Request for Additional Information
Strata Energy, Inc.'s Kendrick Expansion Area Amendment Request

Section 1.0

RAI 1.0-1

Description of Deficiency

On page 1-8 of the Kendrick Technical Report (TR), Strata states that the "[l]iquid and solid waste from the KEA will be nearly identical in composition, annual quantity, and generation rate to the Ross ISR Project."

Basis for Request

Acceptance Criterion 3.1.3(5)(e) of the NUREG-1569 (hereinafter the "Standard Review Plan" or "SRP") requires a description of the wastes and effluents generated at a licensed facility. The "nearly identical" description is too general. If the waste is different from that previously described for the Ross area, that difference needs to be described.

Request for Additional Information

Please clarify the definition of "nearly identical" in the sentence "[l]iquid and solid waste from the KEA will be nearly identical in composition, annual quantity, and generation rate to the Ross ISR Project" on Page 1-8.

RAI 1.0-2

Description of Deficiency

In addition to the request to expand operations to the Kendrick area, the licensee has included several proposed revisions to the existing license (e.g., minimum density of one baseline well per two acres, perimeter well spacing and offset, DM monitoring program, on-site disposal). In several cases, the additional changes are clearly identified in the application and the application provides grounds for those changes. However, several changes affect other areas of this application which are not clearly marked which is difficult for staff to clearly identify the changes. Also, several of those additional changes have been submitted as separate amendment request(s) to the NRC.

Staff will need a summary table of any proposed changes to avoid confusion in the future should ambiguities exist between the Kendrick and Ross applications because many changes have been incorporated as subtle references throughout the Kendrick application. If the change is not listed on that table and staff has not directly addressed this change in its safety evaluation report, then requirements of the Ross application supersede those of the Kendrick amendment.

Basis for Request

Section 10 CFR 40.44 states that "[a]pplications for amendment of a license … shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

Request for Additional Information

Please provide a summary table of the proposed changes from the Ross approved license application/license contained in this amendment request and whether those changes are specific to the Kendrick expansion area or applicable to both the Kendrick and Ross area.

Section 2.6

RAI 2.6-1

Description of Deficiency

The boring logs which are included in the cross sections in this amendment request do not extend to the Deep Monitoring (DM) unit or underlying confining unit specifically in areas in which the "ore zones" are delineated. The isopach mapping indicates that the DM unit is found throughout the Kendrick area but the isopach mapping does not include locations on which this interpretation is based.

Basis for Request

Review procedures in Section 2.6.2 of the SRP states "[t]he reviewer should determine that the application contains accurate geologic maps, isopach maps of the mineralized strata and of the confining layers, geologic cross sections at places critical to a thorough understanding of the selected site, descriptions of representative supporting core samples, geophysical and lithologic logs, and other data required for a thorough understanding of the pertinent geology." Acceptance criterion 2.6(1)(d) of the SRP states [t]he application includes a description of the local and regional stratigraphy based on … [g]ologic interpretations of surface geology and balanced cross sections … accompanied by … geologic, topographic and isopach maps that show … locations of all wells used in defining the stratigraphy".

Request for Additional Information

Please revise the geologic cross sections (Addendum 2.6-A) and isopach and structural mapping (Addendum 2.6-B) to verify that the DM and underlying confining units are present throughout the Kendrick area.

Section 2.7

RAI 2.7-1

Description of Deficiency

The area encompassing the wellfields depicted for the Ross area on Kendrick TR Addendum 2.7-I Figure 17 differs from that depicted on Ross TR Figure 3.1-1, and Section 7.3.6 of the Kendrick TR discusses four mine units at the Ross area whereas the Ross application describes only two mine units.

Basis for Request

Acceptance criterion 5.2.3(6) of the SRP states that "[t]he licensee has agreed to administer a cultural resources inventory before engaging in any development activity not previously assessed by NRC." Acceptance criterion 5.2.3(8)(d)(iii) of the SRP states that "[r]ecords containing information important to decommissioning and reclamation, including …. [a]s-built drawings … [of] wellfields … an any modifications … through time." If the area of impacts changed from the Ross application, describe why an amendment request is not required because the impacts assess for the Ross site were based on the earlier figure.

Request for Additional Information

Please explain the changes from the Ross application and the method of how those changes are to be incorporated into the approved license application.

RAI 2.7-2

Description of Deficiency

Strata is proposing to reduce or eliminate the sampling requirement for the DM unit as the underlying aquifer and proposes its criteria for the propose sampling plan. In some cases, the proposed criteria are not consistent with established criteria (e.g., minimum well yield of 5 gpm). In addition, Strata is proposing two different units for the DM aquifer. The information as presented in the application needs clarification.

Basis for Request

In the introductory paragraph of Section 2.7.2, the SRP states that "… the reviewer should evaluate whether Strata has developed an acceptable conceptual model of the site hydrology and whether the conceptual model is adequately supported by the data presented in the site characterization." Review Procedure 2.7.2(3) states that "[t]he applicant's interpretation of ground-water hydraulic gradients (used to infer flow direction), horizontal hydraulic conductivity, and the thickness, areal extent, and vertical hydraulic conductivity of confining formations should be evaluated."

In the introductory paragraph of Section 2.7.3, the SRP states that a "… conceptual model provides a framework for Strata to make decisions on the optimal methods for extracting uranium from the mineralized zones, and to minimize environmental and safety concerns caused by *in situ* leach operations. Hydrologic characterizations that accomplish this objective are considered acceptable." Review Procedure 2.7.3(3) states that "[t]he applicant should describe all hydraulic parameters used to determine expected operational and restoration performance. Aquifer and aquitard hydraulic properties may be determined using aquifer pumping tests for parameters such as hydraulic conductivity, transmissivity, and specific storage. Any of a number of commonly used aquifer pumping tests may be used including single-well drawdown and recovery tests, drawdown versus time in a single observation well, and drawdown versus distance pumping tests using multiple observation wells. The methods or standards used to analyze pumping test data should be described and referenced: acceptable methods of analysis include use of curve fitting techniques for drawdown or recovery curves that are referenced to peer-reviewed journal publications, texts, or American Society for Testing and Materials Standards."

