REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE ENVIRONMENTAL REPORT FOR THE KENDRICK AMENDMENT TO THE ROSS PROJECT

The purpose of this request for additional information (RAIs) is to obtain additional information and data that is necessary for the U.S. Nuclear Regulatory Commission (NRC) to fulfill its responsibilities under the National Environmental Policy Act of 1969 (NEPA). The RAIs were developed during the NRC staff's review of Strata Energy Inc.'s (Strata) *Environmental Report* (ER) and *Technical Report* (TR), which was submitted to the NRC as part of its license amendment application for the Kendrick expansion area. The information needed was discussed with Strata during the site visit in April 2016 and as a result of the discussions, the RAIs were clarified to promote their efficient resolution.

GENERAL

RAI – GEN-1 Preconstruction Activities

On September 15, 2011, the NRC published a final rule in the *Federal Register* (76 FR 56951) to clarify the definitions of commencement of construction and construction with respect to materials licensing actions conducted under the NRC's regulations. This final rule was effective on November 14, 2011. Under the final rule, site preparation activities are separate from the analysis of the construction activities should the amendment be approved. The parts of the final rule that are applicable to the NRC's licensing action for the proposed Kendrick in situ recovery (ISR) project are in 10 CFR 51.45(c), which specifies that an ER must include a description of site preparation activities, a description of the impacts of those activities and an analysis of the cumulative impacts of those activities.

A. Clarify the description of those Kendrick site preparation (or preconstruction) activities excluded from the definition of construction (i.e., a description separate from that of the description of the proposed construction activities) that have been or will be undertaken, regardless of when those activities may occur in relation to the potential issuance by the NRC of the amendment to the license to construct and operate the proposed ISR facility.

B. Provide a description of the environmental impacts from the site preparation activities (including a description of any proposed measures to avoid or reduce adverse effect of the impacts).

C. Provide an analysis of the cumulative impacts of the proposed action (i.e., the incremental impact of the proposed action) on the human environment when added to the impact of such excluded site preparation activities and to the impact of other past, present, and reasonably foreseeable future actions (regardless of what agency (Federal or non-Federal) or person undertakes such other actions (see Title 40 of the *Code of Federal Regulations* (40 CFR) Section 1508.7, "Cumulative Impact")).

RAI – GEN-2 Cumulative Impacts

The Kendrick ER mostly references the cumulative impacts analysis in the Ross Supplemental Environmental Impact Statement (SEIS). The estimated acreage of the Kendrick project area and duration of the project period for the entire Lance District in the Ross ER and Ross SEIS differ from that in the Kendrick amendment. To facilitate the staff's update of the cumulative impacts analysis, provide more information about the current plans for the region:

A. Update the information provided on potential development in the Lance District with more detail. This should include the potential schedule, staffing (number, new and/or existing workers), and disturbed acreage for Barber; the approximate location of the satellite facility; and an evaluation of how the schedule overlaps with Ross and Kendrick (if this is not already accounted for in Kendrick ER Figure 2.3-2 as Barber is now the only other "Potential Future Production within the Lance District").

B. An announcement made by Strata's parent company, Peninsula Energy Ltd, on July 15, 2015, indicated that Strata and Royal USA Inc. have entered into an agreement to acquire the Hauber Project in the Lance District. In this announcement, Peninsula Energy states "Given the high historic mining grade and its proximity to the Lance Projects' Central Processing Plant (CPP), Peninsula has identified Hauber as a strategic regional opportunity that has the potential to be developed as a future satellite operation…." Provide a time line for this potential opportunity and information about the Hauber Project similar to the information requested and supplied for Barber.

C. Indicate the reason that Richards is no longer being considered as an expansion area, such as technical reasons for unsuitability or that it is being combined with Barber. A comparison of Kendrick ER Figure 2.3-1 and Ross SEIS Figure 2.2 seems to indicate that Barber may include Richards, as well as some area to the north and west of Kendrick not previously considered in the Ross SEIS. Clarify the extent of potential future development in the Lance District.

D. Kendrick ER Section 2.3.2.2.2 states that Strata is not aware of any major expansions or new coal mines proposed within 50 miles of Kendrick. Similarly, Kendrick ER Section 2.3.2.2.3 states that Strata is not aware of any plans for future oil and gas production activities near Kendrick. However, the ER does not identify any agencies contacted or the research done to draw these conclusions. Clarify the justification for these conclusions.

RAI – GEN-3 Permit Updates

Kendrick ER Table 1.5-1 identifies necessary environmental approvals and status of each with corresponding Federal and State agencies. These approvals are needed before operations can commence. Following the submission of the license application to the NRC, Strata has continued to prepare, submit, and receive approval on these permits. Therefore, update ER Table 1.5-1 with the current status of proposed, pending, and approved licenses and permits for Kendrick.

