RAS 14698

Request for Hearing and/or Petition to Intervene
In Re: Crow Butte Resources Request for License Amendment Lic. No. SUA-1534
North Trend Expansion - Docket No. 40-8943 (Adams No. ML072540671)

Office of the Secretary
U.S. Nuclear Regulatory Commission, 16th Flr.
One White Flint North
11555 Rockville Pike
Rockville, MD 20852
Attention: Rulemakings and Adjudications Staff

DOCKETED
USNRC

November 12, 2007 (4:58pm)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

By Fax: 301-415-1101, Verification: 301-415-1966
By Email: HEARINGDOCKET@NRC.GOV

Dear Sir or Madam:

Pursuant to 10 CFR Section 2.309, the undersigned petitioner states that he, she or it has an affected interest in this matter and desires to participate as a party and files this request for hearing and/or petition for leave to intervene and a specification of the contentions which should be litigated.

A hearing should be granted and the undersigned should be entitled to participate in it if he, she or it has shown standing and has proposed at least one admissible contention that meets the requirements of Section 2.309(f).

This request/petition is timely filed on November 12, 2007. Capitalized terms that are not defined herein have the meanings assigned to them in the Application.

The undersigned notes that Section 2239(a)(1)(A) of the Atomic Energy Act, as amended, provides that in any proceeding for the amending of any license, 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.

Standing:

Petitioner is located within the 80 Km radius of the North Trend site and Petitioner's standing under Section 2.309(d) is stated in Exhibit A hereto, which is incorporated herein by this reference as if set forth at length herein.

Admissible Contentions:

Petitioner raises the contentions under Section 2.309(f) which are described in detail in Exhibit B hereto, which is incorporated herein by this reference as if set forth at length herein. Specifically, Petitioner contends that:

TEMPLATE = SECY-037

SECY-02

A. CBR's Mining Operations Use And Contaminate Substantial Water Resources and Radioactive Wastewater Mixes With Brule and High Plains Aquifers and Moves in a Slow-Moving Plume

B. ISL Mining is NOT Environmentally Friendly; ISL Mining May Have Caused Health Impacts at Pine Ridge Indian Reservation Closing 98 Wells

C. Prehistoric Indian Camp Should Be Inspected by Tribal Elders and Leaders

D. Proposed Trucking of Radioactive Resin Between CBR Facilities Creates Substantial Homeland Security Risk of Terrorist Attack and presents great potential for highway accidents resulting in danger to the public and spills or other contamination of environment.

E. CBR Fails to Mention It is Foreign Owned by Cameco, Inc. So All The Environmental Detriment and Adverse Health Impacts Are For Foreign Profit and There Is No Assurance The CBR Mined Uranium Will Stay In US for Power Generation.

F. The Economic Benefits Conferred by CBR on Crawford, NE are Not Shared By Other Communities That Bear Burdens Downwind and Downstream Like Chadron, Slim Buttes, Pine Ridge Indian Reservation and Hot Springs, SD.

Hearing Procedures Requested Regarding Relevant Facts and Positions:

Petitioner requests an Oral Hearing, Discovery and Expert Testimony concerning the following relevant facts and positions (collectively, the "Relevant Facts"):

(1) CBR is owned by Cameco, Inc., a Canadian corporation which purports to be the largest Uranium producer in the World with operations in Canada, the US and Kazakhstan. See www.cameco.com. Cameco acquired CBR in 2000.

(2) CBR currently is using up to 9,000 gallons per minute, which equals 4.7 billion gallons per year at its current operation and wants to use up another 4,500 gallons per minute, equal to 2.4 billion gallons per year for its North Trend Expansion. Since the water quality returned to the 'restored' aquifer is admitted by CBR to have changed geochemistry and to be low-level radioactive, it should not be credited with the amount of water returned to the aquifer in its restoration process when it comes to evaluating water consumption. Accordingly, its 'net consumption' numbers dramatically understate the amount of water usage of CBR's current and proposed operations.

(3) Foreign owned CBR is using up and contaminating vital water supplies in a time of drought for its profit to the detriment of the people, wildlife and land in Crawford, NE, surrounding areas including Chadron, NE, and Pine Ridge Indian Reservation and other users of the High Plains aquifer in Colorado, Kansas, New Mexico, Oklahoma,

South Dakota, Texas and Wyoming. Most of such persons are unaware of CBR's operations or Application.

(4) CBR has admitted a spill of 300,000 gallons of radioactive liquid waste and has publicly admitted failing to clean up one-third (1/3) of it, equal to 100,000 gallons of radioactive liquid waste. CBR has publicly admitted knowledge of a one (1) gallon per hour leak into the Brule aquifer from a broken coupling that existed for several years unnoticed resulting in an unknown amount of contamination of at least 8,760 gallons per year for at least two years (as reported in the Chadron Record, July 8, 1997. There are at least 23 reported leaks of radioactive material from CBR's existing operation. In Spring 1996, CBR admitted to a leak that contaminated 25,000 sq. ft. of the Brule aquifer. This contradicts CBR's statements that they have operated without any environmental impacts and indicates that CBR should not be allowed to expand.

(5) It is believed there is a slow-moving radioactive plume of contaminated water moving through the related aquifers. CBR's Application states that contaminants may enter the human body through water and through ingestion of meat of livestock and/or fish or wild game exposed to the contamination. Contaminants include Radon-222, Thorium, Uranium and inorganic Arsenic.

(6) It is believed that leaks of radioactive arsenic laden fluid into the Brule aquifer from prior "Excursions" from CBR's operations have slowly mixed with the High Plains aquifer and/or the Arikaree aquifer due to connectivity between the Brule aquifer and High Plains aquifer and Arikaree aquifer which runs under Pine Ridge Indian Reservation. The High Plains aquifer is depleting at a rate in excess of its recharge rate.

(7) It is believed there is a relationship between the ninety-eight (98) closed wells on the Western side of Pine Ridge Indian Reservation and certain incidences of cancer, kidney disease, birth defects, miscarriages and infant brain seizures on the Reservation which is downwind and downstream of CBR's existing ISL mining operation. Under the doctrine of *Res Ipsa Loquitor*, the burden of proof shifts to CBR to show that its operations have no causal connection to the contamination of the Pine Ridge water wells or the diseases of the people who drank and bathed in that water.

(8) The impacts of the North Trend mining to the health and environment of people and wildlife relying on the High Plains aquifer and the Arikaree aquifer should be evaluated as part of the Application.

(9) International human rights standards indicate that Indigenous peoples' whose lands are affected by development projects have the right to "free, prior and informed consent." In the Declaration on the Rights of the World's Indigenous Peoples ("Declaration"), Article 32, ¶ 1, "Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources," and ¶ 2, "States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development,

utilization or exploitation of mineral, water or other resources," and ¶ 3, "States shall 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." (See General Assembly Resolution A/61/L.67 of 7 September 2007.) To date, no opportunity has been provided under this applicable provision of the Declaration for members of the Oglala (Lakota) Sioux Tribe, its members or representative institutions to analyze CBR's License Amendment or its affect on lands, territories and resources. A favorable decision permitting intervention would provide this opportunity.

