparisons showing how a selected area compares to the state, EPA region or the nation

EJSCREEN replaces EJView, a previous publicly available environmental justice screening tool, and incorporates recommendations from the National Environmental Justice Advisory Council (NEJAC).

Anyone using EJSCREEN should note there is substantial uncertainty in demographic and environmental data, particularly when looking at small geographic areas. EJSCREEN is not intended to provide a risk assessment. Also, EJSCREEN does not provide data on every environmental impact and demographic indicator that may be relevant to a particular location, and data may be several years old. Screening results should be supplemented with additional information and local knowledge to get a better understanding of the issues in a selected location. It is important to understand the caveats and limitations when using EJSCREEN.

How the EPA Uses EJSCREEN

The EPA uses EJSCREEN as a preliminary step when considering environmental justice in certain situations. The agency uses it to screen for areas that may be candidates for additional consideration, analysis or outreach as the EPA develops programs, policies and activities that may affect communities. In the past, the agency employed EJ screening tools in a wide variety of circumstances.

A few examples of what EJSCREEN supports across the agency include:

- Informing outreach and engagement practices
- Implementing aspects of the following programs:
  - permitting
  - enforcement
  - compliance
  - voluntary
- Developing retrospective reports of EPA work
- Enhancing geographically based initiatives

EJSCREEN is not used by EPA staff for any of the following:

- As a means to identify or label an area as an "EJ community"

- To quantify specific risk values for a selected area
- To measure cumulative impacts of multiple environmental factors
- As a basis for agency decision-making or making a determination regarding the existence or absence of EJ concerns

APPENDIX B
EJSCREEN Standard Report for the Study Area
which includes the
Dewey-Burdock Project Area and a 20-Mile Buffer Measured from the Approximate Project Boundary
Consisting of
Portions of Weston and Niobrara Counties in Wyoming
and
Portions of Fall River and Custer Counties in South Dakota

EJSCREEN Report (Version 2016)

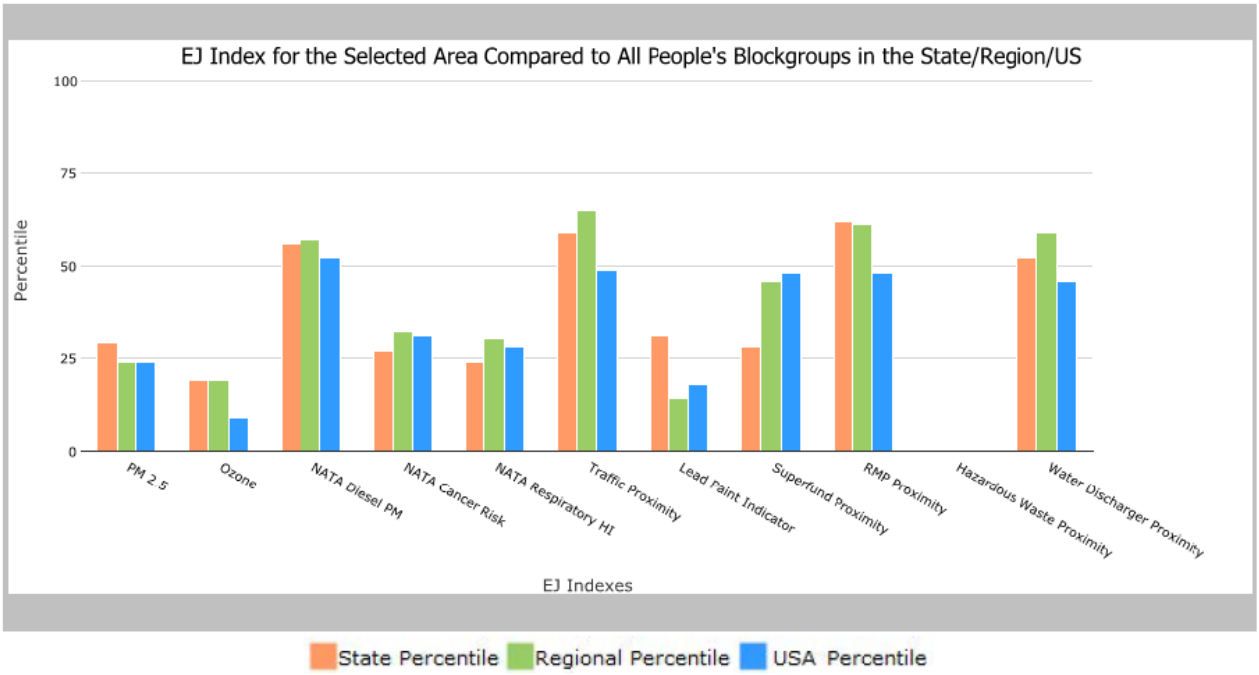
20 mile Ring around the Area, SOUTH DAKOTA, EPA Region 8

Approximate Population: 3,569

Input Area (sq. miles): 1723.03

Dewey-Burdock Study Area

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	29	24	24
EJ Index for Ozone	19	19	9
EJ Index for NATA* Diesel PM	56	57	52
EJ Index for NATA* Air Toxics Cancer Risk	27	32	31
EJ Index for NATA* Respiratory Hazard Index	24	30	28
EJ Index for Traffic Proximity and Volume	59	65	49
EJ Index for Lead Paint Indicator	31	14	18
EJ Index for Superfund Proximity	28	46	48
EJ Index for RMP Proximity	62	61	48
EJ Index for Hazardous Waste Proximity+	N/A	N/A	N/A
EJ Index for Water Discharger Proximity	52	59	46



