

RAS 14854

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Ann Marshall Young, Chair

Dr. Richard F. Cole

Dr. Fred W. Oliver

DOCKETED
USNRC

December 29, 2007 (6:21pm)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of

CROW BUTTE RESOURCES, INC.
(In Situ Leach Facility, Crawford, NE)

Docket No. 40-8943

ASLBP No. 07-859-03-MLA-BD01

December 28, 2007

REPLY TO NRC STAFF RESPONSE

Petitioners Thomas K. Cook, Slim Buttes Ag. Dev. Corp., and Western Nebraska Resources Council ("WNRC") hereby submit this Reply to the NRC Staff's Response to Petitioners' Request for Intervention:

REPLY

Congress made a specific finding that "source...material must be regulated in the national interest and in order to provide for the common defense and security and to protect the health and safety of the public." 42 U.S.C. Section 201.2(d) (emphasis added), quoted in Riverkeeper Inc. v Collins, 359 F3d 156, 169 (2nd Cir 2004). The NRC Staff and Applicant CBR are silent as to how it would be in the US national interest or common defense and security, or in furtherance of the protection of the health and safety of the public to grant this foreign owned Applicant's amendment to expand to the North Trend area. Rather, the NRC Staff argues that it is irrelevant to the licensing decision that Applicant is foreign owned and that Applicant provides no assurance that its uranium products will be used for power generation and not for weapons that could fall into the hands of enemies of the United States. NRC Response at 43-44.

Petitioners submit that the NRC itself lacks authority under the Atomic Energy Act to grant a

TEMPLATE = SECY-037¹

SECY-02

license where, as here, there is no benefit to the US national interest, common defense or security and there are clear detriments to the health and safety of the public. Mere technical compliance with NRC disclosure regulations does not in and of itself satisfy the purposes stated in the Atomic Energy Act, as amended.

The United States Supreme Court has stated that a regulation “is not a reasonable statutory interpretation unless it harmonizes with the statute's ‘origin and purpose.’” *US v Vogel Fertilizer Co.*, 455 US 16, 26 (1982). Accordingly, it is incumbent upon the NRC to evaluate the US national interest or common defense and security, or lack thereof, as well as the protection of public health and safety, or failure thereof. Furthermore, the NRC is required to deny a license amendment that would not serve the US national interest or common defense and security or would fail to protect public health and safety.

The Application at issue in this proceeding must be viewed in light of widespread drought conditions and significant depletion of the High Plains Aquifer which threaten public health and safety for the benefit of a foreign entity and not in the US national interest. Similarly, since each of the Petitioners and, in the case of Slim Buttes Ag. Dev. Corp. and WNRC, its members (see Affidavits of Joe American Horse, Thomas K. Cook, Bruce McIntosh, Janet Mize, Beth Ranger, and Dr. Francis E. Anders), is a US person with an interest than may be affected by the proceeding, the Atomic Energy Act requires that Petitioners be admitted as intervenors in the proceeding despite any nonmaterial failures to comply with highly specific and technical regulations that may or may not be in “harmony” with the origin and purpose of the statute.

I. Standing:

Petitioners Cook, Slim Buttes Ag. Dev. Corp. and WNRC have standing because they have demonstrated that they may be affected by a decision in this proceeding. The applicable statute, 42

U.S.C. Section 2239(a), provides that "the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding. On the question of standing, the presiding officer must "construe the [intervention] petition in favor of the petitioner." *Georgia Inst. of Tech. (Georgia Tech Research Reactor)*, CLI-95-12, 42 NRC 111, 115 (1995). In reviewing affidavits with respect to standing, a decision maker should "avoid 'the familiar trap of confusing the standing determination with the assessment of petitioner's case on the merits,' *Sequoyah Fuels Corp. (Gore, Oklahoma Site Decontamination and Decommissioning Funding, LBP-94-5, 39 NRC 54 (1994)* (citing *City of Los Angeles v. National Highway Traffic Safety Administration*, 912 F.2d 478, 495 (D.C.Cir.1990) (citations omitted)), *aff'd*, CLI-94-12, 40 NRC 64 (1994). *In the Matter of HydroResources, Inc.*, LBP-98-9, 47 NRC 261, 272 (1998) ("HRI I").

Petitioners are not required to rely on the good will of [Applicant], the future decisions of the Staff of the NRC, or the staff of the Environmental Protection Agency. Petitioners who demonstrate that they rely on water supplies adjacent to the in situ leach ("ISL") mining project have a right to a hearing. *HRI I* at 269 (emphasis added.). In the case of exposure to radon from living in close proximity to an ISL mine is an "injury in fact" sufficient to establish standing. *In the Matter of HydroResources, Inc.*, LBP-03-27 58 NRC 408, 413 (2003) ("HRI II"). Anyone who uses a substantial quantity of water personally or for livestock from a source that is reasonably contiguous to either the injection or processing sites of an ISL mine has suffered an "injury in fact." *HRI I* at 275.

Thomas K. Cook:

Thomas K. Cook lives and works downwind and downgrade from Applicant's proposed North Trend expansion site. According to the Application itself Chadron is within the radius of the affected

population. Reference Petition at 27 citing to ER 3.10 – Regional Population.

It is well known that depletion of the High Plains Aquifer (also known as the Ogallala Aquifer) results in a reduction of property values. See, e.g., L. Torrell et. al., *The Market Value of Water in the Ogallala Aquifer*, 66 Land Economics 2d 163 (1990) (The value of water is a significant part of irrigated farmland transaction prices observed in the marketplace. Using a comprehensive data set of farm sales in New Mexico, Oklahoma, Colorado, Kansas, and Nebraska, the value of water was estimated as the price differential between irrigated and dryland farm sales. Results indicate the water value component of irrigated farm sale transactions ranged from 30 to 60 percent of the farm sale price, depending on state; with an average of 37 percent in Nebraska). Id. at 172 and Table 3.

The NRC Staff understands that the Application shows that there will be doses of radioactivity received at residences near the current and proposed facilities and that such doses are expected to be less than the public dose limits set forth by regulation. This exposure to radiation, while within technical limits, is a sufficient 'injury in fact' for purposes of demonstrating standing for this proceeding under *HRI I* and *HRI II*. Clearly, Mr. Cook has a real and genuine stake in this proceeding giving rise to standing under the statute.

Slim Buttes Ag. Dev. Corp.:

Slims Buttes Ag. Dev. Corp. works to foster rural self-sufficiency and agricultural development in one of the poorest counties in the United States. The policy that greater participation be afforded minority or low-income groups, Executive Order 12898, "*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*," 59 Fed. Reg. 7629, 7630 (Feb. 16, 1994), 3 C.F.R. § 859 (1995), requires that an EIS analyze social and environmental impacts on minority

and disadvantaged communities. *Louisiana Energy Services, L.P. (Claiborne Enrichment Center)*, CLI-98-3, 47 NRC 77, 101-02, 109 (1998). *HRI I* at 272. Accordingly, the impacts to the people at Slim Buttes and their family and community garden projects must be analyzed in this proceeding. Further, Slim Buttes Ag. Dev. Corp. uses water and relies on water rights that may be asserted by its stakeholders, including its representative Joe American Horse, who are members of the Oglala Sioux Tribe and beneficiaries of treaty rights under the Ft. Laramie Treaties of 1851 & 1861 in favor of the Great Sioux Nation and therefore enjoy superior water rights which are infringed by Applicant's water usage. See Affidavit of Joe American Horse at paragraph 7.

An organization may meet the injury-in-fact test either (1) by showing an effect upon its organizational interests, or (2) by showing that at least one of its members would suffer injury as a result of the challenged action, sufficient to confer upon it "derivative" or "representational" standing. *Houston Lighting and Power Co. (South Texas Project, Units 1 and 2)*, ALAB-549, 9 NRC 644, 646-47 (1979), *affg*, LBP-79-10, 9 NRC 439, 447-48 (1979). An organization seeking to intervene in its own right must demonstrate a palpable injury in fact to its organizational interests that is within the zone of interests protected by the AEA or NEPA. *Florida Power and Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4)*, ALAB-952, 33 NRC 521, 528-30 1991). Where the organization relies upon the interests of its members to confer standing upon it, the organization must show that at least one member (with standing in an individual capacity) has authorized the organization to represent his or her interests in the proceeding. Id.; *Houston Lighting and Power Co. (Aliens Creek Nuclear Generating Station, Unit 1)*, ALAB-535, 9 NRC 377, 393-94, 396 (1979). Finally, an individual who files a request for hearing on behalf of an organization must show that he or she has been expressly authorized by the organization to represent its interests in the proceeding. *Detroit Edison Co. (Enrico Fermi Atomic Power Plant, Unit 2)*,

LBP-78-37, 8 NRC 575, 583 (1978); see also *Georgia Power Co. (Vogtle Electric Generating Plant, Units 1 and 2)*, LBP-90-29, 32 NRC 89, 92 (1990). *HRI I* at 271.

The Petition of Slim Buttes Ag. Dev. Corp. shows palpable injury in fact to its organizational interests; namely, to promote community gardens which are irrigated with water from local wells.

The Affidavits of Joe American Horse and Thomas K. Cook show that Slim Buttes Ag. Dev. Corp. also has representational standing due to injury in fact by its members, clients and employees. They use the water; therefore, they have demonstrated an injury in fact for purposes of standing in this proceeding. Clearly, Slim Buttes Ag. Dev. Corp. has demonstrated standing for purposes of this proceeding.

WNRC:

The Petition of WNRC shows palpable injury in fact to its organizational interests; namely, to protect the resources of Western Nebraska with a focus on water degradation that may result from uranium mining.

The Affidavits of Bruce McIntosh, Janet Mize, Beth Ranger and Francis E. Anders show that WNRC also has representational standing due to injury in fact to its members in the community. Of particular note are Ms. Mize, Ms. Ranger and Dr. Anders, all of whom have property in Crawford, Nebraska. Dr. Anders' property and water well are within one mile of current ISL mining operations and he has observed discoloration of his water in relation to the workweek of Applicant's drilling team. Dr. Anders drinks and bathes in the water from his well in close proximity to Applicant's proposed North Trend expansion as well as its current operation. Ms. Mize uses her property for camping and plans to have a retirement home there. Ms. Ranger lives in Crawford, NE and is exposed to radon releases from Applicant's existing and proposed operations. "Petitioner's assertions of exposure to

radon from living in close proximity to [Applicant's] facility sufficiently establish an injury in fact. *HRI II* at 413. "In the case of exposure to ionizing radiation such as that asserted by the Petitioner here, a small or minor unwanted exposure, even one well within regulatory limits, is sufficient to establish an injury in fact." *Id.* at 414.

Based on these affidavits supporting representational standing, it is clear that WNRC has standing in this proceeding.

II. Contentions:

Each Petitioner has presented several contentions each of which present a genuine dispute with Applicant on a material issue of law or fact. In ruling on any request for hearing, the Presiding Officer is to determine "that the specified areas of concern are germane to the subject matter of the proceeding...." Any area of concern is germane if it is relevant to whether the license should be denied or conditioned. *HRI I* at 280; *HRI II* at 411. The statement of concerns "need not be extensive, but ... sufficient to establish that the issues the requester wants to raise regarding the licensing action fall generally within the range of matters that properly are subject to challenge in such a proceeding." *HRI II* at 414-415.

A concern about the quality of water is germane if the ISL project, including activities that require further NRC or EPA approval, could affect it. If a petitioner alleges a deficiency in the EIS or Environmental Report, then that concern is germane. If a petitioner alleges a deficiency in the method for monitoring to detect excursions, then that concern is germane. It is not necessary to determine the merits of a concern in order to determine that it is germane. Assuredly, this standard differs from assessments of "contentions" in formal proceedings. The informal standard is far easier to meet. *HRI I* at 280. A contention that the project's transportation of contaminated materials by truck over long

distances threatens the safety of people living, working, and traveling in the area, was found to be a germane area of concern. *Id.*

Accordingly, Petitioners have raised several germane areas of concern which allow for intervention and access to the hearing file. Petitioners need not specify their concerns in detail until they have been given access to a hearing file. *HRI I* at 275 (citing *Babcock and Wilcox (Apollo, Pennsylvania Fuel Fabrication Facility)*, LBP-94-4, *infra*, 39 NRC at 52).

Moreover, the Petitioners contentions do present genuine disputes with the Applicant on material issues of law and fact and each has adequately supported its petition in a reasonable manner in compliance with the Due Process Clause of the US Constitution. Petitions are to be construed in favor of the party seeking intervention. *HRI II* at 412 ("finally, while the petitioner bears the burden of demonstrating standing, the intervention petition is construed in the petitioner's favor.")

Petitioners have raised substantial environmental concerns. NEPA mandates that for all "major Federal actions significantly affecting the quality of the human environment," a detailed statement must be prepared to analyze the environmental impact of the proposed action, adverse environmental impacts which cannot be avoided, and alternatives to the proposed action. 42 U.S.C. § 4332(2)(C) (1988). If an EIS is not statutorily required, the agency in question must prepare an EA. 40 C.F.R. § 1501.4(b) (1990). Based on the EA, the agency must determine whether to prepare an EIS. 40 C.F.R. § 1501.4(c) (1990). If the agency determines that an EIS is not required, it must prepare a FONSI. 40 C.F.R. § 1501.4(e) (1990). NEPA review of the environmental effects of issuance of a... license requires consideration of site-specific environmental impacts of the project, as well as the cumulative environmental effects of the project. *LaFlamme v FERC*, 945 F.2d 1124, 1127 (9th Cir 1991).

Disputed Facts:

1. Water Usage. Petitioners contend that Applicant's water usage is exactly what they have permits to extract, namely 9,000 gpm prior the expansion and an additional 4,500 gpm with the North Trend expansion. Applicant contends that due to compliance with NDEQ standards created especially for Applicant's operations, its water usage should be based on a fictional "net consumptive use" of water. Applicant's representatives have publicly testified that the "net consumptive use" of water of Applicant's ISL mine is equivalent to one 113 gpm pivot sprinkler.¹ This creates misimpressions and misunderstandings by creating a false impression that Applicant's water usage is minimal or nominal when in fact it currently represents an enormous water usage of 4.7 billion gallons per year currently with an additional 2.4 billion gallons per year of usage planned for the North Trend expansion. Since Applicant has admitted that the water is changed and made unusable by the ISL operation, it has to take responsibility for the water usage and may not rely on a technical standard to create a false impression that its water usage is nominal. The Application fails to account for drought conditions or climate change. Reference Petition at p.19 with reference to TR 2.5.1 and 2.5.3. Yet Petitioner WNRC submits that Squaw Creek historically has not been dry except during the past few years as if something were sucking up all the water in the area. See Affidavit of Bruce McIntosh at Paragraph 7.

¹ In response to Footnote 16 of the NRC Response (at p. 20) concerning the August 21, 2007 public testimony of Applicant before the Nebraska Natural Resources Committee, Petitioners attach a copy of the transcript from such hearing with testimony of Applicant as well as Petitioners White Plume and Cook.

The NRC Staff disputes Petitioners characterization of the water being used by Applicant as “pristine” which has a dictionary definition meaning “not yet altered by human encroachment” or “in an original state or condition.”² NRC Response at 23 and 32. The NRC Staff has confused “pristine” with the word “potable.” Petitioners are aware that the pristine water used up and contaminated by Applicant in its current and proposed operations could be used for irrigation, and can be filtered and used for household and farm purposes. Just because the water is of a relatively ‘poor’ quality prior to filtering does not mean that such water is unusable or worthless as a water resource which is what the NRC Staff is arguing. See NRC Response at 21. The Application itself states that the groundwater has been geo-chemically changed by the ISL process and that it can not be restored to its pre-mining levels. As a result, Applicant ‘restores’ the water to a technical level created for it by the NDEQ.

The NRC Staff criticizes Petitioners’ contentions as lacking data or expert opinions when none is required. See, e.g., NRC Response at 32. For example, the NRC Staff argues that Petitioners provide no data or expert opinion that pre-operational water quality is ‘pristine’ when “pre-operational water” is by definition ‘pristine’ so that no such data or expert opinions are necessary.

10 CFR Section 51.45(b)(5) requires Applicant to state any irreversible and irretrievable commitments of resources. Due to the permanent geo-chemical changes from pre-operational water to post-operational water, the Environmental Report should state that 4.7 billion gallons per year of water is being irretrievably committed in current operations and that an additional 2.4 billion gallons per year of water will be irretrievably committed for the North Trend expansion.

² Encarta World English Dictionary.

The High Plains Aquifer is depleting and such depletion is being sounded as a warning sign. A Google search reveals plentiful information and data concerning the depletion of the High Plains Aquifer.

2. Water Contamination; Mixing of Aquifers. Petitioners contend that Applicant's activities are contaminating the water supplies as a result of spills and discharges of radioactive waste and re-injection of contaminated liquids into aquifers which the Application admits are not impermeable. Reference Petition at p.19 with reference to TR 2.6.2.8. Petitioners contend there is a mixing of the aquifers. Id.

Petitioner WNRC submits that the geologic mapping and lithostratigraphic correlations have been recently revised and redescribed for the High Plains Aquifer in Western Nebraska, including volcaniclastic sandstones of the Arikaree Group and epiclastic sandstones of the Ogallala Group. The sequence is underlain by siltstones of the White River Group and overlain by Quaternary deposits. The base of the Arikaree Group is narrowly incised into underlying strata. There is much more mixing of waters in this region than known 20 years ago according to the hydrologists in assembling a recent paper called "Revised Lithostratigraphy of Late Paleogene and Neogene Strata of the High Plains Aquifer in Western Nebraska, USA" by Hannan E. Lagarry et al., Department of Physical & Life Sciences, Chadron State College, Chadron, NE 69337, nebeearthmomma@yahoo.com. See Affidavit of Bruce McIntosh at paragraph 6.

In rejecting Petitioners' assertions concerning the mixing of the aquifers, the NRC Staff claims that Petitioners' statements "contradict, without providing any basis, the statements in

CBR's Application indicating that the Chadron Formation is a different aquifer than the High Plains Aquifer and that no reasonable mechanism for mixing has been identified due to the very low hydraulic conductivity of the confining layers between the Brule and Chadron Formations". This is a disputed issue of fact. Applicant's conclusory statement in its Application that neither the Brule nor Chadron Aquifers mix with the High Plains Aquifer, and the Staff's bare reliance on that assertion in rejecting Petitioners' concerns, is not altogether different than the argument that HRI made in the *HRI I* when the applicant sought to establish that there was no danger to the source of drinking water, despite the lack of understanding with respect to local geological features. In rejecting applicant's position, the Licensing Board stated "[b]ecause knowledge of the relevant rock formations is still rudimentary and plans are incomplete, there are enough reasonable doubts to establish "injury in fact." *HRI I* at 275.

Applicant's Environmental Report [5.4.1.3.2] concluded: "Since ISL operations alter the groundwater chemistry, it is unlikely that restoration efforts will return the groundwater to the precise water quality that existed before operations." Petitioners' contentions regarding the returning radioactive and chemically altered, heavy metal wastewater solution to the aquifer are clearly germane to issues before the Board, even though Applicant "is committed" by its Application "to returnin[ing] the groundwater to the restoration values set by the NDEQ in the Class III UIC Permit". The NRC Staff disputes Petitioners' contention of the potential of a slow-moving plume of radio-active water from Applicant's operation in the Brule Aquifer to the High Plains Aquifer.

The NRC Staff ignores Applicant's ER's listing of some causes of possible excursion of uranium and other heavy metals in the re-injection of mine wastewater, including:

[I]mproper balance between injection and recovery rates, undetected high permeability strata or geologic faults, improperly abandoned exploration drill holes, discontinuity and unsuitability of the confining units which allow movement of the lixiviant out of the ore zone, poor well integrity, and hydrofracturing of the ore zone or surrounding units.

Ibid, 4.4.3.2. The foregoing section of the ER shows that there is some mixing among the aquifers. A hearing and expert testimony is required to ascertain the amount of mixing and whether it poses a threat. Such analysis is required under NEPA as expressed in the regulations (e.g., Section 51.45(c)).

The NRC Staff do not address the ER's statement that "[r]egional data regarding flow in the Basal Chadron are limited," with additional information and "investigation" to be provided. ER 4.3.6. Thus, more information needs to be obtained to determine potential water quality/quantity impacts by the proposed expansion project. Applicant also ignores the potential problems due to water contamination of caused by unknown (but known to exist) fracturing between the Brule aquifer and the upper aquifer used by private wells in the North Trend area. As the ER [3.4.3.3] noted: "The exact definition of the 'overlying aquifer' at North Trend is somewhat difficult to determine." Thus, the ER wanted "additional future testing" prior to any mining in the proposed expansion area.

3. Use of Uranium for Weapons By Enemies of the US. Petitioners contend that there is no assurance that Yellowcake uranium from Applicant's ISL operations will not be used for nuclear weapons of a foreign country or terrorists or fall into the hands of such enemies of the United States. In its Response, Applicant fails to provide any evidence of any restrictions, or even a written assurance, that Applicant's uranium products will not be sold to China, Pakistan, North Korea or elsewhere to the highest bidder. Section 2012(d) of the Atomic Energy Act requires that source material be regulated in the US national interest. The NRC Staff has failed to explain how granting this license amendment,

when Applicant can provide no assurance that the uranium will in fact be used for power generation, would be in the US national interest. Therefore, the NRC lacks authority to grant such a license amendment without evidence that this risk is mitigated.

4. Increased Threats to Homeland Security. Petitioners contend that Applicant's proposal to truck radioactive resin on a regular route 365 days per year increases the risk of a terrorist attack and/or criminal interference that may result in the release of radioactive material – just as in the case of a 'dirty bomb.' In its Response, Applicant fails to provide any information contrary to Petitioners' contentions of such increased risk. Applicant apparently believes that no risk is created by the constant trucking of radioactive resin through Crawford, Nebraska. In *HRII*, it was found that trucking of radioactive materials was a germane area of concern. *Id.* at 283. The NRC Staff argues that there is no duty to address the environmental impacts from terrorist attack. However, the environmental impact is part of the homeland security evaluations that must be performed. In the instant case, the license amendment would authorize the regular, daily trucking of radioactive resin from a satellite facility to the main processing facility. All such trucks would be on a regular and usual route and would be unguarded according to the Application. Since this is a new type of activity that is proposed in connection with the North Trend expansion and one that is not currently licensed, NEPA review thereof is triggered. This is distinguished from cases like *Oyster Creek*, cited in the NRC Response at 42, which reject the triggering of NEPA review for consequences of terrorism against licensed facilities when no new type of activity is being licensed.