(10) CBR's 2.0-2.25 mile radius is inadequate; rather the entire 80km radius should be used to evaluate the impacts of the North Trend mining to the health and environment of people and wildlife who are admittedly downwind and/or downstream of CBR's current and proposed operations.

(11) There is no assurance that Yellowcake Uranium products from the CBR operation goes to US nuclear power plants and such Uranium may be sold by CBR's Canadian parent company to buyers in China, India, Pakistan, Russia and/or to the highest bidder.

(12) There is no assurance that Yellowcake Uranium products from the CBR operation will not be used for nuclear weapons of a foreign country or terrorists.

(13) Although CBR's Application discusses economic benefits in the immediate vicinity of its facilities (i.e., Crawford, NE), CBR acknowledges that residents and wildlife in at least an 80 Km radius, including Chadron, NE, Hot Springs, SD, and Pine Ridge Indian Reservation and that none of such areas receive any economic benefit from CBR's activities.

(14) There are at least 26 Nebraska towns that have illegally high levels of Uranium in their water supplies. Recently, the Nebraska Indian Affairs Commission passed a resolution calling for a public hearing on CBR's Application. See "Uranium Levels Too High in 26 Nebraska Towns" by Tracy Overstreet, The Independent.com (December 18, 2005).

(15) CBR's Application mentions a prehistoric Indian camp found in the area proposed for the North Trend expansion. CBR is not qualified to make judgments about the significance of the Indian camp as an archaeological find or significance to the Oglala Sioux people. Oglala Sioux elders should be consulted concerning such prehistoric Indian camp. Further, the planned ground disturbances will disturb ancient archeological sites that may be covered by other federal law.

(16) The proposed plan to truck radioactive material back and forth between the current facility and the North Trend facility exposes the community to the substantial risk of terrorist attack and/or criminal interference resulting in a release of radioactive material – the equivalent of a "dirty bomb." The truck will be unguarded. In addition, the plan to truck radioactive material between the current facility and the North Trend facility presents

Intervention is requested in addition to a request for a hearing. 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).

Service on Licensee Applicant

A copy of this petition was mailed to:

Crow Butte Resources, Inc.
141 Union Blvd., Ste. 330
Lakewood, CO 80228
Attn: Stephen P. Collings, President

Respectfully submitted,

Thomas K. Cook, Dir. November 12, 2007
(Signature)

Slim Buttes Agricultural Development Corp.

(Print Name)

Exhibit A – Petitioner Standing attached
Exhibit B – Petitioner Contentions attached

Exhibit A – Requestor/Petitioner's Standing

Name: SLIM BUTTES AGRICULTURAL DEVELOPMENT CORP., Petitioner

Address: 1705 So. Maple Street
Chadron, NE 69337

Telephone number: (308) 432-3409

Pursuant to Section 2.309(d), Petitioner has standing.

(1) The nature of the petitioner's right under the Act to be made a party to the proceeding is:

(a) Petitioner is an Oglala Sioux Tribe chartered nonprofit association which is based in Slim Buttes, Pine Ridge Indian Reservation, and which is devoted to the development of small family and community gardens and farm projects. In 2007, Petitioner tractor-tilled and supported 356 family and community gardens across the 4,500 square-mile reservation, in his 21st year of continuous operation.

(b) Petitioner's employees and clients, including families are located as close as forty miles from the proposed North Trend expansion site, are downwind and downgrade of the proposed North Trend site and would be exposed to increased levels of Radon as described in the Application.

(c) Petitioner's employees and clients, including the families at Pine Ridge, drink water from an aquifer that may mix with the Chadron aquifer and/or the Brule aquifer in which CBR mines uranium and has released radioactive arsenic laden liquid waste.

(d) Petitioner's health values are adversely impacted by his proximity to the ISL Uranium mine.

(2) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding is:

(a) Petitioner's employees and clients', including the families who eat from the community gardens, have their personal health put at risk and may be damaged by continued uranium mining, further "Excursions" and continued contamination of the air, surface water and groundwater.

(3) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest is:

(a) An approval of the amendment would put Petitioner's employees and clients, including the families who eat from the community gardens plowed by Petitioner, at further risk of personal health problems associated with contamination of the air, surface water and groundwater by CBR's operations.

(b) A denial of the amendment would protect the health, wellbeing and property values of Petitioner's employees and clients, and those of people who are similarly situated to them.

Respectfully Submitted:

Thomas K. Cook, Dir.

Thomas K. Cook, Program Director
www.indianyouth.org

Exhibit B – Petitioner's Contentions[1]

A. CBR's Mining Operations Use And Contaminate Substantial Water Resources and Radioactive Wastewater Mixes With Brule and High Plains Aquifers and Moves in a Slow-Moving Plume

(i) CBR's Uses 9,000 gallons per minute of pristine water and returns that amount of radioactive, geochemically changed water to the Chadron aquifer. There is no basis to use a "net consumption" number suggested by CBR of about 113 gpm because the water returned to the aquifer is very different, namely it contains low-level radioactivity, from the water removed by CBR from the aquifer.

(ii) The basis for the contentions is that several places in the Application and in other public testimony (see, e.g., CBR Testimony at August 21, 2007 Nebraska Natural Resources Committee Hearing) CBR gives a mis-impression that its water usage is relatively nominal because it uses the fact that its 'restoration' meets NDEQ regulations as grounds for not counting the full amount of CBR's water usage.

(iii) The issue is in the scope of the proceeding because CBR seeks to use an additional 4,500 gpm, for a total of 13,500 gpm, at a time when the aquifer is discharging at 160% of recharge and at a time of widespread drought.

(iv) The issue is material to the findings of the NRC which is required to determine whether CBR's current operation and proposed operation is in the best interests of the general public; water usage is key to that determination.

(v) Alleged Facts: The Relevant Facts are hereby incorporated by reference. In addition, CBR's water usage is admitted by it to be 9,000 gpm at its current facility and 4,500 gpm at North Trend. Petitioner believes there is a slow-moving plume of radioactive water in the High Plains aquifer caused by CBR's current operation and which poses a health risk to the people who use the High Plains aquifer in Colorado, Nebraska, New Mexico, Oklahoma, South Dakota, Texas and Wyoming. The Arikaree aquifer that runs under the Eastern portion of Pine Ridge Indian Reservation mixes with the Brule aquifer in which CBR has documented radioactive leaks and mixes further with the other elements of the High Plains aquifer. Petitioner cites to USGS "Ground Water Atlas of the United States; Kansas, Missouri and Nebraska; HA 730-D (http://capp.water.usgs.gov/gwa/ch_d/D-text2.html), which indicates that the Brule aquifer mixes with the unconfined water in the High Plains aquifer and that the High Plains aquifer is being depleted faster than it is being recharged.

