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WATER RIGHTS  
PROGRAM

STATE OF SOUTH DAKOTA  
BEFORE THE WATER MANAGEMENT BOARD

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IN THE MATTER OF THE WATER  
PERMIT APPLICATION NOS. 2685-2  
AND 2686 POWERTECH (USA) INC.

CLEAN WATER ALLIANCE  
NOTICE OF EXPERTS  
- SUPPLEMENT

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The Clean Water Alliance, by and through its attorney, hereby designates  
the following additional expert witness:

**John Wrede, Wildlife Specialist**  
2802 Westgate Drive  
Rapid City, South Dakota 57702

Mr. Wrede will testify as to the his concerns and opinions about the  
potential and unaddressed impacts of the proposed Dewey-Burdock  
mine and mill on wildlife and wildlife habitat. A copy of a report of  
his opinions accompany this Notice.

Dated this 23rd day of August, 2013.

/s/ Bruce Ellison  
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Attorney for Clean Water Alliance

**CERTIFICATE OF SERVICE**

A true and correct copy of this Supplemental Notice was mailed, U.S. postage paid  
to:

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Dated this 23<sup>rd</sup> day of August, 2013

/s/ Bruce Ellison

August 23, 2012

To: Bruce Ellison

From: John Wrede Wildlife Manager/Biologist Retired

Date: August 23, 2013

Subject: Technical Review and Comment

Appendix 3.9-A Powertech Uranium Corporation, Dewey-Burdock Project  
Baseline Wildlife Report

Dear Bruce:

The following represents some of the primary concerns I have with regard to the above mentioned report on the status of wildlife on the area affected by the proposed ISL uranium mining project.

#### GENERAL

As written, the report is vague and difficult to understand. The objectives, as stated on page 2 of the report, are not, in my opinion, achieved in any substantive way thereby leaving the reader with innumerable questions about how information for the report was gathered, how it was analyzed and interpreted and what scientific literature supports the conclusions.

As an example, I cite a May 7, 2010 letter (Appendix 5.6-B) submitted by Stan Michals- Energy and Minerals Coordinator for South Dakota Department of Game, Fish and Parks, to Richard Blubaugh of Powertech USA that accompanied the Mine Permit Application in response to questions about crucial big game habitats or migration corridors in the project area and review of the contractor methods of big game monitoring in the project area. The letter specifically states that there are "no crucial big game habitats or migration corridors" in the Dewey Burdock Project area or in the one mile buffer "surrounding the project. Based on personal experience and familiarity with both SD Department of Game, Fish and Parks operations and data bases, I would challenge the statements made simply because, to my knowledge, Game, Fish and Parks has never fully defined, assessed, monitored or accumulated scientifically defensible information that accurately illustrates locations and metrics of any big game species critical habitat areas and am assured that no one in the state, least of all the Department of Game, Fish and Parks, has any objective information regarding migration corridors in that area or any other area. To the best of my knowledge, no scientific investigations have been done in the State of South Dakota to accurately define and identify either habitat types or geographic areas of the state critical to the ecological sustainability of big game populations that would allow a statement like that to be made. What is yet disturbing about the content of this letter is the absence of information noting the potential for seasonal movements or even regular movements of many species of wildlife between the state of Wyoming and South Dakota in the project area. Mere proximity seems to provide the obvious answer. There is ancillary information from both scientific study as well as anecdotal information that confirms, as an example, the movement of elk, deer, antelope and big horn sheep between South Dakota and Wyoming in that general area. Such movements may or may not be considered migratory but they none the less, have been documented, so the only question left to be answered in that regard is whether or not those movements are crucial to population sustainability. I submit that the condition speaks for itself. If the animals didn't move back and forth across political boundaries, they obviously didn't need the behavior to sustain their life requirements. It is a matter of home ranging characteristics and philopatry that are indeed, critical to ecological sustainability in big game herds. I also submit that the State of Wyoming has a vested interest in the wildlife that utilizes

the border area. Was the state of Wyoming asked to evaluate the impacts this project has on it's wildlife? I present the question; if Powertech relied upon the aforementioned GFP assessment to consolidate it's assessment of big game use of the project area, is there any accuracy or reliability to be found in the conclusions about big game in the report. It needs to be shown that Game, Fish and Parks performs defensible population monitoring of any species in that area and publishing of accessible population data before statements of population status, distribution, trend or demographics can be made or statistically supported.