5. Climate Change Factors and the Environment. Applicant is required by NEPA and 10 CFR Section 51.60 to submit an Environmental Report. 10 CFR Section 51.45(b) requires

Applicant to describe the environment affected and the impact of the proposed action. Climate change is now part of the environment. Therefore, the Environmental Report should discuss the implications of climate change in order to conduct the analysis required by Section 51.45(c). The NRC is required to take a “hard look” at the environmental consequences in accordance with NEPA. See, e.g., LaFlamme v FERC, 945 F2d 1124, 1127 (9th Cir 1991)

6. White River Fault. There is a dispute as to whether the confining units are intact or whether there is mixing due to hydraulic movement which is increased due to earthquake activity along a fault which runs through the affected area. There are other unknowns including the White River Fault through the Brule/Chardon aquifer. “Changes in aquifer pressure potentially could impact activity related to the fault and the transmissive characteristics of the fault (E.G., resistance to flow). There are numerous documented cases where injection in the immediate vicinity of the fault has caused an increase in seismic activity.” ER 4.3.1. In light of the unknowns regarding fracturing and potential intermixing of aquifers, together with the history of releases of radioactive and other heavy metals, Applicant’s contentions that “quarterly” testing of wells, streams, impoundments within a kilometer of its operations did “not indicate the presence of radioactive contamination,” only enhances the germane nature of the Petitioners’ contentions in this regard.

7. White River Spills. Applicant is responsible for several spills into the White River or into areas which run into the White River. The North Trend expansion is likely to increase the risk of spills into the White River. Failure to consider these impacts is contrary to Section 51.45 requirements.

8. Pre-Historic Indian Camp. Petitioner Cook and the Native American members and stakeholders of Slim Buttes Ag. Dev. Corp., represented by Joe American Horse, have an genuine and substantial interest in the protection of a Native American archeological site. The NRC Staff has not asserted any jurisdiction but has merely supported the conclusions stated by Applicant in the Application. Petitioners Cook and Slim Buttes Ag. Dev. Corp. have disputed any authority Applicant may be using to make any conclusions about such Native American matters. Petitioners assert that Applicant made calls to but did not receive any responses from the Oglala Sioux Tribe or Nation except questions from one Oglala individual named Harvey Whitewoman, who expressed concerns about Applicant's water usage. Applicant fails to analyze the issue properly in its Application and fails to obtain approval from Native American authorities.

9. Treaty Issues. The Oglala Sioux Tribe members and stakeholders of Slim Buttes Ag. Dev. Corp., represented by Joe American Horse, have a genuine and substantial interest in the protection of their treaty rights under the Ft. Laramie Treaties of 1851 and 1868 with the Great Sioux Nation, which include superior water rights in the region which have never been quantified. Affidavit of Joe American Horse at Paragraph 7.

10. Indigenous Peoples Issues. Petitioner Cook and the Native American members and stakeholders of Slim Buttes Ag. Dev. Corp., represented by Joe American Horse, have an genuine and substantial interest in the correct application of the Declaration on the Rights of the World's Indigenous Peoples (the "Declaration"), Article 32. General Assembly Resolution A/61/L.67 of 7 September 2007. The Declaration provides for, among other things, the right of indigenous peoples to develop priorities and strategies for

development and use of their territories. The site of the North Trend expansion includes the territories of the Great Sioux Nation referred to above. The Declaration also provides for States, including the United States (and its agencies including the NRC) to “provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.” *Id.* and Reference Petition at p.3-4. Petitioners Cook and members and stakeholders of Slim Buttes Ag. Dev. Corp., represented by Joe American Horse, use the water from their wells which are downstream from the proposed North Trend site, for spiritual purposes including the *inipi* or “sweat lodge” ceremony. Affidavit of Joe American Horse at Paragraph 6; Affidavit of Thomas K. Cook at Paragraphs 5-6.

III. Discretionary Intervention:

The NRC has "broad discretion to provide hearings or permit interventions in cases where these avenues of public participation would not be available as a matter of right." *Andrew Siemaszko, CLI-06-16, 63 NRC 708 (2006)*. In exercising this discretion, presiding officers and licensing boards traditionally consider the following six factors, originally developed in case law but now codified in NRC regulations. Contrary to the assertions by the NRC Staff, Petitioners refer to these factors in the body of their Petition, taken as a whole. See Reference Petition at p.5 (“if the petition for leave to intervene as a matter of right is denied, then this request includes a request to be allowed discretionary intervention under Section 2.309(d)”) (emphasis added). Accordingly, the NRC Staff’s objection that Petitioners have not technically complied with Section 2.309(e) are

misplaced. The Petition, as a whole, does address the factors described in Section 2.309(e).

Factors weighing in favor of allowing intervention [the "positive" factors] -- (i)

The extent to which the requestor's/petitioner's participation may reasonably be expected to assist in developing a sound record; (ii) The nature and extent of the requestor's/petitioner's property, financial or other interests in the proceeding; and (iii) the possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest. *Siemaszko* at 708. The first factor -- assistance in developing a sound record -- is the most important. *Id.* Petitioners Cook and the stakeholders of Slim Buttes Ag. Dev. Corp., represented by Joe American Horse, are critical to developing a sound record related to indigenous peoples issues. Petitioner WNRC is critical to developing a sound record related to water degradation issues.

Petitioners live in Crawford, Chadron and Slim Buttes, in each case within 80 km (and in Dr. Anders case within one km) of the current mine site and proposed expansion. Petitioners breath the air, drink the water, and some raise livestock and crops on the land, utilizing the water for bathing, irrigation and ceremony and are therefore concerned about airborne and surface and subsurface water contamination and loss. As people of the land they are familiar with the impact that such contamination and water loss can have on the land and its inhabitants as well as the cultural impact in light of their traditional ways. They are also concerned about the potential direct impact on them and their neighbors, for many generations to come, resulting from this uranium mining operation and proposed expansion.

As to the Lakota members and stakeholders of Slim Buttes Ag. Dev. Corp., they have an ancestral and legal interest in protecting the air, water, and lands within the boundaries of the 1851 & 1868 Ft. Laramie Treaties.

As Native Americans, Petitioners Cook and Slim Buttes Ag. Dev. Corp. are interested in the preservation of identified and as yet unfound "pre-historic" sites of their ancestors and protecting the Earth. They can contribute much to the hearing by way of questions and information. For them, these responsibilities of the protection of their land on behalf of the future generations are of paramount interest and value.

Petitioners are particularly concerned about CBRs proposed expansions increased impact on the air, water, and soil. Due to fracturing of aquifers including the Brule/Chardon aquifer being mined, they are concerned about lowering of water tables and contamination of water supplies from the mining operation due to unknown and fracturing and other sources of intermixing of aquifers.

A granting of the proposed CBR expansion will threaten the land-use interests of the future generations of Petitioner White Plume and other members of Owe Aku of lowered water tables and increasing the area of underground water sources which are so contaminated as to require exemption from the Clean Water Act and can no longer be a domestic water source.

Factors weighing against allowing intervention [the "negative" factors] – (i) The availability of other means whereby the requestor's/petitioner's interest will be protected; (ii) The extent to which the requestor's/petitioner's interest will be represented by existing parties; and (iii) The extent to which the requestor's/petitioner's participation will

inappropriately broaden the issues or delay the proceeding. *Siemaszko* at 708.

Neither Applicant, other than generally resisting intervention, does not address Petitioners' request for discretionary intervention. The NRC Staff objects to discretionary intervention but aside from asserting technical complaints as to form of the pleading, the NRC Staff does not raise any negative factors. No other petitioner or party to this proceeding will represent the important interests represented by these Petitioners. There is no evidence of any intention to frustrate or delay this proceeding. In fact, there are no negative factors present weighing against intervention.

We understand that discretionary intervention is "an extraordinary procedure." *Siemaszko* at 708. In this case, Applicant runs the largest ISL uranium mine in the United States. Applicant purports to be the largest uranium company in the World. See www.cameco.com. Since this case involves the largest mine of its type in the United States run by the largest uranium company in the World, Petitioners respectfully submit that this case is ripe for such an extraordinary procedure as discretionary intervention should any of the Petitioners be found to lack standing but possesses a germane area of concern and/or admissible contention (assuming a hearing will otherwise be held due to the standing and contentions of at least one petitioner or on the NRC's request).

Where, as here, there are positive factors and no negative factors present, and in light of the importance of this proceeding in the uranium industry due to the size of the project and Applicant's position in the industry, discretionary intervention is entirely appropriate so as to foster a complete and sound record and meaningful participation by interested parties.

V. Subpart G Proceedings Discretionary:

Section 2.310(a) provides that proceedings for a licensee-initiated amendment may be conducted under subpart L. In the discretion of the presiding officer, such proceedings may also be conducted under subpart G. 10 CFR Section 2.700 (“the provisions of this subpart apply to ... any other proceeding as ordered by the Commission.”) Because material facts are at issue and as directed by Section 2.309(g), Petitioners have cited Section 2.310(d) in connection with their request for subpart G procedures. See Reference Petition at p. 5. Subpart G procedures are appropriate due to the nature of the issues in this case, involving technical issues related to water movement, geologic formations, intermixing of aquifers, contamination and depletion, as well as cultural and indigenous peoples issues.

CONCLUSION

For the reasons stated above, each of the Petitioners have an interest that may be affected by a decision in this proceeding and, accordingly have demonstrated standing to be admitted as a participant. Further, each Petitioner has expressed areas of concern germane to the subject matter of the proceeding and, therefore, each Petitioner has admissible contentions for purposes of this proceeding. Based on the Reference Petition, it is clear that each Petitioner has asserted admissible contentions which can be further articulated after intervention is granted and Petitioners have access to a hearing file in this case. In the event that, as to any Petitioner, standing is not found, then discretionary

intervention should be granted for that Petitioner, especially in light of the fact that this project involves the largest ISL uranium mine in the United States and is managed by the largest uranium company in the World. Finally, the technical, cultural and indigenous peoples rights issues present complexities in this case which are not present in other cases and which require the NRC to implement subpart G procedures for this proceeding.

Respectfully submitted,

THOMAS KANATAKENIATE COOK

SLIM BUTTES AGRICULTURAL DEVELOPMENT
CORPORATION

WESTERN NEBRASKA RESOURCES COUNCIL

BY:



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RE: Legislative Hearings on Uranium Mining in Northwest Nebraska

Dear Tom:

Judi asked me to write you to update you on NCIA's activities with regard to LR105 and the testimony at the Natural Resources Committee Hearing on August 21, 2007.

The following is a brief summary of what we have done so far:

1. NCIA has maintained contact with Senator Louden's office and obtained copies of the transcripts of the hearing that you testified at in August as well as copies of exhibits that were presented at that hearing. I have included that material with this letter.
2. Via email, Judi contacted Marilyn Richardson and Tim Coulter of the Indian Law Resource Center on your behalf and requested that Tim be put in contact with you and gave their office your contact information. Judi also provided Marilyn and Tim with the background information on this issue that you had shared with her.
3. This issue has been put on the agenda of the upcoming NCIA Quarterly Commissioner meeting on November 2, so that it can be shared with all of NCIA's commissioners.

The legal counsel for Senator Louden's office, Jody Gittins, has been out of the office due to family emergencies, so there are currently no updates or reports to share with you.

Contact our office if you have any questions in regard to NCIA's assistance with this matter. We look forward to seeing you in Lincoln on November 2 for our meeting.

Cordially,

Zachary Meyer
NCIA Public Information Specialist

(ENC)

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any idea on what we're going to do with these old TVs? [LR77]

DEBRA DOPHEIDE: Well, in our case we have Mr. Martin who takes our...you know, we refer people to him. I don't know what the rest of you poor little towns are going to do. (Laugh) [LR77]

SENATOR LOUDEN: Yeah, but that...I mean I'm thinking a little bit bigger than that, you know. [LR77]

DEBRA DOPHEIDE: I understand what you're saying, do I have any idea? No, I don't. I would tell you this, I put a lot of trust in NDEQ. And I put a lot of trust in their sources and the people that they know. And the fact that I know that they will come up with a solution to this, I know they will, because they always do. [LR77]

SENATOR LOUDEN: Is it going to be better than running over them with a crawler? [LR77]

DEBRA DOPHEIDE: I think so. (Laugh) [LR77]

SENATOR LOUDEN: Okay, thank you. [LR77]

DEBRA DOPHEIDE: Thank you. [LR77]

SENATOR LOUDEN: Next testifier? Is that the last testifier on LR77? Thank you. Then we'll go to...what's the number? LR105. [LR77]

JODY GITTINS: Good afternoon, Chairman Louden, members of the Natural Resources Committee. My name...it's still morning. Good morning, Senator Louden, (laugh) members of the Natural Resources Committee. My name is Jody Gittins, J-o-d-y G-i-t-t-i-n-s. I am introducing this LR105 on behalf of the Natural Resources Committee.

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The purpose of the study is to look at uranium mining in the state of Nebraska with respect to water consumption, water use, expansion, and its contracts with the state of Nebraska. We know that uranium mining is increasing, and we also know that the price of uranium has increased over the years and, to date, no one has really taken a look at what that industry is in the state of Nebraska, and the Natural Resources Committee has oversight over that and has requested the interim study be conducted.

Representatives from the only uranium mining company located in the state of Nebraska will be testifying immediately after me to be able to ask and answer all your questions. [LR105]

SENATOR LOUDEN: Questions for Jody? Seeing none, thank you. And ready for our first testifier. [LR105]

MARK McGUIRE: Good morning, Chairman Loudon, members of the committee. My name is Mark McGuire, M-a-r-k, McGuire, M-c-G-u-i-r-e. I am an attorney for and lobbyist for Crow Butte Resources. What our effort today will be is to present information to you about everything there is to know, and it can be learned in an hour and a half, about uranium mining and the uranium mining process. And we will give you information that will address what I understand to be contracts with Nebraska, in other words, its business relationship in Nebraska, what it puts into the state; water issues, tax issues. Hopefully, we will cover all of those parts. The...I've been associated with Crow Butte Resources since its beginnings, basically, in Nebraska in the early 1980s. Early on, in approximately 1984, we sought and were granted by the DEQ and the EPA a permit to build a pilot plant. We had the idea of in situ uranium mining, and "in situ" means in place. We had the idea; we wanted to proceed forward. We were required to build a pilot plant showing exactly how we could mine the uranium, process it, reconstitute the water in the aquifer that the uranium came from to show that what we were saying was possible was indeed possible. Early on in those days there was significant opposition from a variety of forces. There were dire predictions about water consumption, water pollution, as well as general environmental damage. There was lots

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of litigation filed against us, and we prevailed in all of those. I think we also prevailed in the court of public opinion, thank you. And I'll tell you a somewhat humorous but...and very accurate story, and that is the first hearing we had, and this is prior to the pilot plant project, was held out here in Crawford. It was held in the high school auditorium. We were sitting on the stage and it was standing room only. There were two State Patrol officers there, uniformed, to provide peace, and it was a very animated process. The first witness who presented himself to testify had been at Miller Time for some time before he showed up and so that's kind of the tone and tenor of how this whole thing got started. But now, some 25 years later, Crow Butte has done exactly what was promised that we could do and would do. We want to present information to you today in both how the mining operation works and then to actually see the mining process. My vision of this is something like this is science class; after lunch we're going to invite you to go to the lab to see how it all really comes about. You will learn as well, however, about the tremendous economic impact Crow Butte Resources has on both the local as well as the state level. What we're going to present for you is a PowerPoint presentation. Mr. Jim Stokey is going to do that, which raises two procedural issues, Mr. Chairman. First of all, I'm not sure what we're supposed to do here in terms of proponent, opponent, or neutral. I didn't see this as a neutral...or a pro or con issue. Makes a lawyer crazy not to be on one side or the other, but I think we can just maybe be neutral and that works. Secondly, I think you might want to consider moving over to sit here. We can all leave or move back, because it will be on that screen. [LR105]

SENATOR LOUDEN: Okay. How long will it take? [LR105]

MARK McGUIRE: The PowerPoint? [LR105]

SENATOR LOUDEN: Yeah. [LR105]

MARK McGUIRE: Probably close to an hour. Your neck is going to be... [LR105]

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SENATOR LOUDEN: An hour? [LR105]

MARK McGUIRE: But I just realized that once we got seated here, that that's where the projection goes. [LR105]

SENATOR LOUDEN: Can we go without? There's other people that would maybe like to testify, and I hate to, you know, put the whole PowerPoint for the testimony when other people would like to testify, if that's all right, for an hour. I didn't realize you was going to have a PowerPoint and I didn't realize it was going to last that long. [LR105]

MARK McGUIRE: We can do it in 30 minutes. [LR105]

SENATOR LOUDEN: Can you cut it down to 15? (Laughter) [LR105]

MARK McGUIRE: To 15? You're a hard bargainer. [LR105]

SENATOR LOUDEN: Yeah, I just got done selling cattle, so I know what... [LR105]

MARK McGUIRE: (Laugh) We can go as short as we can. Maybe we can (inaudible). We'll... [LR105]

SENATOR LOUDEN: Can we do it this way, other testifiers, and then we can finish up with the PowerPoint? [LR105]

MARK McGUIRE: Sure. That's a good idea. [LR105]

SENATOR LOUDEN: Okay. We'll go with that then. Next testifier. So you know what's ahead of you, so you better be ready to go if you want to testify now. [LR105]

DEBRA WHITE PLUME: (Exhibits 7, 8, and 9) Well, good morning. My name is Debra

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White Plume. I'm an Oglala Lakota from Pine Ridge, South Dakota. I'm the director of Bring Back the Way, a grass-roots cultural preservation and social change NGO with environmental and health consultative status to the Oglala Sioux Tribe. I wanted to share with you a very short and brief history. Our Lakota people have ancient spiritual, cultural, and historical ties to this entire region of the Great Plains. In fact, the ground we stand on is 1868 Fort Laramie Treaty land, a treaty ratified by the United States Congress and recognized by international law. Regarding the consumption of water and expansion of uranium mining, our people believe water is our first medicine, water is sacred, water is the adornment of Mother Earth, water is life. Without water, there is no life. There's a finite amount of water on Mother Earth. The water we have now is the water that was here in the time of the dinosaur and it is the water that will be here in the time of our grandchildren's grandchildren and onward. Research documents that in situ leach mining to extract uranium poses many risks to the contamination of ground water, land, air, people, and plants. The Crow Butte Resources in situ leach uranium mine currently operating in Nebraska has, in fact, spilled and leaked radioactive contaminants each year since they began operating. Crow Butte Resources has requested and received approval to utilize 9,000 gallons of water per minute to extract and store uranium and waste at their facility, which is a few miles from here. Crow Butte has applied to develop two new mines in the expansion of their current license. These two new mines will also utilize ground water to extract uranium and store the radioactive waste. It's a scientific fact that mining can pull other minerals and metals from the earth in addition to the intended element. They want to mine uranium. They also pull out arsenic. There are currently 26 towns and cities in Nebraska attempting to remedy the illegal maximum contaminant level of arsenic as the new MCL became 10 in January of last year. There are 98 homes on the Pine Ridge whose wells drinking water quality test revealed an arsenic MCL from 2 to 12 times higher than the legal EPA limit. The United States Geological Survey rural water program, the Indian Health Service, the Federal Agency for Toxic Substances and Disease Registry, and women of all red nations have all tested the ground water and surface water on the Pine Ridge. The tests reveal alpha emitters in the wells, streams, and springs across the Pine Ridge. We are doing a broad

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health study to create an epidemiology map to examine further the published reports of the South Dakota Department of Health which state that American Indians in South Dakota have a significantly higher rate of cancer than whites; that we die faster and younger; and that our infant death rate continues to rise annually and is the highest in the nation. The diabetes rate on Pine Ridge is translated at one diagnosis per day. Science tells us the kidney is often more quickly affected by prolonged exposure to even low doses of arsenic and radionuclides, causing death prior to the onset of cancer in many patients. The radionuclides detected on the Pine Ridge, according to the USGS report, include thorium 230, which is a result of uranium mining, which may have traveled to Pine Ridge from the Edgemont area. However, Crow Butte Resources, utilizing ground water and a common aquifer which covers eight states, is a very serious concern to our people. The current in situ leach uranium mine in Crawford is producing nuclear waste, which is stored on site and eventually put back into the ground water. The nuclear industry will tell us ISL is safe. Other viewpoints in the scientific community tell us it is not safe. In the Lakota world view, water is to be respected. ISL uranium mining is disrespectful to water and to all of creation. Contaminating the water and, thus, impacting all of creation is disrespectful, as well as deadly eventually. The use of sacred water to create contamination is not good for life. ISL mining creates a liquid nuclear waste dump. The nuclear industry has created nuclear waste. They have created something that cannot be destroyed. The Canadian-based corporation of Cameco, Incorporated (sic), which owns Crow Butte Resources, is mining a very dangerous metal, creating a pollution that cannot be captured once released; takes its profits and leaves us with a contaminated environment and a depleted aquifer. In the current drought, to continue to contaminate and deplete the ground water is a human mistake that may never be remediable. And I may just have created that word. I urge the state of Nebraska to work hard to work with Crow Butte to reclaim this area and the water, for the powers that be to not approve the Crow Butte application for expansion and to not renew their existing ISL license, and to now allow the use of our precious water for this dangerous endeavor. The effects are too damaging and far reaching. I urge you, I urge Nebraska to adopt the precautionary principle adopted at the 1992 Rio

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Summit, which my brother will be talking about after me. The purpose of these hearings where we now sit are for folks like me to have a voice to be heard by leaders and decision makers. For the record, I submit the Oglala Sioux Tribal Ordinance 07-40, enacting the Natural Resources Protection Act of 2007 and declaring our homeland a nuclear-free zone; and Resolution 07-149 regarding uranium contamination. And I submit for the record the Bring Back the Way water, mining, and health report regarding contamination of the Pine Ridge. I did not bring copies for everybody, and I apologize for that. I brought one copy for the record. Thank you for listening to me. [LR105]

SENATOR LOUDEN: Questions for Debra? Is that...that's right, your name, Debra? [LR105]

DEBRA WHITE PLUME: Debra, D-e-b-r-a, yes. [LR105]

SENATOR LOUDEN: Yeah, you didn't spell, yeah. Yeah, and you're from Pine Ridge? [LR105]

DEBRA WHITE PLUME: I'm from Pine Ridge. [LR105]

SENATOR LOUDEN: Okay. Senator Christensen. [LR105]

SENATOR CHRISTENSEN: Thanks, Chairman Louden. Debra, I thank you for coming. You mentioned that there's a loss of water, and you also mentioned that there is contaminated water returned to the ground water. Where is the loss and what amount of water is returned? [LR105]

DEBRA WHITE PLUME: When I talked, I talked about the need for a water study on Pine Ridge. That's something we need to document because common sense tells you, if you're pulling water out of the aquifer, there's a loss occurring, just like your water cup there. As you drink it, it gets lower and lower. If you don't pour anything back in there,

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you're depleting your water supply. That's one of the things that our tribe wants to find out in terms of what is the rate of depletion. But science tells us for this aquifer it is not being rejuvenated at the same rate that it is being depleted. If we're pulling up to 9,000 gallons a minute, 24 hours a day, 7 days a week, 365 days a year, our common sense just tells us that we're obviously not rejuvenating it at 9,000 gallons a minute. This might be something the DEQ and other entities in Nebraska need to look at. [LR105]

SENATOR CHRISTENSEN: Did I hear you say that there was also contaminated water going back? [LR105]