(vi) CBR's Application states that it returns the water to the aquifer in a changed state and omits to state that the returned water is radioactive. Application states that there is slow movement between fractures in Brule aquifer and the High Plains aquifer. Little is known about the White River Fault and how it may contribute to fractures that allow for movement of radioactive water when Excursions occur.

Please see the following citations to the Application (TR means Technical Report and ER means Environmental Report) and points of contention:

ER 2.2 PROPOSED ACTION

Groundwater restoration will take place concurrently with development and production activities. The goal of the groundwater restoration is to return the water quality of the affected zone to a chemical quality consistent with baseline conditions or, as a secondary goal, to the quality level specified by the Nebraska Department of Environmental Quality (NDEQ).

**** Contention: but CBR admits that this is impossible because the mined wastewater is radioactive so NDEQ standards are used to create a "restored" aquifer that is not really restored.**

ER 5.4.1.3.2 Establishment of Restoration Goals

The baseline data are used to establish the restoration standards for each mine unit. As previously noted, the primary goal of restoration is to return the mine unit to preoperational water quality condition on a mine unit average. **Since ISL operations alter the groundwater geochemistry, it is unlikely that restoration efforts will return the groundwater to the precise water quality that existed before operations.** Restoration goals are established by NDEQ to ensure that, if baseline water quality is not achievable after diligent application of best practicable technology (BPT), the groundwater is suitable for any use for which it was suitable before mining. NRC considers these NDEQ restoration goals as the secondary goals.

**** Contention: This shows that CBR knows that its restoration efforts will not meet its proposed goals.**

**** Contention: TR 2.2.2.2.1 omits to state that huge numbers of people rely on the irrigated water for farms, pasture, habitat and/or rangeland and CBR only considers 2.25 mile radius for this purpose when it should consider entire radius of at least 80 Km or the radius involving the 174,000 sq. miles of the High Plains aquifer. Application fails to state that area is in the 8th year of a drought. Fails to state what impact earthquake would have besides causing leaks of radioactive material into the water supplies. Fails to state how risk of earthquakes and tectonic shifts would be mitigated.**

**** Contention: TR 2.2.3 states that Basal Chadron is not used for domestic supply in the North Trend area but omits to state that water that mixes with Basal Chadron and Brule aquifers is used by people and animals in the areas surrounding the North Trend area.**

TR 2.6.2.5 Upper Chadron and Brule Formations, Upper Confinement

Based on data from the CSA, the vertical hydraulic conductivity of the upper confining

intervals at Crow Butte is less than 1.0x10-10 cm/sec.

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Infrequent fine-to-medium-grained sandstone channels have been observed in the lower part of the Brule Formation. When observed, these sandstone channels have very limited lateral extent. The Brule-Chadron contact is sometimes difficult to ascertain, as the contact between the two formations is gradational and cannot be consistently picked in drill cuttings or electric logs. Therefore, the Upper Chadron/Lower Brule may be considered a single confining interval.

ER 3.4.3.1 Regional Groundwater Hydrology

Souder indicates that the Brule is a tight formation with a minimal hydraulic conductivity of less than 25 feet/day, although in a few areas there may be a significant saturated thickness, presumably where sandier intervals are present. The Chadron is described as consisting of claystones with extensive volcanic ash that is tight with low hydraulic conductivity comparable to the Brule, except where fractured, although the coarse Basal Chadron Sandstone is present at the bottom of the formation. The Pierre is described by Souders (2004) as a dark grey, bentonitic shale that is "very tight and is not considered to hold any extractable groundwater" except where fractured. Fractures may increase Brule and Chadron permeability in localized areas (Souders, 2004). It is noted that CBR operations in the CSA to date do not support evidence of fracturing in the Pierre to a degree such that it would impact the designation of the Pierre as a lower confining unit below the Basal Chadron Sandstone.

** **<u>Contention</u>: CBR says that the Brule formation <u>does</u> conduct water; 25 ft/day; and there may be more saturated areas; and that it can be fractured (e.g., by the observed tectonic movements or earthquakes, and that upon fracturing, they would no longer serve as a lower confining unit – CBR has evidence of fracturing but has made a judgment that it would not impact the designation of the Pierre as a lower confining unit below the Basal Chadron Sandstone – this is in contention.**

ER 3.4.3.2 North Trend Area Groundwater Hydrology

In the upper part of the Brule Formation, sandstones and sandy siltstones are present which locally may be water bearing. However, these sandstones, siltstones, and clay stringers are difficult to correlate over any large distance, and are discontinuous lenses rather than laterally continuous strata. In the North Trend Area, private water wells are completed in this interval (see Section 3.4.1), and it is therefore the uppermost aquifer above the mined interval.

Figures 3.4-15 through 3.4-18 present the location of all groundwater wells in the North Trend Expansion Area, as well as potentiometric surfaces for the Brule, Basal Chadron Sandstone, and Middle Chadron sand, measured in February, 2007. As shown on these maps, local groundwater flow within the Basal Chadron is to the east, with a gradient of

0.0016 ft/ft (8.5 ft/mile). Based on only four data points, flow in the Brule is to the east/northeast at 0.005 ft/ft (26.4 ft/mile).

** **Contention:** **This shows that CBR knows about water movement – and should know about movement of radioactive water amongst the aquifers.**

ER 3.4.3.3 Aquifer Testing and Hydraulic Parameter Identification

The Production Zone in North Trend is the Basal Chadron Sandstone. The majority of the wells monitored during this test were completed in the Basal Chadron. The exact definition of the "overlying aquifer" at North Trend is somewhat difficult to determine. As such, to assess hydrogeologic isolation between the Production Zone and the overlying sands, overlying monitor wells were installed in both a Mid/Upper Chadron sand and a sandy clay within the base of the shallow Brule Formation. Because the production zone (Basal Chadron sand) is underlain by the Pierre Shale, no underlying monitoring wells were installed.

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The test results demonstrate: " The Basal Chadron monitor wells are in communication with the Basal Chadron Production Zone throughout the North Trend test area; [The Basal Chadron Sandstone has been adequately characterized with respect to hydrogeologic conditions within the majority of the proposed North Trend Expansion Area;

" Adequate confinement exists between the Basal Chadron sand Production Zone and the overlying Mid/Upper Chadron sand, and the overlying Brule Formation throughout the central portion of Section 27 of the proposed North Trend Expansion Area; and, (emphasis added)

o While additional future testing will be necessary prior to mining in part of the proposed license area, the 2006 testing is sufficient to proceed with Class III permitting and NRC licensing for North Trend.