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

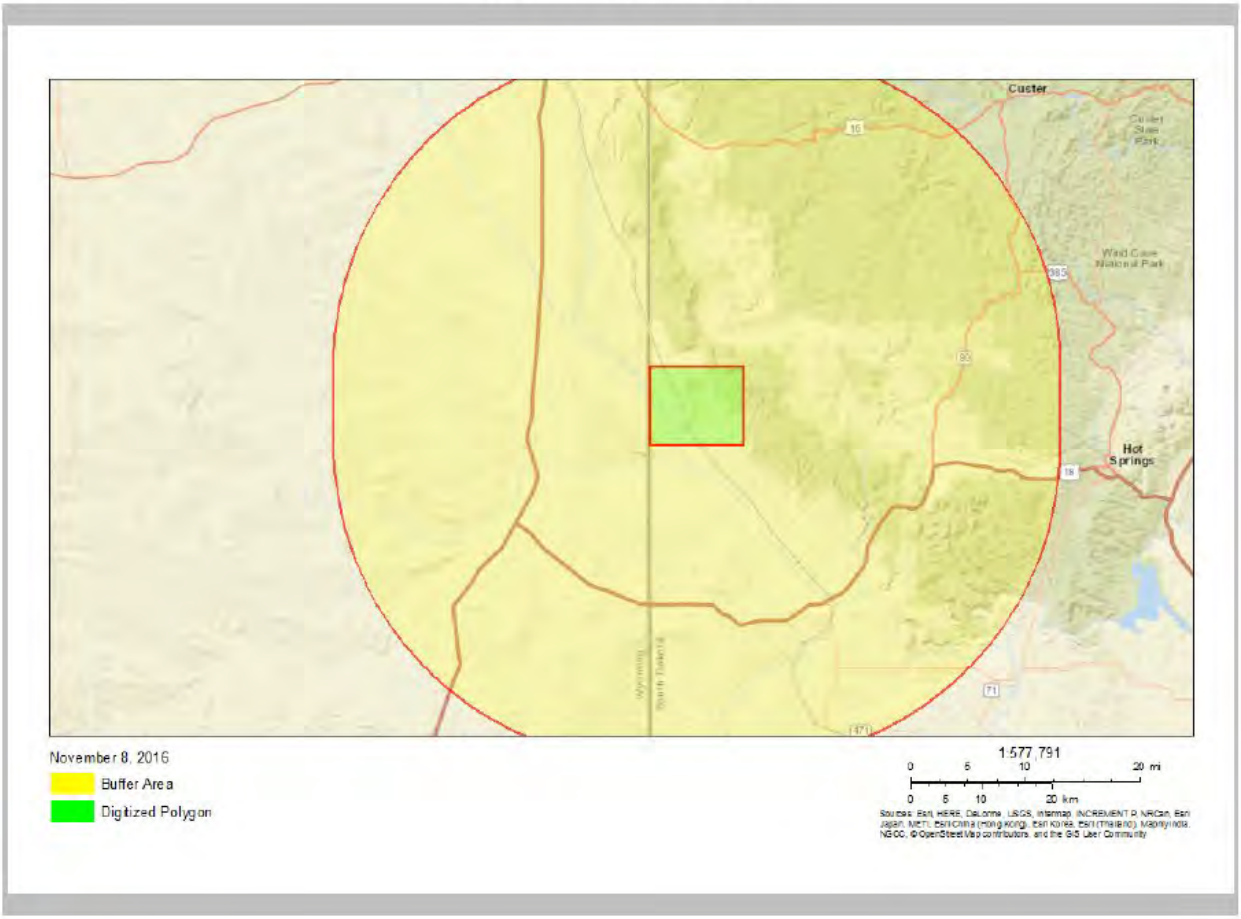
EJSCREEN Report (Version 2016)

20 mile Ring around the Area, SOUTH DAKOTA, EPA Region 8

Approximate Population: 3,569

Input Area (sq. miles): 1723.03

Dewey-Burdock Study Area



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

20 mile Ring around the Area, SOUTH DAKOTA, EPA Region 8

Approximate Population: 3,569

Input Area (sq. miles): 1723.03

Dewey-Burdock Study Area

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	6.03	7.89	4	7.17	17	9.32	2
Ozone (ppb)	53.5	50.3	99	54.6	25	47.4	82
NATA* Diesel PM (µg/m³)	0.0725	0.294	12	0.605	<50th	0.937	<50th
NATA* Cancer Risk (lifetime risk per million)	18	22	23	30	<50th	40	<50th
NATA* Respiratory Hazard Index	0.75	0.82	52	1.4	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	2.5	49	16	250	6	590	7
Lead Paint Indicator (% Pre-1960 Housing)	0.25	0.34	47	0.23	67	0.3	56
Superfund Proximity (site count/km distance)	0.0001	0.016	78	0.11	36	0.13	16
RMP Proximity (facility count/km distance)	0.017	0.29	12	0.34	6	0.43	1
Hazardous Waste Proximity+ (facility count/km distance)	N/A	0.12	N/A	0.12	N/A	0.11	N/A
Water Discharger Proximity (facility count/km distance)	0.031	0.2	24	0.27	9	0.31	3
Demographic Indicators							
Demographic Index	16%	25%	34	27%	28	36%	20
Minority Population	6%	16%	34	23%	15	37%	14
Low Income Population	26%	33%	36	31%	44	35%	39
Linguistically Isolated Population	0%	1%	69	2%	55	5%	44
Population With Less Than High School Education	10%	9%	64	9%	67	14%	48
Population Under 5 years of age	4%	7%	22	7%	24	6%	31
Population over 64 years of age	24%	15%	86	12%	91	14%	89

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

APPENDIX C
EJSCREEN Standard Report for the Edgemont Area
which includes a
5-Mile Buffer from the Center of Edgemont, South Dakota

EJSCREEN Report (Version 2016)