Acceptance Criterion 5.7.8.3(3) states that "[i]t may be appropriate to exclude the requirement to monitor water quality in the underlying aquifer if (i) the underlying aquifer is a poor producer of water, (ii) the underlying aquifer is of poor water quality, (iii) there is a large aquitard between the production zone and the underlying aquifer and few boreholes have penetrated the aquitard, or (iv) deep monitor wells would significantly increase the risk of a vertical excursion into the underlying aquifer." Acceptance Criterion 5.7.8.3(4) states that "[t]he applicant establishes well field test procedures. Once a well field is installed, it should be tested to establish that the production and injection wells are hydraulically connected to the perimeter horizontal excursion monitor wells and are hydraulically isolated from the vertical excursion monitor wells. Such testing will serve to confirm the performance of the monitoring system and will verify the validity of the site conceptual model reviewed in Section 2 of this standard review plan. The reviewer should verify that well field test approaches have sound technical bases."

Request for Additional Information

Please clarify the following aspects of the DM unit:

(1) On Table 2.7-21, Strata provides the nomenclature used in this request for the stratigraphy underlying the ore zone aquifer. From youngest to oldest, the stratigraphic units are defined as BFH2, BFS 2, BFH 1 and BFS 1. On Addendum 2.6-B Figure 1 "Structure Contour of Top of Deep Monitoring Surface", Strata depicts a line in which is described as the BFH 2 confining layer pinch out. Thus, east of that line (which includes the Ross area), the DM unit is defined as the BFS 2 unit and, west of the line, the DM unit is defined as the BFS 1 unit.
    a) The line bifurcates Mine Unit D and a portion of Mine Unit B. Assuming that the DM unit is to be monitored for those mine units, how is the DM unit to be defined especially if, as stated, on page 2-164 that the BFS 2 unit coalesces with the upper Fox Hills Sandstone (ore zone)?
    b) The argument is made that in the Ross area, the BFS 2 unit is the first sand unit underlying the ore zone and thus should be that monitored as the underlying aquifer. Then the argument is made that the BFS 2 unit does not meet the definition of an aquifer and should not be monitored. If the BFS 2 unit coalesces with the Ore Zone west of the BFH 2 confining unit pinch out, why was not the BFS 2 unit considered part of the ore zone east of the pinch out and thus the BFS 1 unit would be the first underlying sand unit?

(2) On pages 2-223 through 2-224, Strata uses arguments from the Ross Safety Evaluation Report supplemented with additional information to support the contention that DM unit is not an aquifer in portions of the Ross and Kendrick areas. On page 3-11 to 3-12, Strata proposes criteria to be used in determining whether or not the DM unit is to be monitoring at a specific mine unit.
    a) Currently, Strata has a similar yet separate amendment request for monitoring of the DM unit specific to the Ross area. Please clarify whether or not the proposed criteria are to be applied to the Kendrick area or to both Kendrick and Ross areas.
    b) Please specify how the resolution of these proposed criteria should staff not approve them (i.e., should the Kendrick amendment request be denied in its entirety or will the pages be stricken from the application).

(3) On Page 2-213, Strata states that due to the poor yields and slow rate of recovery, the hydraulic conductivity of the [BSF 2 unit] is lower than the ore zone. Strata refers to hydrographs in Addendum 2.7-H for support but the hydrographs are comprised of only four data points typically over a one-year period which is not useful to demonstrate low yields and slow rate of recovery. On Table 2.7-22, Strata presents the Kendrick monitoring wells construction summary. On Table 2.7-23, Strata presents information on water levels, estimated yields and volumes purged during development of the DM wells. On Table 2.7-39, Strata presents field-measured conductivity, pH and turbidity which reportedly is at the conclusion of DM well development. On page 2-232, Strata states that the water quality of the DM interval is similar in gross salinity concentration as that measured at the Ross DM wells.
    a) Well construction diagrams were not included in the application. Please verify that the drill hole below the screened horizon was properly backfilled.

b) Please verify that "(ft-bmp)" in the header for the third column in Table 2.7-23 means feet below the measuring point.
c) The first data point on the DM wells hydrographs correlates with the date and the static water level as reported during well development on Table 2.7-23. Please provide rationale as to why that static water level, presumably prior to development and immediately after well construction, is representative of the aquifer conditions.
d) The yield estimated from the development of several DM wells greatly exceeded that for the DM wells at the Ross area (based on the hydrographs during sampling) suggesting that the BFS 1 unit differs, at least hydraulically, from the BFS 2 unit. Therefore, in the event that monitoring is required, pre-operational sampling would be required for the BFS 1 prior to any major site construction. Please verify whether or not that sampling has been performed.

RAI 2.7-3

Description of Deficiency

In the model report, Strata uses yields for livestock water supply wells of less than 0.8 gallons per minute (gpm) and ignores most livestock water supply wells in the overlying aquifer (SM aquifer). However, on page 2-225 of the Kendrick application, Strata argues that a minimum yield of 5 gpm is needed for a rancher with an average size herd relying on a single well. The difference in yields may affect the model predictions.

Basis for Request

In the introductory paragraph of Section 2.7.1, the SRP states that "[c]haracterization of the hydrology at *in situ* leach uranium extraction facilities must be sufficient to establish potential effects of *in situ* leach operations on the adjacent surface-water and ground-water resources and the potential effects of surface-water flooding on the *in situ* leach facility."

Review Procedure 2.7.2(3) states that a reviewer should "[e]Evaluate the site hydrogeologic conceptual model for ground-water flow in potentially affected aquifers. Review available data from well logs and hydrologic tests and measurements to obtain confidence that sufficient data have been collected and that the data support Strata's hydrologic conceptual model for ground-water flow within and around the permit boundary." Acceptance Criterion 2.7.3(3) states that "[t]he applicant should describe all hydraulic parameters used to determine expected operational and restoration performance."

Request for Additional Information

Please provide rationale for the pumping rates of up to 0.8 gpm for livestock wells in the numerical flow model

RAI 2.7-4

Description of Deficiency

For the Kendrick amendment, Strata conducted a total of three single-well pumping tests in the ore zone aquifer at three different well-clusters. The pumping rates and durations for the pumping tests were similar to those conducted at the Ross area. No responses to the pumping were detected at wells screened in the overlying and underlying aquifers which Strata interpreted as indicating that the ore zone was confined consistent with results of the earlier pumping tests conducted in the Ross area. Further, Strata states that the laboratory core data for shale samples indicate extremely low permeabilities thus indicating the upper and lower confining units can serve as aquitards for ISR operations.