DEBRA WHITE PLUME: In doing this research, and it's in our report, there are many documented cases of spills and leaks occurring at Crow Butte Resources, pages of them, there's pages of them and we have them documented in this report, every year since they've been operating. Every year their ponds leak, their pipes leak, their wells leak--1997, 1998, 1998, 1999, 2000, 2000, 2000, 2000, 2001, 2001, 2002, 2002, 2002, 2003, 2004, 2005, 2005, 2005, 2005, 2005, 2006, 2006, 2006--spills and leaks of radioactive contaminants at Crow Butte Resources. I can't tell you the exact number of gallons. I know one of our research studies of your reports in Nebraska state that over 300,000 gallons of contaminated waste was spilled and Crow Butte was unable to recover all of that. Your records state that one-third of it was cleaned up and that the rest, they weren't able to clean it up so that that area is now considered unfit for future use and considered a sacrifice area. That's what our research documents. They could tell you different today. They're here. [LR105]

SENATOR CHRISTENSEN: Thank you. [LR105]

SENATOR LOUDEN: Other questions, Mark? [LR105]

SENATOR CHRISTENSEN: No. [LR105]

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SENATOR LOUDEN: Other questions for Debra? I have one or two. When you talk about arsenic on the Pine Ridge, that is in the ground. That doesn't necessarily come from Crow Butte water or something like that, is it? Because we have arsenic problems all over western Nebraska and western South Dakota and the whole bit. That's more or less coming out of the ground itself, isn't it? [LR105]

DEBRA WHITE PLUME: It... [LR105]

SENATOR LOUDEN: Can that be blamed on Crow Butte? [LR105]

DEBRA WHITE PLUME: Well, that's one of the things that we're looking into, because there's two types of arsenic. Arsenic, as arsenic, is naturally occurring. We do have that. We do know that. You know that in your state. There's such a thing called inorganic arsenic and that is a result of mining. And we're looking into... [LR105]

SENATOR LOUDEN: Now is that...okay, when you talk about that, is that from up around... [LR105]

DEBRA WHITE PLUME: Edgemont area? [LR105]

SENATOR LOUDEN: ...Edgemont area? And that was a different type of mining up there. They... [LR105]

DEBRA WHITE PLUME: That was open pit. [LR105]

SENATOR LOUDEN: ...they went in and dug it out and made a mess years ago, and I don't know if they're even mining anything up there now. But is that...is that where you got some of your inorganic arsenic, as you call it? [LR105]

DEBRA WHITE PLUME: We believe we got some from the mining at Edgemont,

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open-pit mining, and we believe the contaminant may be entering the aquifer from Crow Butte Resources. We believe that also. The Indian Health Service is compiling data from the early 1970s to the current time in order to look at it with a comprehensive viewpoint over time, over the last 30 years, and I imagine Nebraska officials are doing the same thing. [LR105]

SENATOR LOUDEN: Now you mentioned radioactive material. Is that...is that what...you're talking about yellow cake that gets spilled on top the ground or what do you mean by radioactive material that got...that got spilled or whatever? [LR105]

DEBRA WHITE PLUME: The waste from ISL mining is radioactive. The water and the sludge that's left over, once they pull out the substance to make yellow cake, is radioactive. [LR105]

SENATOR LOUDEN: Now is that...at what level, I guess? I mean is that any higher level than if you walked into a mine up at Edgemont? I mean, you walk into one of those mines, you're going to...the clicker will click. And is it any higher, what you're talking about, than what would more or less be natural occurring? I guess that was kind of my question. [LR105]

DEBRA WHITE PLUME: I don't know how quickly you would be contaminated, but its life is 144,000 years before it loses its radioactivity. [LR105]

SENATOR LOUDEN: Okay. Other questions for Debra? Senator Fischer. [LR105]

SENATOR FISCHER: Thank you, Chairman Louden. Just a short question. Thank you for coming today. I haven't looked at the map for this. How far is the reservation from the mine? [LR105]

DEBRA WHITE PLUME: Thirty-eight miles, as the crow flies. See, our border, we

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border with Nebraska maybe 30 miles from here. [LR105]

SENATOR FISCHER: I'm from Valentine, which is close to the Rosebud Reservation.
[LR105]

DEBRA WHITE PLUME: Uh-huh. Right. [LR105]

SENATOR FISCHER: And I am aware of the problems and challenges faced on that reservation by the Lakota, and I assume that you also face many of those challenges. You brought up diabetes and life span, life expectancy, and I guess I'm asking were you implying that those are problems caused by mining? [LR105]

DEBRA WHITE PLUME: I'm telling you that I believe uranium mining has a disastrous effect on human beings and our environment, and science tells us that. Nuclear waste is deadly in any way, shape, or form. [LR105]

SENATOR FISCHER: You said there may be different materials in the water, on the reservation, in the aquifer, in your wells. You use that...you used "may be" a couple times. [LR105]

DEBRA WHITE PLUME: Uh-huh. [LR105]

SENATOR FISCHER: Do you have any kind of studies or research on that? [LR105]

DEBRA WHITE PLUME: Yes. I have studies here that show. Indian Health Service, USGS, the National Toxic Registry, our rural water program have all tested the water and there are radionuclides in the water. Alpha... [LR105]

SENATOR FISCHER: Is it in some of the materials that you have for it? [LR105]

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DEBRA WHITE PLUME: It's in here, yes. [LR105]

SENATOR FISCHER: Okay. [LR105]

DEBRA WHITE PLUME: Alpha emitters; radium 226, 228 combined; cadmium; barium; they found thorium 230--and these are agencies of the United States government that came here and tested our water, you know--and including arsenic. I wanted to say that, just in closing, I know the battle that took place in Nebraska government to not become a nuclear waste dump. I remember that and how the Governor had to pay a big fine to not become a nuclear waste dump. And I really believe there's good people in Nebraska. There's good people everywhere. And I want to tell you that we're having a uranium summit on Pine Ridge and we're bringing in ISL experts from around the world and we would like to have one day of presentation in the state of Nebraska, and we may try to work with a student group here on campus to do that. I believe that every day every citizen needs to know the pros and cons of uranium mining. And once people make up their minds based on information, then we can say we have made an informed decision. Thank you. [LR105]

SENATOR FISCHER: Thank you very much. [LR105]

DEBRA WHITE PLUME: Uh-huh. Who do I give my...down here? Okay. [LR105]

JODY GITTINS: Debra, would you like to just give it to me, and I'll (inaudible)? [LR105]

DEBRA WHITE PLUME: Sure. [LR105]

SENATOR LOUDEN: Yeah. Thank you for testifying. Are you on the tribal council up there? [LR105]

DEBRA WHITE PLUME: No, we're...the organization I work for is a nongovernmental

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organization with environmental and health consultative status to the tribal government.
[LR105]

SENATOR LOUDEN: Okay. Uh-huh. Thank you for testifying. [LR105]

DEBRA WHITE PLUME: Thank you. [LR105]

THOMAS K. COOK: Good morning, Senator Louden and esteemed senators of the Natural Resources Committee. My name is Thomas, T-h-o-m-a-s, K., for Kanatakeniate, Cook, C-o-o-k. I've been a resident of Chadron since 1978. I am the president of the Chadron Native American Center, the legal representative body of Native Americans in the northern Panhandle. I'm also president of the High Plains Community Development Corporation. Also, I am a member of the Governor's Commission on Indian Affairs for the northern Panhandle. I say a hearty thank you for your presence here, your interest, and your dealing with the proposed expansion of Crow Butte Resources' uranium mining just west of us. My wife of 32 years and I are landowners here in Dawes County and also 20 miles north on the Pine Ridge Reservation on her family allotment. In the 34 years we have developed our homestead, the White River has dried only two or three times. I remember them: 1980, 1982, and 2007. Last year was similar. The White River consists of stagnant green pools of muck right now. In 1980, I was the administrative assistant for the vice president of the tribe, and when the water dried up the executive committee sent the legal counsel to the Natural Resources office, which I understand you oversee, and the question the young attorney asked, the attorney Robert Grey Eagle, asked the officers there was we have the prior use right, the Winters Doctrine, the river is ours, the Lakota Indians, as well as it is you good people down here in Nebraska, so we want to inquire about the regulations for water passing through the reservation. And the attorney told the executive committee--I was there at the time--he said the officials told him we don't have to leave enough water in the river for the Indians to piss in. That was 1980, ladies and gentlemen, and I certainly hope the attitude, the sense of things in your officers at the local natural resources district are more educated,

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up to date, and considerate of their own place here. The Native American people, you know, have been here untold generations of time. We respect you, the people here who have been how many generations in this area. Each of you can say, oh, my grandfather, my great-grandmother came from here and there in Europe. The people that are from here have a vastly different history they refer to, not only in their conscious, social, analytical thinking, but in their spirit. So the thing about water might be something radically different from the quantitative, analytical approach that you take. It's something that has life meaning to it, close as your own grandchildren. I have come here to oppose, state my opposition and promise the opposition of Native American organizations, individuals, associations, and tribe in this region for more radioactive poisoning to this environment. My question is simple. Do the pools out west of Chadron, 20 miles, do those pools constitute a radioactive nuclear waste dump? It's a simple question. But I understand that these speculative funds coming in are basically foreign entities from Canada. So are foreign entities releasing radioactive material on U.S. soil to make a profit? And if so, is that not an act of war? How is that different from a dirty bomb? I ask this question because from my five acres of property in Dawes County I overlooked Crow Butte, and it's 20 miles from my house, so I have a vested interest. And I understand you have a vested or professional interest. But it's scary to me because of the revelations of the water book that Mrs. White Plume has presented to you, the results of research over many generations of tribal councils, and the assault of more and more of these in situ mines. The people suffer from a certain lack of information and understanding, our population, in general. As I understood, in 1997, when they began this mine over in Crawford, there's going to be how many mines? Well, Waymon Wilde, Jr., who had been at Daracant (phonetic) for many months out there, and finally left because he's scared of the stuff. He's a young man--20s. I asked him, how many of these in situ mines there are out there right now, and he said there are close to 8,000. So if these 8,000--and they're, by-the day, continuing by the day, expanding and expanding and expanding--so at what...at what...at what...we heard the man say, some man say, that the uranium is all over in the region. Well, is Crow Butte Resources going to come right to my property, 20 miles east, and are they going to use

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up 9,000 gallons a minute, each one of them or combined, or what is the water use of this process? I'm concerned because I'm employed for 14 years as a program director and field coordinator for Running Strong for American Indian Youth, an organization national in scope, but it has brought \$30 million of development--water wells, housing, diabetes clinics--all sorts of programming to Pine Ridge Reservation and to Nebraska through the Native American Center. And this year my program set in 356 vegetable gardens on Pine Ridge communities. Up until a few years ago, my primary source for irrigating my half-acre garden was the White River. And when it started drying up, why, naturally, I plugged into another source. But if the test is use it or lose it--do the Indians use the river? Yes, we do. We depend on it for such luxuries as gardening, feed your own families. Of course, if you say, oh, no, the government is going to feed your family, you don't have to bother with the stuff, therefore, you don't have to worry about using water and you're going to lose it, that's the situation we're in on Pine Ridge today, Senator. I came to urge, refer, and advise that your committee and the state of Nebraska adopt a precautionary principle because we are potentially affected parties in this whole business and process. This precautionary principle has been adopted in international law through the Rio Declaration adopted at the 1992 U.N. Conference on the Environment and Development, also called the Earth Summit in Rio de Janeiro. This same principle has been adopted by the European Union, and further articulated in 1998 at the Wing Spread Conference as follows, one sentence: When an activity raises threats of harm to human health or the environment, precautionary measures should be taken, even if some cause-and-effect relationships are not fully established scientifically. In this context, the proponent of an activity, rather than the public, should bear the burden of proof. The process of applying the precautionary principle must be open, informed, and democratic, and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action. Senators, this precautionary principle is one we are going to proceed with in the Chadron Indian Organization, the Oglala Sioux Tribe, and follows the cares and the address of the native nations at a world uranium hearing in 1992. Native people over all believe that uranium should be left in the ground, in its natural resting place. I fear that the same

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thing is happening as happened 130 years ago with gold, in a time none of your ancestor...or few, some maybe of your ancestors were here, but they were coming by droves because of this fever of gold. The price went up like uranium prices going up in the last year, 18 months, and next year it's going to be a couple hundred dollars. And so you've got all this speculation, thousands of companies speculating how can they become millionaires who get rich off poisoning of the water and the people. Senator Louden, I say thank you for your interest, your attention paid to this matter, and I hope you will proceed with the sense of precautionary principles. Before you proceed, I would like you to strictly examine this whole matter of mistakes. We're all human. Our endeavors are prone to mistakes. First thing this morning the good senator made a mistake right off the bat. He misspoke somebody's name over here and, sure... [LR105]

SENATOR LOUDEN: Are you done testifying? (Laughter) When you start in on me, you start in on the wrong person. While I'm talking to you here, on the White River, that Lake Whitney Dam and that is on the White River. [LR105]

THOMAS K. COOK: Yes. [LR105]

SENATOR LOUDEN: Okay. And is that a Bureau of Reclamation project, or who owns that dam or who controls that irrigation on that? And is there return water that comes out of that lake after there's irrigation canals? [LR105]

THOMAS K. COOK: My understanding is that the natural resources district in Chadron oversees the Whitney irrigation project. I thought back, for sure, it must be the Whitney Dam that choked off the river, so I went over there. I went to Whitney, and that dam is a mud puddle itself. [LR105]

SENATOR LOUDEN: In other words, there isn't any water flowing into the dam. [LR105]

THOMAS K. COOK: No. [LR105]

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SENATOR LOUDEN: Is there much water flowing past Crawford that's coming down the White River? I mean is the thing dried up clear back up into Wyoming or...? [LR105]

THOMAS K. COOK: If there's 9,000 gallons of water being taken at Crow Butte, of 24/7, then this probably... [LR105]

SENATOR LOUDEN: Okay, then your thinking is that by their pumping there they've affected the flow of the river. Is that what you're telling me? [LR105]

THOMAS K. COOK: Yes. [LR105]

SENATOR LOUDEN: Okay. Thank you. Other questions for Tom? Seeing none, thanks for coming and testifying, Tom. [LR105]

THOMAS K. COOK: Thank you, Senator. [LR105]

SENATOR LOUDEN: And I work quite a lot with Judi gaiashkibos down there. [LR105]

THOMAS K. COOK: Yes. [LR105]

SENATOR LOUDEN: And I think I've talked to you a time or two or on the phone. [LR105]

THOMAS K. COOK: Yes. [LR105]

SENATOR LOUDEN: Okay. Thank you. [LR105]

THOMAS K. COOK: Thank you, sir. [LR105]

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SENATOR LOUDEN: Next testifier. Oh, I guess we're ready for the picture show.
[LR105]

MARK McGUIRE: Jim Stokey. [LR105]

JIM STOKEY: I guess we can start. [LR105]

SENATOR LOUDEN: Go ahead. [LR105]

BARB KOEHLMOOS: Excuse me. We do need you all to introduce yourself (inaudible).
Okay. Thank you. [LR105]

JIM STOKEY: (Exhibit 10) My name is Jim Stokey, J-I-m S-t-o-k-e-y, and I brought
some people with me to help with this. [LR105]

BARB KOEHLMOOS: Jim, could I...I'm sorry, you're not picking up on our recorder at
all. [LR105]

SENATOR LOUDEN: You need that other microphone. [LR105]

BARB KOEHLMOOS: We have a mike right here. (Inaudible) Okay. [LR105]

JIM STOKEY: Can we try it now? Can you hear me now? [LR105]

BARB KOEHLMOOS: Yeah, we can, but...I think it will be okay. [LR105]

JIM STOKEY: I'll stand close. I'll speak loud also. Do you want me to do my name
again? [LR105]

BARB KOEHLMOOS: I'm sorry? [LR105]

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JIM STOKEY: Do I have to do my name again? [LR105]

BARB KOEHLMOOS: If you don't mind. [LR105]

JIM STOKEY: All right. [LR105]

BARB KOEHLMOOS: This is for our transcribers. [LR105]

JIM STOKEY: I thought it was. Thank you. (Exhibit 10) My name is Jim Stokey, J-i-m S-t-o-k-e-y. I'm the mine manager at Crow Butte Resources, and I do appreciate the chance to talk about our mine. I can tell you right now I'm extremely proud of what we do in western Nebraska, and I'm extremely proud of the people who work for me. With that, I'd like to introduce three people that came with me. Two of them will be helping me with this presentation today. There's Rhonda Granthem, and their sheets have all been put in up here, so Rhonda. [LR105]

RHONDA GRANTHEM: Hi. [LR105]

BARB KOEHLMOOS: You know, I don't know what's going on, but we're not (inaudible). Oh great. Sorry. (Laugh) [LR105]

JIM STOKEY: That's all right. (Inaudible) Can you hear us now? [LR105]

BARB KOEHLMOOS: Ah, yeah. [LR105]

SENATOR LOUDEN: And just speak up. (Inaudible). [LR105]

JIM STOKEY: Okay. All right. Rhonda, would you introduce (inaudible). [LR105]

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RHONDA GRANTHEM: Sure. [LR105]

JIM STOKEY: I guess this is the way we should do this, so we get everybody on the...
[LR105]

RHONDA GRANTHEM: Okay. Hi, I'm Rhonda Granthem, it's R-h-o-n-d-a
G-r-a-n-t-h-e-m. [LR105]

JIM STOKEY: John. [LR105]

JOHN CASH: Good morning. My name is John Cash, J-o-h-n C-a-s-h. [LR105]

JIM STOKEY: We'll have them help do the presentation as we go through this. I'll just stand up and take care of the sections as we go. We'd like to get through this, I guess, relatively quickly for you, so we'll start in on this. Again, thank you for giving me the opportunity to do this. Crow Butte Resources, as mentioned earlier, is owned by Cameco, worldwide. We are an independent, incorporated company in the state of Nebraska. Cameco is the parent company for us. Our office is out of Minneapolis, Minnesota, for Cameco USA, and then the corporate office is out of Saskatoon in Canada. If you go to the Internet site for us, it's Cameco.com, and you can find some information out there about our mine. And if you would want to look at us on the New York Stock Exchange, it's...our symbol there is CCJ. The vision for Crow Butte Resources and for Cameco, we're in the business of making electricity and that's all we do. We produce fuel. We produce fuel cleanly. And one of the things that our corporation wants to do is become a dominant nuclear energy company, producing uranium fuel and generating, and I reiterate, clean electricity. Cost of electricity, if you take a look at this by source: gas right now in U.S. cents per kilowatt hour is 5.87; oil, 5.39; coal, 1.92; nuclear at 1.63 cents; and hydro at .58. You can see we're very competitive for the cost of electricity with other sources for fuel. The use of nuclear energy worldwide, hydro is at 19 percent, gas at 15, oil at 10 percent, 1 percent for

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other sources, coal at 39, and we're at 16 percent worldwide. There are 32 countries now that use nuclear energy and we play a part in that. John will talk to this. [LR105]

JOHN CASH: Just touch briefly on this. One of the issues that you hear on the news a lot lately and in the newspapers is the issue of global warming, and one of the key contributing factors that's been attributed to that is the emissions of CO2 gas into the atmosphere. So I'd like to just talk about this briefly. There are three different studies represented on this chart: one in Japan, one from Sweden, and one from Finland. And they're basically listing the life cycle CO2 emissions per source of energy, and number of different energy sources listed on there, coal being the worst emitter of CO2 gas, hydro being the best. But what you'll see down there is, second to hydro, is nuclear, very consistently across the board. You know, that really shocks a lot of people. They say, well, wind has got to be the lowest, or solar, and that's not true. Because of the density that you can power from nuclear energy compared to wind and solar, in the end of the day, nuclear is cleaner. This includes everything from mine (inaudible) all the way through to the end of production of electricity, so it's entire life cycle. [LR105]

JIM STOKEY: If you'll take a look at the bottom of that slide, fuel costs for nuclear reactor, about 35 cents per kW, and 1 kilogram of U308 will generate over 300,000 (sic) kW, so it's a, as John said, it's a good source. In the United States right now we see that there...or we think that there are going to be about 20 new units on line by 2020, and 8 units on by 2016. These are in no particular order, but those are the eight units that are being proposed right now as to come on as far as reactors and power plants. You can see they're spread across the United States, but those are the proposed places, proposed sites that are now applying for licenses to generate fuel...or electricity. Excuse me. Cameco's location, to give you an idea where we're at, Saskatoon is our home office. There are a number of mines up here in northern Saskatchewan: Key Lake, McArthur River, Rabbit Lake, and Cigar Lake. They're up in the Athabasca Basin. Blind River is where we ship our fuel to, or our material to, and it has a conversion facility there. Port Hope is, John... [LR105]

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JOHN CASH: Conversion. [LR105]

JIM STOKEY: ...conversion, excuse me; and Toronto is the stock exchange. Minneapolis, again, is our home office. And Saskatoon, of course, is the main office for Cameco. Where we're located, that Crow Butte flashing right there. This is the Highland mine, Smith Ranch Highland mine in Wyoming. Those are the only two operating mines in the United States right now, other than the Misting (phonetic), I believe, that are in full production, and Cameco owns both of those sites. And so, to give you an idea, this is the Panhandle of Nebraska right there, and then of course this is Wyoming, so we're not that far from each other. [LR105]

SENATOR FISCHER: Excuse me, what was the green outline on the map? [LR105]

JIM STOKEY: Where? That line? [LR105]

SENATOR FISCHER: No, the green area. [LR105]

JIM STOKEY: Oh, that's a federal forest. Those are Forest Service lines. Excuse me. Cameco Corporation is the largest producer of uranium in the world and in the U.S. We produced 2.8 million pounds last year between the Smith Ranch Highland mine and the Crow Butte mine. And we also have significant reserves left in the United States yet to mine. Facility facts about the Crow Butte site: We started commercial production in April 1991; we became wholly owned by Cameco in the year 2000; and we're designed at our mine to produce about 800,000 pounds of U308 per year using in situ recovery. In situ recovery is widely reviewed as a very safe mining method. We have...we're on 888 days right now with no lost time accidents for 58 people. We celebrated our 250th...250,000 hour of operation with no lost time accidents last...about two weeks ago. Before that, it was about a year ago...or three years before that we celebrated it for the first time in operations, was our last 250,000 hour. The lost time accident that we had that caused

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us to lose our record was a man dropped a pipe on his foot and couldn't come back to work the next day. And we don't have any haulage, nor do we have any dangerous equipment, per se, and you'll be...you'll get to go out and take at that. Our rigs are probably the most dangerous thing that we run, so it's viewed as a very safe mining method. We're ISO 14001:2004 certified. We did that in December of 2005, and this is the international standard for the environmental management system that we have at Crow Butte, and this is by independent certification, and ours is by...what's the name of the company? [LR105]

JOHN CASH: Perry... [LR105]

JIM STOKEY: Perry Johnson and associates (sic). We have those people come in and they certify us every year. Crow Butte's total consumptive water usage is 112 gpm per minute. In one year, in one year, Crow Butte uses the same amount of water as one, single center pivot irrigating one crop, 130 acres of corn, applying 16.7 inches of water per acre. And that's our consumptive use. We recirculate 4,400 gpm through ion exchange columns, and those ion exchange columns are the same type of column you have or the same type of technology you have in your Culligan water system in your home, and we recirculate that through the Chadron Aquifer and then we recover uranium from that solution. We're asking to go to 9,000 gpm this following year and...but we still will recirculate that at the same...at approximately the same usage. Rhonda will talk to you about our permits and our oversight. [LR105]