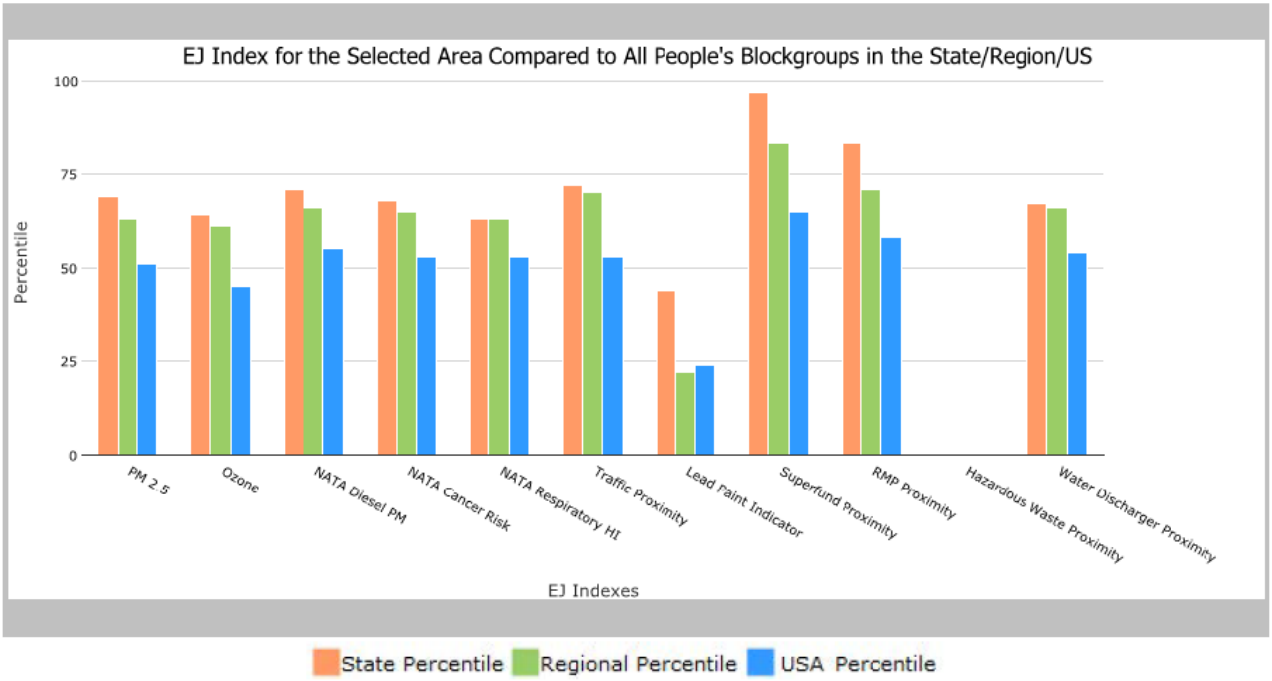
5 mile Ring Centered at 43.300639,-103.831484, SOUTH DAKOTA, EPA Region 8

Approximate Population: 905

Input Area (sq. miles): 78.53

Edgemont Study Area

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	69	63	51
EJ Index for Ozone	64	61	45
EJ Index for NATA* Diesel PM	71	66	55
EJ Index for NATA* Air Toxics Cancer Risk	68	65	53
EJ Index for NATA* Respiratory Hazard Index	63	63	53
EJ Index for Traffic Proximity and Volume	72	70	53
EJ Index for Lead Paint Indicator	44	22	24
EJ Index for Superfund Proximity	97	83	65
EJ Index for RMP Proximity	83	71	58
EJ Index for Hazardous Waste Proximity†	N/A	N/A	N/A
EJ Index for Water Discharger Proximity	67	66	54



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

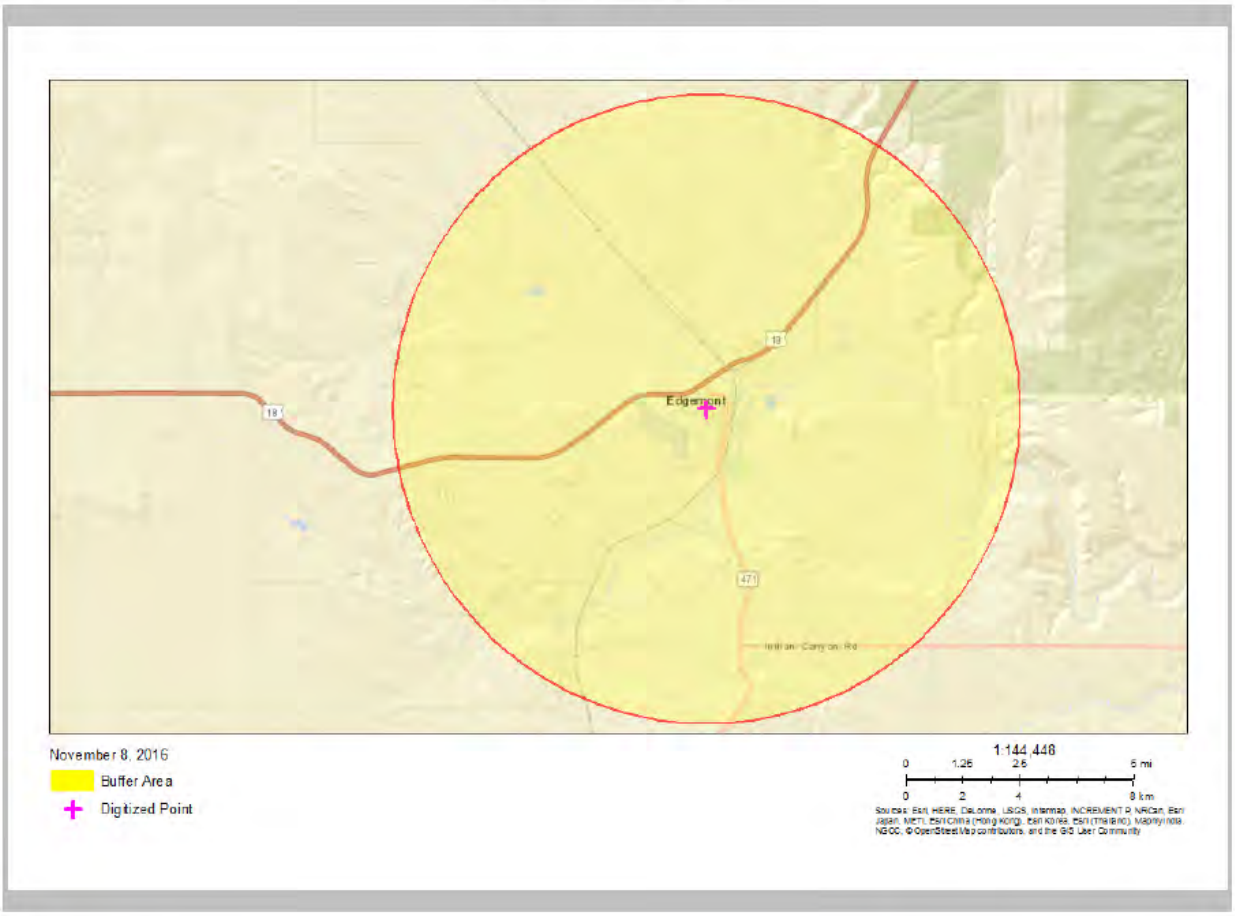
EJSCREEN Report (Version 2016)