As noted by Strata, single-well tests are specifically listed in acceptance criterion (3) of Section 2.7.3 of NUREG-1569 for determining aquifer properties. However, single-well pumping tests as performed by Strata generally do not yield sufficient data to estimate aquifer properties of the confining units. The problem is exacerbated because the pumping wells for the tests at the Kendrick area were only partially penetrating. As a result the separation between the pumping well and the underlying DM well was over 95 feet. The only DM wells that exhibited a response to the pumping tests conducted at the Ross area were separated by less than 45 feet.

The underlying confining unit for the Kendrick area is the BFH 1 which is new. On the geologic cross sections, the geophysical signature on the majority of borings for the underlying confining unit appears to be consistent with shale lithologies. However, many boring logs for wells which will incorporate the BFH 1 unit as the underlying confining unit are missing data over that interval. Based on the isopach mapping, the thickness for BFH 1 unit is generally less than 40 feet in the Kendrick area. Therefore, staff needs to have additional data to have reasonable assurance that the BFH 1 can act as an aquitard especially in the areas where the ore is found near the bottom of the OZ aquifer.

Basis for Request

The SRP Acceptance Criterion 2.7.3(3) states that "[t]he applicant should describe all hydraulic parameters used to determine expected operational and restoration performance. Aquifer and aquitard hydraulic properties may be determined using aquifer pumping tests for parameters such as hydraulic conductivity, transmissivity, and specific storage. Any of a number of commonly used aquifer pumping tests may be used including single-well drawdown and recovery tests, drawdown versus time in a single observation well, and drawdown versus distance pumping tests using multiple observation wells. The methods or standards used to analyze pumping test data should be described and referenced: acceptable methods of analysis include use of curve fitting techniques for drawdown or recovery curves that are referenced to peer-reviewed journal publications, texts, or American Society for Testing and Materials Standards."

Request for Additional Information

Please provide any additional information on the hydraulic properties for the BFH 1 unit.

RAI 2.7-5

Description of Deficiency

On Table 17 of Addendum 2.7-I, Strata provides estimates of the "Estimated Maximum Available Head" and "Drawdown" for various water supply wells in the area. The information is insufficient for staff to review because: (a) the wells do not include those in the Shallow Monitor (SM) aquifer; (b) the "Estimated Maximum Available Head" is based on data not supplied to NRC in this application; and (c), the drawdown is calculated from the estimated 2015 potentiometric surface. For (a), Strata ignores wells in the overlying aquifer by the assumption that the operations only impact the ore zone aquifer. However, the model predicts over 30 feet of drawdown in the SM aquifer during operations. For (b), the well completion data needs to be summarized for staff's review of the information (either staff will take time to duplicate the information gathering or Strata should provide the information). For (c), the reported drawdown is only attributed to operations; however, in 2015, drawdown may have occurred due to the existing wells and may have affected the available water head.

Basis for Request

In the introductory paragraph of Section 2.7.2, the SRP states that "… the reviewer should evaluate whether the applicant has developed an acceptable conceptual model of the site hydrology and whether the conceptual model is adequately supported by the data presented in the site characterization." Review Procedure 2.7.2(3) states that "[t]he applicant's interpretation of ground-water hydraulic gradients (used to infer flow direction), horizontal hydraulic conductivity, and the thickness, areal extent, and vertical hydraulic conductivity of confining formations should be evaluated."

In the introductory paragraph of Section 2.7.3, the SRP states that a "conceptual model provides a framework for the applicant to make decisions on the optimal methods for extracting uranium from the mineralized zones, and to minimize environmental and safety concerns caused by *in situ* leach operations. Hydrologic characterizations that accomplish this objective are considered acceptable." Review Procedure 2.7.3(3) states that "[t]he applicant should describe all hydraulic parameters used to determine expected operational and restoration performance. Aquifer and aquitard hydraulic properties may be determined using aquifer pumping tests for parameters such as hydraulic conductivity, transmissivity, and specific storage. Any of a number of commonly used aquifer pumping tests may be used including single-well drawdown and recovery tests, drawdown versus time in a single observation well, and drawdown versus distance pumping tests using multiple observation wells. The methods or standards used to analyze pumping test data should be described and referenced: acceptable methods of analysis include use of curve fitting techniques for drawdown or recovery curves that are referenced to peer-reviewed journal publications, texts, or American Society for Testing and Materials Standards."

Request for Additional Information

Please provide the information noted above as deficient for this table.

RAI 2.7-6

Description of Deficiency

The reported residual statistics for the calibration/verification simulation for the numeric groundwater flow model in Addendum 2.7-I indicate discrepancies between the observed and model-predicted water levels of up to 87 feet for one well and discrepancies of over 30 feet are reported for 11 of 44 the target wells. Strata stated that, because the model started from the "calibrated Ross model", calibration of the Kendrick model consisted of a "structured sensitivity" approach. This approach was designed to retain to a large degree the parameter values used in the Ross model for the Kendrick model.

Expanding to a larger Kendrick model exposed some potential biases that were not readily apparent in the smaller Ross model. For example, the calibration/verification residuals for the larger-model, model-predicted heads at wells in the Ross area are significantly different from the calibration/verification residuals reported for those wells in the smaller model. This change suggests that the calibration of the smaller model incorporated some bias due to the proximity of the boundary conditions, specifically, the general head boundary conditions may have affected the predicted drawdown. Therefore, wholesale expansion of the model with the same parameter values may not be appropriate.

Basis for Request

In the introductory paragraph of Section 2.7.1, the SRP states that "[c]haracterization of the hydrology at *in situ* leach uranium extraction facilities must be sufficient to establish potential effects of *in situ* leach operations on the adjacent surface-water and ground-water resources

and the potential effects of surface-water flooding on the *in situ* leach facility." Review Procedure 2.7.2(3) states that a reviewer should "[e]Evaluate the site hydrogeologic conceptual model for ground-water flow in potentially affected aquifers. Review available data from well logs and hydrologic tests and measurements to obtain confidence that sufficient data have been collected and that the data support the applicant's hydrologic conceptual model for ground-water flow within and around the permit boundary." Acceptance Criterion 2.7.3(3) states that "[t]he applicant should describe all hydraulic parameters used to determine expected operational and restoration performance."