RAI – GEN-4 Vanadium

The Ross application and SEIS describe both uranium and vanadium processing taking place at the Ross CPP. Clarify whether vanadium would also be removed from the Kendrick resin, and, if not recovered as a resource, how it is handled as a waste.

RAI – GEN-5 Current Ross Activities

The Kendrick ER indicates that the pregnant lixiviant will be piped to the CPP, where it will go through the ion exchange process resulting in loaded resin, which will then be further processed at the Ross CPP into yellowcake before being shipped to a uranium conversion facility. However, it is the NRC's understanding that the Ross CPP is currently not operational for processing to yellowcake and that the loaded resin resulting from Ross operations is going to

another site. Provide the current schedule for the CPP to become fully operational and indicate whether Strata plans to have the resin generated from activities at Kendrick processed to yellowcake at the Ross CPP or whether it will also be shipped off site. Describe where the resin is currently being shipped and details related to the transportation of that resin (e.g., frequency, size). This information is needed to establish the scope of activities and analyze impacts.

RAI – GEN-6 Mine Unit Overlap

Kendrick ER Figure 2.1-1 depicts the Kendrick mine units. Several of the units appear to overlap into Ross:

A. One of the units overlaps into the south central part of Ross. Based on this figure, it does not appear to be one of the lettered mine units identified for Kendrick. Confirm that this mine unit is covered in the Kendrick application (e.g., in terms of impacted acreage, schedule) and identify the mine unit that includes it.

B. A second mine unit overlaps into the northeastern part of Ross. Confirm that this is part of Mine Unit B, as appears to be indicated in Kendrick ER Figure 2.1-1.

C. The perimeter monitor well ring for a wellfield in Mine Unit D also appears to overlap into the southeastern portion of Kendrick. Indicate whether the impacts (e.g., disturbed acres) associated with the portion overlapping into Ross are covered in the Kendrick ER.

RAI – GEN-7 Impacts of Current Ross Operations

Operations at Ross commenced in December 2015. Now that several months of operations have occurred, Strata is likely accumulating data on actual operations. Because the Kendrick ER relies heavily on many of the assumptions made about Ross for the Ross SEIS, identify any changes in operational parameters that would indicate that one or more of the assumptions made in the Ross SEIS may have been underestimated and provide updated estimates. For example, the Ross SEIS provides assumptions for waste generation rates for various operations and waste types, which are assumed to remain the same during Kendrick operations. If actual operational data indicate that these assumed waste generation rates should be greater, then indicate new bounding waste generation rates.

RAI – GEN-8 Figures

Please provide the electronic files for the figures included in the Kendrick ER. For maps, include either the native CAD files or the shapefiles/layers for input into ArcGIS. In particular, provide the native CAD/shape files for ER Figures 2.1-1, 3.5-2, 3.5-3, and 4.4-1. Having the information electronically would enable the NRC to identify (highlight) certain elements of interest and look at overall spatial distributions of associations.

RAI – GEN-9 References

Please provide the following documents referenced in the Kendrick ER:

- Effluent monitoring program required under License Condition (LC) 10.9.
- Application for and Wyoming Pollutant Discharge Elimination System (WYPDES) permit for surface discharge of excess permeate.

- Whicker, R., P. Cartier, J. Cain, K. Milmine, M. Griffin, 2008, Radiological Site Characterizations: Gamma Surveys, Gamma/Ra-226 Correlations and Related Spatial Analysis Techniques. Operational Radiation Safety, Health Physics, Vol. 95, Supplement 5: S180-S189, November 2008.
- WSGS (Wyoming State Geological Survey), 2010, The Origin of Uranium Deposits, by Robert Gregory
- Crook County 2014b, unpublished traffic counts on Crook County roads, provided to WWC Engineering in 2014.
- WYDOT (Wyoming Department of Transportation), 2015, unpublished traffic projections for I-90 at Moorcroft, provided to WWC Engineering in 2015.
- WYDOT (Wyoming Department of Transportation), 2014b, traffic counts on I-90, 2008 through 2013, provided to WWC Engineering in 2014.

LAND USE

RAI – LU-1 View of the Proposed Facility

In its responses to the RAIs for Ross, Strata provided Figure ER RAI GEN-1-1, which overlays the proposed activities for Ross over a map of the license area that also shows the land use categories. Provide a similar figure for Kendrick, showing the facilities present at the end of the construction phase overlaying the land use categories for the site (i.e., combine Figures 4.1-2 and 3.1-3). Alternatively, provide the native CAD or shapefiles/layers so that the NRC staff can develop the figures.

RAI – LU-2 State-Owned Land

The Kendrick ER (e.g., Table 1.3-1) indicates that the proposed project will impact State-owned land. Provide the current use of the State-owned land and the arrangement Strata has with the State for accessing this land.