5 mile Ring Centered at 43.300639,-103.831484, SOUTH DAKOTA, EPA Region 8

Approximate Population: 905

Input Area (sq. miles): 78.53

Edgemont Study Area



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

5 mile Ring Centered at 43.300639,-103.831484, SOUTH DAKOTA, EPA Region 8

Approximate Population: 905

Input Area (sq. miles): 78.53

Edgemont Study Area

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	6.15	7.89	9	7.17	20	9.32	2
Ozone (ppb)	53.5	50.3	99	54.6	25	47.4	82
NATA* Diesel PM (µg/m³)	0.11	0.294	21	0.605	<50th	0.937	<50th
NATA* Cancer Risk (lifetime risk per million)	18	22	30	30	<50th	40	<50th
NATA* Respiratory Hazard Index	0.64	0.82	42	1.4	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	2.6	49	16	250	6	590	7
Lead Paint Indicator (% Pre-1960 Housing)	0.46	0.34	66	0.23	81	0.3	73
Superfund Proximity (site count/km distance)	0	0.016	78	0.11	36	0.13	16
RMP Proximity (facility count/km distance)	1.6E-05	0.29	9	0.34	4	0.43	1
Hazardous Waste Proximity+ (facility count/km distance)	N/A	0.12	N/A	0.12	N/A	0.11	N/A
Water Discharger Proximity (facility count/km distance)	0.033	0.2	25	0.27	9	0.31	4
Demographic Indicators							
Demographic Index	25%	25%	65	27%	56	36%	42
Minority Population	5%	16%	31	23%	14	37%	13
Low Income Population	46%	33%	75	31%	77	35%	70
Linguistically Isolated Population	0%	1%	69	2%	55	5%	44
Population With Less Than High School Education	13%	9%	75	9%	75	14%	58
Population Under 5 years of age	2%	7%	8	7%	10	6%	14
Population over 64 years of age	21%	15%	79	12%	86	14%	83

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

APPENDIX D
Remedial Site Assessment Decision Form
for the
Darrow/Freezeout/Triangle Uranium Mines
April 2016

REMEDIAL SITE ASSESSMENT DECISION – EPA Region 08

Site Name: DARROW/FREEZEOUT/TRIANGLE URANIUM MINE
Alias(es): ABANDONED OPEN PIT URANIUM MINE
ABANDONED OPEN PIT URANIUM MINE

City: NEAR EDGEMONT **County or Parish:** FALL RIVER **State:** SD

Refer to Report Dated: 03/01/2016 **EPA ID:** SDN000803095
Report Developed By: Weston Solutions **State ID:**
Report Type: Site Inspection (001) #001 **Decision Date:** 03/01/2016

- [x] 1. Further Remedial Site Assessment Under CERCLA (Superfund) is not required because:
  NFRAP-Site does not qualify for the NPL based on existing information
- [ ] 2. Further Assessment Needed Under CERCLA.
- [ ] 3. Remedial study/cleanup needed.

Decision/Rationale:

The U.S. Environmental Protection Agency (EPA) has determined that no further remedial action by the Federal Superfund program is warranted at the referenced site, at this time. The basis for the no further remedial action planned (NFRAP) determination is provided in the attached document. A NFRAP designation means that no additional remedial steps under the Federal Superfund program will be taken at the site unless new information warranting further Superfund consideration or conditions not previously known to EPA regarding the site are disclosed. In accordance with EPA's decision regarding the tracking of NFRAP sites, the referenced site may be removed from the CERCLIS database and placed in a separate archival database as a historical record if no further Superfund interest is warranted. Archived sites may be returned to the CERCLIS site inventory if new information necessitating further Superfund consideration is discovered.

Based on a comparison of onsite and offsite data to background concentrations, concentrations of total metal uranium, uranium-238 and radium-226 in surface water were not observed to exceed the three times background concentrations and an Observed Release of metals and radionuclides to the surface water pathway cannot be documented for the Site. Thus, a decision of no further remedial action planned (NFRAP) has been made by the EPA since the Site does not qualify for the NPL based on the existing information as of March 2016. If conditions change or if there is a change in land use in this area, EPA can reassess the site in the future. It should be noted that EPA was not able to obtain current data from the Site source since access had not been granted at the time of the sampling event.

Decision/Rationale (Continued):

Site Decision Made By: Dania Zinner

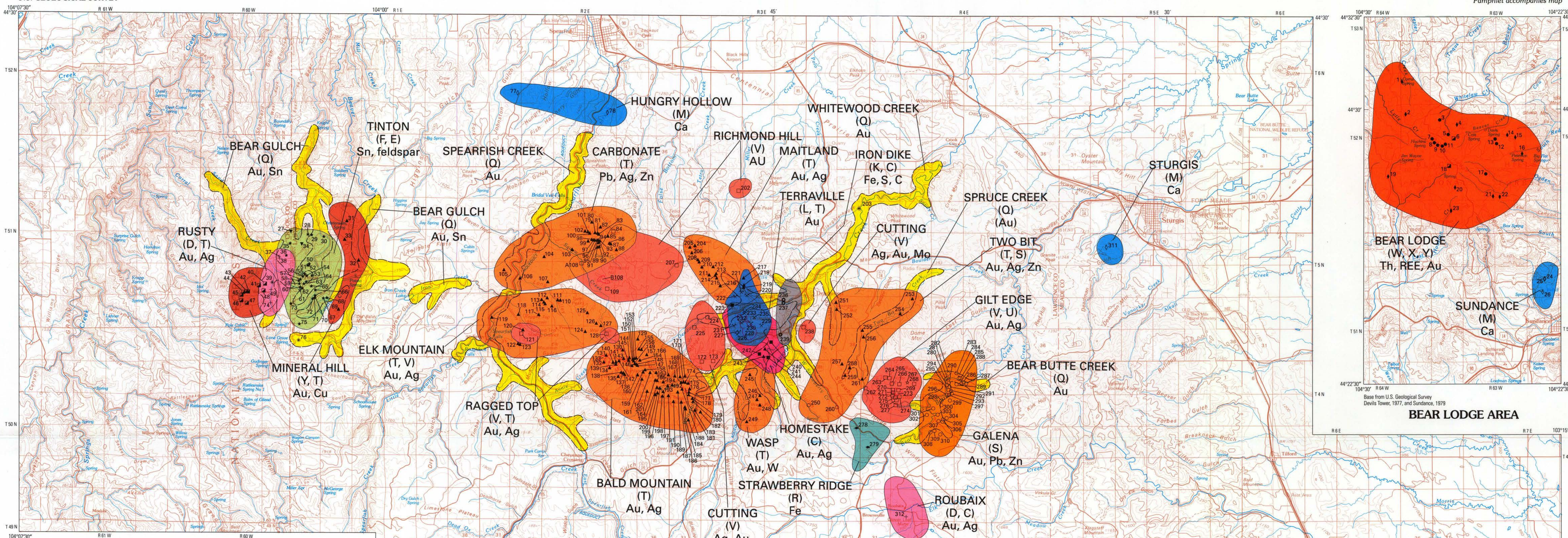
Signature:_____ Decision Date: 03/01/2016