RHONDA GRANTHEM: Okay, as a uranium mine, we operate under a variety of state and federal permits. With state of Nebraska we have a Class III underground injection control permit. That's our...the permit that regulates our well field use, our injection. We have a Class I UIC permit. UIC is underground injection control. The Class I permit is for our deep injection well, which we dispose of some of our waste solution. The Class V permit is septic system. We have an NPDES permit for land application, which currently we haven't used, but we have that permit in...have that permit available to us. With the

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Nebraska Department of Natural Resources, we operate under an industrial ground water permit, which regulates the amount of water that we circulate. And again, as Jim said, we don't consume that water. We recirculate most of it. And then we do our well registration. All of the wells that we install we have to register with the state of Nebraska. And then with the Department of Health and Human Services we have a nontransient, noncommunity, public water system. That's our water system that we use for our potable system on site. We have 15 employees, so we have to license that well. And then we also have to license our...some of our employees for pump installation and well construction, and that's, again, through the department. And then we have federal regulatory oversight as well. With the Environmental Protection Agency, we have an aquifer exemption for...that allows us to inject our solutions, and actually that's administered by the Nebraska Department of Environmental Quality. The Nuclear Regulatory Commission regulates our source material, so we have to license with them; receive the source materials license in order to actually mine and produce the uranium. It also regulates what we call our by-product waste, which is our contaminated waste material. Department of Labor, OSHA, Occupational Safety and Health, regulates our worker safety, and actually the Nuclear Regulatory Commission regulates worker safety as far as radiation safety. And then our Crow Butte Initiatives, as Jim mentioned, we're ISO 14001 certified and that system incorporates our radiological worker safety and environmental safety. [LR105]

JIM STOKEY: You ought to do the first part of this. [LR105]

RHONDA GRANTHEM: This one? Oh, okay. Okay, our project: We have what we call our environmental health and safety program. We regulate regulatory issues, the worker safety, and also the environmental. We have a staff of ten people in our EHS department. We have a manager, a safety superintendent, an environmental coordinator, the radiation safety officer. I'm the radiation safety officer. The health physics technician is in the radiation safety staff. Our on-site lab, which does both process analytical work and environmental work, our sampling, and then our water

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sampling staff is also a part of the EHS department. We have two full-time water samplers that take environmental samples so that we can verify that our process solutions are where they should be at all times and that we're not contaminating anyone's well. [LR105]

JOHN CASH: The EHS department, being up at the top there, environmental health and safety, and I'm a part of the operations group and we work very closely with the EHS group. In fact, Rhonda and I, we meet every day; most days we meet several times a day. But there's a very close relationship between those two groups. And the plan operations, I'm in charge of that, as well as the well field recovery and injection. There's a tremendous amount of training that goes back and forth between these two groups. I oversee these two groups. I also have a foreman in both of those groups to oversee the day-to-day job duties of the people that we have employed there, and also working with reclamation of...not only restoration of ground water, but reclamation of the surface so that when we're done mining, we restore the ground water, take off all the surface structures that have been there, so when we're done we return it to an area that looks just like it did when we first got there. It looks like prairie. So that's basically operations group. They work very closely with the EHS department, as well as with each other. The process of the plant, whatever they do affects the well field, and the well field, what they do affects the plant, so there's a tremendous amount of communication between those two groups, making sure that we do things properly. [LR105]

JIM STOKEY: Well field installation/geology is taken care of by Wade Binds (phonetic). He is one of the younger people that we have on the staff. He'll...when you're invited out to a tour of the mine this afternoon and you'll meet Wade out there. He'll be at one of the rigs and he'll show you what he does out there and he'll further explain some of this. The drilling, the exploration, the geology, and the rework will be explained out there when we meet out there this afternoon. Well field construction and maintenance is another department, and there are about eight people associated with that and they do all of our surface construction and they do all of the maintenance in the mine as we

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have out there right now. Everything at the mine...and you must note that everything at the mine is taken care of at the mine. We do almost everything out there, as far as the build and stuff, ourselves. You'll see out there today we have a contractor on site that we're renewing some of the plant facility and so it will be kind of a...it will be kind of torn up out there a little bit in the plant facility when you see it, but you'll see some of our progress. The administration then, which is my department, Ann Tate (phonetic) and a couple other people, we oversee everything else and this is kind of how we put our organization together in a nutshell for you. We'll let John talk about our process very quickly. [LR105]

JOHN CASH: Well, very quickly, this is just some of the processing that we do at the facility. We talked a little bit about the ground water and basically we have two different types of wells here. The blue on either side, here and here, those are the injection wells. That's where we pump down the mining solution. The mining solution consists of ground water, (a) the ground water; sodium bicarbonate, which is baking soda; and oxygen. That's what we inject into the ground. That solution, we refer to it as a lixiviate, sweeps through the ore body, complexes with the uranium, putting it into solution, and then we pump it up through our production well here, which is in yellow. We have a submersible pump. These are installed very similar to what you would a well on your ranch, very similar construction. That production water will go up through a bed of ion exchange resin. Jim mentioned that this is very similar to the type of resin you'd have with a water softener. Your water softener at home is designed to remove things like calcium and iron. Ours is designed to remove uranium. It's very specific to that. So it will pick up that uranium. That water then is recycled back out to the injection wells once we refortify it with baking soda and oxygen, so it just continues to make that loop. And we'll draw a little bit off to maintain control of our mining solutions, and I'll get to that in just a second. Once the resin is loaded with uranium, bicarb and oxygen, it will go to a precipitation cell. At this point the water takes on a little bit of a yellow color, like a weak lemonade, and it will contain about 30,000 milligrams per liter uranium. But it's still in liquid form and we want to create a solid form out of it, so we'll do a precipitation with hydrogen

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peroxide and caustic soda, and that's where we make yellow cake. I'm sure you all of heard the term "yellow cake" used before. Chemically, this is the end of our process right here. We're going to do some more physical things to it--washing and drying--but chemically, this is our final product right here. We'll pump it over to a thickener. That basically allows the yellow cake to settle out so we've got a nice, consistent product instead of a wet mixture. We'll then pump it across a belt filter. At this point, there's some salt in it and we want to wash the salt out, so we're running it across a vacuum belt to do that. We'll come out with a very clean product. It's still wet, though. We'll run it over to a rotary vacuum dryer. This is a piece of standard industrial equipment that you'd see in industries all across the world, and we pull a vacuum on that dryer vessel and, by doing so, we can lower the boiling point of water to around 130 degrees Fahrenheit and we can boil the water off and end up with a very dry product called yellow cake. It's called yellow cake because of the nice yellow color to it, and the texture is very similar to a yellow cake mix that you would buy at the store. That's why it's called yellow cake. From there, we'll load it in DOT-approved drums, load it onto a trailer, exclusive use trailer, and we'll ship that off to the conversion facility where they'll continue the chemical processing. I said I would get back a little bit to the water flow through the columns and the return. We do maintain a bleed of process water, and by doing that we always extract a little bit more water than what we put back into the formation, and by doing that we create a small cone of depression so that water is always flowing into the mine, versus a high-pressure mound where we'd flow out. So that 1 percent bleed that we talked about is used to maintain the hydrologic control of the mining solutions. I believe that's... [LR105]

(MAN): How deep is the production well? [LR105]

SENATOR LOUDEN: We got to...we get to ask the questions. [LR105]

(MAN): Oh, I'm sorry. [LR105]

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JOHN CASH: The typical mining pattern is kind of hexagonal and really that's dictated by the geology. Sometimes they're hexagonal, sometimes they're a line drive. They'll take on a different shape depending on the geology. But in the center, we'll have the production well, in yellow; the outlying wells are injection wells. So you can see the arrows. That water is sweeping across to the producer. It's very important that we keep a similar distance between the wells so that the wells sweep evenly. If you get wells offset, they're different distances to the producer, one well will sweep a little bit differently and you'll have a different efficiency. So we try to keep them evenly spaced. The depth of our wells varies pretty considerably and it's based on topography. There's actually very little slope to where we're mining, nor slope of the formation, but there is a lot of topography so you see the range of depth at 500 to 1,200 feet. That's topography. That's the hills, hills and valleys. And we also use HDPE piping, high-density, polyethylene piping throughout the mine site. Standard array of patters here: you see the hexagonal pattern, we like that because they fit together really nice. If you'd go to, like, a five-spot pattern, they don't fit together. If you ever tried to take pentagons and stack them side by side, it doesn't work very well. We maintain a pressure of 100 psi or less at the injection manifold. The reason we do that is we do not want to fracture the formation. That 100 psi is extremely conservative. In the oil field, they'll usually say you can have 1 psi per foot of depth before you have to be concerned about fracturing. If you remember, we're mining at 500 feet, so in the oil patch they would say you could go to 500 psi. We only go to 100 psi. We check those pressures two times a day. We also have an extensive monitoring well program to make sure that we maintain control of the mining solution. We have two types of wells. On the exterior, we have a ring of wells and they're completed in the same formation that the mining zone is in, so that if there's any mining solution that escapes from there, we see it in the monitor well and we can adjust the hydrological bleed to pull that back. Those are sampled once every two weeks. Within the ore body itself, within the mining patters, we'll have what we call shallow monitor wells and these are completed in the overlying aquifer above the zone that we're mining, and this is to make sure we don't have any vertical movement of mining solutions to any of these zones that we don't want them to move into. We do not

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have any lower monitor wells and the reason we don't is because we are underlined by the Pierre Shale and it is an extremely good, a geologic term, aquitard. Basically, water will not flow through it, so we do not have monitoring wells in that, because water won't flow through it. It's over 1,000 feet thick. This is a...kind of a cross-section, if you will, of the mining zone and, again, you can see we've got injection/production wells. Here's injection, injection/production, shallow monitor wells, and the monitor well ring. And the monitor well ring here and also the shallow wells, we're watching a number of parameters to make sure we don't have any incursions of mining solution, and these are the parameters we're watching. You can see they're color-coded. You can see that color-coding here. And as we mine, if we don't maintain that hydrologic bleed, you can see that the chemistry moves out to the monitor wells, and when it reaches that monitor well we're going to see that in our samples that we take every two weeks. And you can see there zoning. The chloride is a very mobile ion compared to the uranium. Uranium is very large and sluggish. It moves very slowly within the ground water system, whereas chloride will move very quickly. So a long time before uranium gets anywhere, we will see the chloride and the other things, like conductivity, that's associated with chloride, and the alkalinity, and we can make adjustments to the hydrologic bleed to maintain control. [LR105]

JIM STOKEY: Go ahead. [LR105]

JOHN CASH: Continue? Okay. This is our current mining status. (Coughs) Excuse me. Wyoming is importing way too much smoke, making me cough. (Laughter) It's color-coded up here. You can see the pink is the proposed mine units; yellow, mine units that are in production currently; the green is in restoration; and the red has already been restored and is in reclamation. You can also see these are in sections, square miles, and you can see the relationship of the city of Crawford to the mine that we have right here. This is the outline of the mine permit that we have with DEQ. It's roughly 2,600 acres. This is mine unit 11. It is not in production yet. Mine unit 10 just recently went into production; 8 is in production; and 6--scroll through these pretty quickly--7, 9,

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those are all in production right now currently. The mine units that are in restoration: mine unit 5, 4, 3, 2; and 1 has been restored and has been signed off by DEQ and the NRC as being restored. So that's the current status of our mining progress right now. Maybe I'll turn it over to you, Jim. [LR105]

JIM STOKEY: As stated, we started production in 1991 and that year we produced 105,000 pounds; '92, 400,000 pounds; and you can see we steadily climbed to about 800,000 pounds and then that's where we've managed to maintain that. And this is a graph then of our current production and our past production. In 2006, you can see we were a little bit under 800,000 pounds and we project just to be just a bit under 800,000 for this year also. One of the things that we'd like you to understand about our process out there and our average sales, in 2005 we got \$15 per pound for our product, and the average spot price for that was \$29 a pound. In 2006, we now get \$29 a pound...or \$20 per pound for our product, and the spot price was \$50. Something happened, though, in 2007. We went up to \$36 per pound, but the spot price did this--It went up to \$130 per pound. There's a difference between what you can sell a product for and what the spot price says it's worth, and this is pretty dramatic for us. And we know what our contracts are and we know that next year we'll sell the uranium for \$57 per pound. We also predict that the spot price will either stay flat or it will go up. And right now it's trending down and we were...it's good for us, but it's also affects our...the way we pay our taxes. CBR employs 58 people and 38 of those employees are involved somehow in a community effort and they belong to over 30 organizations, and when you meet these people out there, they're very active in the community that they are associated with. It's...you need to know also that those people that work at the mine are from here. They're not from out of town. I grew up in Lewellen, Nebraska. That's the Sandhills and it's 150 miles from here. I've lived here since 1971. Most everybody at the mine is from this area right here and they graduated from this college. I believe there are two people out there right now that don't have a degree from Chadron State College in our group, and John Cash being one of them, and a new geologist that we just hired being the other. But someone has been associated with this college from day one. And I believe

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there are only three people out there that aren't from this area and that aren't native to this area. So we try to keep it a very community effort at Crow Butte and a very close-knit group out there. We employ 19 full-time contractors and that includes our drillers and our...Ben Ferguson, the man who put a startup business out there and digs our pits for us; Gale Land (phonetic), Lando (phonetic) drilling, drills our...drills our wells for us and he does that with the people from the community. CBR donated \$19,200 last year to the area businesses. One of the things that we did do when we had the forest fires out here in western Nebraska, Peter Kiewit corporation gave \$25,000 to the Harrison Fire Department and the Chadron Fire Department. The Crawford Fire Department only received \$15,000 because none of the fires were on their district. They worked just as hard as anybody else, so we managed to put \$10,000 together for them and gave them that money so that it would help them out and they would get an even match then, as they from the Peter Kiewit Foundation. We also support the 4-H group. We go in and we buy...we buy beef at the end of the year when the 4-H kids sell their beef. We go in and we actually price fix there. I give one of our members \$1,500; they can go in and big a cow up to where they think it is. If we get that cow, fine; if we don't, someone else will get that cow, we'll go after the second one. We usually end up with a cow or a pig or a couple chickens or something like that, but it helps that auction out very much, and so it's one of the things that we try to do. The Old West Trail Rodeo is one of the things that we support; local athletic teams, the local baseball and softball clubs; and we also have a sustainable scholarship here at Chadron State College and it will be continuing on; and we give away scholarships to the high school students that are from Chadron and Crawford. This year we were fortunate enough to have Katie vonForell, Gene vonForell's daughter, and I don't know, some of you might know Gene vonForell, I know the guys here in the front row do, but he's one of our hands that works out at the mine and she got to be part of the Manitoba Science Academy this year and she got to go to Canada and all summer long she's been up there. She's been working on bacteria that's in water somehow, and it's way beyond what I'm doing, but she'll go into here senior year this year and we provided her that experience and paid for that for her this summer. And she's done very well and we've got good reports for that. Our

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payroll last year was, in 2006, was \$3.4 million into Crawford and Chadron and Harrison. Payments to Nebraska businesses in 2006 was \$6.8 million. And there's something I need to tell you about Crow Butte and Cameco. We have a directive that we will support area businesses, and I've always said that if we could put a piping company in Crawford, Nebraska, they'd be wealthy...and we buy a lot of pipe. We buy everything we can from Absalon's and Herren Brother's Hardware in Crawford, Nebraska; literally, everything we can get. If they can't supply it, then we come to Chadron for it. We do a lot of business out here with True Value, and we do a lot of business with the local businesses here in Chadron for lumber and things we can't get. If we can't get it there, we go to Scottsbluff. If we can't get it from Scottsbluff, we go up to Rapid City or to Casper, Wyoming. We buy all of our pumps from a Nebraska business in Omaha, Nebraska, Hydro Pump (phonetic), and all of our down-hole pumps come from there. But we try to support businesses here in Nebraska and it's one of the things that we feel is very important. Property taxes, sometimes people think that we are tax-exempt out there. We paid \$672,000 in property taxes last year. State and use taxes in 2006 were \$300,000 for us. Severance tax--and this is the big one and it's based off the spot price--tax in 2006, it was \$545,000; this year it will cost us \$1.2 million. Crow Butte Resources, Inc., in Nebraska pays \$36,672 per individual in Nebraska. Those are our 58 employees. One of the things that we're...that, personally, I am really glad about and proud about this company; we have a directive and that is our...that's Jerry Grandey signing a paper, signing papers for an agreement, and this is a worldwide agreement--Swords to Plowshares. And one of the things that...and, believe me, one of the things that we...that goes on is people think that we make bombs, that we make uranium for bombs and that we're into that business. There isn't a person at that mine that would work there if that's what we did. We make, and I want to reiterate this, fuel for clean electricity. We try to help; we don't want to be a part of the other side of that. We take...our company has an agreement to take nuclear weapons or Russian missiles and bombs off the general use or out of the world market, downgrade them, blend it with our fuel, and make electricity out of them. And to this date, we've done 269 metric tons, that's 7,950 tons of low-enriched uranium, and 11,000 tons of nuclear warheads we

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have eliminated from the world as we know it today. So I guess I just want you to understand that that's something that we do as part of our project out there. Another thing that we're doing is we're developing an ore body in another part of the world. One of my young engineers, Brian Pile (phonetic), who graduated from this college, is over there right now and he's one of the project engineers on this site, and it's in lower Kazakhstan. That's Russia, and that's Afghanistan right there. So it's in that section of the world. As you see, it's kind of a tough place. It's called Taikonur, and that's a little town. There's 315 people out in the middle of the desert, nine hours from nowhere. This is what it looks like out there. There's a man camp. Next are the buildings that are going in. You'll see similar sort of buildings over here at the Crawford site when we...when you visit there. This is the same structure that you'll see there. What I'd like you to know is that iron right there is being manufactured in Scottsbluff, Nebraska, by B&C Steel. We packaged that steel up right there and we shipped it to Taikonur, and that's where it's sitting on the ground in Taikonur. These are the sheets being made at B&C Steel. This is downspouts and the stuff that was going on the outside of the building. These are the sheets that were bundled, and now these three buildings right here, made by B&C Steel Company in Scottsbluff, Nebraska, are sitting on the other side of the world in Taikonur. We've put \$500,000 worth of steel up over there to date. We don't, like I said, we don't...we're a part of this community. That project came out of our mine. It came out of the Denver office, which I should correct here, our head office earlier I said was in Minneapolis. It's in Denver, Colorado. Minneapolis is our sales, so excuse me for that. But that project is being developed in Denver so those pieces of steel and stuff are being bought and made right here in Nebraska and shipped over there. It's a heck of a lot cheaper to buy them in China or some place like that, but we choose not to do that. James Lovelock made this statement, and James Lovelock is with Green Peace. He said: civilization is in imminent danger and has to use nuclear--the one safe, available energy source--now or suffer the pain sooner to be inflicted by our outraged planet. We're clean. We are a clean electricity source. We make clean fuel. We control what we do. And thank you. [LR105]

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9,000 gpm, we will maintain that same consumptive use because we have to maintain a hydrologic bleed on the size of the mine, the way it is right now. So it may increase a little bit, but not that much. [LR105]

SENATOR LOUDEN: I see. Then you mentioned, I think you mentioned, wells anywheres from 500 to 1,200 feet deep. Now does that mean...are the 500-footers down on that Pierre Shale, too, or is that...you drill them all to Pierre Shale? [LR105]

JIM STOKEY: Yeah, and it's basically we...the Chadron Aquifer lies right above the Pierre Shale. It's basically at the same level. It's the surface contour that changes and that's why the depth of the wells vary. [LR105]

SENATOR LOUDEN: Uh-huh. [LR105]

JIM STOKEY: And we're...you...when you see that, we mine on the side of the hill over there, and as the surface contour varies then so will the depth of the wells. [LR105]

SENATOR LOUDEN: Now your Chadron Aquifer, is that...is that here when you get, as we call, a table or something, is that where that ends? Can you explain to me how the Chadron Aquifer kind of lays in this part of the country? [LR105]

JIM STOKEY: Directly above the Pierre Shale and I guess the best person to do this would be John Cash. He's the geologist that I have here. He knows exactly how that sets in here. I could have him come up here and explain that for you, if it's all right. [LR105]

SENATOR LOUDEN: Okay. Okay, then I guess my next question for you, do you, when you abandon these wells, what do you leave down there where you pump the...pump the yellow cake out or where you pump the material out? What do you leave in the place of that down there? It isn't just a vacuum spot, is it? [LR105]

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JIM STOKEY: Oh, no. No, we have an approved abandonment procedure that's been approved by the Nebraska Department of Environmental Quality. We put in, when the well is determined that we'll no longer use it, we go down and put a bentonite plug in and put...so that it plugs off the screen interval, and I can't remember how many feet above that that we have to put that plug in, and then on top of that we slurry in cement. It's done in...put in by "trimy" (phonetic). In other words, you put a pipe at the bottom and then we pump cement in until we go to the surface, and once we get the cement to the surface and it holds then we're allowed then to let that cement dry. Then we're allowed to go in and dig down five feet, cut that piece of pipe off, put a cement cap on top of that, mark the well, and bury it. [LR105]

SENATOR LOUDEN: Same as oil wells. [LR105]

JIM STOKEY: Yes. [LR105]

SENATOR LOUDEN: I guess my question, though, is down there where you mined out that material clear down there, what do you leave down there? [LR105]

JIM STOKEY: It would be the screen and the blank of the well. [LR105]

SENATOR LOUDEN: Okay, you've... [LR105]

JIM STOKEY: We pull the pump, we pull the stringer and everything else. [LR105]

SENATOR LOUDEN: Yeah, but I mean you pump a slurry or something down there to fill that hole up or what? [LR105]

JIM STOKEY: Well, there is no hole that...yeah, there is no cavity or anything that's in the ground when we're done. The uranium is coating on the sands that are there and

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the bicarbonate washes that off. The sands are still there. I think we figured that there was...and excuse me for just a second. [LR105]

SENATOR LOUDEN: Oh, I see, you separate the uranium from that sand down there in that aquifer. [LR105]

MARK McGUIRE: Right. [LR105]

JIM STOKEY: Yeah. [LR105]

SENATOR LOUDEN: Okay. [LR105]

JIM STOKEY: And if I remember right, my memory serves me right, it will have some signs, about an eighth of an inch. [LR105]

SENATOR LOUDEN: Okay, that's the reason you call it in situ method. [LR105]

JIM STOKEY: In situ recovery. It used to be in situ leach mining. Now the NRC has decided to call it in situ recovery, but that's what it does, it simply washes the uranium out of the sands, brings it to the surface. We strip out the uranium from the water, put the water...the barren water back in the ground, recirculate it and bring more up. [LR105]

SENATOR LOUDEN: One, how much excise tax do you pay Wyoming? You say you have that Highland Ranch or Smith Ranch or something. What's the excise tax for Wyoming for uranium? [LR105]

JIM STOKEY: I have no idea. That's the way we're organized. Power Resources, Inc., is in Denver, Colorado, and they manage us and the Highland mine. And the finances for the Highland mine I'm not up on, so I couldn't answer that for you. [LR105]

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SENATOR LOUDEN: Okay. In other words, I got to find out from Colorado or find out from Wyoming. [LR105]

JIM STOKEY: Yeah. That would be a Steve Collins (phonetic) question. [LR105]

SENATOR LOUDEN: Okay. Okay, that's all the questions. Anyone else have questions for Mr. Stokey? Senator Wallman. [LR105]

SENATOR WALLMAN: Thank you, Senator Louden. Thank you. You know, as you mine this, when you get done, like Senator Louden, decommission, is there any uranium left in that solution? How do you...you get 100 percent out of that sand then or...you know what I mean? [LR105]

JIM STOKEY: We don't. We don't get 100 percent of it out and we mine it until it's economical to not mine anymore, and then we go back in. And to start the mining you have to introduce oxygen into the aquifer. To stop the mining, you have to just remove oxygen from the aquifer, so we introduce a reductant. We wash...take out our mining solution, we introduce a reductant and that stops the mining process. Once that mining process is stopped, we make sure that the ground water is clean, it meets all of the baseline monitoring samples that we had taken previous to mining, and then, after we get that, we go into a six-month stabilization...at least a six-month stabilization to know that the aquifer has become stable. And after that, then the NRC and the DEQ, the Nebraska DEQ, will take a look at those samples that we pull on that aquifer to determine if we've cleaned it up and that it has met their requirements for abandonment. And then they allow us to then abandon that, so... [LR105]

MARK McGUIRE: (Inaudible) point it's determined to be restored. [LR105]

JIM STOKEY: Yeah. Excuse me. And I guess the term then, at that point it's restored.