TRANSPORTATION

RAI – TR-1 Use of Rail

Kendrick ER Figure 3.2-1 shows that the BNSF Railroad is located to the southwest of Kendrick. Confirm that rail is not expected to be used to support activities at Kendrick, or at Ross as a result of activities at Kendrick. This information will be used to ensure that the current scope of the transportation analysis is sufficient.

GEOLOGY AND SOILS

RAI – GEO-1 Soil Survey

Kendrick ER Section 3.3.5.2 discusses the results of the Kendrick soil survey. Provide additional information based on Addendum 3.3-D to support the discussion on erosion (p. 3-50), better detailing, topographically, where the hazard for wind and water erosion is severe, as stated in ER Section 3.3.5.2, and whether this area is to be disturbed as part of the activities proposed for Kendrick.

RAI – GEO-2 Seismology

The discussion in Kendrick ER Section 3.3.6 on seismology and all seismic maps (except Figure 3.3-9) are confined to Wyoming. The ER also focuses on current seismologic events and does not address the occurrence of shallow faulting and basement or deep faults, and whether these should be considered in conjunction with the approved Class I Deadwood well(s) that will be used for wastewater disposal. The following additional information regarding these seismic characteristics are needed:

A. Ross TR Addendum 2.6-A is referenced for its analysis of faults. However, that analysis did not extend through the greater Kendrick area. As indicated in Buswell (1982), shallow faults may be present in the general area. Discuss in detail the possibility of localized shallow faulting, as well as the presence of fractures within the Fox Hills-Lance sequence. (Buswell, M.D., "Subsurface Geology of the Oshoto Uranium Deposit, Crook County, Wyoming: MS Thesis," South Dakota School of Mines and Technology, 1982.)

B. Evaluate the potential for induced seismicity as a result of ISR extraction and brine disposal activities.

RAI – GEO-3 Land Application

Kendrick ER Table 4.13-1 indicates that excess permeate may be disposed by land application, among other methods, although this is not discussed elsewhere in the application. Clarify whether land application will be used and identify the approvals that would be necessary and the status of obtaining those approvals.

RAI – GEO-4 Mud Pits

The Kendrick ER (e.g., Section 3.12, p. 3-514; Section 4.3.1.1.1, p. 4-27) refers to the use of mud pits for soil loss mitigation, stating that drill cuttings and drilling wastes are typically disposed on site in mud pits pursuant to U.S. Environmental Protection Agency (EPA) and state regulations. Provide or reference additional information pertaining to the retention of material in mud pits and potential impact on surface soils and surficial aquifers. Also, specify if the management of mud/technologically enhanced naturally occurring radiological material (TENORM) at Kendrick would differ from its management at Ross as described in Ross SEIS Sections 2.1.1.4, 3.13.1, and 4.14.1.1.

RAI – GEO-5 Well Locations

Kendrick ER Figure 3.1-6 depicts oil and gas well locations in the vicinity of Kendrick. Other maps, including those in Addendum 3.4-I, also present well locations. However, enhanced oil recovery (EOR) well location and well status posted on the current (2015) Wyoming Oil and Gas

Conservation Commission (WOGCC) Web site and other databases do not directly correspond with these figures. For example, there are several more injection and disposal wells listed in the WOGCC database that are not in Addendum 3.4-I.

Discuss the data sources examined to determine well locations, including the relative reliability of these sources. Verify that the maps in Kendrick ER Figure 3.1-6 and Addendum 3.4-I presenting well location and status are internally consistent and reflect the most accurate information. Identify any wells within Kendrick that may be identified in data sources but that were eliminated from the ER, for example because of improper well siting or for other reasons.

RAI – GEO-6 Well Abandonment

Kendrick ER Section 3.1.9 states that "Prior to conducting tests for a wellfield data package, Strata will attempt to locate and abandon all historic drill holes within the perimeter monitor well ring for the wellfield…." Kendrick ER Section 5.4.3.1.1 discusses the requirement to locate and abandon historical drill holes (LC 10.12) within the perimeter monitor well ring before conducting tests for the wellfield data package.

A. Clarify whether this activity will include the identification of oil and gas or other boreholes not related to uranium exploration, and how these boreholes would be identified and located.

B. Verify whether Kendrick borehole abandonment will be consistent with methodologies presented in the Ross ER and TR.

C. Provide more extensive discussion on how the historical drill holes will be located, as well as the potential future impact of wells that Strata was unable to abandon, taking into account Amendment 1 of SUA-1601, recent license amendment requests, and stakeholder concerns.