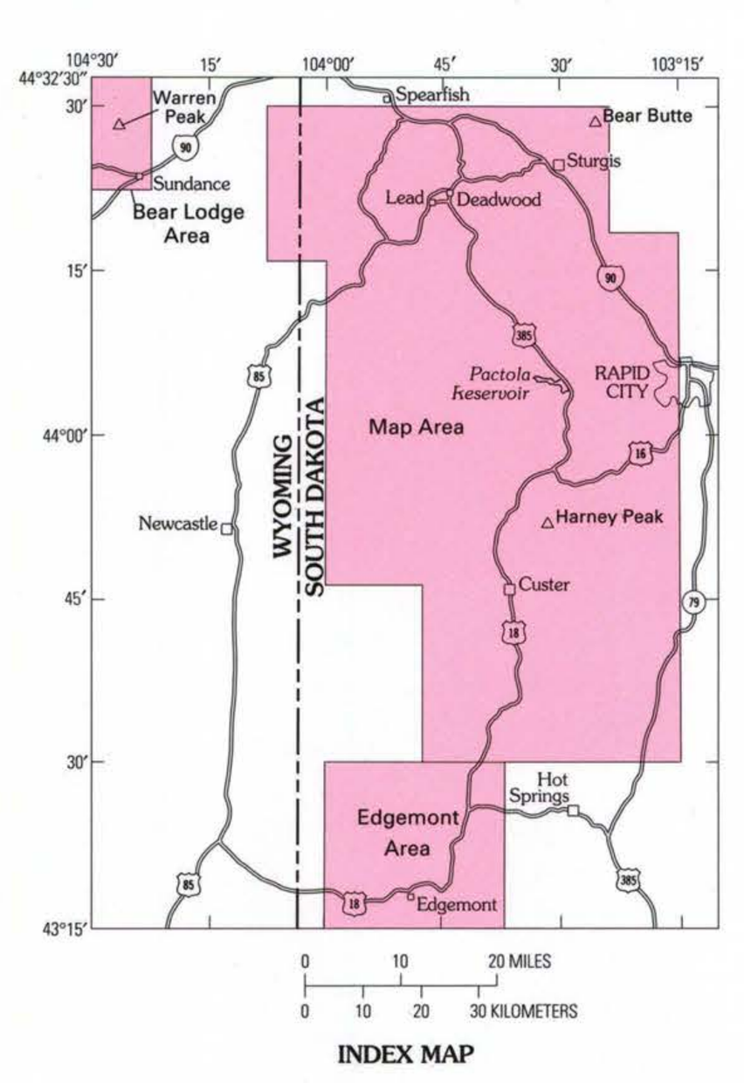
APPENDIX E

U.S. Geological Survey, Miscellaneous Investigations Series Map I-2445, *Maps Showing Metallic Mineral Districts and Mines in the Black Hills, South Dakota and Wyoming*

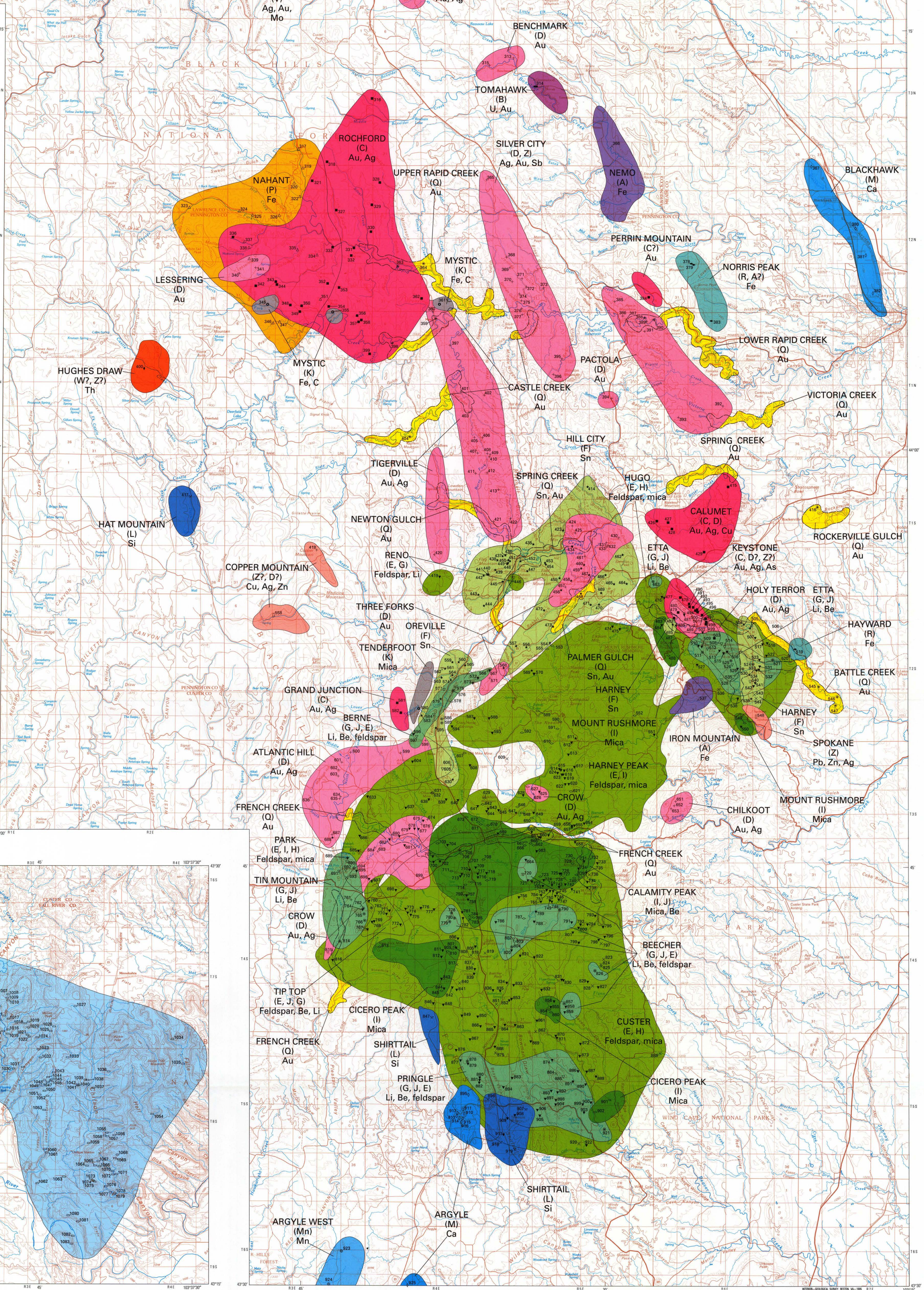
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MISCELLANEOUS INVESTIGATIONS SERIES
MAP I–2445
Pamphlet accompanies map