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It's a restored aquifer. And mine unit 1, by the way, is a restored aquifer. It was the first in, I believe, the first one in the United States that was done and we were able to do it. [LR105]

SENATOR WALLMAN: See, I live in a district where they actually decommissioned a nuclear power plant. [LR105]

JIM STOKEY: Oh, yeah? [LR105]

SENATOR WALLMAN: Hallam, remember? It...and so I'm kind of, you know, but I'm for clean energy, don't get me wrong. [LR105]

JIM STOKEY: Yeah. [LR105]

SENATOR WALLMAN: Yeah. And then also on the recyclable side, you know, we paid a huge fine in this state for a nuclear waste dump and do you think that the, you know, like consumers are going to pay eventually, but how much of that fuel rod, when you put that...you put the cake in the fuel rods, right? [LR105]

JIM STOKEY: We don't. [LR105]

SENATOR WALLMAN: I mean your company does? [LR105]

JIM STOKEY: Yes, at Port Hope. [LR105]

SENATOR WALLMAN: How much of that is actually used up by a nuclear power plant then of that fuel rod? [LR105]

JIM STOKEY: The rod itself? [LR105]

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SENATOR WALLMAN: Yeah. [LR105]

JIM STOKEY: I have...I...that's more than I know. It's beyond my scope. [LR105]

SENATOR WALLMAN: Okay. Well, appreciate it. Thanks. Thanks, Jim. [LR105]

SENATOR LOUDEN: Other questions? Senator Hudkins. [LR105]

SENATOR HUDKINS: I have two questions. How did you find the uranium deposits originally? [LR105]

JIM STOKEY: Originally? There were a group of gentleman geologists and engineers that were looking at oil well logs that were drilled in the Panhandle in Nebraska, and they noticed then an increase in...I believe it was probably either gamma or something like that, at that level, and they "wildcatted" this well in...or this mine. [LR105]

SENATOR HUDKINS: Okay. Thank you. And then the other question: We heard in testimony earlier that there have been a number of leaks and spills. What do you say about that? [LR105]

JIM STOKEY: The leaks that we report, that we reported, as were brought out on the ponds, the way the ponds are made is that we have a...and I don't know how thick the liner is on top, 50 mil HDPE liner, separated by a mesh membrane, and then below that there's another 50 mil liner. So we have double containment on the pond. Periodically, because of the exposure to the elements and exposure to the sunlight or something will blow in there, we'll get a small puncture in that upper confinement. It will leak into the center, which we monitor and we take samples on that daily and...to find out if there's anything going on there. We watch...we have a series of tubes that are down in between the two liners at the bottom and a sand bearing area down there so that if we see that level starting to come up or if we see a change in the chemistry of the water

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that's in that area, we know that there's...that there's probably a leak in the upper liner. As soon as we detect that, we lower the pond below that leak and stop it. Then we get Colorado liners to come in, take a look at the lining, find the leak, repair it, and then we can bring it back up. We always catch it, though, when (inaudible). The leaks that we're talking about are line pin holes. One of them was leaking like, at one time, like ten gallons per like a week or something like that, but we found it. We find those. Oh yeah, and the other thing is that we always self-report. We...if we find anything that goes wrong out there, we, within 24 hours, call the NDEQ and the NRC and report it ourselves. We don't hide anything. [LR105]

SENATOR HUDKINS: Okay. Thank you. [LR105]

SENATOR LOUDEN: Senator Fischer. [LR105]

SENATOR FISCHER: Thank you, Chairman Louden. So you're saying that the leaks have just been on the first liner, it hasn't gone through to the second liner and it hasn't gone into the soils, into the ground water. [LR105]

JIM STOKEY: Yeah, and we have monitor wells around that, a ring of monitor wells around our ponds. [LR105]

SENATOR FISCHER: It was brought up in previous testimony that there was 300,000 gallons spilled and two-thirds was recovered, I think that was it, and the rest went to a sacrifice area. Do you have any knowledge of anything like that, or a comment? [LR105]

JIM STOKEY: Yeah. And Rhonda and John will help me with this one, but the...during normal operations of the mine we have piping that's out on the surface and we have piping that's above the surface that are in the well heads. Because of age or movement or freezing or something, every now and then we'll have a flange or something that will break or crack, and that water will leak. It's injection water, typically, or production water.

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It's very low in uranium. And any chemical that we have out there, it's very low in that. If we do have a leak and it goes to the surface, we go out and we try to recover as much of it as we can. If...and Rhonda surveys every one of the leaks and if there is a ground contaminated there, if it's above a certain level, we would remove that dirt and we would send it to Blind River...or not Blind River, excuse me, Pathfinder in Wyoming--it's a lot of names; I can't remember them all--and that's a low-level...or...not a low-level, but a disposal site for waste, and we can send it there, which we do. And we survey every one of the areas that is...has any water that's spilled onto it. And the end of the day, when we go back and reclaim the mine, we'll go back and measure the levels of contamination, if any, on those sites. A lot of those have none. We can't...there isn't any detectable level after there's been a leak, and so...but they're very minimal. We catch them, but there have been a few of them over the years and so... [LR105]

SENATOR FISCHER: You started mining in 1991. Is that correct? [LR105]

JIM STOKEY: Yes. [LR105]

SENATOR FISCHER: On the map you showed, there were I don't know how many...how many sites within your boundaries that were yellow that, that you were currently mining; one site that has been restored, which I understand it's capped, you are no longer mining; two or three that were in the process, restoration, I believe, was the term. So over 16 years you've capped one mine, if that's the right terminology,... [LR105]

JIM STOKEY: Mine unit. [LR105]

SENATOR FISCHER: ...you're in the process of capping, or whatever, three, three or four other ones. How long before your entire site then within those boundaries is done, you're done mining in that area? [LR105]

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JIM STOKEY: The way it works is mine unit 1 has been restored and we've removed all the equipment. [LR105]

SENATOR FISCHER: Right. [LR105]

JIM STOKEY: Mine unit 2 is in stabilization. Right now we're watching the ground water to see if we've got it stabilized. We've restored the ground water, we think, and if...we're watching the chemistry of the ground water to make sure that it's stabilized. Mine units 3, 4, and 5 now are those that are in ground water treatment, and 5 just went in last Monday and... [LR105]

SENATOR FISCHER: Which all of those, you're saying, have no more...or it's not cost-effective to mine for uranium in those. Okay. [LR105]

JIM STOKEY: We've essentially mined them out... [LR105]

SENATOR FISCHER: Okay. [LR105]

JIM STOKEY: ...to a lower grade level. Mining units are small. How many square feet, John? [LR105]

JOHN CASH: A mine unit may be about 10,000 square feet or a well pattern may be 10,000 square feet, and may have 30 patterns. [LR105]

SENATOR FISCHER: With the out...in your pattern that you have with them out and one in the middle. [LR105]

JOHN CASH: A mine unit may be 100 acres. [LR105]

JIM STOKEY: And we have 10 of those, or 11 of those, excuse me. But mine unit 1 is

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very small, mine unit 2 is larger, and you saw that they grew (inaudible) grew in size.
[LR105]

SENATOR FISCHER: But to look into the future, how long do you think before you've...where it's cost-effective to mine uranium in the Crow Butte area and you'll be done? [LR105]

JIM STOKEY: Boy. If the price holds, it will be awhile. You know, it's... [LR105]

SENATOR FISCHER: Oh, you have to have a projection, a plan. [LR105]

JIM STOKEY: Well, we...the last well house that we build is going to be in...and this is just a guess, okay, but 2012 will be the, you know, be the last one that we build. I don't know how long it will mine and, you know, it will mine for quite awhile. And so the life of the mine could go on for a few more years, other than that. [LR105]

SENATOR FISCHER: The area then when you're finished mining and it's been restored and...do you plan or do you have to hold on to that land then? Are you responsible? Can it be sold to ranchers? Can it...or is it off-limits? [LR105]

JIM STOKEY: We lease part of the land and that land will just simply go back to the owners, the Stetson (phonetic) family. [LR105]

SENATOR FISCHER: How many acres was on that site, 2,000? [LR105]

JIM STOKEY: Twenty-five hundred I believe is about... [LR105]

SENATOR FISCHER: Twenty-five hundred? So you lease some of that now. You don't own it all within the boundaries that you had on the map, the boundary line? You don't own that? [LR105]

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JIM STOKEY: Yes, we own part of it. We own...and I don't know how many acres that we own, but it's very...a very small amount of that. [LR105]

SENATOR FISCHER: Out of the 2,500. [LR105]

JIM STOKEY: Yeah, we own the...yeah, a couple hundred. [LR105]

SENATOR FISCHER: A couple hundred acres out of the 2,500. [LR105]

JIM STOKEY: Yes. And we have a bond, though, that's a cash bond and it's with, I believe, NDEQ or the state. [LR105]

MARK McGUIRE: With DEQ. [LR105]

JIM STOKEY: DEQ, and that, I think, was \$22 million last year and that's in place. If we walk away from this, that money is there to go ahead and recover or reclaim that land and restore that. [LR105]

SENATOR FISCHER: If you...when you say there's a bond, that's if you walk away without your company restoring the wells, correct? [LR105]

JIM STOKEY: Uh-huh, yes. That's right. And we... [LR105]

SENATOR FISCHER: I would doubt you would do that. [LR105]

JIM STOKEY: No. [LR105]

MARK McGUIRE: Right. [LR105]

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JIM STOKEY: We will not. And that's updated every year and it's reviewed by the NDEQ and the NRC, and they approve that bond. [LR105]

SENATOR FISCHER: Do you have plans for any other mines in the state? You don't have to tell me your business secrets. I'm just...I mean, really, you don't, but I'm just curious if you do, so... [LR105]

JIM STOKEY: No, we've...applied for an expansion to the North Trend area north of Crawford. We know that our ore body trends up that way and that's what we would like to do now. One of the things that we would like to do is continue doing business in western Nebraska. We've made a significant impact to this area as far as economic development is concerned, and we'd like to continue that. And to maintain our 800,000 pounds per year, as our main ore body right now starts to wane, we need to prop that back up. That's what the North Trend area will do, and it will continue mining and continue providing those people with a livelihood. [LR105]

SENATOR FISCHER: Do...and I appreciate that. Do you mostly mine in, I guess, harder soils? Not to offend anybody. I'm from the Sandhills. We call this gumbo up here. So you mine more in harder soils with the shale and...rather than in like my area of the state, the Sandhills? Is that...is that where you find uranium? [LR105]

JIM STOKEY: I've always thought that we'd find uranium. We always need gravel in this area, so if you find gravel we'll probably find uranium under it, so we can't have the gravel. [LR105]

SENATOR FISCHER: Sandhills should be loaded then maybe? [LR105]

JIM STOKEY: Yeah. Or you'll find it under a park or a wetland area. But that seems to be where we find a lot of stuff. But, no, it's basically old ancient streambeds is where we find it, and that's how we've managed to do that. We drill into that streambed and then

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we just simply follow it with exploration drilling. But it's always difficult. [LR105]

SENATOR FISCHER: Okay. Thank you very much. [LR105]

JIM STOKEY: Thank you. [LR105]

SENATOR FISCHER: Look forward to the tour. [LR105]

JIM STOKEY: I should...there's one thing I should mention too. There's over 1,600 wells or 1,600 pivots, I believe, in the area here that's under Lyndon Vogt's control. And we, at the mine, we use about as...am I right? Larry was telling me that. [LR105]

LYNDON VOGT: You're close. There's about 2,300. [LR105]

JIM STOKEY: 2,300? Okay. And our mine, and to reiterate this, our mine uses, we consume as much water as one of those and we provide 58 people a job. [LR105]

SENATOR FISCHER: Total mine. [LR105]

JIM STOKEY: Yeah. [LR105]

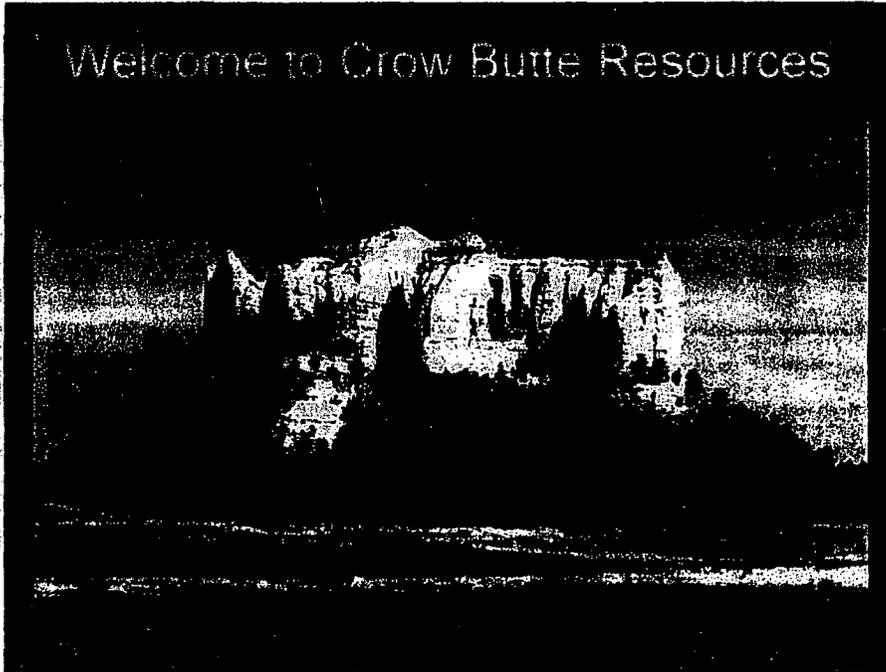
SENATOR FISCHER: The total area. [LR105]

JIM STOKEY: Total mining, our own operation consumes that amount of water, and we provide 58 people a job out of that. One center pivot of corn does that. [LR105]

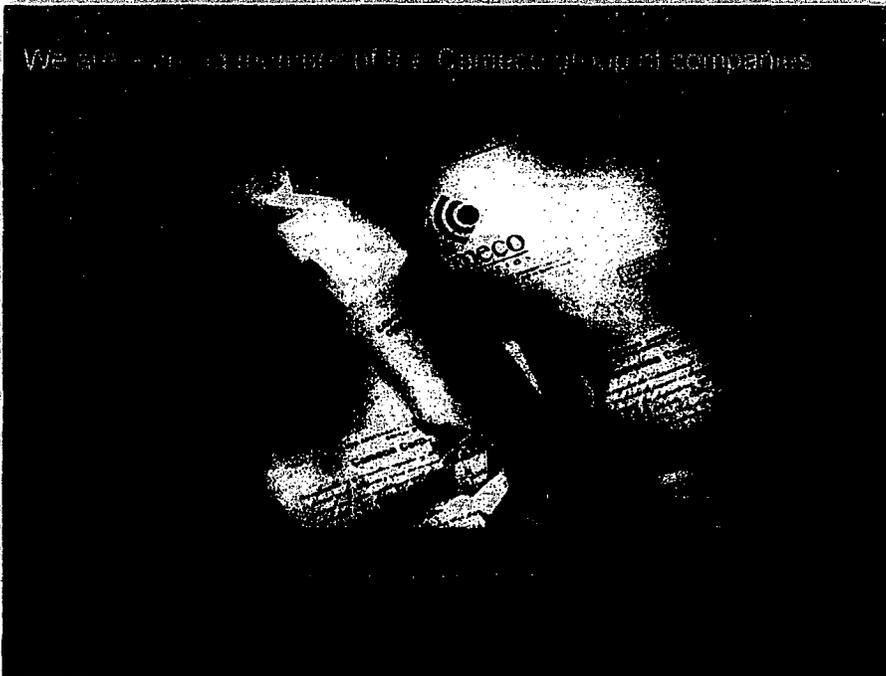
SENATOR FISCHER: Well, we love corn. Thank you. [LR105]

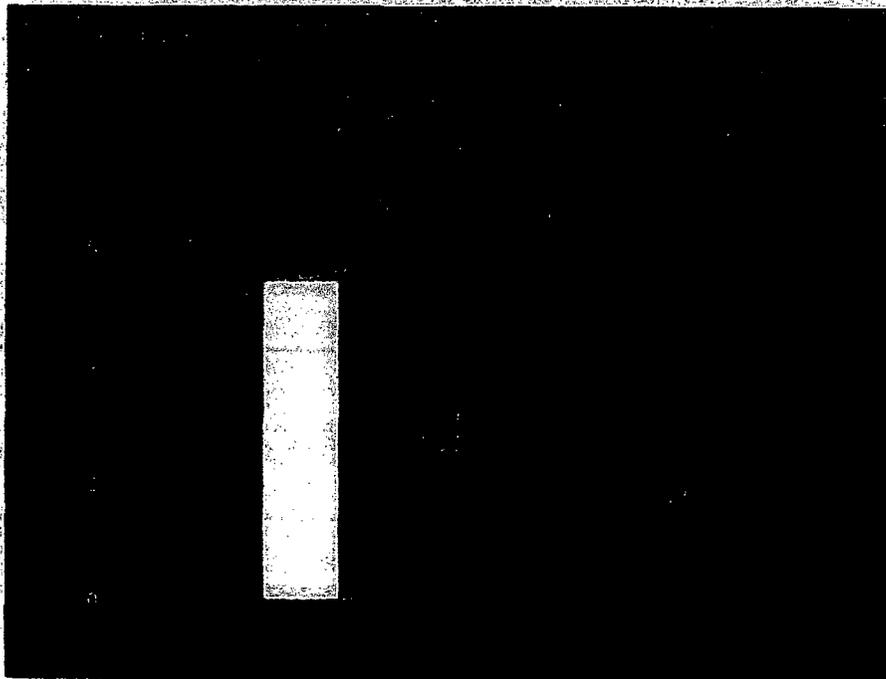
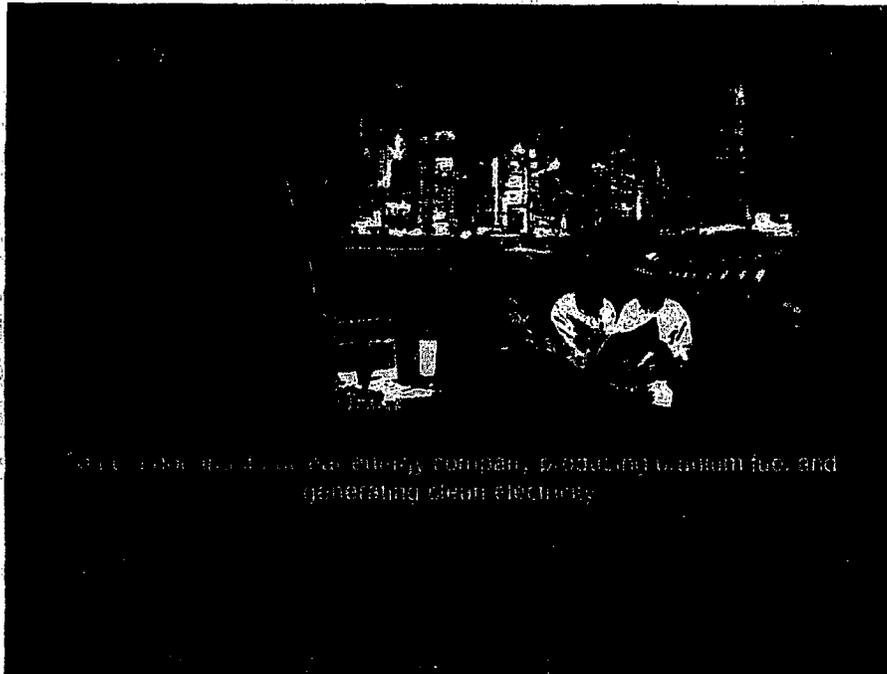
JIM STOKEY: (Laugh) Yeah, I know. I'm from the same place. [LR105]

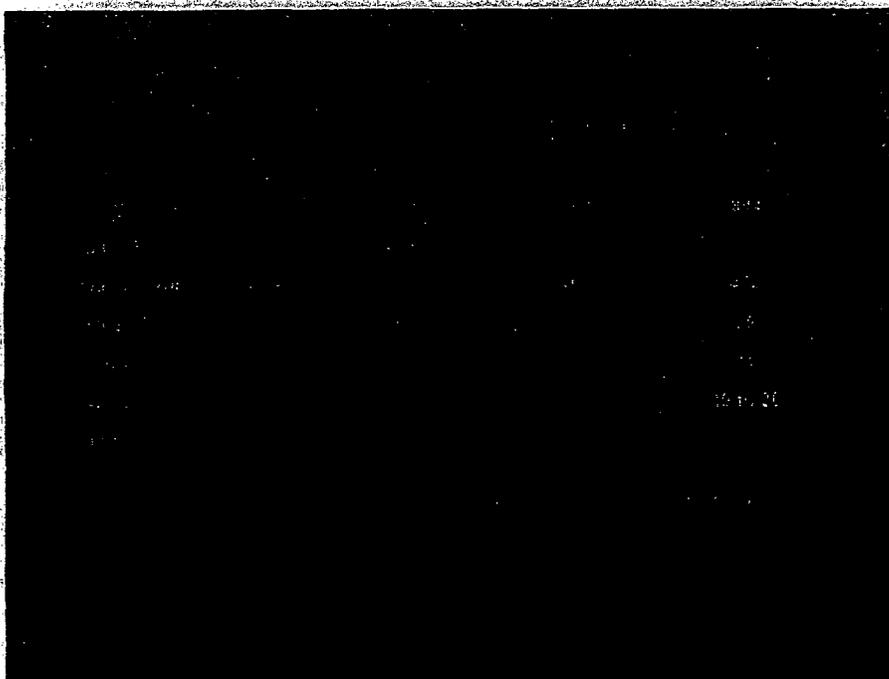
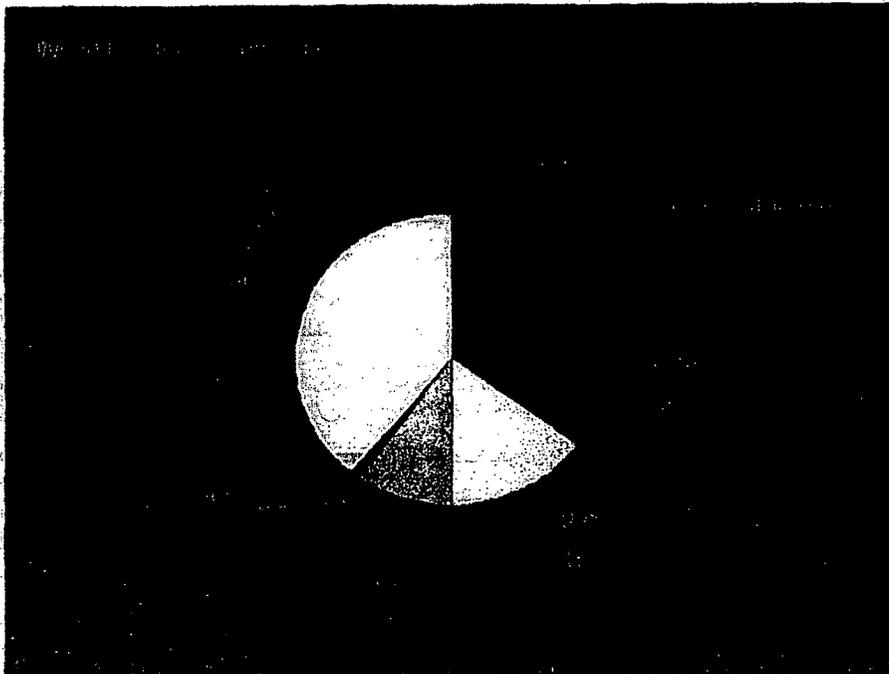
Welcome to Crow Butte Resources