RAI – GEO-7 Paleontology

The Kendrick Class III Cultural Resource Inventory report (p. 4-2) indicates that an unspecified number of "traces" of paleontological material were observed during the September 2014 field effort. For the Ross Class III inventory (p. 4-2 of that report), such occurrences were recorded on "site forms or IF forms" and presumably mapped by GPS. Indicate whether similar field techniques were followed for paleontological occurrences at Kendrick. If they were not, provide justification for why paleontological localities within the Kendrick project area were not mapped and recorded. Also, specify the total number of such occurrences encountered during the inventory.

SURFACE WATER RESOURCES

RAI – SW-1 Other Potential Pollution Sources

Provide a discussion of other potential pollution sources (e.g., agriculture, oil production, other mines) that may discharge to surface water. If there are no sources other than the WYPDES outfalls described in this section and the future WYPDES outfalls associated with the general construction temporary WYPDES permit, indicate so. The additional discussion should address, as applicable, the cumulative impact (past, current, and future) of these pollutant

sources, including locations relative to the site, the affected water bodies, and the magnitude and nature of the pollutant discharges, including spatial and temporal variations (i.e., rivers and reservoirs).

RAI – SW-2 Flooding

Kendrick ER Section 3.4.1.3 provides a discussion of the Hydrologic Modeling System (HEC- HMS) model that was developed to estimate the peaks and volumes of floods for various recurrence intervals within Kendrick. Provide an average predicted peak flow (100-year, 24 hour) from Kendrick taking into account that the Ross SEIS (Section 4.5.1.2 p 4-35) states there is a predicted peak flow of 1.4 m^3/s [50 ft^3/s, or cfs] during a 100-year, 24-hour storm which is an increase of less than 1 percent of the peak flow in the Little Missouri River of 170 m^3/s [6,000 ft^3/s]. Reconcile this Ross predicted peak flow with Kendrick data, as necessary, (Kendrick ER, Section 3.4.1.3 Pages 3.71 through 3.73 and referenced Tables 3.4-7 and 3.4-8). Also specify whether the Revised Guidelines for Implementing Executive Order 11988, "Floodplain Management" (draft, 2015), were considered when calculating the flood peaks and volumes, taking into account climate change, and modify calculations as necessary to do so.

RAI – SW-3 Wyoming Pollutant Discharge Elimination System (WYPDES)

Provide expected WYPDES discharges including outfall volumes, rates (gpm), and duration, as well as available monitoring data for the existing temporary WYPDES outfalls and the expected flow volumes to outfalls and retention basins.

RAI – SW-4 Effluent Monitoring

Kendrick TR Section 3.1.3 states that LC 10.9 requires Strata to establish and conduct an effluent and environmental monitoring program, including surface water monitoring, in accordance with Ross TR Section 5.7.8.2. Verify that the Kendrick environmental monitoring program is consistent with that established at Ross.

RAI – SW-5 Consumptive Use of Surface Water and Nonproduction Ground Water

The Kendrick ER does not directly address the use of surface water and nonproduction ground water (domestic, consumption, dust control, and irrigation) during construction, operation, restoration, and decommissioning, consistent with Table 4.3 in the Ross SEIS. Provide information pertaining to use of these nonproduction resources by Strata at Kendrick, including the basis for the estimates and potential impacts such as those concerning the Oshoto Reservoir. Additionally, provide or reference ground water and surface water use by others in the Kendrick area such as ground water use for EOR. Include sufficient information to understand the cumulative impact of surface and nonproduction ground water use by Strata and others in the Kendrick area.

GROUND WATER RESOURCES

RAI – GW-1 Aquifers

Provide additional details about the aquifers at Kendrick:

A. Present a summary of groundwater level changes over time using data Strata has collected since they began taking these measurements in the Kendrick area. Address whether there has been a declining water table, the origin of this event, and whether this affects surface water flow or the occurrence of seeps and springs.

B. As a supplement to Kendrick ER Section 3.4.3, provide or identify information pertaining to the soil properties of the unsaturated zone necessary to estimate travel times to the water table.

RAI – GW-2 Aquifer Tests

Kendrick ER Addendum 3.4-G includes aquifer test results that deviate from their respective type curves (e.g., p. B-4, B-5, B-6). Provide explanations for aquifer test type curve deviations.

RAI – GW-3 Ground Water Consumptive Use

Ground water consumptive use is a critical component of the application. Provide additional information on the consumptive use of ground water, including the following:

A. The Kendrick ER and TR do not directly provide the calculated ground water volumes associated with each phase of module operations. The Kendrick ground water model (ER Addendum 3.4-I) provides estimated operational flow rates (Table 14) and simulated ISR wellfield development activities and schedule (Table 15), as well as other data and information. Provide a methodology whereby estimated ground water volumes may be determined for a given ISR phase so that consumptive use through time can be understood and calculated. Ultimately, this information should provide more detail about historical and current consumptive use of ground water and future anticipated consumptive use rates, including the corresponding increase in consumptive use expected from Kendrick.