** **Contention: Petitioner does not believe that adequate confinement exists in light of admitted conductivity between the Brule formation and High Plains aquifer.**

ER 3.4.4 Surface Water and Groundwater Quality

CBR believes that integrity problems with the Chadron well casing may have had an impact on the water quality in the Brule well. The Chadron well has since been plugged and abandoned. It is noted that gross alpha and beta analyses were not performed because uranium and radium were the anticipated compounds and were thus specifically included on the analyte list.

** <u>Contention</u>: – **CBR admits that failures with its Chadron well casing caused increased Uranium and Radium-226 in the Brule well. This shows contamination of the Brule which flows unconfined with the High Plains aquifer.**

ER Table 3.4-15: Laboratory Analysis Report - Brule Well W-78

** <u>Contention</u>: **shows arsenic in Brule rising from .005, to .006, to .007 in a few months in 1997 – this is from the existing ISL mining operation which had a large spill in 1997.**

TR 2.6.2.7 - North Trend Structure

Therefore, based on the data available to date and presented herein, it is possible that the referenced structural feature is a fault at depth, movement along which is expressed upsection in the Pierre, Chadron and Brule as a fold (e.g., a monocline), as discussed below.

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In summary, current data suggest that the White River Fault may be present at depth and movement along this feature impacted the deposition of the Middle/Upper Chadron. However, data do not clearly require that this fault transect the Middle/Upper Chadron or Brule, and mapped data suggest that movement along the structure occurred during deposition of the Chadron/Brule via uplift of a monocline or fold in this area. Crow Butte is committed to conduct additional exploratory drilling to better define the nature of the feature before commencing mining operations.

ER 4.3.1 Geologic Impacts
If the White River structural feature is in fact a fault, 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 a fault has caused an increase in seismic activity. However, such response typically occurs when injection operations have increased the pressure in the aquifer **by** a significant amount (e.g., 40 to 200 percent pressure increase over initial conditions). The pressure in the Basal Chadron will be increased **by** localized scale **by** injection operations during mining and restoration operations, and will be more than offset **by** production within each wellfield pattern.

ER 3.4.6 CONCEPTUAL MODELING OF SITE HYDROLOGY
Regional data regarding flow in the Basal Chadron are limited. Based on those data, the structural feature does not appear to dramatically impact flow in the Basal Chadron Sandstone. Additional investigations to be conducted during development of North Trend are expected to provide detailed information regarding the impact of this feature on regional and local flow in the Basal Chadron.

** <u>Contention</u>: **This shows that CBR really doesn't know whether the White River falult, tectonic movements and/or nearby drilling of other wells will cause increased**

movement of water between the aquifers. CBR is assuming things about the structural feature – the White River Fault – related to the flow in the Basal Chadron Sandstone – which means that they don't know about how contained the radioactive fluid will be.

ER 4.3.1 – water and wind erosion are concerns at the North Trend site.

** **<u>Contention</u>: Since wind and water erosion are concerns, the importance of evaluating climate change is indicated.**

ER 1.1.3 Operating Plans, Design Throughput, and Production
The current Crow Butte Plant is licensed for a flow rate of 5,000 gallons per minute, excluding restoration flow, under SUA-1534...The North Trend satellite plant will operate at a flow rate of 4,500 gpm with an expected annual production rate of 500,000 to 600,000 pounds U30 8.

** **<u>Contention</u>: the current plant is now licensed for 9,000 gpm; restoration flow should always be excluded when discussing water usage because radioactive water is not equal to pristine water.**

ER 3.4.5 WATER USE INFORMATION
As discussed previously in Section 3.4.1, local water use is very limited. Isolated household wells are completed in the Brule Formation, and the city of Crawford uses two wells completed in the Brule outside the North Trend Expansion Area (see Figure 3.4-2). One well completed in the Basal Chadron is used for household purposes (Well No. 61; approximately 1.5 miles southeast of the Expansion Area boundary).

** **<u>Contention:</u> – this omits information about local water use in the nearby towns and farms beyond the 2 mi radius; the moving radioactive plume affects people throughout the related aquifers due to underground water movement which is slow but meaningful.**

ER 4.4.3.1 Groundwater Consumption
The application states that water levels in the City of Crawford (approximately three miles northwest of the mining area) could potentially be impacted by approximately 20 feet by consumptive withdrawal of water from the Basal Chadron Sandstone during mining and restoration operations (based on a 20-year operational period).
A similar order of magnitude impact (drawdown) likely exists for the North Trend operations. No impact to other users of groundwater is expected because: (1) there is no documented existing use of the Basal Chadron in the proposed North Trend expansion area; and, (2) the potentiometric head of the Basal Chadron Sandstone in the North Trend expansion area ranges from approximately 10 to more than 50 feet above ground surface.

** **<u>Contention</u>: CBR currently uses 9,000 gpm and plans to use an additional 4,500 gpm which results in a much greater withdrawal of water than the "consumptive withdrawal" discussed above which counts radioactive wastewater as being returned**

for purposes of calculating consumption. Petitioner submits that just because the water meets NDEQ guidelines for being considered "restored" does not mean that the water has not been consumed for purposes of discussing water consumption. The returned water is geochemically different and contains high levels of arsenic and continues to have higher than natural concentrations of radioactivity.

B. ISL Mining is NOT Environmentally Friendly; ISL Mining May Have Caused Health Impacts at Pine Ridge Indian Reservation Closing 98 Wells

(i) CBR claims throughout the Application and in public testimony that it's ISL mining process is proven and environmentally friendly.

(ii) The basis for the contentions is that CBR gives a mis-impression that its operations are environmentally friendly when there are at least 23 reported incidences of spills at its current facility and reports of excursions of radioactive wastewater into the Brule aquifer which does mix with the High Plains aquifer.

(iii) The issue is in the scope of the proceeding because CBR seeks to expand its operations on the basis that it is a less harmful alternative to open pit uranium mining but CBR fails to take responsibility for environmental damage caused by its form of ISL mining.

(iv) The issue is material to the findings of the NRC which is required to determine whether CBR's current operation and proposed operation is in the best interests of the general public; environmental safety is key to that determination.

(v) Alleged Facts: The Relevant Facts are hereby incorporated by reference. In addition, CBR is responsible for several leaks including a 300,000 gallon leak of which only 200,000 gallons was cleaned up, a 25,000 sq. ft. contamination and a two year long coupling leak of at least one (1) gallon per hour of radioactive waste. These leaks migrated and may have caused the contamination of 98 water wells on Pine Ridge Indian Reservation.

(vi) CBR's Application states that it believes that its operations results in minimal short term impacts and no long term impacts and Petitioner believes that its operations result in major short term and long term adverse impacts.

<u>Please see the following citations to the Application (TR means Technical Report and ER means Environmental Report) and points of contention</u>:

TR 1.2 – "Production of uranium has been maintained at design quantities throughout that period with no adverse environmental impacts."