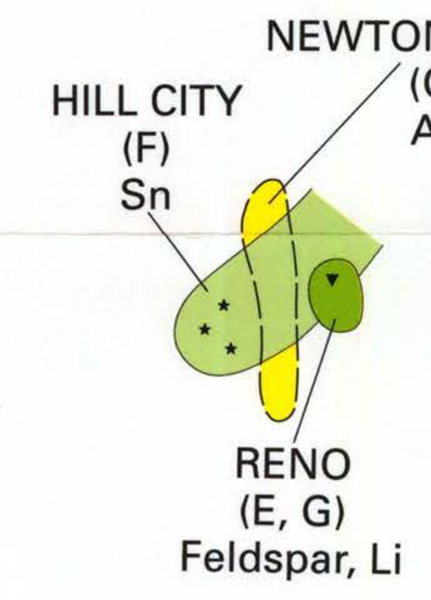


INDEX MAP



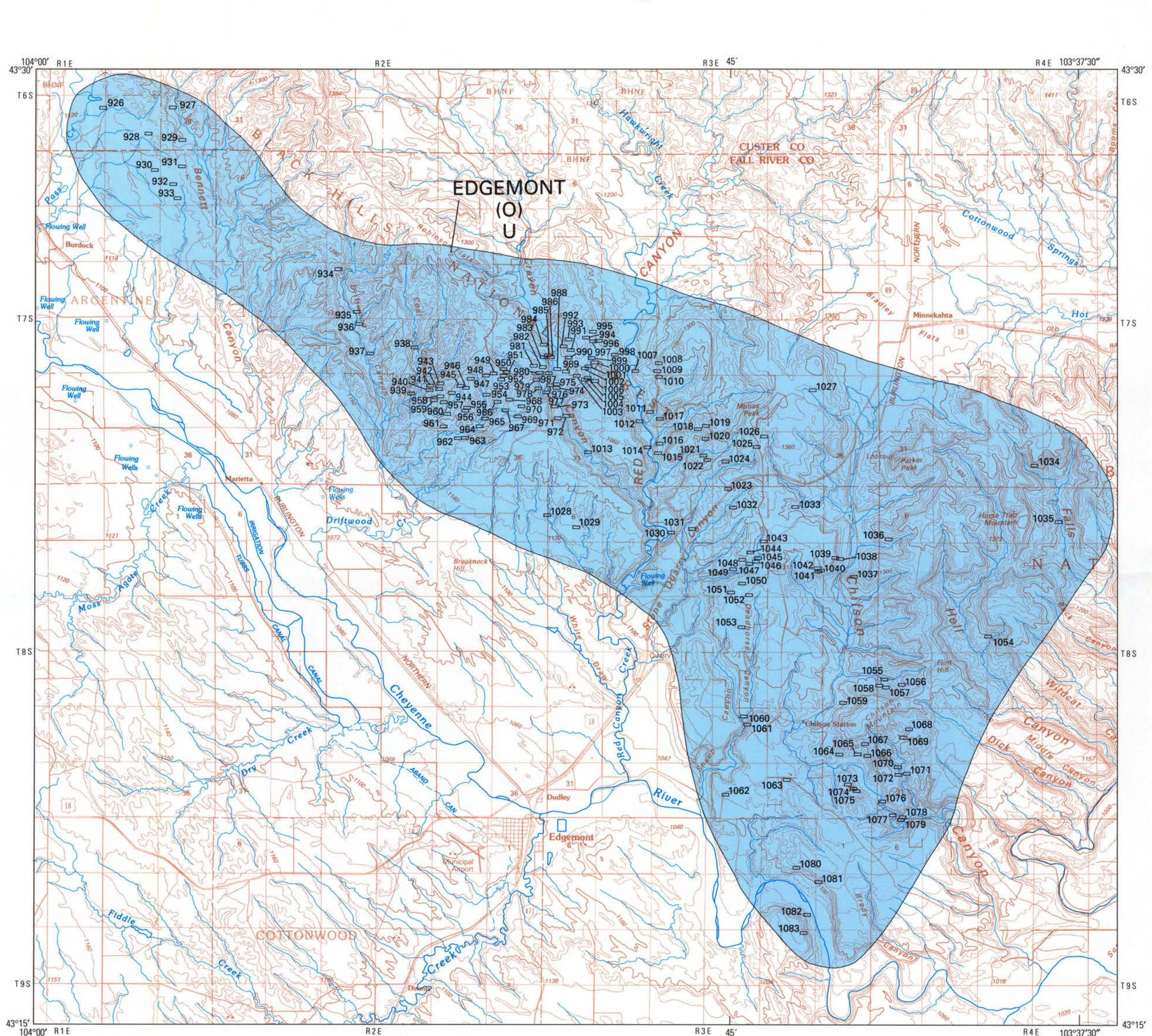
EXPLANATION

AGE	DEPOSIT TYPE	SYMBOL	CODE	TYPICAL COMMODITIES Major	Minor
Quaternary	Placer	✳	Q	Au, Sn	
	Bog iron	△	P	Fe	
Cenozoic	Placer	✳	Q	Au, Sn	
	Disseminated and carbonatite	◪	Y	Au	Mn, U
		●	X	Rare earth elements	Te, Ag
		♦	W	Th	Pb, Ba, Th
	Porphyry	□	V	Au, Ag	Cu
		☆	U	Mo	Cu
	Vein and replacement	▲	T	Au, Ag	Pb, Zn
		○	S	Pb, Ag	Zn, Au
	Vein	▯	Z	Pb, Au, Ag	Zn, Cu
	Vein and bedded	⊕	Mn	Mn	
Mesozoic	Roll-front	▭	O	U, V	
Paleozoic	Limestone	◊	M	Ca	
	Residual	◆	R	Fe	
	Paleoplacer	⚒	L	Au, Si	
	Vein	+	D	Au, Ag	Pb, As, Cu
Early Proterozoic	Pegmatite	⊙	J	Be	
		◇	I	Mica	
		×	H	Potassium feldspar, mica	
		▽	G	Li	
		★	F	Sn, W	
		▼	E	Potassium feldspar	
	Vein	+	D	Au, Ag	Pb, As, Cu
	Syngenetic stratiform	○	K	Mica, Fe	Au, S
	Syngenetic stratiform	■	C	Au	Ag
	Taconite iron-formation	⅄	A	Fe	Mn
	Quartz-pebble conglomerate	▬	B	U	Au
Archean	Taconite iron-formation	⅄	A	Fe	Mn



Metallic mineral district—Showing name of district, type(s) of deposit(s) present (in parentheses), commodities present, and locations of mines and prospects. Districts are defined and colored according to most common type of deposit present; chart above provides key to age, type of deposit (uncolored boxes designate deposit types that are not the most important type in any district), and commodities typical of that type of deposit. Boundaries of placer deposit districts are dashed; all other boundaries are solid. Where districts overlap, generally the color shown is that assigned to the smaller of the districts. Commodities in some districts differ from those listed above. A few isolated deposits are outside the boundaries drawn for the districts to which the deposits are assigned. See tables 1–4 in accompanying pamphlet for names, recorded location, and classification of individual deposits

228 Outline of open-pit mine



EDGEMONT AREA

Base from U.S. Geological Survey Mount Rushmore, 1977; Rapid City, 1977; and Sundance, 1979
Universal Transverse Mercator projection

SCALE 1:100 000

5 MILES — 10 KILOMETERS

CONTOUR INTERVAL 50 METERS, EXCEPT IN BEAR LODGE AND EDGEMONT AREAS, WHERE IT IS 20 METERS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

APPROXIMATE MEAN DECLINATION, 1995

CONVERSION FACTORS

Multiply	By	To obtain
centimeters (cm)	0.3937	inches (in)
meters (m)	3.281	feet (ft)
kilometers (km)	0.6214	miles (mi)

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1995

Data compiled 1985–91
Edited by Diane E. Lane
Color design by Virginia D. Scott
Graphic design by Thomas L. Loesch
Cartography by Henry Williams
Manuscript approved for publication August 19, 1993

MAPS SHOWING METALLIC MINERAL DISTRICTS AND MINES IN THE BLACK HILLS, SOUTH DAKOTA AND WYOMING

By
Anna B. Wilson and Ed DeWitt
1995

Any use of trade names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Geological Survey

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042727

APPENDIX F

EPA Tribal Consultation and Inform and Educate Events

ACTIVITY	DATE	NOTES
An EPA representative attended the Nuclear Regulatory Commission (NRC) Tribal consultation meeting for Dewey Burdock and Crow Butte in Rapid City with 13 tribes.	February 2012	Tribes requested the EPA provide information on 4 topics: 1. Cheyenne River Water Quality. 2. Radiation Sources and Risks at uranium ISR sites. 3. Geology & Hydrology at the Dewey Burdock site and potential impacts from the ISR process. 4. Seismology at the site.