B. Discuss the combined impacts of consumptive use on ground water availability from Kendrick and Ross, and other proposed ISR facilities, as applicable, in the Lance District.

RAI – GW-4 Mitigation

The Kendrick ER relies on the Ross ground water model for demonstrating the successful mitigation of excursions and flare. The modeling was not repeated for Kendrick. Clarify why this decision was made and how these elements will be addressed as necessary in the future at Kendrick on a site-specific basis as part of wellfield-specific reports and associated activities.

RAI – GW-5 Ore Zone Potentiometric Surface

Kendrick ER Figure 3.4-28 shows the potentiometric surface of the ore zone. However, this figure is based on data from January 2015 and does not reflect the recently initiated ISR operations at Ross. Provide an updated figure, or indicate when updating of the ore zone

potentiometric surface map will take place and whether this map will reflect the propagation of wellfield extraction.

RAI – GW-6 Geochemistry

Ground water quality varies between aquifer units. For example, variation in the ground water quality of the Kendrick shallow monitoring aquifer is evident in Kendrick ER Table 3.4-33 and Addendum 3.4-J, wherein shallow monitoring aquifer ground water in the southwest portion of the project area appears to exhibit higher sulfate concentrations compared with the shallow monitoring aquifer ground water in northern areas. Water extracted from the ore zone aquifer exhibits a narrower compositional range variation, with only one well in the north showing higher sulfate. Explain the variations in ground water quality, particularly with respect to the interconnection of aquifer units (both laterally and vertically).

RAI – GW-7 Current Ground Water Use

Kendrick ER Section 4.4.2.2.4 states that Strata "plans to work with the oil company to abandon the wells and replace them with an alternate well," referring to existing oil production water wells that would be impacted by Kendrick operations. Provide a summary of any existing agreements, plans, or permit conditions in place at Ross that may serve as the basis for this approach.

RAI – GW-8 Well Classification

Kendrick ER Section 3.4.3.4.1.2 provides ground water well classifications. The calculations performed by Strata did not appear to take into account adjusted gross alpha activity (GAA) in accordance with the EPA Radionuclides Rule. Indicate whether GAA was considered and if not, why this adjustment was considered unnecessary. Alternatively, provide revised calculations taking GAA into account.

RAI – GW-9 Deep Monitoring Zone Monitoring

Kendrick ER Section 3.4.3.3, pages 3-100 to 3-102, concludes that the deep monitoring (DM) zone is not an aquifer due to lack of significant yield. Kendrick TR Section 3.1.6, pages 3-10 to 3-12, proposes a phased approach to DM monitoring based upon criteria including the thickness of the confining shale above the DM (i.e., BF1 or BF2), thickness of the DM, DM characteristics (i.e., permeability), and well performance (yield). Strata also submitted a request to the NRC to amend LC 11.3 to reflect Strata's position that the DM is typically not an aquifer. Based on data and operational experience from Ross Mine Unit 1, provide an analysis of the impacts assuming that the NRC approves this amendment request, versus those if the request is not approved. The analysis should address how the reduced or lack of DM monitoring affects ground water and operations in comparison to the retention of DM monitoring as currently addressed in the Ross license.

TERRESTRIAL ECOLOGY

RAI – TER-1 Habitat Disturbance

Add to Kendrick ER Table 3.5-1 a column that indicates the number of acres expected to be disturbed for each habitat type, and a column that indicates the percentage of that habitat that would be disturbed. Include a statement with information about any assumptions about how disturbances were estimated. For example, indicate whether Strata assumed that only a small part of the wellfield extent would be disturbed (i.e., around the injection and extraction wells), or whether there is a larger assumed area.

RAI – TER-2 Maintenance Practices

Provide specific details on operational and maintenance (O&M) practices that would take place during Kendrick activities that could affect biota (e.g., describe the practice of swabbing and its frequency). Kendrick ER Section 4.5.1.2 anticipates that O&M impacts would be less than construction impacts. Provide a statement of how much and what kind of project activity would typically occur within Kendrick during O&M to serve as the basis for a conclusion about potential impacts to biota. For example, would one vehicle travel and check wellfields each day?

AQUATIC ECOLOGY

RAI – AQ-1 Seeps/Springs

Kendrick ER Section 3.5.4.2.7 states that some perennial seeps/springs are present. However, the ER does not describe their link to the potentially impacted aquifer. There is no mention as to the importance of this habitat type to the aquatic setting.

A. If these seeps/springs are linked to the potentially impacted aquifer, describe the potential impacts to aquatic resources that are present in them.