TR 1.5.2 – CBR believes that the current commercial project, including the successful restoration of groundwater in Mine Unit **1**, demonstrates that such a program can be implemented with minimal short-term environmental impacts and with no significant risk to the public health or safety. The remainder of this application describes the Mining and Reclamation Plans for this project and the concurrent environmental monitoring programs employed to ensure that any impact to the environment or public is minimal.

ER 5.4.1.3.2 Establishment of Restoration Goals
The baseline data are used to establish the restoration standards for each mine unit. As previously noted, the primary goal of restoration is to return the mine unit to preoperational water quality condition on a mine unit average. **Since ISL operations alter the groundwater geochemistry, it is unlikely that restoration efforts will return the groundwater to the precise water quality that existed before operations. (emphasis added.)**

ER 4.4.3.2 Impacts on Groundwater Quality
In addition to uranium, other metals will mobilize by the mining process. This process affects the mining zone, which must be exempted from Clean Water Act protections by the NDEQ and the EPA under the aquifer exemption provisions of the State and Federal UIC regulations.

Excursions represent a potential effect on the adjacent groundwater as a result of operations. During production, injection of the lixiviant into the wellfield results in a temporary degradation of water quality in the exempted aquifer compared to pre-mining conditions. Movement of this water out of the wellfield results in an excursion.

Excursions of contaminated groundwater in a wellfield can result from an improper 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.

To date, there have been several confirmed horizontal excursions in the Chadron sandstone in the current license area. These excursions were quickly detected and recovered through overproduction in the immediate vicinity of the excursion. In all but one case, the reported vertical excursions were actually due to natural seasonal fluctuations in Brule groundwater quality and very stringent upper control limits (UCLs).

In no case did the excursions threaten the water quality of an underground source of drinking water since the monitor wells are located well within the aquifer exemption area approved by the EPA and the NDEQ. Table 4.4-1 provides a summary of excursions reported for the current license area.

**** <u>Contention</u>: CBR's excursions call into question its claim to have only a minimal impact on the environment. In addition, CBR must do climate change analysis due to the impact of rains and flooding on the safety of its operations. For example, heavy rains pushed water table up to high levels and caused Excursions in 2005 on two occasions in June and July 2005 due to spring rains (unrelated to mining activities).**

6.3 **ECOLOGICAL MONITORING**
CBR does not perform any ecological monitoring at the current licensed operation. Based on the discussion concerning ecological impacts in Section 4.5, CBR does not propose to perform any ecological monitoring for the North Trend Expansion Area.

ER 2.5.1 Cumulative Radiological Impacts
Crow Butte Resources believes that the only environmental impact from approval of the increased flow rate at the current operation would be a corresponding increase in the emission of radon-222 from the current operation. The amendment request estimated a 22 percent increase in the maximum public dose were the increased flow approved....
NRC staff are currently (March **2007**) reviewing the flow increase license amendment request. This is a separate licensing action that could have a cumulative effect with the North Trend Amendment Request, if approved by NRC.

**** <u>Contention</u>: The above-referenced amendment to increase flow was approved causing a cumulative increase of more than 22% of Radon-222. The Application should state the currently effective increases in Radon-222.**

TR 2.2.3 Water Use – The North Trend area drains into the White River which flows Northeast towards the Pine Ridge Indian Reservation.

ER 3.5.7 Aquatic Resources
The White River is subject to fluctuating water levels and flooding. The White River drains portions of the project area. The White River did not have diversity values within this range, indicating relatively lower water quality and degraded stream habitats.

ER 4.5.10 Fish and Macroinvertebrates
Suitable habitat for fish and macroinvertebrates exists within portions of Spring Creek and the White River. However, the construction, operation, and maintenance of the project is not expected to affect either of these habitats.

ER 3.4.1 - In summary, there is no domestic groundwater use of the Basal Chadron Sandstone within the North Trend Expansion Area. Two residences are supplied by wells completed in the Brule Formation. Based on population projections (see Section 3.10), future water use within the North Trend Expansion Area and the 2.0-mile review area likely will be a continuation of present use. It is unlikely that any irrigation development will occur within the license area due to the limited water supplies, topography, and climate. Irrigation within the review area is anticipated to be consistent with the past (e.g., limited irrigation in the immediate vicinity of the White River). It is anticipated that the City of Crawford municipal water supply will continue to be provided by the groundwater and infiltration galleries related to the White River and associated tributaries.

**** <u>Contention</u>: CBR fails to consider climate change, drought conditions and that Crawford's water supply comes from the White River and the North Trend project drains into the White River meaning that the community water supplies may be contaminated with radioactive waste from the CBR mine.**

TR 2.4.1 – states that Harvey Whitewoman of the Oglala Sioux called before the follow up calls were begun to ask what effect the proposed project might have on water quality.

**** Contention: No one answered the questions of Harvey White Woman of the**

Oglala Sioux Tribe concerning the impact on the water quality.

TR 2.3.3 Environmental Justice
No adverse environmental impacts would occur to the population within the PSA from proposed Project activities; therefore there would be no disproportionate adverse impact to populations living below the poverty level in these Block Groups.

ER 3.11.1.2 Potential Declines in Groundwater Quality
To date, there have been several confirmed horizontal excursions in the Chadron sandstone in the current license area. These excursions were quickly detected and recovered through overproduction in the immediate vicinity of the excursion. In all but one case, the reported vertical excursions were actually due to natural seasonal fluctuations in Brule groundwater quality and very stringent upper control limits (UCLs). In no case did the excursions threaten the water quality of an underground source of drinking water (USDW) since the monitor wells are located well within the aquifer exemption area approved by the EPA and the NDEQ. Table 3.11-1 provides a summary of excursions reported for the current license area.

The long term impacts on groundwater quality should also be minimal, as restoration activities have been shown to be successful in returning the groundwater quality to background or class of use standards. Additionally, there is no mechanism in EPA or NDEQ regulations to "unexempt" an aquifer. Therefore, the groundwater in the immediate mining area will never be used as a USDW. The primary purpose for restoration is to ensure that postmining conditions do not affect adjacent USDWs.

**** <u>Contention</u>: Petitioner does not agree. The long term impacts on groundwater quality are major – restoration activities are not the same as returning the water to non-radioactive condition because of movement of the radioactive material – how do we know that these excursions didn't affect any drinking water? What about water that feeds grass that is eaten by deer and other wildlife?**

ER Table **3.11-1:** Excursion Summary lists 6 excursions of mining solution into the water table, one surface leak and problems with a high water table due to heavy spring rains (which would likely worsen due to climate change).