EPA Web conference on Cheyenne River Water Quality. Presenters included: Delinda Simmons, Water Quality Coordinator, Oglala Sioux Tribe Carlyle Ducheneaux, Water Quality Specialist, Cheyenne River Sioux Tribe Liz Rogers EPA Water Quality Lead for South Dakota Peter Ismert, EPA Water Quality Lead for the Oglala Sioux Tribe Tom Johnson, EPA Water Quality Lead for the Cheyenne River Sioux Tribe	March 2013	Fifteen tribes were invited: Fort Peck Assiniboine and Sioux Tribes Cheyenne River Sioux Tribe Crow Creek Sioux Tribe Crow Nation Northern Arapaho Tribe Flandreau Santee Sioux Northern Cheyenne Nation Oglala Sioux Tribe Santee Sioux Nation Sisseton Wahpeton Oyate Standing Rock Sioux Tribe Eastern Shoshone Lower Brule Sioux Tribe Rosebud Sioux Tribe Yankton Sioux Tribe Web conference included the Cheyenne River Sioux Tribe and other tribes. The audio file of the presentations was sent to the 15 tribes.
EPA Web Conference on Radiation Sources and Risks at uranium ISR sites presented at the Regional Tribal Operations Committee meeting.	April 2013	Region 8 Tribes were present at the meeting.
Sent invitation letters to leaders of 35 Tribal governments. Environmental Directors and Tribal Historic Preservation Officers were cc'ed.	Mailed and emailed letter May 28-30, 2013	Invitation for NHPA Section 106 consultation and provided information on the June 10, 2013 informational web conference the EPA committed to conducting. Information about the first web conference was included in the letter.
EPA Web conference with the Cheyenne River Sioux Tribe and other tribes on Geology & Hydrology at the Dewey Burdock site and potential impacts from the ISR process.	June 2013	

ACTIVITY	DATE	NOTES
EPA meeting with Oglala Sioux Tribe representatives in Hot Springs, SD.	June 11, 2015	The EPA Regional Administrator requested a meeting with Oglala Sioux Tribal representatives.
EPA presentation at the Rocky Mountain Tribal Leaders Council Quarterly Meeting in Billings, MT. The Rocky Mountain Tribal Leaders Council serves the following tribes: The Blackfeet Nation The Chippewa Cree Tribe of Rock Boy's Indian Reservation The Confederated Salish and Kootenai Tribes The Crow Tribe The Eastern Shoshone Tribe The Fort Belknap Indian Community The Fort Peck Assiniboine and Sioux Tribes The Northern Arapaho Tribe The Northern Cheyenne Tribe The Shoshone Bannock Tribes The Piikani Nation The Little Shell Tribe of Chippewa Indians of Montana	August 13, 2015	
EPA presentation at meeting with South Dakota, North Dakota and Montana Tribal Historic Preservation Officers in Bismarck, ND. Representatives from the following tribes were present: The Cheyenne River Sioux The Crow Tribe The Flandreau Santee Sioux Tribe The Fort Belknap Tribes The Northern Cheyenne Tribe The Oglala Sioux Tribe The Rosebud Sioux Tribe The Sisseton Wahpeton Oyate The Spirit Lake Tribe The Standing Rock Sioux Tribe The Three Affiliated Tribes	September 10, 2015	In conjunction with ND DOT meeting.
EPA presentation at meeting with Santee Sioux Nation and Ponca Tribes of Nebraska in Kansas City.	October 28, 2015	
EPA presentation at meeting with the Great Plains Tribal Chairman's Association Meeting in Rapid City. The Great Plains Tribal Chairman's Association serves the following tribes:	October 30, 2015	