B. Describe the maintenance practices to be implemented (if needed) for wetlands or springs/seeps.

METEOROLOGY, CLIMATOLOGY, AND AIR QUALITY

RAI – AIR-1 Kendrick-Specific Emissions Data

Kendrick ER Section 4.6 refers to the Ross air emissions analysis instead of performing one specifically for Kendrick. Ross SEIS Section 4.7.1.1 refers to the ISR Generic Environmental Impact Statement (NUREG-1910) and its analysis for the ISR facility in Crownpoint, NM, for assessing possible offsite concentrations of air pollutants.

A. Kendrick emissions are not quantified. Ross SEIS Table 4.4 provides emissions data by year. Provide similar data for the years in which Kendrick would be operating. Specifically, for purposes of use in the Kendrick SEIS, expand upon Table 5-2, “Emissions Summary,” of the “Air Quality Permit Application Chapter 6, Section 2, Wyoming Air Quality Standards and Regulations – Ross In-Situ Uranium Recovery

B. Project, Crook County, Wyoming" (June 2011) to show years through completion (about year 20) of the Kendrick expansion.

C. Kendrick ER Section 4.6 cites the Ross data, and Ross SEIS Section 4.7 discusses potential pollutant concentrations. Clarify how the Kendrick emissions overlap with the Ross emissions.

RAI – AIR-2 Kendrick Air Permit Information

Provide the following related to the air permit application for Ross, as amended for Kendrick:

A. Provide specifics on expected release points at Ross and Kendrick.

B. Describe gaseous effluent control systems.

C. Provide the models and assumptions used to determine concentrations, if included in the air permit application.

D. Provide concentrations at points outside the site boundary, if included in the air permit application.

RAI – AIR-3 Particulate Emission Controls and Mitigation Measures

For drill rigs, identify the type of engines (i.e., Tier 1 or Tier 2) being used, and whether add-on controls such as catalyst and diesel particulate filters to achieve lower emission rates are being used. For controlling visible dust plumes at the project site, describe the actions and timeframes for those actions if a visible plume is observed.

RAI – AIR-4 Kendrick and Ross Greenhouse Gas Emissions

Update the estimates of greenhouse gases and other releases in Tables 5.5, and 5.6 of the Ross SEIS for Kendrick.

NOISE

RAI – NOI-1 Estimated Noise Levels

Kendrick ER Section 4.7.1.1.1 states that Table 4.7-1 shows the estimated noise levels for construction equipment 1,462 feet away (minimum distance from planned well and nearby residence). It states that "the table shows that the maximum estimated noise level at a nearby residence, resulting from a drill rig operating at the closest potential well location, would be well below the nuisance level of 55 dBA." However, Table 4.7-1 shows that the drill rig would have the lowest noise level of all the construction equipment at a point 1,462 feet away, and all of the other equipment listed in the table would have a maximum noise level of 50 dBA or higher, with 9 of the 12 equipment types listed having a maximum noise level above the nuisance level of 55 dBA. Clarify the ER's conclusion based on the data in the table.

RAI – NOI-2 Noise Receptors at Kendrick

Kendrick ER Section 3.7 relies on the baseline noise study done for Ross in 2010, described in Ross ER Section 3.7.3 and Addendum 3.7-A and Ross SEIS Section 3.8. Clarify further that this baseline remains accurate for Kendrick by:

A. Indicating how long it takes to construct a well (i.e., how long would the receptor be hearing the noise), whether other residences (besides the nearest) are close enough to a planned well to experience these levels, and how many wells are planned at those locations.

B. Indicating whether any of the residences are sufficiently close to planned road construction to experience noise from those activities, and if so how long they would generally be exposed.

C. Indicating whether the residences considered in the Ross study are representative of those closest to potential noise-generating activity at Kendrick, as well as roads where increased traffic will travel over a longer time than estimated in the Ross SEIS.

D. Since some activities have begun at Ross, providing information on the resulting noise that would be included in the Kendrick baseline.

HISTORIC AND CULTURAL RESOURCES

RAI – CUL-1 Class III Survey

Provide a qualification statement for the survey principal investigator. The issue of field surveyor's qualifications has come up during previous licensing hearings. Thus, the curriculum vitae should be on file.

RAI – CUL-2 Inadvertent Discovery Plan

Confirm that the current Ross ISR Inadvertent Discovery Plan will be applicable to Kendrick.

RAI – CUL-3 Effect of Kendrick Effect on Ross Properties

Explain what impact, if any, Kendrick activities will have on identified Ross cultural resources. For example, it appears that Kendrick Mine Unit B crosses over into the Ross project boundary and will potentially affect 48CK2014. There is also a seemingly undesignated mine unit in the southern part of Ross (RAI – GEN-6) that will affect presently unevaluated site 48CK2078. Finally, the perimeter well ring of Kendrick Mine Unit D overlaps into the southwestern part of Ross where a Tribal district eligible for the National Register of Historic Properties is located (48CK2227). The perimeter well ring of Mine Unit D may also encroach on the Tribe

component of 48CK2087, which was recorded by the Tribal survey of Ross but lies within Kendrick.