ER 4.4.3.3 Potential Groundwater Impacts from Accidents
Groundwater quality could potentially be impacted during operations due to an accident such as evaporation pond leakage or failure, or an uncontrolled release of process liquids due to a wellfield accident. If there should be an uncontrolled pond leak or wellfield accident, potential contamination of the shallow aquifer (Brule), as well as surrounding soil, could occur. This could occur as a result of a slow leak or a catastrophic failure, a shallow excursion, an overflow due to excess production or restoration flow, or due to the addition of excessive rainwater or runoff.

Over the course of the current licensed operation, CBR has experienced several leaks associated with the inner pond liner on the commercial evaporation ponds. **These small**

leaks are virtually unavoidable since the liners are exposed to the elements. (emphasis added.)

**** Contention: CBR's admission that leaks of radioactive material are unavoidable means they cannot be considered an environmentally friendly operation.**

**** Contention: TR 2.5.1, 2.5.3 fail to account for climate change and current drought conditions.**

TR 2.5.5 – Winds
As shown by the wind rose for the license area in Figure 2.5-3, the predominant air pollutant dispersion would be towards the north to northeast. The next most common directions would be towards the southwest to south-southwest.

TR 2.6.2.8 Conclusions- Site Geology and Confining Strata
These two analyses would indicate the presence of clay minerals with very fine grain sizes. Size distribution analyses of these beds verify that the material is quite fine grained.

These two facts indicate that both the upper and lower confinement are significantly less permeable than the ore zone and essentially impermeable. Further, core and hydrologic data from the CSA indicate that the vertical hydraulic conductivity of the confining shales and clays overlying and underlying the Basal Chadron Sandstone are on the order of 10-10 cmlsec, or lower. The geologic information presented in this application clearly demonstrates the lateral continuity of the overlying and underlying confining zones on both regional and local scales, as well as the lateral occurrence and distribution of the Basal Chadron Sandstone mined interval.

**** Contention: This shows conductivity between aquifers which means there is slow movement between radioactive material deposited in the Brule aquifer and the Chadron aquifer which has been mined.**

ER 1.3.2.5.2 Liquid Waste Disposal
Two methods of disposal are proposed for the North Trend Satellite Facility:
Deep Disposal Well CBR has operated the deep disposal well at the current license area for over ten years with excellent results and no serious compliance issues. CBR expects that the liquid waste stream at the North Trend Satellite Facility will be chemically and radiologically similar to the waste disposed of in the current deep disposal well.

**** Contention: CBR has admitted a one gallon per hour leak from a coupling for two years and has admitted that it had one or more excursions from its disposal well. See Relevant Facts.**

ER 3.11.2.1 Exposures from water pathways
The solutions in the mining zone are controlled and adequately monitored to insure that migration does not occur. The overlying aquifers will also be monitored.
Three commercial evaporation ponds located approximately 2000 feet from the current plant building have been constructed for commercial operation. There are also two

R&D evaporation ponds located approximately 1,000 feet from the plant building. The R&D evaporation ponds have a 34-mil Hypalon liner and a leak detection system. The commercial evaporation ponds are lined with double impermeable synthetic liners. The ponds, therefore, are not considered a source of liquid radioactive effluents. There is a leak detection system installed to provide a warning if the liner develops a leak. The Crow Butte Plant is located on a curbed concrete pad to prevent any liquids from entering the environment. Solutions used to wash down equipment drain to a sump and are pumped to the ponds. The pad is of sufficient size to contain the contents of the largest tank in the event of its rupture. Since there are no routine liquid discharges of process water from the Crow Butte Central Plant, there are no definable water related pathways.

ER 3.11.2.2 Exposures from Air Pathways
The only source of radioactive emissions from the current operation is radon released into the atmosphere through the plant ventilation systems or from the wellfields. This radon release results in radiation exposure via the inhalation, ingestion, and external exposure pathways. The total effective dose equivalent (TEDE) to nearby residents in the region around the Crow Butte Project was estimated in the 1995 License Renewal Application by using the computer simulation, MILDOS-Area. The joint frequency data compiled from a site-specific meteorological station were used to define the atmospheric conditions in the project area.

Based on the site specific data and method of estimation of the source term, the emission rate of radon-222 from the Crow Butte Project was estimated at 5,937 Curies/yr for a flow of 5,000 gpm in the upflow ion exchange columns in the existing plant. In order to show compliance with the annual dose limit found in 10 CFR §20.1301, CBR demonstrated by calculation that the total effective dose equivalent (TEDE) to the individual most likely to receive the highest dose from the current licensed operation was less than 100 mrem per year. The dose to the most effected resident was 23.2 mrem/yr (0.232 mSv/yr) or 23.2% of 100 mrem/yr dose constraint.

**** <u>Contention</u>: Petitioner submits that these dosage amounts are now doubled by the existing increase in upflow to 9,000 gpm and should be recalculated since it results in increased Radon-222 emissions.**

ER Figure 4.12-1 – Human Exposure Pathways for Known and Potential Sources from North Trend

CBR has demonstrated by calculation that the TEDE to the individual most likely to receive the highest dose from the North Trend satellite operation is less than 100 mrem per year. The results of the MILDOS-Area simulation are presented in Table 4.12-1.

**** Contention: - Shows ingestion of meat, air, dust, water would cause health impacts to the residents of the area with an 80 Km radius from the site. Petitioner contends that there is no such thing as a safe low dose of radiation and that cumulative effects of these contaminations causes adverse health impacts.**

C. Prehistoric Indian Camp Should Be Inspected by Tribal Elders and Leaders

(i) CBR notes that it has discovered a prehistoric Indian camp in the North Trend area.

(ii) The basis for the contentions is that CBR made a decision it was not authorized to make; to wit: that the prehistoric Indian site and nearby artifacts are not significant.

(iii) The issue is in the scope of the proceeding because CBR seeks to expand its operations on the basis the planned ground disturbances.

(iv) The issue is material to the findings of the NRC which is required to determine whether CBR's current operation and proposed operation is in the best interests of the general public; respect for Indian artifacts is key to that determination.

(v) Alleged Facts: The Relevant Facts are hereby incorporated by reference. In addition, as noted below, CBR has identified a prehistoric Indian camp at the North Trend site.

(vi) CBR's Application states that it believes that the prehistoric Indian camp is not significant but it has not basis, expert or otherwise, to reach that conclusion.

Please see the following citations to the Application (TR means Technical Report and ER means Environmental Report) and points of contention:

TR 2.4.1 Historic, Archeological, and Cultural Resources

Two sites, one historic (25DW501) and one prehistoric (25DW73), in the general vicinity were identified in the archeological site search. The historic site is the ruins of the Hall Brothers Mill near the southeast edge of the Expansion Area along the White River. The prehistoric site is a reported Indian camp, also southeast of the Expansion Area. Information on the prehistoric site is scanty. Both of these sites were reported as being outside the assessment area.