A similar theme seems to course through the entire document.

On page 4 of the document, it is stated that there are "a few stock water reservoirs scattered throughout the area that do not typically retain water year- round" This statement raises some obvious questions about soil permeability, soil leaching, anticipated responses to either construction of mining related water holding ponds or irrigating selected areas with waste water, and interaction with ground water.

On page 3 of the document, Powertech attempts to define vegetative communities by grouping vegetative types into 5 overly simplistic classifications that are inconsistent with ecological site classifications established by the Natural Resources Conservation Service as the industry standard. As an example, in brief literature search, I can find no direct similarity between what Powertech refers to as "Big Sagebrush Shrubland" or "Greasewood Shrubland" and the Ecological Site definitions described in R061XS010SD by the NRCS. I cite this for one reason and that is to demonstrate the complexities of habitat definitions for wildlife species but also the underlying characteristics of soils and plant life that can and do change for any number of reasons including moisture regimes. The vegetative community types expressed in the report are a poor and inaccurate representation of both plant community characteristics and the varied wildlife habitats that are supported by both herbaceous and woody organisms on the project area.

With the possible exception of the assessment and status of small mammal populations on the project site, methods describing both monitoring and population density measurements were vague and largely unsupported by any protocol I am familiar with. Big game monitoring and population assessments, in particular, were purely anecdotal and not based on scientific monitoring protocols. Furthermore, based on the loose descriptions of species monitoring in the reports, the only data accumulated on wildlife populations was purely presence/absence or the establishment of detection rates of various species. Without at least 3 full seasons of structured monitoring, that employed accepted random sampling methods, it is my opinion that there can be no conclusions drawn about any wildlife population density, distribution, demographic or movements which are essential in determining population status and trend. Merely establishing the presence or absence of a species in a given geographic area does not even allow reasonable assumptions to be made about population densities or trends. Without a statistically accurate and defensible population trend line, the impacts of mining operations on wildlife populations can't be properly assessed. A population that is trending downward toward due to issues with habitat suitability, density and distribution, that continues to decline after mining operations begin, can not be accurately said to be effected by the mining activities. Consider also the opposite scenario. Wildlife population baseline data must be secured in a statistically accurate position on a trend line before any conclusion can be drawn about the impact mining operations have on it's density and distribution. Neither can it be accurately stated that mining activities and associated physical disturbance have minimal impact without accurate preliminary measurement. Elk, as an example, are

well known to seasonally avoid perfectly good habitat areas over the long term simply due to anthropogenic disturbance.

Overall, the absence of complete descriptions of monitoring protocols used to measure wildlife populations on the project area, and information to demonstrate the statistical reliability of the population information published, there are significant questions about the accuracy of the information, particularly from a temporal standpoint. From the report, it is assumed, as an example, that most wildlife species detected on the area are year around residents with small home ranges, and that animals not detected on the area, do not use or frequent the area, even on a seasonal or transitory basis. Not only are their issues with the thoroughness of species investigations but, without the benefit of multiple monitoring protocols that measure numerous population parameters on a temporal as well as spatial scale, little can be said about their population densities, habitat dependencies or trends. In the same vane, simple measurement and description of vegetation does not accurately advise habitat suitability or sustainability. According to NRCS evaluations, much of the ecological site surrounding the project area is and has been highly susceptible to livestock over-utilization and even vegetative type conversion that directly affects wildlife diversity and densities. If those activities continue on the project area, along with added mining activities and land disturbance, declines in wildlife populations are nearly assured. Baseline population data must be accompanied by accurate habitat condition classifications.