VISUAL/SCENIC RESOURCES

RAI – VIS-1 Visibility of Kendrick Activities from Existing Residences

The Kendrick ER and TR do not seem to include specific analysis of Kendrick activities and their visual impact on residences. Provide information on the Kendrick activities that would be visible from existing residences and mitigative steps being taken (such as painting schemes and solicitation of input from stakeholders).

SOCIOECONOMICS

RAI – SOC-1 Tax Revenue

Supplement the information in the Kendrick ER (Table 4.10-1) and Ross SEIS Section 4.11 to indicate how much of the tax revenue is attributable to Kendrick (including property taxes), and how much accrues to the state vs the county. Provide the amounts of tax payments made for 2015 and to whom. This information will be used to determine impacts of Strata operations on county revenue.

PUBLIC AND OCCUPATIONAL HEALTH

RAI – POH-1 Occupational Injury and Fatality Rates

Clarify whether the occupational injury and fatality rates provided in the Ross RAI responses (ER RAI P&O Health-1a) apply to Kendrick.

RAI – POH-2 MILDOS Modeling

Strata used MILDOS to calculate radionuclide releases and doses. While Kendrick ER Table 4.12-2 provides some site-specific MILDOS input data, all of the input data is needed to independently evaluate the modeling. In order to verify the applicant-calculated doses provided in Kendrick ER Table 4.12-3, provide one input/output run representative of a population dose calculation, and one input/output set representative of a maximally exposed resident calculation. In addition, provide GIS coordinates of the new Kendrick wellfields that would be representative of potential release points for radon emissions.

RAI – POH-3 Dose to Workforce

According to Strata, all Strata employees are badged at this time in Ross operations. Provide the first quarter 2016 employee monitoring results for radiation exposure. In addition, if possible provide estimates of the percentages or numbers of employees who will likely be badged during the upcoming years of operations at Ross and Kendrick.

WASTE MANAGEMENT

RAI – WM-1 Mixed Waste

Mixed waste is not discussed in the Kendrick ER. Confirm that the response to Ross ER RAI Waste-1(A) is applicable to Kendrick and state how this waste stream would be managed. This information is needed to ensure all potential waste types are addressed in the impact analysis.

RAI – WM-2 Waste Minimization

The Kendrick ER does not provide a waste minimization plan. Confirm that the waste minimization plan for Ross presented in Ross ER Section 4.13 is applicable to Kendrick and indicate how the plan would be modified to address any Kendrick-specific aspects, if applicable.

RAI – WM-3 Preconstruction Waste

Ross SEIS Section 3.13.1 states that "An average of 23,000 L (6,000 gal) of ground water, in addition to 12 m^3 (15 yd^3) of drilling muds, are produced during the development and sampling of monitoring wells," specifically referencing preconstruction. Kendrick ER Table 4.13-1 also gives these same figures for construction.

A. As cited in Ross SEIS Section 4.13.1 from the Ross ER, ground water is also produced during well testing conducted to characterize aquifer properties. This TENORM liquid waste is discharged under a temporary WYPDES permit. Identify whether this is already included in the estimates in Kendrick ER Table 4.13-1, as well as the volume of this waste.

B. Break out wastes from preconstruction and construction for Kendrick based on the experience with Ross, now that activities have commenced, if data are available.

RAI – WM-4 Disposal of Construction/Demolition Waste

Kendrick TR page 1-9 states: "Non-AEA-regulated solid waste will include construction debris and decontaminated material and equipment. Due to potential limitations at local landfills, Strata anticipates managing at least a portion of the non-AEA-regulated solid waste on company-owned property consistent with WDEQ/Solid and Hazardous Waste Division (SHWD) requirements."

Kendrick ER page 4-103 states: "Construction/demolition waste will be transported to a municipal landfill for disposal in a designated containment system or disposed on-site in a WDEQ/SHWD approved facility on Strata-owned surface within or adjacent to the original Ross license area."

Identify if a construction/demolition landfill will be, or has been, established at Ross or Kendrick for use by Strata. If so, provide the location of the landfill. This includes a landfill to be used for decommissioning wastes. Identify the location where Strata currently disposes of its municipal waste.

RAI – WM-5 Disposal Location for Byproduct Material

Identify the location where Strata is sending solid byproduct material to be disposed and its distance in road kilometers/miles from Ross and Kendrick.