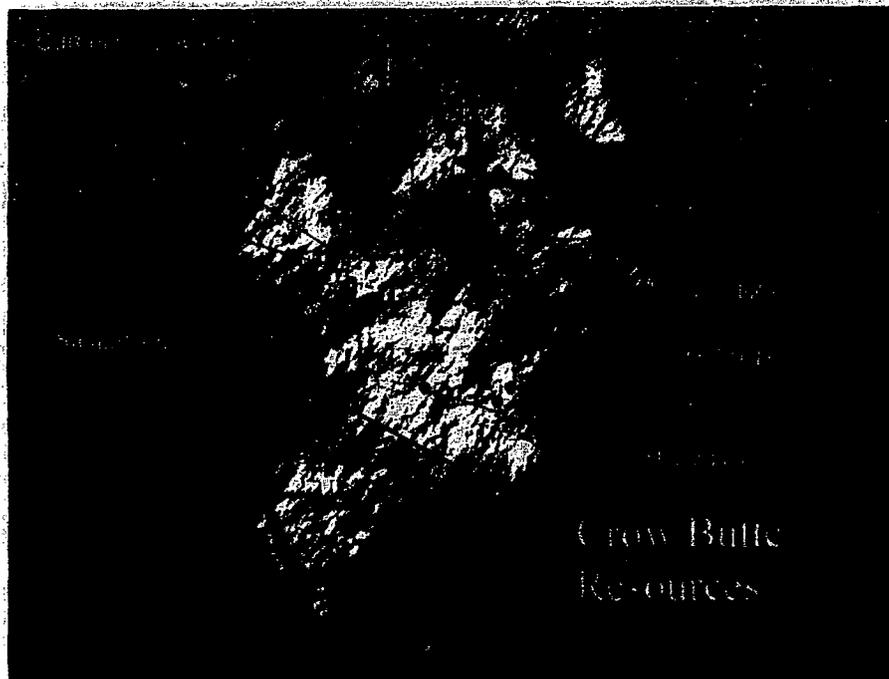
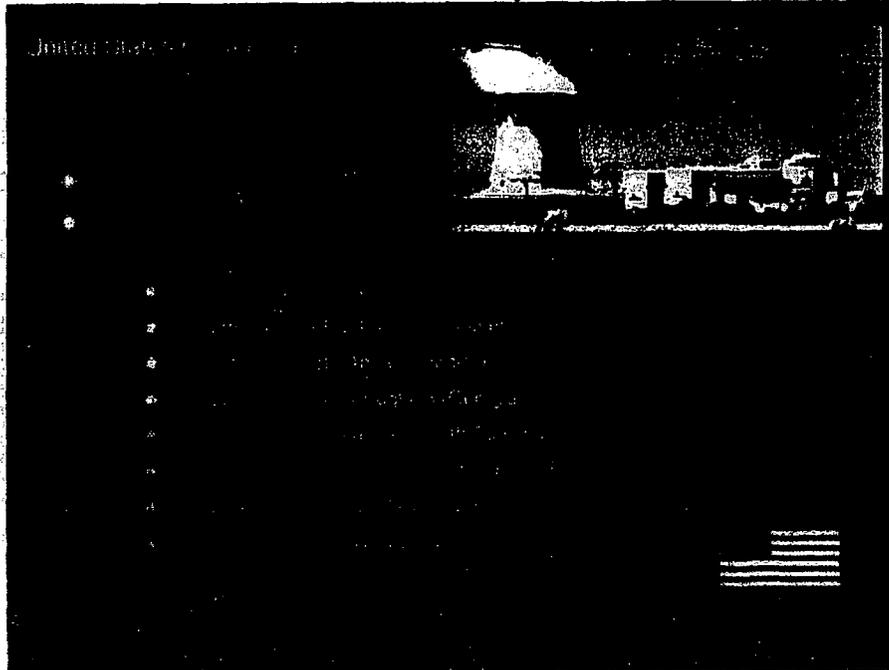


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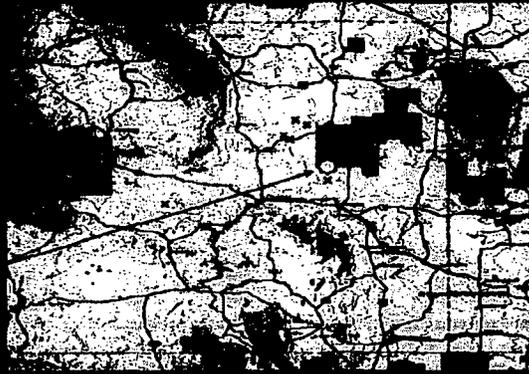
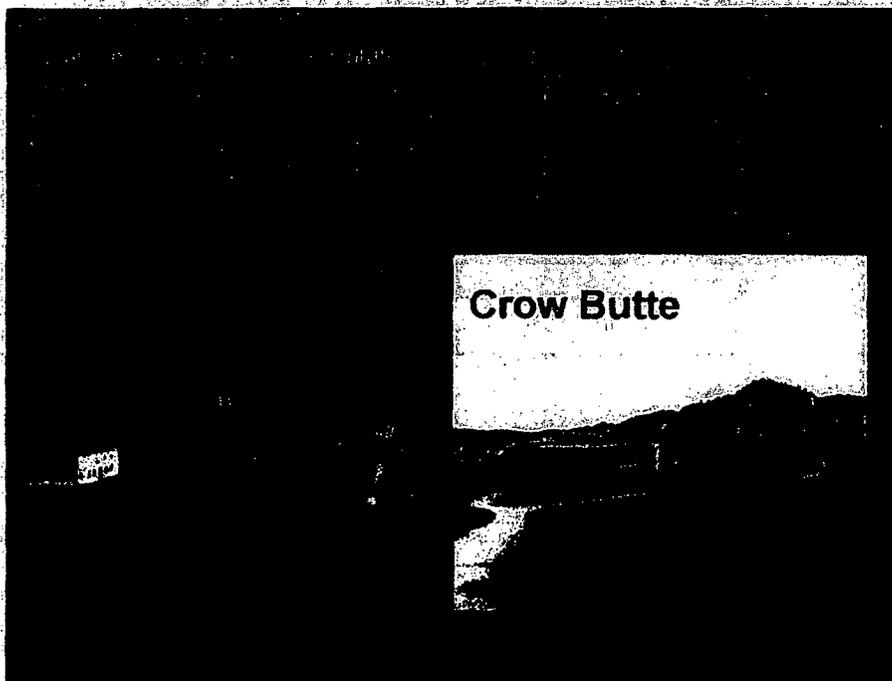
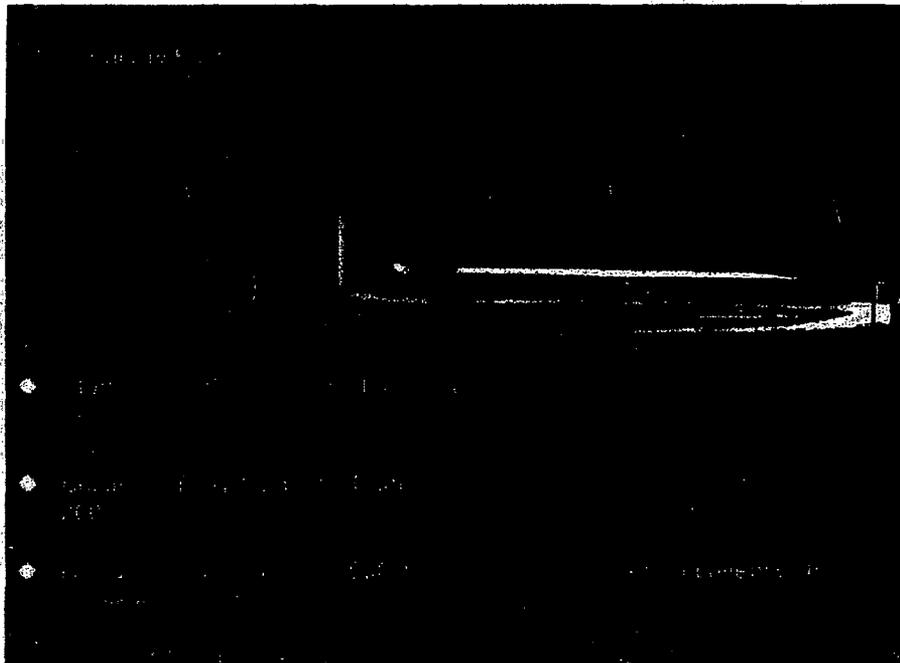


Figure 1. Barrow, Alaska, 1970s





- ◆ [Illegible text]

Environmental Services

Nebraska Department of Environmental Quality

- Industrial Groundwater Injection Control (IGIC) Permit - General Production Units
- IGIC Permit for deep injection of waste solutions
- IGIC Permit for Septic Systems
- IGIC Permit for Land Application of treated process water (not used)
- General Exploration Permit

Nebraska Department of Natural Resources

- Industrial Groundwater Permit
- Well Registration

Nebraska Department of Health and Human Services

- Non-Treatment Non-Community Public Water Supply Permit
- Installation of well construction and pump installation

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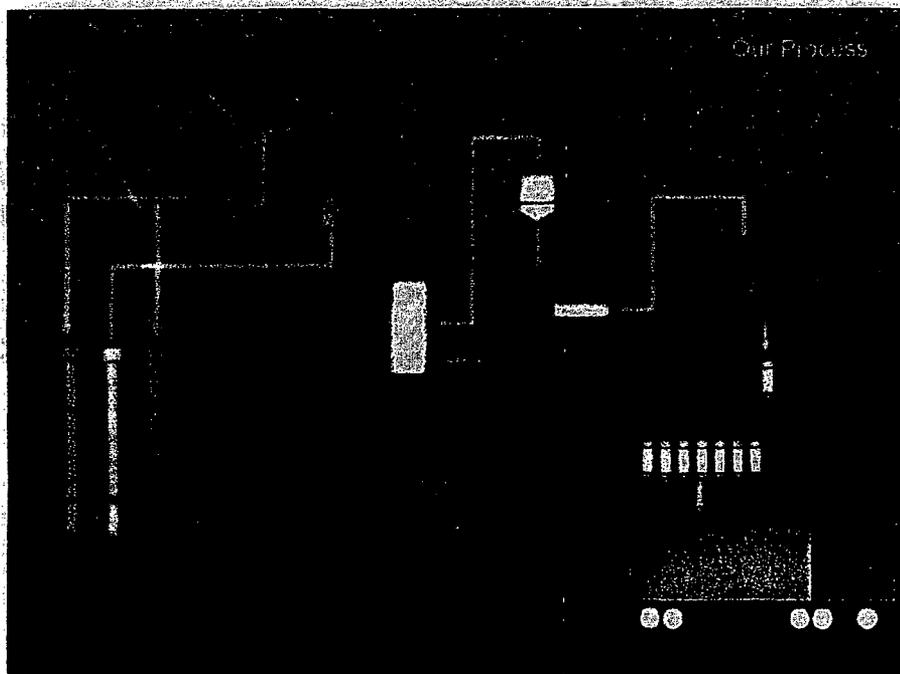
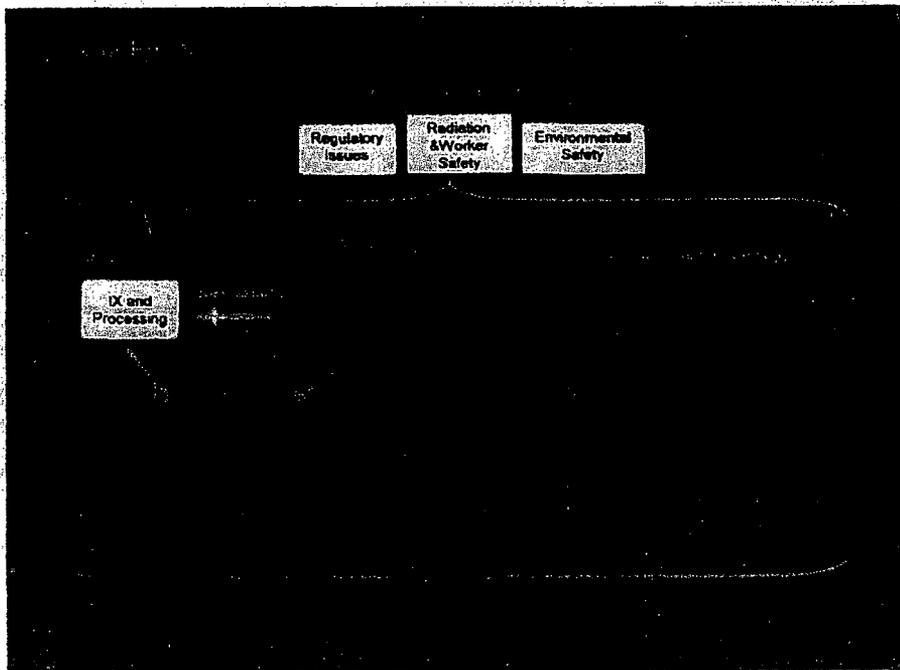
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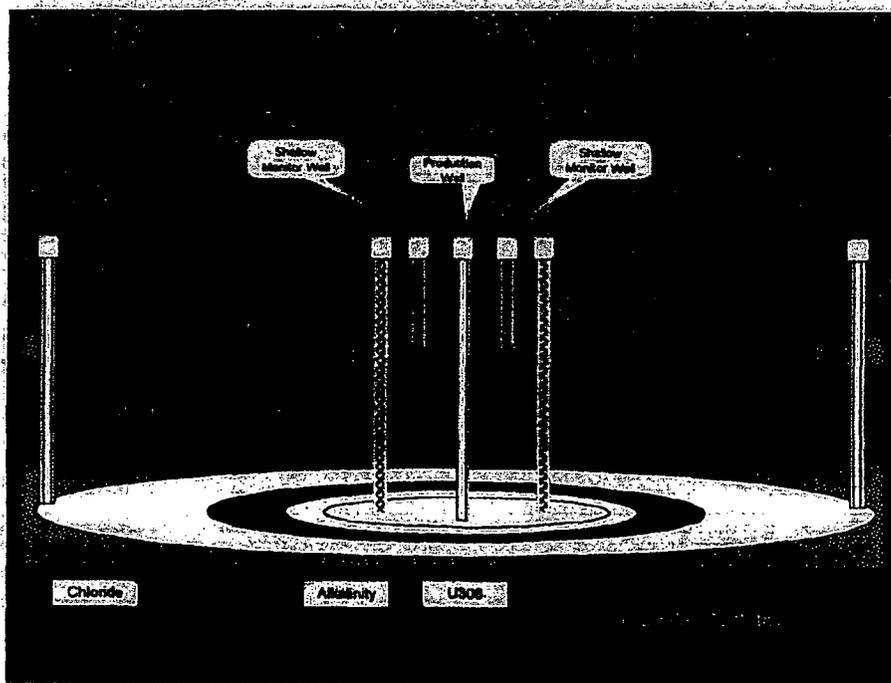
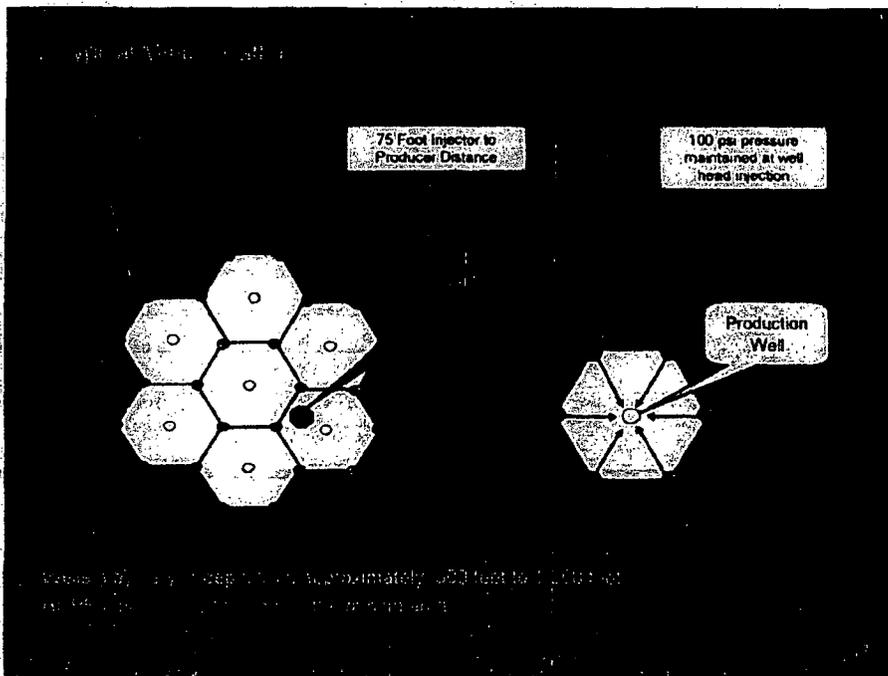
Nebraska Department of Health and Human Services

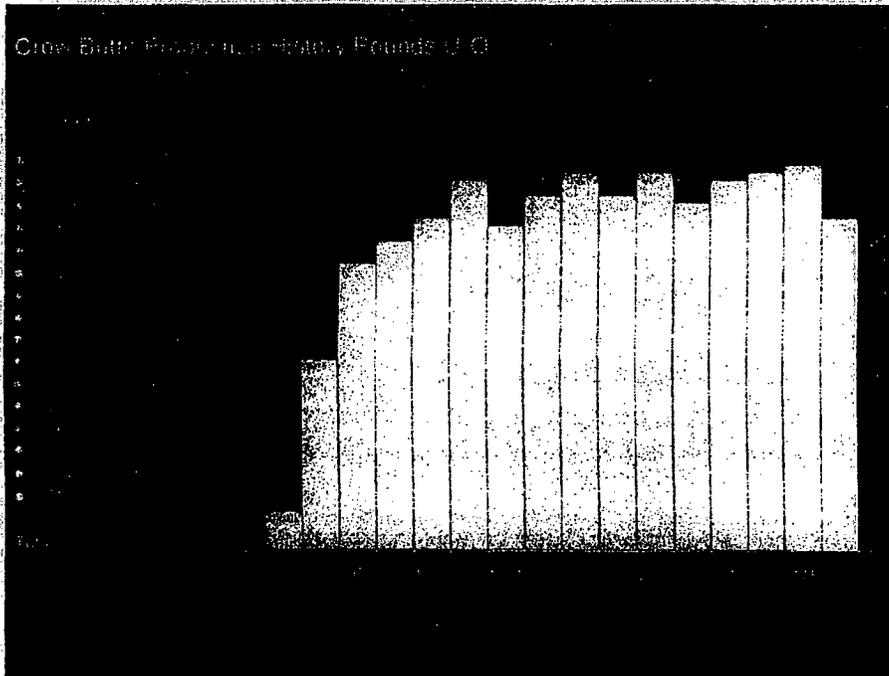
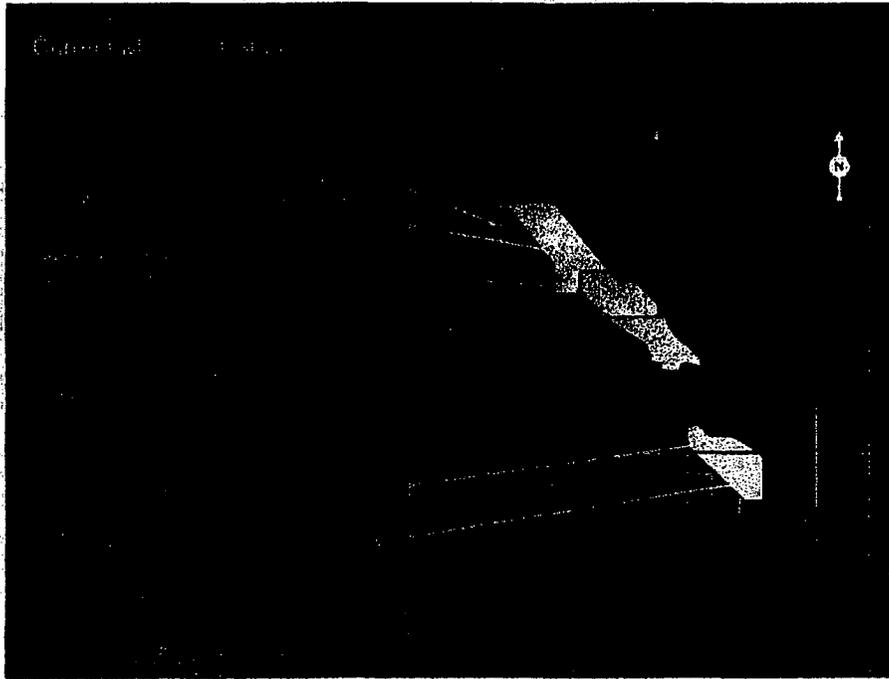
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Crow Butte Resources Initiatives

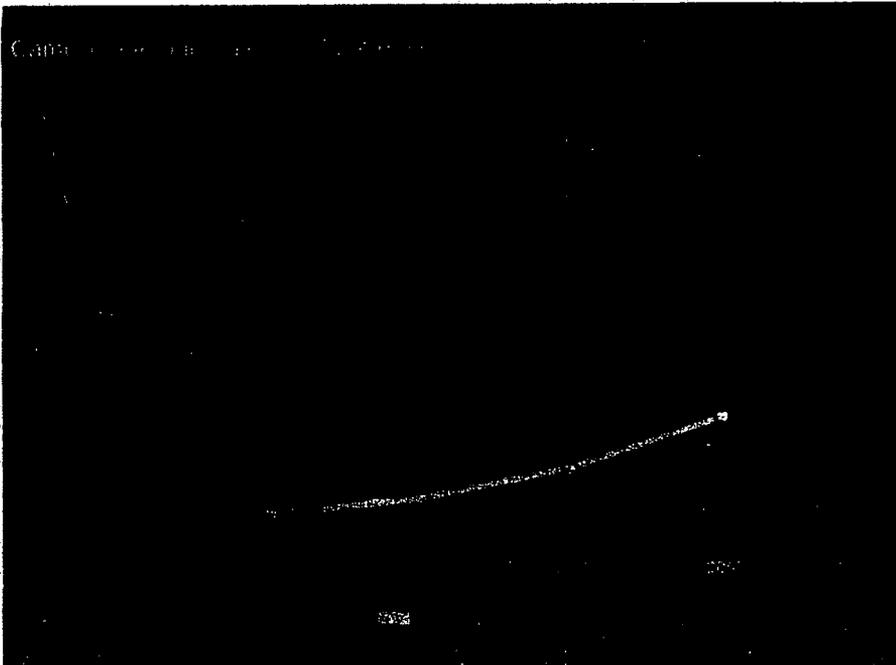
CBRI is a 501(c)(3) nonprofit organization that is committed to providing environmental and social services to the community. CBRI is currently working on several projects, including a water treatment plant and a wastewater treatment plant. CBRI is also working on a number of other projects, including a water conservation program and a water quality monitoring program.