ER 3.8 HISTORIC AND CULTURAL RESOURCES

Previous cultural resource investigations in the general area surrounding Crawford indicate that a variety of prehistoric and historic resources of potential significance exist in the vicinity. Resources include the Hudson-Meng prehistoric bison kill to the north of the area, several prehistoric camps and artifact scatters in the general areas, fur-trade period sites associated with the early history of Chadron, Fort Robinson to the west of Crawford, the Sidney-Deadwood Trail, the two historic railroads that cross where the town of Crawford emerged, and the town of Crawford itself. There has been extensive farming around Crawford, which may have disturbed many earlier sites, but has also created historic farming sites and features.

The proposed North Trend Expansion Area is on private lands north of the town of Crawford. An architectural and structural properties search was completed at the Nebraska

State Historic Preservation Office and an archaeological site search was completed at the Archaeology Division of the Nebraska State Historical Society in July 2004. No previous cultural resources inventories have been documented for this area and the State Histori Preservation Office has no record of documented standing structures in the area. Two sites, one historic (25DW501) and one prehistoric (25DW73), in the general vicinity were identified in the archeological site search. The historic site is the ruins of the Hall Brothers Mill near the southeast edge of the Expansion Area along the White River. The prehistoric site is a reported Indian camp, also southeast of the Expansion Area. Information on the prehistoric site is scanty. Both of these sites were reported as being outside the assessment area. There are no reported National Register Properties or National Natural Landmarks in the vicinity of the project.
On April 30, 2004 letters identifying the nature and location of the proposed project were sent to the Nebraska Commission on Indian Affairs and the following 13 tribes: the Apache Tribe of Oklahoma; the Cheyenne River Sioux Tribe; the Cheyenne and Arapaho Tribes of Oklahoma; the Crow Creek Sioux Tribe; the Crow Nation; the Kiowa Tribe of Oklahoma; the Lower Brule Sioux Tribe; the Northern Arapaho Tribe; the Northern Cheyenne Tribe; the Oglala Sioux Tribe; the Pawnee Nation of Oklahoma; the Rosebud Sioux Tribe; and the Standing Rock Sioux Tribe. Follow up telephone calls were made in June to verify that the information had reached the appropriate persons in each tribe and to ask whether the tribes had any concerns about the project or were aware of any traditional concerns in the immediate vicinity of the project.

Harvey Whitewoman of the Oglala Sioux called before the follow up calls were begun to ask what effect the proposed project might have on water quality. No other tribal concerns were identified.

ER 4.8 HISTORIC AND CULTURAL RESOURCES IMPACTS

As discussed in Section 3.8, an archaeological review area was surveyed for the presence of cultural resources that may be impacted by the proposed mine development. Three historic sites and three isolated prehistoric artifacts were located and identified. The historic sites are the ruins of an abandoned farm complex (25DW296), an occupied farm complex (25DW297), and a refuse disposal area (25DW298). The individual artifacts are an early historic (1860's to 1870's) metal trade point (25DW299), a chert core (25DW300), and a Plains Archaic chert point fragment (25DW301). These resources are not likely to yield information important in prehistory or history and are considered not eligible for the National Register of Historic Places. Because these resources are considered not eligible, they are not historic properties. The proposed North Trend Expansion Area will have no effect on historic properties, and no further cultural resource work is recommended. The Nebraska State Historical Preservation Officer (SHPO) has concurred that the reported resources are not eligible for the National Register of Historic Places and that the proposed project will not affect archaeological, architectural, or historic context properties (Steinacher and Puschendorf, 2006).

**** <u>Contention</u>: Petitioner submits that CBR is not qualified to make any determinations concerning the significance of the prehistoric Indian camp found at the North Trend site. Oglala Sioux elders and leaders should be consulted**

immediately before any further action is taken that might interfere with the archeological value of the prehistoric Indian camp.

D. Proposed Trucking of Radioactive Resin Between CBR Facilities Creates Substantial Homeland Security Risk of Terrorist Attack and Presents the Risk of Contamination to the Public and the Environment in the Event of Accidents and Spills.

(i) CBR notes that it has plans to have one truckload per day carry radioactive resin from the North Trend site to the current facility for processing and then one truckload per day is planned to carry the resin back to North Trend. These truckloads will be unguarded radioactive waste.

(ii) The basis for the contentions is that CBR is planning to transport radioactive material on public highways on a regular basis on a fixed route. This makes the radioactive material a potential target for terrorist attack which would create a "dirty bomb" threat and a risk to the environment and the public at large in the event of accidents or spills.

(iii) The issue is in the scope of the proceeding because CBR seeks to change its manner of operation by dramatically increasing the public exposure of radioactive materials through daily trucking of such material on fixed routes in a discrete location. CBR fails to describe in its Application the threat to Homeland Security or the potential threat to the environment and the public at large in the event of traffic accidents or spillsin its Application.

(iv) The issue is material to the findings of the NRC which is required to determine whether CBR's current operation and proposed operation is in the best interests of the general public; respect for Homeland Security and protection of the public and the environment from contamination in the event of traffic accidents or spills are is key to that determination.

(v) Alleged Facts: The Relevant Facts are hereby incorporated by reference. In addition, as noted below, CBR plans to have regular transportation of radioactive waste which is unguarded and subject to theft or terrorist attack.

(vi) CBR's Application states that it believes that its current practices cover this potential threat without any analysis or consideration of the terrorist threat or threat to the environment or the public in the event of traffic accidents or spills.

Please see the following citations to the Application (TR means Technical Report and ER means Environmental Report) and points of contention:

ER 1.3.2 Description of Proposed Facility
The ion exchange processes at the satellite facility serve to recover the uranium from the leach solution in a form (loaded ion exchange resin) that is relatively safe and simple to transport by tanker truck to the central plant for elution and further processing of recovered uranium. Regenerated resin is then transported back to the satellite facility for reuse in the ion exchange circuit.

ER 4.6 - The distance from the satellite plant to the Crow Butte Central Plant is 8.1 miles

of which 7.1 miles are on dirt or trail roads. Assuming a conservative 2 trips per day for resin transfer.

** <u>Contention</u>: **CBR's failure to consider Homeland Security risks and the threat to the environment and the general public associated with the daily trucking of radioactive material between North Trend and the current facility shows the falsity of CBR's conclusion that it is "relatively safe and simple" to transport the resin.**

E. CBR Fails to Mention It is Foreign Owned by Cameco, Inc. So All The Environmental Detriment and Adverse Health Impacts Are For Foreign Profit and There Is No Assurance The CBR Mined Uranium Will Stay In US for Power Generation

(i) CBR fails to mention in the Application that it was acquired in 2000 by a Canadian corporation named Cameco.

(ii) The basis for the contentions is that CBR has omitted references to foreign ownership in order to give the mis-impression that CBR's Uranium mining operations are somehow profitable to US interests when in fact they are profitable to Canadian and other foreign interests to the detriment to US persons' health and safety.