COST BENEFIT ANALYSIS

RAI – CB-1 Market Conditions

Provide information on the current cost of and market conditions for the following:

A. The yellowcake market, similar to that provided in the Ross ER

B. The vanadium market, assuming that vanadium would continue to be produced at the Ross CPP, including from Kendrick extractions

RAI – CB-2 Internal Costs

Provide updated internal costs of the project as shown in Table 7.5-1 of the Ross ER.

RAI – CB-3 Resource Commitments

Section 5.8 of NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," suggests that an EIS should analyze and discuss the following:

- irreversible and irretrievable commitment of resources,
- unavoidable adverse environmental impacts, and
- relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity.

Therefore, provide information on the land, water, raw materials, and other natural and manmade resources to be committed for the construction, operation, aquifer restoration, and decommissioning of the Kendrick wellfields and the extended operation of the Ross CPP facilities. These commitments should include, but not be limited to, consumptive use of surface and ground water, energy expanded in the form of fuel for equipment and vehicles, electrical energy, and materials that would be consumed or reduced to unrecoverable forms such as concrete, asphalt, steel, process chemicals and gases, uranium, vanadium, or other element resources retrieved from the aquifer.

ENVIRONMENTAL MONITORING

RAI – EM-1 Air Monitoring Stations

Strata has proposed to use five air particulate monitoring sites for the operational airborne radiation monitoring program. Passive radon and gamma radiation monitoring would be conducted at 11 sites, 5 of which are co-located with the air particulate monitoring sites. A comparison of Kendrick ER Figure 3.11-30 and Figure 6.1 in the Ross SEIS (Ross ER Addendum 3.6-A, Figure 3) indicates that at least two of the sites may already be in use as part of monitoring for Ross. Ross SEIS Figure 6.1 also indicates that some Ross sampling stations may be located within Kendrick, although they are not identified in Kendrick ER Figure 3.11-30. Clarify any overlap between monitoring stations for Ross and Kendrick.

RAI – EM-2 Environmental Monitoring Program

Kendrick ER Chapter 6 states that the environmental monitoring program for Kendrick is the same as that for Ross. However, the program as described in Kendrick ER Chapter 6 has some differences. Clarify whether the Kendrick program differs from that at Ross, particularly addressing the following:

A. The Ross program has soil samples collected to 15 cm as well as subsurface samples collected to 150 cm, as described in Ross SEIS Section 6.2.2. Kendrick ER Section 6.1.2 states that all soil samples will be collected to a depth of 5 centimeters. The Ross program includes analyzing the soil and sediment samples for gross alpha, which is not mentioned for the Kendrick program.

B. The Ross program (Ross SEIS Section 6.2.4) has surface water samples analyzed for Po-210 (as called for in Regulatory Guide 4.14); however, the Kendrick program does not (Kendrick ER Section 6.1.3.1). The Ross program is also analyzing surface water for gross alpha and gross beta, which are not mentioned for the Kendrick program.

C. The Ross program (Ross SEIS Section 6.2.5) has ground water samples analyzed for Th-230, Po-210, and Pb-210 (as called for in Regulatory Guide 4.14); however, the Kendrick program does not (Kendrick ER Section 6.1.3.2). The Ross program is also analyzing ground water for gross alpha and gross beta, which are not mentioned for the Kendrick program.

D. For non-radiological contaminants, Ross SEIS Section 6.3.1 indicates that Strata's operational monitoring program for Ross will "continue" the quarterly surface water sampling done for the pre-operational monitoring. Confirm the assumption that this means Strata will sample for the same constituents during operations as for the baseline sampling. However, Kendrick ER Section 6.2.1 only lists pH, conductivity, temperature, uranium, Ra-226, Th-230, and Pb-210 for operational sampling, while Kendrick ER Addendum 3.4-D lists many additional constituents sampled for the baseline. If Strata decided to change what is sampled during operations (including cutting the non-radiological constituents) (unlike for Ross), provide the reasons for the change.

E. For ground water monitoring, Kendrick TR Table 5.7-2 lists the parameters to be sampled for. Gross beta is included in the Ross program (and the ISR GEIS) but is not included on the Kendrick list, although the Kendrick list does have additional elements not on the ISR GEIS list. Explain why gross beta was not included on the Kendrick list.

RAI – EM-3 Operational Monitoring of Water Supply Wells

Kendrick ER Section 6.2.2.2, on non-radiological monitoring, states that existing water supply wells will be monitored during operations as described in ER Section 6.1.3.2, which described radiological monitoring only and not the non-radiological constituents that are the topic of this section. Section 6.3.2.1 of the Ross SEIS implies that Strata would sample for the constituents listed in ISR GEIS Table 8.2-1 for both the existing wells and the monitoring wells. Confirm this assumption (or provide clarification) and provide an example of a report.