<date>



The above information is summarized in the following table:
 CBE's total investment in the 1990s is projected to be \$1.1 billion, or 10% of the total investment of over \$10 billion in the 1990s.
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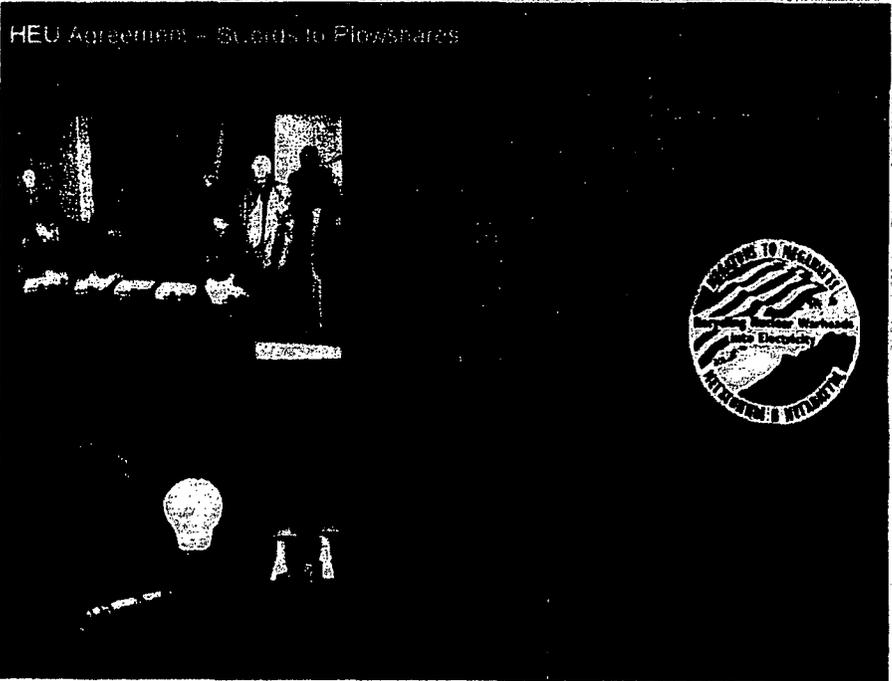
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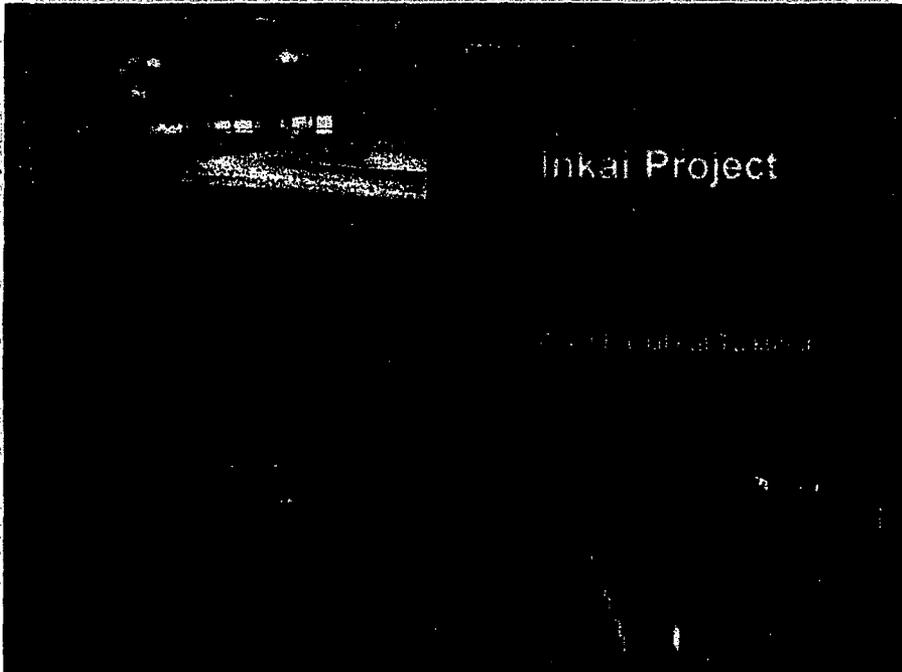
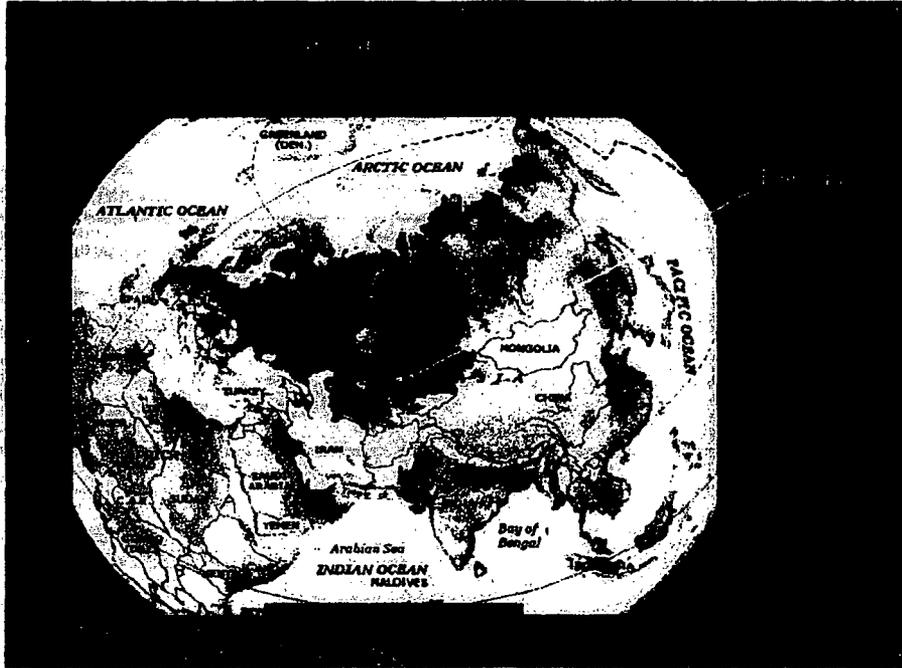
Project: [illegible]

Start Date: [illegible]

Project Budget: \$5.1M projected for 2017-2018

Crew Base: [illegible] - pay \$35,072.41 tax to Nebraska per employee





James Lovelock



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RESOLUTION OF THE OGLALA SIOUX TRIBAL COUNCIL
OF THE OGLALA SIOUX TRIBE
(An Unincorporated Tribe)

RESOLUTION OF THE OGLALA SIOUX TRIBAL COUNCIL AUTHORIZING THE ENVIRONMENTAL HEALTH TECHNICAL TEAM TO SERVE AS THE LEAD TRIBAL AGENCY FOR ACTIVITIES INVOLVING URANIUM CONTAMINATION, MINERAL RESEARCH AND DEVELOPMENT ON THE PINE RIDGE INDIAN RESERVATION AND ALL TREATY-PROTECTED LANDS OF THE LAKOTA NATION.

WHEREAS, the Oglala Sioux Tribe was organized under Section 16 of the 1934 Indian Reorganization Act by adopting a federally approved Constitution and By-Laws, and

WHEREAS, the Oglala Sioux Tribe adopted its Constitution and By-Laws by referendum vote on December 14, 1935, in accordance with the Constitution, the Oglala Sioux Tribal Council is the governing body of the Pine Ridge Indian Reservation, and

WHEREAS, the Oglala Sioux Tribal Council is vested with authority "to protect and preserve the natural resources of the Tribe, and to regulate the use and disposition of property upon the reservation" under Article IV, Section 1(m) of the Oglala Sioux Tribal Constitution, and (n) "to protect the health and general welfare of the Tribe", and

WHEREAS, the Oglala Sioux Tribe promotes the respecting of Mother Earth and emphasizes the importance of protecting all elements needed from her for the survival of the Tribe, and

WHEREAS, the Oglala Sioux Tribe recognizes that the Precautionary Principles are similar to the original concept of the Seventh Generation:

- Prevent pollution and make polluters, not taxpayers, pay and assume responsibility for the damage they cause.
- Protect our children from chemical and radioactive exposures to avoid illness and suffering.
- Promote use of safe, renewable, non-toxic technologies.
- Provide a natural environment we can all enjoy with clean air, fishable waters, and protection of our forest, deserts, mountain, prairies, wetlands, rivers, lakes, oceans and a safe land for our Circle of Life to live in, and

WHEREAS, the Oglala Sioux Tribe has always maintained precautionary principles for the benefit of the Oglala Sioux Tribal Members and recognizes the right of these members to use and enjoy air, water, wildlife, and other renewable resources determined by the Tribal Council to be common property which shall not be impaired, nor

shall such use impair their availability for the use of future generations, and

WHEREAS, the Oglala Sioux Tribe reaffirms the principle of the permanent sovereignty of tribal peoples under foreign occupation over their own natural resources, and

WHEREAS, the Oglala Sioux Tribe has great concern about pollution of surface and ground water, dumping of contaminant wastes, loss of natural vegetation and pollution of the natural habitat of the Pine Ridge Reservation, and

WHEREAS, on July 12, 2007, the President of the Oglala Sioux Tribe organized a meeting to address the issues involving Uranium Contamination resulting from mining activities within the 1851 & 1868 Ft. Laramie Treaties, and outside of the jurisdictional boundaries of the Pine Ridge Reservation, and

WHEREAS, there is a need for follow-up to the July 12, 2007 meeting, and for additional technical and legal research on these issues, and

WHEREAS, the Oglala Sioux Tribal Council enacted Resolution No. 97-74, establishing the Environmental Health Technical Team to address environmental and public health issues, and

WHEREAS, the Environmental Health Technical Team is the appropriate Tribal agency to research and address issues relating to Uranium mining and contamination, and to consult with the other interested stakeholders, such as the Lakota Landowners Association, Black Hills Defenders, Bring Back the Way, and other interested groups; now

THEREFORE BE IT RESOLVED, that the Oglala Sioux Tribal Council does hereby authorize and direct the Environmental Health Technical Team to serve as the lead agency for all activities involving Uranium contamination, research and mineral development within the boundaries of the Pine Ridge Indian Reservation, as defined in Article I of the Constitution and By-Laws of the Oglala Sioux Tribe, and within the boundaries of the Treaty-protected lands as defined in the Treaty of Fort Laramie of September 15, 1851 and the Treaty of Fort Laramie of April 29, 1868, and

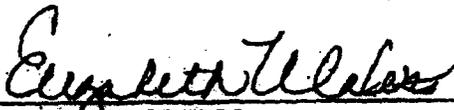
BE IT FURTHER RESOLVED, that the Director of the Natural Resources Regulatory Agency shall serve as the primary point of contact on Uranium contamination and related issues, including mineral research and development, and

BE IT FURTHER RESOLVED, that the Environmental Health Technical Team shall serve as the clearinghouse with regard to all activities, and documents pertaining to the Oglala Sioux Tribe including but not limited to ordinances, resolutions, by-laws, historical documents, charters, mandates from the Bureau of Indian Affairs and any other federal agency and any correspondence between the BIA & the Oglala Sioux Tribe, related to Uranium pollution and research toward the executive, legislative and judicial efforts to preserve and protect the members of the Oglala Lakota Nation, and

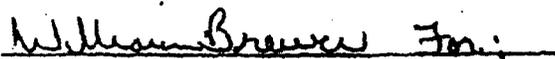
BE IT FURTHER RESOLVED, that the Environmental Health Technical Team shall report and be accountable to the Tribal President and the Oglala Sioux Land Committee, and shall comply with and strictly apply all relevant Tribal ordinances, in carrying out the directives of this Resolution.

C-E-R-T-I-F-I-C-A-T-I-O-N

I, as the undersigned Secretary of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe hereby certify that this resolution was adopted by the vote of: 16 for; 0 against; 0 abstaining; 1 not voting during a REGULAR SESSION held on the 7TH day of AUGUST 2007


ELIZABETH WATERS
Secretary
Oglala Sioux Tribe

A-T-T-E-S-T:


JOHN W. YELLOW BIRD-STEELE
President
Oglala Sioux Tribe

↑
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AG-FINE HOPE AGENCY 30

ORDINANCE OF THE OGLALA SIOUX TRIBAL COUNCIL
FOR THE OGLALA SIOUX TRIBE
(An Unincorporated Tribe)

ORDINANCE OF THE OGLALA SIOUX TRIBAL COUNCIL ENACTING THE OGLALA SIOUX TRIBE NATURAL RESOURCES PROTECTION ACT OF 2007.

WHEREAS, the Oglala Sioux Tribe has adopted its Constitution and By-Laws by referendum vote on December 14, 1935, in accordance with Section 16 of the Indian Reorganization Act of 1934 (25 U.S.C. § 476), and under Article IV of the Oglala Sioux Tribe Constitution the Oglala Sioux Tribal Council is the governing body of the Pine Ridge Indian Reservation, and

WHEREAS, the Oglala Sioux Tribal Council is vested with authority "to protect and preserve the natural resources of the Tribe, and to regulate the use and disposition of property upon the reservation" under Article IV, Section 1(m) of the Oglala Sioux Tribal Constitution, and (n) "to protect the health and general welfare of the Tribe", and

WHEREAS, the purpose of the Oglala Sioux Tribe's Natural Resources Protection Act of 2007 is to ensure that no damage will come to the people, the culture, the environment, including the air and water, and economy of the Oglala Sioux Tribe because of uranium mining or processing in the region of the Upper Midwestern United States, and

WHEREAS, the Oglala Sioux Tribal Council finds that the wise and sustainable use of the Natural Resources traditionally has been and remains a matter of paramount governmental interest to the Oglala Sioux Tribe and a fundamental exercise of Oglala Sioux Tribal sovereignty, and

WHEREAS, the Oglala Sioux Tribal Council supports preserving and protecting all of the natural resources within the confines of the Pine Ridge Indian Reservation especially the air, water, and earth as these resources are the foundation of life, and

WHEREAS, the Oglala Sioux Tribal Council affirms that it is the duty and responsibility of the Oglala Sioux Tribe to protect and preserve the natural world in its purest form for the life of future generations, and

WHEREAS, the Oglala Sioux Tribal Council upholds the right and freedom of the people to be respected, honored and protected with a healthy physical and mental environment, and

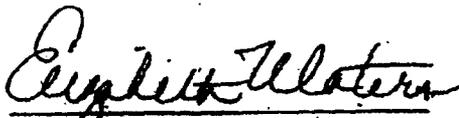
WHEREAS, the Oglala Sioux Tribal Council finds that there is a reasonable expectation that future mining and processing of uranium in the region of the Upper Midwestern United States will generate

economic hardships to the Oglala Sioux Tribe. These economic hardships include but are not limited to the potential damage to the land, air, water, vegetation, and other natural resources of the Oglala Sioux Tribe, now

THEREFORE BE IT ORDAINED, that the Oglala Sioux Tribal Council does hereby declares the Pine Ridge Indian Reservation, including its aboriginal territory boundaries to be a nuclear-free area for the protection of the people and the Natural Resources of the Oglala Sioux Tribe. Any person, agency or entity, including federal, state, and county governments, or corporations, businesses, or companies who shall cause any nuclear pollution or contamination to enter the confines of the Pine Ridge Indian Reservation, including its 1851 & 1868 Treaty boundaries and aboriginal territory boundaries, shall be prosecuted to the fullest extent of the law.

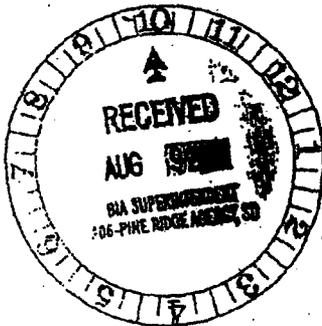
C-E-R-T-I-F-I-C-A-T-I-O-N

I, as the undersigned Secretary of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe hereby certify that this Ordinance was adopted by the vote of: 16 for; 0 against; 0 abstaining; 1 not voting during a REGULAR SESSION held on the 7th day of AUGUST 2007.


ELIZABETH WATERS
Secretary
Oglala Sioux Tribe

A-T-T-E-S-T:


JOHN W. YELLOW BIRD-STEELE
President
Oglala Sioux Tribe

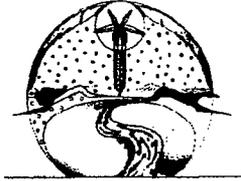


"SOME DAY THE EARTH WILL WEEP, SHE WILL BEG FOR HER LIFE, SHE WILL CRY WITH TEARS OF BLOOD. YOU WILL MAKE A CHOICE, IF YOU WILL HELP HER OR LET HER DIE, AND WHEN SHE DIES, YOU TOO, WILL DIE." --John Hollow Horn, Oglala Lakota, 1932

Crying Earth Rise Up!

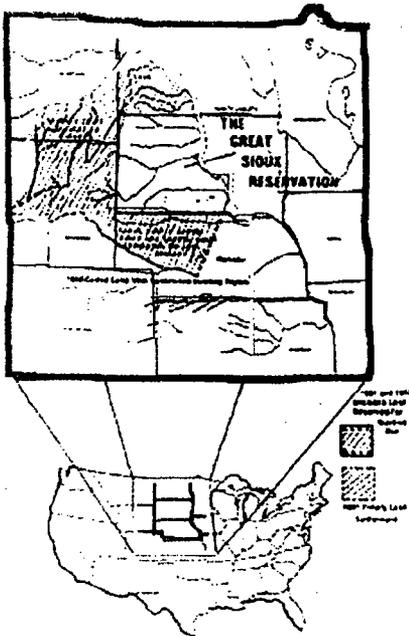
Lakota Worldview: Water Is Sacred

For many generations, our Lakota people lived on the plains and followed the stars for ceremony. Our ancient Creation story teaches us that Tunkasila made all of Creation, woman and man and taught us to be a good relative to all of Creation. Mni, Water is a Sacred Gift of Creation. Mni is the Adornment of Mother Earth, Mni is the companion of Wooke, the daughter of Tunkasila. Wooke is the Law.



Mni is our first home, when we arrive here on Mother Earth, the water of our mothers' womb is our first dwelling. Water is our first medicine. Without water, there is no life. The Spirit of Mni is also in the Star Nation. In the form of steam, the Spirit of Mni enters the Human Body to nourish the Spirit. Mni is part of every daily and ceremonial aspect of Lakol Wicohan, our Lakota lifeway.

After the coming of the white man, and many years of war making, the Oceti Sakowin -Seven Council Fires- known historically as the Great Sioux Nation-entered into the 1851 and 1868 Fort Laramie Treaties with the United States. Our ancestors retained a land base for the Lakota Nation that includes parts of what is currently known as North Dakota, South Dakota, Colorado, Wyoming, Montana, Nebraska, and Canada.



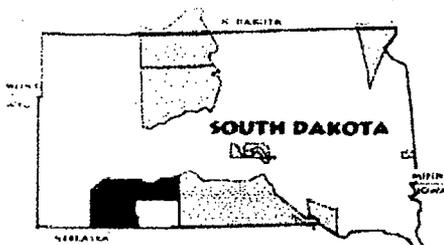
1851 & 1868
Ft. Laramie
Treaty Territory

"The Great
Sioux
Reservation"

Our Treaty Territory contains our sacred land and Ceremonial Sites, and billions of dollars worth of Minerals, Plants, and Water.

Our ancestors and the United States government officials smoked our Sacred Pipe together and the U.S. Congress ratified the Treaty, so our people believe that the Treaty is true and binding, as long as the water flows and sweet grass grows.





Through America's aggressive Treaty violations and the decimation of the Buffalo Nation, the Oglala Lakota were forced onto the reservation. The Pine Ridge Indian Reservation is located in southwestern South Dakota.

THE PINE RIDGE RESERVATION WAS ORIGINALLY KNOWN AS PRISONER OF WAR CAMP #344.

"Pine Ridge Indian Agency" (The official Bureau of Indian Affairs terminology)

The U. S. Dept of the Interior's Bureau of Indian Affairs Census reports there are now 48,000 Oglala Lakota people, with 25,000 tribal members residing on Pine Ridge, with 65% age 25 and under.

Drinking Water Quality Tests on Pine Ridge

On Pine Ridge, Drinking Water Quality tests conducted from 1995 to the present by the US Geological Survey, the Indian Health Service, and the Oglala Sioux Tribal Rural Water Program and the Federal Agency for Toxic Substances and Disease Registry (ATSDDR) reveal contaminants in the groundwater. There are two serious threats to our drinking water, Arsenic, and Alpha Emitters (radiation emitting).

Uranium Mining and Water Contamination

The Tests Reveal the Contaminants: Arsenic, Combined Radium 226 & 228, Barium, Thorium 230 (not naturally occurring), other Radioactive Alpha Emitters. Maximum Contaminant Level (MCL) measures contaminants and tell us the "safe" levels of contaminants.

Since the US Drinking Water Act drinking water quality is measured for contaminants. The MCL of Arsenic is 10 as of January 2006. An MCL above 10 is not in the "safe" level under US law. The Environmental Protection Agency's MCL "goal" for Arsenic level is a measurement of zero, because the EPA cannot determine a true safe threshold level for Arsenic. Once Arsenic is released into the environment, it cannot be contained. It only changes form.

According to Indian Health Service 2005 Reports the water quality test results on Pine Ridge reveal that 98 wells have Arsenic levels 2 to 12 times higher than the MCL determined by law. The wells of these families have been capped and their drinking water source has been changed to that of the water piped in. (Call the Indian Health Service at 685-6561 to ask for copies of the Arsenic Reports). These homes have received under-the-sink water filters from the Indian Health Service, however shower water, water from the garden hose, bath water, this is not filtered. Arsenic contaminated water still pours into our homes.