ACTIVITY	DATE	NOTES
The Cheyenne River Sioux The Crow Creek Sioux Tribe The Flandreau Santee Sioux Tribe The Lower Brule Sioux Tribe The Oglala Sioux Tribe The Omaha Tribe The Ponca Tribe of Nebraska The Rosebud Sioux Tribe The Santee Sioux Tribe The Sisseton Wahpeton Oyate The Spirit Lake Tribe The Standing Rock Sioux Tribe The Three Affiliated Tribes. The Turtle Mountain Band of Chippewa The Winnebago Tribe The Yankton Sioux Tribe		
EPA letters inviting tribal consultation meetings with 38 tribes, as well as NHPA section 106 consultation.	November 25, 2015	
EPA tribal consultation webinar with Environmental Director of Santee Sioux Nation.	February 19, 2016	Web conference
EPA tribal consultation webinar with Tribal Historic Preservation Officers (THPOs) from the Prairie Island Indian Community; Shakopee Mdewakanton Sioux Community; and Upper Sioux Community.	February 22, 2016	Web conference
EPA tribal consultation meeting with the Crow Tribe in Billings, MT.	March 1, 2016	Meeting in person at the BIA Building
EPA tribal consultation meeting with the Northern Arapaho Tribe.	March 2, 2016	Conference call and webinar
EPA tribal consultation meeting with the Assiniboine and Gros Ventre Tribes of Fort Belknap in Billings, MT.	March 3, 2016	Meeting in person at the BIA Building
EPA tribal consultation meeting scheduled with the Cheyenne River Sioux Tribe.	March 8, 2016	Meeting was cancelled by Tribe on March 7
EPA tribal consultation web conference with Tribal Historic Preservation Officer of Standing Rock Sioux Tribe.	April 22, 2016	Provided background information on the Dewey-Burdock project
EPA tribal consultation meeting with the Oglala Sioux Tribe in Pine Ridge, SD.	April 28, 2016	In person meeting at the Oglala Sioux Justice Center

ACTIVITY	DATE	NOTES
EPA tribal consultation meeting with the Standing Rock Sioux Tribe in Fort Yates, ND.	May 5, 2016	In person meeting at the Standing Rock Sioux Tribe Administration Building
EPA tribal consultation meeting with Oglala Sioux Tribal leaders in Denver, CO.	June 17, 2016	Presented community outreach plan. Tribal leaders requested that we present the plan to the Land and Natural Resources Committee
EPA presentation of the EPA community outreach plan to Land and Natural Resources Committee of the Oglala Sioux Tribe.	July 18, 2016	In person meeting in Pine Ridge, SD
EPA letters inviting further tribal consultation meetings with 5 tribes on draft UIC permits, a draft Environmental Justice analysis and additional draft documents.	June 6, 2017	
EPA tribal consultation meeting with the Ponca Tribe of Nebraska in Lincoln, Nebraska.	August 23, 2017	In person meeting at the Ponca Tribe's Office in Lincoln, NE
EPA letters inviting further tribal consultation meetings with 38 tribes on revised draft UIC permits, a revised draft Environmental Justice analysis and additional revised draft documents, as well as NHPA section 106 consultation.	July 8, 2019	
EPA tribal consultation meeting with Cheyenne and Arapaho Tribes of Oklahoma in Concho, OK.	September 11, 2019	In person meeting in Concho, OK
EPA tribal consultation meeting with Cheyenne River Sioux Tribe in Eagle Butte, SD.	September 30, 2019	In person meeting in Eagle Butte, SD
EPA tribal consultation meeting with Santee Sioux Nation, Niobrara, NE.	November 20, 2019	
EPA letters to 15 tribes, following up on the EPA's July 8, 2019 letter and reiterating its offer to hold further tribal consultation meetings.	February 14 and 21, 2020	The 15 Tribes included: The Cheyenne and Arapaho Tribes The Cheyenne River Sioux Tribe The Crow Tribe The Fort Belknap Tribes The Fort Peck Tribes The Northern Arapaho Tribe The Oglala Sioux Tribe The Ponca Tribe of Nebraska The Prairie Island Indian Community The Santee Sioux Tribe The Shakopee Mdewakanton Sioux Community The Standing Rock Sioux Tribe

ACTIVITY	DATE	NOTES
		The Three Affiliated Tribes The Upper Sioux Community The Yankton Sioux Tribe
EPA tribal consultation meeting scheduled with the Oglala Sioux Tribe. The meeting did not occur.	March 23, 2020	EPA could not travel due to COVID-19-related travel restrictions and offered to conduct the meeting as a web conference.
EPA tribal consultation meeting scheduled with the Oglala Sioux Tribe. The meeting did not occur.	June 24, 2020	EPA could not travel due to COVID-19-related travel restrictions and offered to conduct the meeting as a web conference.
EPA tribal consultation meeting with Santee Sioux Nation, Web Conference.	July 20, 2020	
EPA consultation meeting with the Oglala Sioux Tribe; virtual meeting.	August 28, 2020	During the meeting, the Tribe stated that the meeting did not meet the Tribe's definition of consultation because there was not a quorum of Tribal Council present.
Letter to Oglala Sioux Tribe to notify Tribe the EPA's Tribal Consultation process has concluded.	October 21, 2020	
Letter to NRC, BLM, ACHP, SD SHPO, Powertech and 38 Tribes that EPA has adopted the NRC/BLM Programmatic Agreements	November 13, 2020	
Letters to 38 Tribes stating that the Tribal Consultation process is concluded and EPA has made its final UIC permit decisions.	November 24, 2020	The letter stated that concerns from Tribes that EPA heard during consultation are addressed in the Response to Comments (RTC) document enclosed with the letter. A link to the RTC was also included in the email.