SRP Review Procedure 6.1.2(1) states that "[i]f numerical ground-water flow or transport modeling is used to support or develop the ground-water restoration plans, examine the descriptions of features, physical phenomena, and the geological, hydrological, and geochemical aspects of the modeled aquifers. The staff should verify that the descriptions are adequate and that the conditions and assumptions used in the modeling are realistic or reasonably conservative and supported by the body of data presented in the descriptions."

Request for Additional Information

Please verify that the Kendrick model is properly calibrated and that the boundary conditions are not affecting the model-predicted drawdown.

Section 2.9

RAI 2.9-1

Description of the Deficiency

Section 2.9.1 of the TR for the Kendrick Expansion Area states that the preoperational monitoring program did not include local vegetation, animal tissue, or radon flux. Strata stated that vegetation and animal tissue samples collected as part of the Ross ISR Project preoperational monitoring program is representative of the proposed Kendrick Expansion Area. Local vegetation and animal tissue were sampled as part of the Ross preoperational monitoring program, which included one grazing vegetation sample within the proposed Kendrick Expansion Area and one beef sample that was considered representative of the Ross ISR Project and proposed Kendrick Expansion Area sites. Furthermore, Strata stated that, according to Section 6.2.3 of the Final Supplemental Environmental Impact Statement for the Ross ISR Project, vegetation and food sampling is not required because Strata demonstrated that a significant pathway to humans does not exist from these sources. For the Ross ISR Project, Strata calculated the maximum impacts to the public through all pathways would be less than 1 percent of the applicable radiation-protection standard.

The Safety Evaluation Report (SER) for the Ross ISR Project stated that Strata should specify, in its airborne effluent and environmental monitoring program, particular conditions that will trigger the need for Strata to conduct livestock and vegetation sampling during operations. In a letter to the NRC, dated March 1, 2015, Strata stated it would start vegetation and cattle sampling, as described in Regulatory Guide 4.14, if air sampling results for particulate radionuclides (natural U, Th-232, Ra-226, and/or Pb-210) at any air sampling station in unrestricted areas was greater than 25% of the applicable effluent concentrations in 10 CFR 20, Appendix B, Table 2, for at least two quarters in any year. The staff evaluated Stata's proposal, and in a letter dated July 23, 2015, commented that Strata should clarify its description of operational livestock and vegetation sampling in view of commitments already made and staff guidance in Regulatory Guide 4.14 regarding acceptable trigger levels.

By letter dated July 30, 2015, Strata stated it would follow the commitments outlined in Section 5.7.7.1.3 of its December 2010 TR, and not those commitments made in Table 5.7-1 of its

December 2010 TR or its letter dated March 1, 2015. Instead, Strata stated that it would update Table 5.7-1 of its December 2010 Technical Report to reflect changes after NRC approval of Strata's airborne and environmental monitoring program. In a letter dated November 19, 2015, the staff agreed with Strata that is should revise its TR to reconcile differences in the descriptions of the environmental monitoring program with regard to vegetation and forage sampling.

Based on the above information, the application narrative is conflicting with regard to performing vegetation, food, or fish sampling during operations because Strata committed to conduct such monitoring if certain trigger levels were exceeded. Also, Strata proposed to follow the protocol used during preoperational characterization to collect vegetation, food, or fish samples during operations, if needed.

Basis for Request

NUREG-1569 Acceptance Criterion 2.9.3 (1) states "Monitoring programs to establish background radiological characteristics, including sampling frequency, sampling methods, and sampling location and density are established in accordance with pre-operational monitoring guidance provided in Regulatory Guide 4.14, Revision 1, Section 1.1 (NRC, 1980).

Regulatory Guide 4.14 recommends the collection of three vegetation samples, three food samples of each type (crops, livestock, etc) within 3 kilometers of the site, and fish samples from each body of water.

Request for Information

Please provide additional information on how one sample of grazing vegetation and one beef sample satisfies the sample collection recommendations of Regulatory Guide 4.14.

Please provide an update on the revision of Section 5.7.7.1.3 of the TR for the Ross ISR Project airborne and environmental monitoring program, if it is to be applied to the proposed Kendrick Expansion Area.

The NRC staff notes that any revision of Strata's environmental monitoring program could include specific mention of the 5 percent trigger value contained in footnote (o) of Table 2 of Regulatory Guide 4.14

RAI 2.9-2

Description of the Deficiency

Sediment samples were collected at five surface water monitoring stations, four grab sample sites, and seven reservoirs within the proposed area. Strata collected sediment samples in late summer (September 2014), but did not collect samples following spring runoff because the streams within the area are ephemeral. Also, sediment samples were collected in the thalweg portion of the stream channel instead of a traverse across the body of water. Strata attributed this collection method to the ephemeral nature of the stream channels.

Basis for Request

NUREG-1569 Acceptance Criterion 2.9.3 (1) states "Monitoring programs to establish background radiological characteristics, including sampling frequency, sampling methods, and sampling location and density are established in accordance with pre-operational monitoring guidance provided in Regulatory Guide 4.14, Revision 1, Section 1.1 (NRC, 1980)."

Regulatory Guide 4.14 recommends sediment sampling at two locations in each surface water location (e.g., streams, rivers, drainages) following spring runoff and in late summer, preferably following an extended period of low flow. It also recommends several sediment samples should

be collected in a traverse across the body of water and composited for analysis, at each location.

Section 2.6.3.6 of the SER for the Strata Ross ISR Project (ADAMS accession number ML14002A107) states that specific streams located on the Strata Ross ISR project were ephemeral and dry at the time of sampling, and that sediment samples were collected from the deepest portion of the channel from those streams. Based on the information provided, the NRC staff considered the justification reasonable for the sampling sediment method in those streams. However, it is not clear from the information presented in section 2.9.2.3 of the TR for the Kendrick Expansion Area that, other than the seven reservoirs, each of the nine sediment sampling locations was ephemeral and dry at the time of sampling.

Request for Additional Information

Please provide additional justification for collecting sediment samples only in the late summer, when water levels are expected to be lower than average, and not collecting sediment samples following spring runoff, when water levels are expected to be higher than average.

For each of the nine sediment sampling locations (other than the seven reservoirs), please explain why sediment samples were not collected in a traverse across the body of water and composited for analysis at each sampling location.