(iii) The issue is in the scope of the proceeding because CBR seeks to expand its operations on the basis that the Uranium it produces is needed to fulfill US demand for power generation when its Canadian owners may divert the Uranium products to non-US customers such as China, India, Pakistan, North Korea or possibly Iran.

(iv) The issue is material to the findings of the NRC which is required to determine whether CBR's current operation and proposed operation is in the best interests of the US general public; understanding the foreign ownership of CBR is key to that determination.

(v) Alleged Facts: The Relevant Facts are hereby incorporated by reference. In addition, as noted below, CBR has described its ownership history to omit the 2000 acquisition of CBR by Cameco.

(vi) CBR's Application states that its history without reference to Cameco and gives the impression that CBR's operations are for the profit of US interests when they are clearly for the profit of foreign interests.

<u>Please see the following citations to the Application (TR means Technical Report and ER means Environmental Report) and points of contention</u>:

TR 5 OPERATIONS
Crow Butte Resources, Inc. (CBR) operates a commercial scale in-situ leach uranium mine (the Crow Butte Uranium Project) near Crawford, Nebraska.

CBR testified in the Nebraska NRC Hearing that it is wholly owned by Cameco, Inc. (www.cameco.com) which lists CBR as one of its assets together with operations in Canada and Kazahstan. Cameco's website touts possible new deals to sell Uranium to Russia.

ER 1.1.1 Crow Butte Uranium Project Background
The original development of what is now the Crow Butte Uranium Project was performed by Wyoming Fuel Corporation, which constructed a research and development (R&D) facility in 1986. The project was subsequently acquired and operated by Ferret Exploration Company of Nebraska until May 1994, when the name was changed to Crow Butte Resources, Inc. (CBR). This change was only a name change and not an ownership change. CBR is the owner and operator of the Crow Butte Project.

** **Contention:** **CBR is owned by Cameco since 2000. Cameco also runs operations in Canada and Kazahstan and which sells Uranium products to other non-US buyers which may include China, India, Pakistan, North Korea and possibly Iran unless there are Canadian regulations which restrict such sales.**

ER 1.2 & ER 2.1.2 - In addition to leaving a large deposit of valuable mineral resources untapped, failure to develop the North Trend Expansion Area would result in the loss of a large investment in time and money made by CBR for the rights to and the development of these valuable deposits. Denial of the amendment request would also have an adverse economic effect on the individuals that own the mineral rights in the North Trend Expansion Area.

ER 1.2 & 2.1.2 - The Crow Butte Project (including the North Trend Area) represents an important source of new domestic uranium supplies that are essential to provide a continuing source of fuiel to power generation facilities.

** **Contention**: **It is material that CBR is owned by a Canadian company that will make profits or lose on its investments. Petitioner submits that we, as US persons, care less about the profits of a Canadian company than for the health and safety of our environment. The Application makes no reference to the chain of possession of this nuclear source material or who the buyers are and where it may end up or how it may be ultimately used.**

F. The Economic Benefits Conferred by CBR on Crawford, NE are Not Shared By Other Communities That Bear Burdens Downwind and Downstream Like Chadron, Slim Buttes, Pine Ridge Indian Reservation and Hot Springs, SD.

(i) CBR fails to mention that the limited economic benefits conferred by CBR to Crawford, NE and Dawes County, NE, are not shared with other communities that bear the environmental and health costs of the mine such as Chadron, NE, Slim Buttes, Pine Ridge Indian Reservation, and Hot Springs, SD.

(ii) The basis for the contentions is that CBR argues that its economic contributions should be balanced against the environmental costs but only provides a comparison that includes económic benefits conferred on a small percentage of the people affected by the environmental pollution.

(iii) The issue is in the scope of the proceeding because CBR seeks action on the basis that its economic contributions justify its environmental burdens.

(iv) The issue is material to the findings of the NRC which is required to determine whether CBR's current operation and proposed operation is in the best interests of the general public; understanding the disproportionate allocation of CBR's benefits compared to the distribution of the environmental burdens is key to that determination.

(v) Alleged Facts: The Relevant Facts are hereby incorporated by reference. In addition, as noted below, CBR has described the affected area of 80 Km and has described economic benefits conferred only on Dawes County, NE and the Town of Crawford, NE.

(vi) CBR's Application states that the economics are estimated and that the burdens include surface water, groundwater, air and soil contamination.

Please see the following citations to the Application (TR means Technical Report and ER means Environmental Report) and points of contention:

ER Table 2-1 shows economic impacts to Crawford NE without reference to any economic impacts in other places within the 80 Km radius from the ISL mine.

ER 3. 10. 1.1 Regional Population
In general, population trends for the last decade show that population in urban areas is increasing, while population in rural areas is declining. Areas within 80 km of the project site that are defined as urban (all territory, population, and housing units in urbanized areas and in places of more than 2,500 persons outside of urbanized areas) by the U.S. Census 2000 are the cities of Chadron in Nebraska, and Hot Springs and Pine Ridge in South Dakota.

ER 4.10 SOCIOECONOMIC IMPACTS
Monetary benefits accrue to the community from the presence of the Crow Butte Project. Against these monetary benefits are the monetary costs to the communities involved, such as those for new or expanded schools and other community services. While it is not possible to arrive at an exact numerical balance between these benefits and costs for any one community, or for the project, because of the ability of the community and possibly the project to alter the benefits and costs, this section summarizes the expected incremental economic impacts from operation of the proposed North Trend Satellite Facility.

7.3 THE BENEFIT COST SUMMARY
The benefit-cost summary for a fuel-cycle facility such as the Crow Butte Project involves comparing the societal benefit of a constant U30 8 supply (ultimately providing energy) against possible local environmental costs for which there is no directly related compensation. For this project, there are basically three of these potentially uncompensated environmental costs:

" Groundwater impact;
" Radiological impact; and,

" Disturbance of the land.

The groundwater impact is considered to be temporary in nature, as restoration activities will restore the groundwater to a pre-mining quality. The successful restoration of groundwater during the research and development (R&D) project and the commercial restoration of Mine Unit 1 have demonstrated that the restoration process can meet this criterion successfully.

The radiological impacts of the current and proposed project are small, with all radioactive wastes being transported and disposed of off-site. Radiological impacts to air and water are also minimal. Extensive on-going environmental monitoring of air, water, and vegetation has shown no appreciable impact to the environment from the Crow Butte Project.

** <u>Contention</u>: **– Petitioner submits that the impacts of contamination are major and permanent in nature. Petitioner also submits that the additional costs of nuclear power includes the proper disposal of fuel rod waste and that the use of depleted uranium causes cancer in innocent civilians and our troops when used in conflicts abroad and on US based gunnery ranges. These costs should be included in the Cost-Benefit analysis.**