I have several concerns about particular species, to include eagles, sage grouse, prairie dogs, black footed ferrets, burrowing owls, (a species not mentioned or apparently monitored in the report) upland plovers and the sensitive species listed by the Department of Game, Fish and Parks. I contend that not near enough assurance is provided that these species will not be adversely affected by mining operations.

Sage grouse, in particular, are a species of great concern and it is disturbing to read the conclusions about this species in the report. It appears that Powertech concludes that because a sage grouse lek does not exist on the project area, and because the last known active lek in the area was abandoned nearly 6 years ago, and because no sage grouse were incidentally observed on the project area, mining operations will have no effect on this recently listed but precluded species. The aforementioned conclusions are based solely on perceptions of presence absence observations and do not, in any way, consider the landscape scale demographics, behavior and habitat requirements of this species. No formal measurements "other than limited visual/auditory" scans of the project area were done to evaluate the status of species use of the project area.

It is well known that sage grouse inhabit the border region in Wyoming in this area and it is further well established that the subpopulation of birds in the area have likely receded back toward the core area of their range in Wyoming likely due to habitat degradation and anthropogenic disturbances such as those represented in the Powertech proposal. It is also clearly established by research that energy development in the sage steppe environment is one of the direct causes of sage grouse declines across their range. There is nothing on record to suggest that previous uranium mining activities on this project area did not cause significant reductions in sage grouse populations as well as alterations in their habitat sufficient to cause those declines and there is nothing yet written to show that further mining operations will not continue to contribute to the habitat degradation that has already occurred in the region. If this bird, along with other sage steppe obligates are listed as an endangered species, recovery efforts will demand essential habitat improvements to include connectivity with former home range uses.

Yet another concern I have as it relates to sage grouse is the potential establishment of artificial water impoundments or surface containment areas that have been shown to contribute greatly to the

proliferation and spread of West Nile Virus, an organism that is 100% fatal to sage grouse and other bird and animal species. Ponds of standing water, in these semi-arid areas, are proven breeding grounds for mosquitoes that carry the west nile virus and act as attractants for reservoirs for the disease. South Dakota has one of the highest incident rates of West Nile Virus in the country as well as human mortality rates caused by the disease and I simply question the wisdom of those who wish to further facilitate the disease and its spread by construction of water holding and distribution facilities.

I believe there are also some significant issues with eagles that have yet to be fully understood or addressed in this wildlife evaluation. The habitat area within the proposed Powertech mining area is historically noted for its eagle depredation potential on sheep. Historically, domestic lambs were often killed by eagles of both species in this area to the degree that expensive trapping and translocation exercises had to be done to reduce the concerns of livestock producers. From that perspective, it is highly important that sources of native wildlife prey species such as small mammals, and even antelope kids are maintained at high levels to insure that predatory response to domestic stock is minimized. Powertech documents detail the construction of several miles of power lines and associated infrastructure that represent increased predatory threats to both domestic animals and wildlife. Power poles and towers in particular provide artificial perches for all predatory birds and have been documented as sites from which aerial predator hunting activities can and do cause additive mortality on species such as sage grouse.

These are but a small number of concerns I've been able to identify regarding the Powertech mining proposal. As I continue to more thoroughly review the sections on wildlife, wetlands and rangeland vegetation assessments, I'm certain that equal and perhaps more important concerns will emerge. I submit that the wildlife assessments done to aid in the publication of this wildlife report are both inadequate and inaccurate to portray a realistic picture of wildlife habitat and use of the project area and I also submit that the South Dakota Department of Game, Fish and Parks concurrences in this regard are scientifically unsupportable and hastily done.

Sincerely yours,

*John Wrede*

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