RAI 2.9-3

Description of the Deficiency

The air monitoring stations selected for the pre-operational monitoring period were: (1) site OCH, located upwind and to the east, as a control location; (2) site D-Road, located at the nearest residence, on the southeast side of the proposed Kendrick Expansion Area; (3) sites Berger Hill, Burch, and Deadman, located near the northern boundary. According to section 7.3.5.5 of the TR for the Kendrick Expansion Area, the location of the nearest residence that would receive the highest predicted annual dose is the Wesley residence. However, no air sampling results were provided for the Wesley residence, which is located approximately 1.56 kilometers (0.97 miles) to the north of the Ross central processing plant and 0.4 kilometer (0.25 miles) from the northern site boundary.

The staff notes that there is no overlap between the Ross and proposed Kendrick Area Expansion air monitoring programs, although several air monitoring stations for Ross are physically located in the proposed Kendrick Area Expansion.

Basis for Request

NUREG-1569 Acceptance Criterion 2.9.3 (1) states “Monitoring programs to establish background radiological characteristics, including sampling frequency, sampling methods, and sampling location and density are established in accordance with pre-operational monitoring guidance provided in Regulatory Guide 4.14, Revision 1, Section 1.1 (NRC, 1980). Air monitoring stations are located in a manner consistent with the principal wind directions reviewed in Section 2.5 of the standard review plan.”

Regulatory Guide 4.14 recommends pre-operational air particulate and radon sampling at three locations at or near the site boundaries, one control location remote from the site, and one location at or close to the nearest residence with the highest predictable airborne radionuclide concentration from milling operations.

Request for Additional Information

Please explain why an air particulate sampling station was not located near the Wesley residence during the preoperational monitoring period.

Please describe the air monitoring network that would integrate air monitoring stations during operations at the proposed Kendrick Area Expansion with the approved air monitoring stations for operations at the Ross portion of the site.

RAI 2.9-4

Description of the Deficiency

Strata stated that the operational environmental soil sampling program within the proposed Kendrick Expansion Area will be the same as that approved for the Ross ISR Project. Therefore, it is expected that during operations, soil samples will be collected at air monitoring stations to a depth of 15 cm, the same depth specified in Strata's Environmental Management Program. Also, soil samples will be analyzed for total uranium, radium-226, lead-210, and gross alpha, which is consistent with the Environmental Management Program for the Ross ISR Project.

Strata collected and analyzed soil samples to a depth of 5 centimeters where air sampling stations are located, and used a soil sample depth of 15 centimeters for the remaining 34 locations.

Basis for Request

NUREG-1569 Acceptance Criterion 2.9.3 (1) states "Monitoring programs to establish background radiological characteristics, including sampling frequency, sampling methods, and sampling location and density are established in accordance with pre-operational monitoring guidance provided in Regulatory Guide 4.14, Revision 1, Section 1.1 (NRC, 1980)."

NUREG-1569, Acceptance Criterion 2.9.3(2), states: "Soil sampling is conducted at both a 5-cm [2-inch] depth as described in Regulatory Guide 4.14, Section 1.1.4 (NRC, 1980) and 15 cm [6 in] for background decommissioning data."

RG 4.14 provides guidance on the preoperational and operational aspects of effluent and environmental monitoring at uranium mills. RG 4.14 recommends a 5 centimeter depth for surface soil samples, and subsurface soil samples should be analyzed for Ra-226, natural uranium, Th-230 and Pb-210. The Strata Environmental Management Program stipulates that soil and sediment samples will be analyzed for gross alpha.

Request for Additional Information

Please provide justification for not collecting and analyzing surface soils at 5-cm and 15- cm depths at each location or indicate where this can be found in the TR.

Please clarify why one set of subsurface samples was not analyzed for natural uranium, Th-230 and Pb-210.

Please clarify why soil and sediment samples did not include gross alpha analyses, which is included in the Strata Environmental Management Program, but not mentioned for the proposed Kendrick Expansion Area program.

RAI 2.9-5

Description of the Deficiency

Strata used portable survey instruments mounted on an all-terrain vehicle to conduct a baseline gamma radiation survey of the proposed Kendrick Expansion Area. Radiation detector readings were correlated to radionuclide concentrations in soil to derive gamma exposure rates, as described in Addendum 2.9-A, "Baseline Gamma Survey Report; Radiological Baseline Characterization Program; Kendrick Expansion Area," (December 2014). Strata also compared gamma exposure rate measurements obtained from the gamma scanning system with exposure

rate measurements obtained from optically stimulated luminescent (OSL) dosimeters installed as part of the long-term direct radiation study for the proposed Kendrick Expansion Area.

The Baseline Gamma Survey Report describes methods to correlate radiation detector response to radionuclide concentrations in soil and gamma exposure rates. The report states that coefficient of determination (R^2) values greater than 0.75 are sufficient for this application, and concludes that RadEye-radiation detector correlations produced the best results using regression analyses. According to NUREG-1475, Revision 1 "Understanding Statistics," irreproducible results are suggested when a correlation coefficient (r) is smaller than 0.95, which is equivalent to a coefficient of determination of 0.9. Information provided on the correlation of natural uranium soil concentrations and exposure rates is insufficient, based on the data and analyses presented in the report.

Basis for Request

NUREG-1569 Acceptance Criterion 2.9.3 (1) states "Monitoring programs to establish background radiological characteristics, including sampling frequency, sampling methods, and sampling location and density are established in accordance with pre-operational monitoring guidance provided in Regulatory Guide 4.14, Revision 1, Section 1.1 (NRC, 1980)."

Regulatory Guide 4.14 recommends that gamma radiation measurements should be made with passive integrating device (such as a thermoluminscent dosimeter), pressurized ion chamber, or properly calibrated portable survey instruments. The TR describing the proposed method for correlating portable survey instrument response to soil concentrations should provide the requested information. The TR that described the method for correlating instrument response to soil concentrations did not contain sufficient information on the statistical analyses to support the correlations of natural uranium soil concentrations with exposure rates, based on the data and analyses presented in the report.

Request for Additional Information

Please provide additional information about the radiation detection system employed for the direct gamma field survey at the Kendrick Expansion Area, including the minimum detectable activities based on actual scan speeds of the vehicle during data acquisition.

Please provide additional information on the statistical methods that were used to correlate instrument response to soil concentrations, for each radionuclide analyzed, across the Kendrick Expansion Area.

Section 3.1

RAI 3.1-1

Description of Deficiency

Several non-Strata wells (e.g., Mellott Ranch WS#3 and ENL Sophia 1A) are located in a proposed wellfield and screened in the ore aquifer. In Section 5.7.8.2 of the Kendrick application, Strata discusses monitoring at nearby wells but did not propose any limitation or special consideration of operating a wellfield (module) in which a private well is located.