In past decades, Open Pit Uranium Mining occurred Northwest of the Pine Ridge in the area of Edgemont, SD on the outskirts of our sacred Black Hills. The milling of the Uranium took place by the Cheyenne River, which flows to the Pine Ridge. The radioactive waste from that Uranium Mine has since been buried underground for storage.

The area around Edgemont and the Northwest area of the Pine Ridge is over the Inyan Kara Aquifer and the White River Group. The Arikaree Aquifer flows under the center of the Pine Ridge. The USGS and OST Rural Water tests document that wells and springs from these Aquifers reveal that contaminants of

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Arsenic, Radium 226 & 228, and Gross Alpha Emitters are higher than the safe and legal Maximum Contaminant level.

Some Alpha Emitters and Arsenic are naturally occurring due to Uranium in the ground, others as a result of mining. (Call the OST Rural Water Office in Pine Ridge at 867-1999 & ask for copies of their Annual Reports. The complete test results are in their reports.)

These wells that exceed the MCL for Arsenic and Alpha Emitters have been closed and the drinking water is now piped in or trucked in to the community.

A summary of the OST Rural Water Reports and Indian Health Service shows that the Alpha Emitters from the following areas exceed the legal MCLs (highend range of composite tests):

Location of water test: Red Shirt (These test results are above the legal MCL)

<u>Safe</u> <u>MCL</u>	<u>Detected</u> <u>MCL</u>	<u>Date of</u> <u>Test</u>
15pCi/L	21.6	1999
5pCi/L	15.4	1999
15pCi/L	61.8	2000
5pCi/L	38.7	2000
15pCi/L	16.4	2001
5pCi/L	14.4	2001
15pCi/L	15	2002
5pCi/L	15	2002

Location of water test: Potato Creek (These test results are above the legal MCL)

<u>Safe</u> <u>MCL</u>	<u>Detected</u> <u>MCL</u>	<u>Date of</u> <u>Test</u>
15pCi/L	26.4 (well 3)	2003
15pCi/L	23.9 (well 2)	2003

Location of water test: White Horse Creek (These test results are above the legal MCL)

<u>Safe</u> <u>MCL</u>	<u>Detected</u> <u>MCL</u>	<u>Date of</u> <u>Test</u>
15pCi/L	15	2003

Nuclear Waste Contamination?

Have the nuclear waste tailings from the Uranium mines around the Edgemont area get into the groundwater, thus traveling for many years underground to get here, under the Pine Ridge, into the Aquifer we drink from? Did the above ground tailings blow in the wind to our lands here on Pine Ridge? There has never been a definitive study to determine possible sources of contamination.

Mni Wiconi Pipeline

The Mni Wiconi water line has only been here for a few years, prior to Mni Wiconi disconnecting our wells and connecting our homes to the pipeline, we drank groundwater for years, some homes that are

land-based still drink from the groundwater, as they are not connected to the pipeline. According to the Annual Reports of Rural water, the drinking water they provide is groundwater pumped.

Practically the first sentence of the Congressional Bill which created with Mni Wiconi Program states that *"the drinking water quality available to the Pine Ridge does not meet the minimum health and safety standards, thereby posing a threat to public health and safety"*. (Mni Wiconi Act PL 100-516 (H.R. 2772) October 24, 1988 and amended PL 103-434 (S1146) October 31, 1994.

According to the 2003 Health Consultation Report of the Sharps Corner/Porcupine area conducted by the US Federal Agency for Toxic Substances and Disease Registry the private well samples studied in 1999 and 2000 for Radio nuclides, the highest MCL detected was 75.9ugL, which is two and half times higher than the legal MCL of 30ugL. The sampling led the ATSDR to conclude that *"Radio nuclides were the drinking water contaminant of concern for the Sharps Corner/Porcupine area"*.

Of the eight water wells sampled, 50%, or half, of homes MCL for Radio nuclides exceeded the EPA's legal Maximum Contaminant Level for Gross Alpha Particle activity. In the Radon part of the study, the air was measured in these homes. One-third or 30% of the homes were found to have results of Radon above the legal MCL.

The results summarized that the folks in these homes were ingesting radioactivity through the drinking water, as well as being contaminated by Radon through inhalation, breathing it in as it is in their homes. In every one of these homes, at least one family member died from Cancer. The ingestion and inhalation of Radio nuclides also has a quicker effect on the kidney--many individuals will suffer kidney damage and die from the effects BEFORE they get cancer.

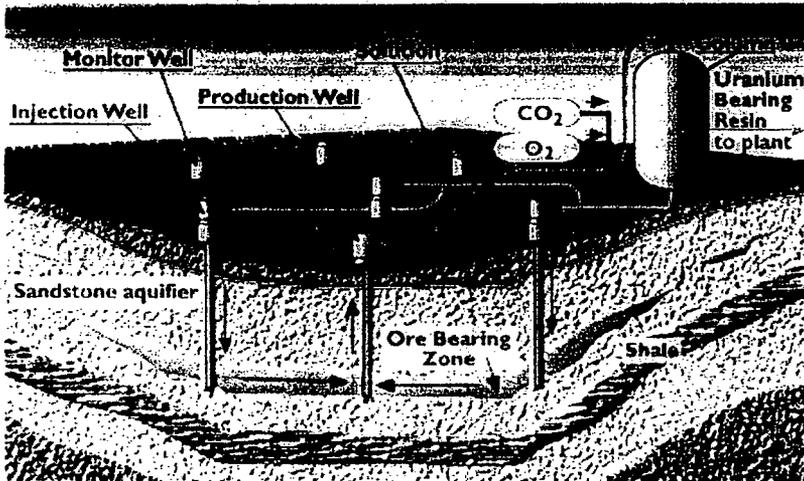
Testing to determine a defined source of radioactive contaminants is a worthwhile activity our tribe could engage in, it could help identify the source of the contaminants that may have been pulled out of the ground through mining activities, entering the Aquifers. (Call the USGS Office in Rapid City and ask where to purchase copies of USGS reports). Other Tribal Nations have designed and conducted such studies, we could do this at Pine Ridge.

In a letter addressed to OST President John Steele in 2003, Lorelie DeCora responded to his question posed regarding the definition of a contaminant known as "Th-230" that he stated had been detected in groundwater quality tests conducted on the Pine Ridge. The Women of All Red Nations (WARN) Report issued a report in 1980 documenting water quality test results. **Thorium 230** is a contaminant that results from Uranium tailings from mining. Thorium can be naturally occurring, *but Thorium 230 is not naturally occurring*. Thorium 230 will stay radioactive for 154,000 years. After 77,000 years, it becomes half of the value of its' prior radioactivity. (Thorium 230=Th-230)

In Situ Leach Mining: "ISL"

Substances such as Inorganic Arsenic, Radium 226 & 228, and other contaminants can enter groundwater as a result of mining. One type of mining that uses water is known as "In Situ Leach Mining". ISL Uranium mining replaces the former open-pit and underground mining which company's have utilized in the past to extract Uranium out of the ground. ISL mining does not produce the "waste tailings" that are associated with former methods of mining, but ISL mining is still a very dangerous mining method and holds great potential for groundwater, air, and soil contamination. ISL mining pulls Uranium up from the

ground using Aquifer water, extracts the Uranium, temporarily stores the water in "monitoring" wells, pipes it to "evaporation" ponds, and then eventually injects some of the water back into the Aquifer.



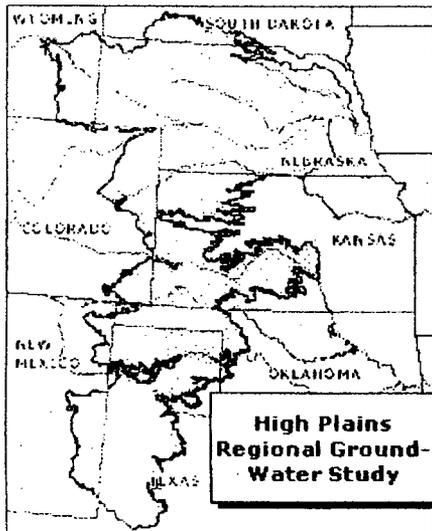
The ISL process blends the contaminated water with clean Aquifer water to store it in the "monitoring" wells where the Radioactivity is measured after the Uranium is leached out to produce "Yellow Cake". The water used to pull the Uranium out of the ground is also stored in "evaporation ponds" (by this point the water is full of radioactive contaminants, it is like a sludge or a gel.)

Radioactive Uranium and Barium Sludge Ponds and "monitoring

wells" result from the In Situ Leach mining process. It takes thousands of years for this sludge to lose half of its radioactivity. These evaporation ponds are what environmentalists and scientists call "a nuclear waste dump" as the substance is a mining waste, but the mining companies are allowed to keep this waste on-site, in what some view as the company's advantageous manipulation of nuclear waste laws and regulations but which is actually a practice that is harmful to the environment.



The ISL process presents the potential for leaks in the pipes that are used to "extract" the Uranium out of the ground.



Such leaks would allow the radioactive water to seep out of the pipe and back into the groundwater.

ISL Uranium Mine at Crawford, Nebraska

"In Situ Leach Mining" is presently happening in Crawford, Nebraska at the Crow Butte Resources, Inc. Uranium Mine, which is a subsidiary 100% owned by Cameco, Inc., the multinational energy corporation that is headquartered in Saskatchewan, Canada.

Cameco, Inc. is the world's largest Uranium producer. This Crow Butte Uranium Mine has spilled or leaked contaminated water that can get into the land, into the air and ground water.

The High Plains Aquifer that is under the Crow Butte Resources (CBR) Uranium Mine also flows under the Eastern portion of the Pine Ridge Reservation.

- The Crow Butte Uranium Mine is licensed to use 5,000 to 9,000 gallons of Aquifer water per minute the "In Situ Leach" method.
- The CBR has at least three "evaporation ponds" where they store the contaminated water. The ponds are as big as a football field, lined with plastic and vinyl. They are 17 to 20 feet deep. And filled with radioactive sludge. The plastic and vinyl liners often develop rips/tears which can leak.
- The "monitoring wells" where CBR stores contaminated water after the Uranium has been leached out are actually underground cement containers which hold the water for a period of time before it is placed in the "evaporation pond". Both storage sites/methods are seen as radioactive nuclear waste dumps by the environmentalist community and some in the science community as well.
- The CBR Uranium Mine produces up to one million pounds of "Yellow Cake" per year at its processing plant onsite. Once the Uranium is turned into "Yellow Cake" it is then stored in 55-gallon steel drums until transported. "Yellow Cake" is used to power Nuclear Power Plants and to make Nuclear Bombs through production of the world's most powerful and most dangerous element: Plutonium. CBR states that it only sells "Yellow Cake" for use in providing electricity.

CBR proposes 20 more years of Uranium mining near Crawford, Nebraska. The Cameco, Inc. website states they have "a proven reserve of 60 million pounds of Uranium to extract". How much water is that at 9,000 gallons per minute? 24 hours per day, 365 days per year for 20 more years... What will the number of gallons increase to once the two new Uranium Mines are developed and running? How has this water use impacted aquifer depletion? How will it impact aquifer depletion?

Crow Butte Resources, Inc. will soon seek renewal of their existing license and proposes to expand their Uranium Mine north of Crawford, Nebraska, to an area near Whitney Lake and Dam, and the White River. The names of these two satellite ISL mines are the **North Trend** and the **Three Crow**. The existing mine currently has over 4,000 wells at Crow Butte Resources. The **North Trend** Expansion license amendment has been submitted by CBR to the Nuclear Regulatory Commission (NRC). According to CBR correspondence in NRC records, Crow Butte Resources plans to submit their **Three Crow Expansion** license amendment to the NRC in mid-2008, as well as their CBR license renewal.

In this research effort, we could find no evidence that the Oglala Sioux Tribal Council has taken any official legislative action regarding the safety of this ISL mine and its potential effects on our groundwater. The OST must devote some resources into examining this environmental issue.

ISL Uranium Mining is also planned to occur near Edgemont, SD by the Powertech Company which is now drilling exploratory wells for their proposed ISL Uranium Mine, and the Neutron Energy Corp is looking around the Black Hills area as well.

Impacts of Mining on Humans and the Environment

The scientific community has conclusively determined that Inorganic Arsenic and Alpha Emitters are cancer causing to humans. Arsenic and Alpha Emitters are often pulled out of the ground during the mining process, entering the groundwater, people drink the groundwater and become contaminated.

There can be a 5, 10, or 20-year latency period of exposure to Arsenic and Alpha Emitters before cancer develops. There are about 321 people diagnosed with Diabetes each year on Pine Ridge. Currently, of our 25,000 residents, 10% of our Tribal Members have Diabetes.

How many diabetics will there be in our Tribe after 20 more years of contamination?

Our people who are Diabetic patients seem to move to the Dialysis stage of the disease quickly, can this be a result of kidney damage sustained over many, many years of contamination of ingesting even low doses of Arsenic and Alpha Emitters?

The homes across the Pine Ridge whose test results revealed an illegal MCL of Arsenic now have filters provided by the Indian Health Service to filter Arsenic out of the water as it comes out of our kitchen faucet to purify the water we drink and cook with, but the water we bath our children in, wash our clothes with, water our lawns with, and shower with is not filtered. The Arsenic is still pouring into our homes.

According to the I.H.S. official at the Aug 15, 2007 EHTT meeting, *"this shouldn't be a concern because you have to drink it to be effected by it"*. American Science is not the only science who studies such matters, German science states there is proof that even a low dose over time can have a more dramatic result than previously understood. Should are people be given adequate information on this subject?

With the Crow Butte Resource, Inc. existing mine and two new proposed mines 38 miles to the southeast of here, and the proposed Powertech Uranium Mine 60 miles to the Northwest, In Situ Leach Mining for Uranium has the potential to contaminate all of the groundwater our people depend on for drinking water.

The CBR Uranium Mine has had leaks and spills every year since they have been in operation, 23 in all.

License Violations at Crow Butte ISL uranium mine (Nebraska) (www.wise-uranium.org)

- Sept 26, 2006: Monitor well placed on excursion status
- May 5, 2006: leak detected at Pond 4
- Jan 19, 2006: Monitor well placed on excursion status
- Oct 27, 2005: Injection well leak detected
- Aug 4, 2005: Monitor well placed on excursion status
- June 28, 2005: Monitor well placed on excursion status
- June 17, 2005: Monitor well placed on excursion status
- May 2, 2005: Monitor well placed on excursion status
- May 14, 2004: leak detected at Pond 1
- Dec 23, 2003: Monitor well placed on excursion status
- Dec 26, 2002: Monitor well placed on excursion status
- Sept 10, 2002: Monitor well placed on excursion status
- April 4, 2002: Monitor well placed on excursion status
- Dec 4, 2001: Monitor well placed on excursion status
- March 2, 2001: Monitor well placed on excursion status
- Sept 10, 2000: Monitor well placed on excursion status
- May 26, 2000: Monitor well placed on excursion status
- April 27, 2000: Monitor well placed on excursion status
- March 6, 2000: Monitor well placed on excursion status
- July 2, 1999: Monitor well placed on excursion status
- Aug 7, 1998: Spill of 10,260 gallons of injection fluid
- March 21, 1998: Monitor well placed on excursion status
- Aug 12, 1997: Discovery of Pinhole Leaks in Upper Liner of Process Water Evaporation Pond

When an ISL well is placed in "excursion status" it is because some part of the pipes or containers or other parts of the apparatus is LEAKING/SPILLING the water/solution/Uraniun mix back into the groundwater (Aquifer).

"The most critical part of the ISL process is to control the movement of the chemical solutions within the aquifer. Any escape of these solutions outside the ore zone is considered an excursion, and can lead to contamination of surrounding ground-water systems. Some of the most common causes of excursions, identified by international operations in the United States and across Europe, can be through old exploration holes that were not plugged adequately, plugging or blocking of the aquifer causing excess water pressure buildup and breaks in bores, and failures of injection/extraction pumps." ("An Environmental Critique of In Situ Leach Mining : The Case Against Uraniun Solution Mining" at www.sea-us.org.au)

Uraniun Corporations say that ISL mining is environmentally friendly and safe, but according to researchers in the scientific community, *"The ISL technique can lead to permanent contamination of groundwater and can contaminate land which was otherwise good productive land."*

According to news reports in Nebraska, CBR experienced such a massive spill of more than 300,000 gallons of contaminated water that the area has been designated as **"unfit for future use"**—it is now considered a sacrifice area. (Instate News) as they are unable to clean up all of the contamination.

How will 20 more years of injecting contaminated water into all of the Aquifers that our people drink from effect our coming generations?

- Inorganic Arsenic crosses the placenta and can cause fetal death, it can be detected in Mothers' breast milk.
- Children's bodies are more susceptible to the damaging effects of Inorganic Arsenic.
- Are these contaminants connected to our high numbers of infant deaths? Of infant/children brain seizures? Of Down Syndrome babies born to young mothers? Of babies born with extraordinarily short umbilical cords?

In April 2005 the OST Council declared a situation of Eminent Threat due to test results of individual and community water wells exceeding the EPA Standard MCL of Gross Alpha Particle Radionuclide and Arsenic. OST Resolution #2005-46 states that I.H.S. negligence in testing for safe drinking water has resulted in tribal members becoming ill, it states: the wells our people were drinking from were declared "Unfit for Consumption" due to illegal Maximum Contaminant Level's.

Health on the Pine Ridge

Do we need a comprehensive health study on the Pine Ridge? According to the **South Dakota Cancer Report of 2003**, counties on the Pine Ridge have a "significantly higher rate of cancer, diabetes, and infant mortality than the SD state average for the time period of 2001-2005".

SD health records also state that in the "2003 Study, the American Indian cancer death rate was 30% higher than that of whites in South Dakota." The state records include the data that from the years "1999-2003 while the cancer death rate decreased for whites in SD, it increased for American Indians". For the years "2003 through 2005, the American Indian infant mortality rate increased at almost twice the rate for the white people in South Dakota." The report: Cancer in South Dakota, 2003 states "that American

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Indians had the highest age-adjusted rates for Years of Potential Life Lost” and that “American Indians are dying at a much younger age compared to whites”.

Why is this so? We need to encourage our tribal leadership and tribal government to conduct a health study to determine why our statistics are so high.

The Oglala Lakota People deserve to be informed about what the newly proposed Crow Butte Resources, Inc. In Situ Leach Uranium Mines will do to our future generations, water, land, people, animals, & plants. The OST can and should do the right thing: investigate and produce a comprehensive report on this energy company's violations and investigate how to hold them accountable to the EPA laws and other principles of respect for Mother Earth and our Sacred Water; and to hold the EPA and Federal Government responsible in upholding our Treaty and Human Rights to clean water, land, air, and health conditions based on a clean environment.

By passing OST Ordinance 07-40 (see below) on August 7, 2007, this is the responsibility Tribal Council made a commitment to. This concept will be discussed at the Uranium Summit coming to the Pine Ridge this fall. Also to be discussed will be the proposed Uranium Mines elsewhere in 1868 Ft. Laramie Treaty Territory such as the Edgemont area and the Wild Horse Sanctuary near Hot Springs, SD.

OST Council has yet to take specific action on the Crow Butte Resources license renewal and their application for two additional ISL Uranium Mines: the North Trend area and the Three Crow area.

WHAT IS ENVIRONMENTAL JUSTICE? *BY IEN*

TO NATIVE PEOPLES, ENVIRONMENTAL JUSTICE GOES BEYOND THE ISSUE OF DISPROPORTIONATE TOXIC, NUCLEAR CONTAMINATION & HEALTH EXPOSURE OF OUR ELDERS, MEN, WOMEN, YOUTH, CHILDREN & OUR TRADITIONAL FOOD

ENVIRONMENTAL JUSTICE INCLUDES: issues of exploitation, ecological damage, restoration of natural resources, compensation for victims of exposures & protection & healing of biological diversity that sustains us & allows us to practice our culture, language, & spirituality; the protection of all areas that are sacred & that are culturally & historically significant to our peoples and it

addresses economic development & social justice issues towards building sustainable communities with safe & sustainable jobs & livelihoods

means the decolonization of our minds & recognition of traditional knowledge as the foundation of who we are

addresses ethical & policy issues concerning biotechnology, ownership of life, introduction of genetically modified organisms into the environment & policy issues on intellectual property rights of Indigenous knowledge; it means developing & maintaining education and language programs that teaches adults and the younger generation what their relationship is to the sacredness of our Mother Earth

means understanding and defending our treaties and to exercise our right to self-determination as Indigenous peoples; it means to claim our inherent right to protect our traditional land, water, air and our future generations

In the United States, it means the right to develop our own tribal environmental protection programs with our own water and air quality standards, and seek delegated authority to implement our own environmental programs - which strengthens our sovereignty

In the United States and Canada, it means to have the right to fully protect our environment and all natural resources in our traditional territories, reserves and reservations by applying, monitoring and enforcing our own tribal-based environmental, historical, sacred areas, endangered species and conservation laws

Environmental Justice means to be active-from the grassroots to tribal government-in all policy decisions from local, tribal, state, national and international levels where policy development is made that affects our future generations and all life that sustains us and our Mother Earth.

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On August 7, 2007 the OST passed Ordinance #07-40 which recognizes the responsibility of the OST to protect the land, air, water, and people of the tribe and which criminalizes nuclear contamination on the Pine Ridge and within 1851 & 1868 Ft. Laramie Treaty boundaries.

“No Uranium Mining on Lakota Land”

Research Conducted by:

Rayette Camp, Victorio Camp, Aaron Price, Matt Rankin, Chris Soverow, the late Marlin “Moon” Weston, Debra White Plume

Source Materials:

- OST Mni Wiconi Program Annual Reports 1999-2006 (Rural Water)
- OST Water & Sewer Program Reports
- OST Ordinances and Resolutions
- OST Archives Office
- Environmental Protection Agency
- Instate News (Nebraska)
- US Geological Study 1992-1997
- Wise Uranium
- Indigenous Mining
- SD Dept of Health & Human Services
- Indian Health Service, Pine Ridge Agency, Aberdeen Area Office
- The Case Against Uranium Solution Mining “An Environmental Critique of In Situ Leach Mining” at www.sea-us.org.au
- Cancer in South Dakota, 2003

“Environmental Justice”

by Indigenous Environmental Network

email: ien@igc.org www.ien.org

Owe Aku, Bring Back the Way

Manderson, SD 57756-0325

605-455-2155 (Debra White Plume) or 605-867-5995 (Vic Camp)

email: cryingearth_riseup@yahoo.com

www.bringbacktheway.com



In speaking of nuclear waste:

“They have created something that cannot be destroyed”.

—Winona LaDuke

Crying Earth Rise Up!

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:

Ann Marshall Young, Chair

Dr. Richard F. Cole

Dr. Fred W. Oliver

In the Matter of

CROW BUTTE RESOURCES, INC.
(In Situ Leach Facility, Crawford, NE)

Docket No. 40-8943

ASLBP No. 07-859-03-MLA-BD01

December 28, 2007

CERTIFICATE OF SERVICE

I hereby certify that copies of the "REPLY OF PETITIONERS TO NRC STAFF RESPONSE" in the above captioned proceeding have been served on the following persons by deposit in the United States Mail as indicated by an asterisk (*); and by electronic mail as indicated by a double asterisk (**) on this 28th day of December, 2007:

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Judge Fred W. Oliver **
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