Basis for Request

Acceptance criterion 3.1.3(5)(f) states that "[t]he description of the in situ leaching process includes … [a]n analysis of the effects that the in situ leach operations are likely to have on surrounding water users".

Request for Additional Information

Please provide a discussion on management of private wells located within the Kendrick area that could affect or be affected by the proposed operations.

Section 5.7.7

RAI 5.7.7.1

Description of the Deficiency

The operational environmental monitoring program for the proposed Kendrick Expansion Area is planned to be conducted in accordance with recommendations contained in Regulatory Guides 4.14 (NRC 1980), 4.15 (NRC 2007) and 8.37 (NRC 1993).

In Section 5.7.7.1 of the TR for the Kendrick Expansion Area, Strata stated that field sample collection and/or measurement techniques will be conducted in accordance with accepted scientific protocols. The example field survey and sampling methods Strata noted are those described in NUREG/CR-5849, "Manual for Conducting. Radiological Surveys in Support of License Termination: Draft Report for Comment, "and/or NUREG-1575, "Multi-Agency Radiological Survey and Site Investigation Manual," as applicable.

The methods described in NUREG/CR-5849 have been updated by methods described in NUREG-1575. Their underlying methods in the two documents differ significantly and are not compatible. The NRC endorses the use of the MARSSIM approach for the design and execution of certain types of radiological surveys (Consolidated Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria; NUREG-1757, Volume 2, Revision 1; 2006).

Basis for Request

NUREG-1569 Acceptance Criterion 5.7.7.3(4) states that the airborne effluent and environmental monitoring program is acceptable if the proposed sampling methods are consistent with guidance in Regulatory Guide 4.14 Section 3 (NRC, 1980).

Section 3 of Regulatory Guide 4.14 states that provisions should be made to ensure that representative samples are obtained by use of proper sampling equipment, proper location of sampling points, and proper sampling procedures.

MARSSIM provides guidance on how to plan and carry out a study to demonstrate that a site meets appropriate release criteria. It describes a methodology for planning, conducting, evaluating, and documenting environmental radiation surveys conducted to demonstrate compliance with cleanup criteria.

NUREG/CR-5849 is a draft report published in 1992 that has been superseded by NUREG-1575 and its supplements. It is incorrect for applicants to use both guidance documents in their program because of significant differences in technical approaches between the two NUREG reports. The staff notes that NRC and other regulatory agencies have endorsed the use of NUREG-1575 for environmental measurements for more than a decade.

Request for Additional Information

Please provide additional information on the selection of field sample collection and/or measurement techniques in the operational environmental monitoring program using updated guidance, such as MARSSIM.

Section 5.7.8

RAI 5.7.8-1

Description of Deficiency

In the Ross license application as originally approved, Strata proposed an extensive list of baseline parameters. Subsequently, Strata requested that the list be reduced. Staff approved that request through Amendment 2 to License SUA-1601, the basis for which is documented in the accompanying SER. However, the list in the Kendrick amendment differs from the approved list.

Basis for Request

SRP Review Procedure 5.7.8.2(1) states that the reviewer should "[v]erify that procedures for establishing baseline water quality include acceptable sample collection methods, a set of sampled parameters that is appropriate for the site and *in situ* leach extraction method, and collection of sample sets that are sufficient to represent any natural spatial and temporal variations in water quality."

Request for Additional Information

Please revise Table 5.7-2 "Wellfield Background Aqueous Sampling Parameter List" to be consistent with the approved list of parameters for this project or provide an analysis for the change in the list of parameters.

RAI 5.7.8-2

Description of Deficiency

In Section 5.7.8.2 and on Figure 5.7-1 of the Kendrick TR, Strata discusses "potential" surface water sampling locations based on an evaluation in the wellfield data package for a specific mine unit. The potential locations include 3 monitoring stations, 6 grab stations and 13 reservoirs. In Section 2.7 of the Kendrick TR, Table 2.7-11 lists 19 reservoirs of which 18 are located within the proposed Kendrick area and the preoperational sampling conducted at four surface water sampling locations (Table 2.7-14), four grab stations and 18 reservoirs. The information provided in the application is insufficient in detail for staff to evaluate whether or not it meets the above review procedures, acceptance criterion or guidance or that the justification for departure from the guidance was adequate.

Basis for Request

Review procedure 5.7.8.2(6) states the reviewer should "[e]valuate whether a surface-water monitoring program is necessary at the site and, if so, whether the monitoring program will be effective to detect migration of contaminants into surface-water bodies." Acceptance criterion 5.7.8.3(5) states, in part, that "[p]rocedures for monitoring surface-water quality during operations should be discussed in the application: this discussion must include a monitoring schedule, monitor locations, and a list of sampled constituents. Strata may be exempted from monitoring during operations if the site characterization demonstrates that no significant flow of ground water to surface water occurs near the site (e.g., if surface-water bodies are perched and ephemeral)." Guidance in Regulatory Guide 4.14 states "[s]amples of surface water should be collected quarterly from each onsite water impoundment (such as a pond or lake) and any offsite water impoundment that may be subject to seepage from tailings, drainage from potentially contaminated areas, or drainage from a tailings impoundment failure.

Samples should be collected at least monthly from streams, rivers, any other surface waters or drainage systems crossing the site boundary, and any offsite surface waters that may be subject to drainage from potentially contaminated areas or from a tailings impoundment failure.

Any stream beds that are dry part of the year should be sampled when water is flowing. Samples should be collected at the site boundary or at a location immediately downstream of the area of potential influence."

Request for Additional Information

Please clarify and/or provide justification for the following:

a) The closest location on the Little Missouri River upstream of the Kendrick area is reservoir TSRES03. Is TSRES03 representative of the upstream quality?
b) Based on the proposed mine units, please provide a listing of which specific surface sampling locations will be sampled for the proposed mine unit as currently envisioned.
c) Please clarify why not all reservoirs within the Kendrick area are included in the operational monitoring program.

Section 6.3

RAI 6.3-1

Description of the Deficiency

Strata currently disposes of its municipal waste at the Campbell County Landfill, and disposes of solid byproduct material at the Pathfinder Mines Corporation site in Shirley Basin, Wyoming. Strata committed to adhering to the procedures for removing and disposing of structures and equipment of the proposed Kendrick Expansion Area as described in Section 6.3 of the TR for the Ross ISR Project.

A proposed modification to this commitment is to add a disposal option that would allow non-contaminated and decontaminated material to be disposed in a permitted on-site disposal facility. Section 1.10 of the Kendrick Technical Report states that solid waste will include construction debris and decontaminated material and equipment. A portion of solid waste is planned for disposal at lined retention ponds, following pond decommissioning. Strata's 2015 annual surety estimate for SUA-1601 assumes that 100 percent of concrete with no potential for contamination (e.g., building footings) and 80 percent of concrete with potential for contamination (e.g., CPP and CPP Truck Bay buildings) would be disposed on site (Strata 2016). The planned location of the future non-site landfill is within the lined retention ponds, following pond decommissioning.

Materials disposed in the on-site facility would consist of construction debris, piping, and equipment that meet surface contamination limits referenced in Section 5.7.6.3.2 of the approved Ross TR. The surface contamination limits are those contained in NRC document FC 83-23," Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source and Special Nuclear Material (1987)." This guidance applies to solid material with surface contamination, but it is not applicable to solid material with volumetric contamination, such as concrete. Also, the total inventory of residual radioactivity buried in the disposal cell would need to be accounted for, as part of demonstrating compliance with license termination criteria contained in 10 CFR Part 40, Appendix A, Criterion 6(6).

Basis for Request

Review Procedure 6.3.2 states that staff should review provisions made for the removal and disposal of byproduct material to an existing uranium mill or licensed disposal sites to ensure that requirements of 10 CFR 40, Appendix A, Criterion 2, are met. Criterion 2 states that, to avoid proliferation of small waste disposal sites and thereby reduce perpetual surveillance obligations, byproduct material from in situ extraction operations, such as residues from solution evaporation or contaminated control processes, and wastes from small remote above ground

extraction operations must be disposed of at existing large mill tailings disposal sites; unless, considering the nature of the wastes, such as their volume and specific activity, and the costs and environmental impacts of transporting the wastes to a large disposal site, such offsite disposal is demonstrated to be impracticable or the advantages of onsite burial clearly outweigh the benefits of reducing the perpetual surveillance obligations. In addition, Strata needs to account for the onsite disposed material as part of demonstrating compliance with license termination criteria contained in 10 CFR Part 40, Appendix A, Criterion 6(6).

If a licensee plans to bury solid material onsite with surficial or volumetric residual radioactivity that meets FC 83-23 limits, an evaluation of the proposed disposal method and materials is required. 10 CFR 20.2001 identifies the mechanisms by which a licensee may lawfully dispose of its licensed radioactive waste. One of the mechanisms is an alternative disposal authorization in accordance with 10 CFR 20.2002, which allows disposal within a licensee's site of low-activity wastes that contain residual radioactivity. NRC guidance on evaluating onsite disposal requests under 20.2002 in contained in NUREG-1757, Volume 1, Section 15.12.

Request for Additional Information

Please provide additional information on Strata's proposed disposal of material and equipment in an onsite disposal facility located in the current Ross license area. Requests to dispose of material that contains, or is suspected of containing, residual radioactivity in an onsite location needs to be approved by the NRC using procedures established for compliance with 10 CFR 20.2002, "Method for obtaining approval of proposed disposal procedures."

Section 6.4

RAI 6.4-1

Description of the Deficiency

Section 6.4 of the TR for the Kendrick Expansion Area states Strata does not propose to revise the existing RESRAD model used in the Ross ISR Project to calculate site-specific soil cleanup criteria for the Kendrick Expansion Area. The rationale for not performing new RESRAD calculations is the similarity of the environment and land use characteristics between the Ross ISR Project and Kendrick Expansion Area sites. Section 6.4 does not provide additional justification for not performing a site-specific analysis of the Kendrick Expansion Area.

Based on the limited information provided, the staff can't verify that input parameters for a RESRAD model of the Kendrick Expansion Area are similar to those used for the Ross ISR Project, or that RESRAD results would be similar for soil cleanup criteria in the Kendrick Expansion Area.

Also, Section 6.4.1 of the TR for the Ross ISR site provides an analysis for a natural uranium cleanup standard of 479 pCi/gm, based on a RESRAD model using site-specific parameters and the Radium Benchmark Dose Approach method described in NUREG-1569 Appendix E. The licensee is required, however, to develop soil cleanup criteria that accounts for Th-230, if elevated levels are indicated in soil samples collected during decommissioning. This commitment was not mentioned in the TR.

Basis for Request

NUREG-1569 Acceptance Criterion 6.4.3(1) states that cleanup criteria for radium in soils are met as provided in 10 CFR Part 40, Appendix A, Criterion 6(6). This criterion states that the design requirements for longevity and control of radon releases apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land, averaged over areas of 100 m2, which as a result of byproduct material, does not exceed the background level by more than:

(i) 5 picocuries per gram (pCi/g) of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over the first 15 cm [5.9 in.] below the surface; and

(ii) 15 pCi/g of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over 15-cm [5.9-in.] thick layers more than 15 cm [5.9 in.] below the surface."

NUREG-1569 Acceptance Criterion 6.4.3(3) states that acceptable cleanup criteria for uranium in soil, such as those in Appendix E of the SRP, are proposed by the applicant. This is the radium benchmark dose approach of 10 CFR Part 40, Appendix A, Criterion 6(6).

NUREG-1569 Acceptance Criterion 6.4.3(4) states that, for areas that already meet the radium cleanup criteria but that still have elevated thorium levels, Strata proposes an acceptable cleanup criterion for thorium-230. One acceptable criterion is a concentration that, combined with the residual concentration of radium-226, would result in the radium concentration (residual and from thorium decay) that would be present in 1,000 years meeting the radium cleanup standard.

NUREG-1569 Appendix E Acceptance Criterion E2.1.3 item (2) states that "code/calculation input data are appropriate for the site and represent current or long-term conditions, whichever is more applicable to the time of maximum dose. When code default values are used, they are justified as appropriate (representative) for the site."

Request for Additional Information

Please develop soil cleanup criteria using a site-specific analysis for the Kendrick Expansion Area (e.g., soil type, wind speed, precipitation, etc.) which will be developed using RESRAD to derive site-specific soil cleanup criteria. As part of this analysis, differences in site-specific parameters between the Kendrick Expansion Area and Ross ISR Project sites should be summarized. Also, the analysis should address Th-230 in soil samples collected during decommissioning in the Kendrick Expansion Area.

Section 7.3

RAI 7.3-1

Description of Deficiency

With regard to modeling the public dose using MILDOS-AREA, the December 2010 version of the Ross ISR Project TR, Section 7.3.4.4, "Source Term Estimates," states that Strata used the source term methodology in NUREG-1569, Appendix D (ADAMS Accession Number ML110130335). Strata provided its input assumptions for calculating the source terms in Table 7.3-2, "MILDOS-AREA Input Parameters." Using this methodology, Strata reported wellfield leak rate source terms from production operations in Mine Unit 1 and 2 of 122 Ci/yr and 123 Ci/yr, respectively. Strata's estimate of the purge (bleed) source term was 70.2 Ci/year and the ion exchange resin transfer source term was 1.0 Ci/yr. Although Strata stated in Table 7.3-2 that the restoration wellfield flow rates would be lower than production flow rates, Strata stated that the source terms during mine unit restoration would be the same, except that the ion exchange resin transfer source term is zero. The source term values are summarized in Table 7.3-4 of the Ross ISR Project TR.

In Section 7.3.5.1, "Central Processing Plant Source Term," of the Kendrick Expansion Area TR (ADAMS Accession Number ML15096A157), Strata states that the method it used to estimate the radon source term was based on Regulatory Guide 3.59, rather than the NUREG-1569, Appendix D, methodology it originally used for the Ross ISR Project, as described above. Strata derived a Regulatory Guide 3.59 source term of 2,552 Ci/year and stated:

> To reflect the modern CPP design, it is assumed that 10% of this value is released from the center of the CPP as a radiological effluent, an assumption that was accepted in the NRC staff's SER for the Ross ISR Project.

On this basis, Strata asserted that the [Central Processing Plant] source term is 255.2 Ci/year. To the contrary, since Strata did not use the Regulatory Guide 3.59 methodology in the Ross ISR Project TR, but rather used the NUREG-1569, Appendix D methodology, the staff has neither previously evaluated nor has it approved a reduction of the Regulatory Guide 3.59 source term at Ross to 10% of the calculated value to estimate emissions from the Central Processing Plant.

Furthermore, in Section 7.3.5.3, "Operating Mine Units," of the Kendrick Expansion Area TR, Strata stated:

> The methodology presented in NUREG-1569, Appendix D, is not a good fit for modern ISR mine units like those proposed for the KEA and those approved at the Ross ISR Project. This methodology includes source term contributions from large scale, open atmosphere ponds or reservoirs, a process that will not occur at the Ross ISR Project and proposed KEA due to use of deep well disposal methods.

This statement is incorrect. The methodology described in NUREG-1569, Appendix D is generally applicable to ISR facilities, whether or not there are ponds or reservoirs. Strata also stated:

> Accordingly, the only release in the wellfield area itself is the result of well venting at a rate of 0.01 relative to the amount of radon in process fluids; and
>
> NUREG-1569, Appendix D provides an estimate of a venting factor for mine units of 0.01, such that it is assumed that 1% of radon available in the process water may be emitted by venting at the mine units.

These statements are incorrect because the wellfield leak rate assumed in NUREG-1569, Appendix D is 1% <u>per day</u> of the total radon-222 activity in solution. The 1% per day value in NUREG-1569, Appendix D is not correctly interpreted to mean 1% of the radon-222 activity which passes through the CPP each year. Strata made the same mistake in Section 7.3.5.4, "Restoration of Mine Units," when estimating the source term from restoration of the Kendrick mine units.

Therefore, the source term methodology presented by Strata in Section 7.3.5.3 and 7.3.5.4 is incorrect. Since NRC staff has approved use of the methodology in NUREG-1569, Appendix D for the Ross ISR Project, the same method could be used for the Kendrick Expansion Area, or Strata could develop an alternative methodology for the entire licensed area with appropriate explanation and justification.

<u>Basis for Request</u>

NUREG-1569, Acceptance Criterion 7.3.1.2.3(5) states, "The parameters used to estimate the source term, environmental concentrations, and exposures are applicable to conditions at the site as reviewed in Section 2.0 of this standard review plan. Guidance on source term calculations is available in Regulatory Guide 3.59, Sections 1–3, "Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Milling Operations" (NRC, 1987). Additionally, an example source term calculation specifically applicable to *in situ* leach facilities is described in Appendix D."

Request for Additional Information

Please correct the description of the source term methodology in Section 7.3.5 of the Kendrick Expansion Area TR and calculate revised source terms for each mine unit for both production and restoration.

Section 7.5

RAI 7.5-1

Description of Deficiency

In Section 7.5 of the Kendrick TR, Strata states that the "above omissions are addressed in LC 12.11…[which the] [s]taff found … acceptable" [emphasis added]. Based on language in the application, the above omissions include "an accident scenario involving hydrochloric acid, sodium hydroxide, or chemicals associated with a reductant." However, the review of the information submitted to address LC 12.11 did not include an analysis of hydrochloric acid, sodium hydroxide or chemicals associated with a reductant.

Basis for Request

Staff's acceptance of the submittal for LC 12.11 focused on adherence to the transportation regulations and not necessarily the analysis of the handling and storage of the material. In fact, a review of Strata's Environmental Planning Procedures and Industrial Safety Program procedures during the pre-operational inspection only discussed limited quantities of hydrochloric acid and sodium hydroxide for laboratory usage only. Furthermore, license condition 10.10 requires NRC approval of a chemical or biological reductant.

Request for Additional Information

Please clarify the statement in Section 7.5 of the Kendrick TR, in which Strata states that the "above omissions are addressed in LC 12.11…[which the] [s]taff found … acceptable" [emphasis added]. Based on language in the application, the above omissions include "an accident scenario involving hydrochloric acid, sodium hydroxide, or chemicals associated with a reductant."

REFERENCES

NRC, 2014. Final Safety Evaluation Report, Strata Energy, Inc.,Ross ISR Project License Application, (ADAMS accession number ML14002A107), February 2014.

Strata, 2011. Strata Energy, Inc. License Application for the Ross ISR Project, (ADAMS accession number ML110120063), January 2011.

Strata, 2015. Strata Energy, Inc. Request to Amend License SUA-1601 for the Kendrick Expansion Area, (ADAMS accession number ML15096A157), March 2015.