



received
8/26/2015

August 21, 2015

Mr. David Schellinger, Permit Coordinator
Wyoming Department of Environmental Quality-Land Quality Division
2100 West 5th Street
Sheridan, WY 82801

RE: Strata Energy Ross In Situ Recovery Project LQD Permit to Mine No. 802 Non Significant Revision to the Permit

To Mr. Dave Schellinger:

Strata Energy, Inc. (Strata) recently completed activities associated with the preparation of the Mine Unit 1 (MU1) Wellfield Package required by the WDEQ/LQD permit. As part of this effort, Strata characterized the BFS 2 sand underlying the ore zone. The BFS 2 sand represents the first underlying sand beneath the OZ and is the DM interval. The BFS 2 sand ranges from 10 to 20 feet thick in MU1 and is continuous throughout the mine unit. The BFS 2 sand is a very low yielding zone with yields typically less than 0.1 gallon per minute (gpm) in the DM wells within MU1. Analysis of the recharge following swabbing in the DM wells in MU1 suggests that there are not useable quantities of water in this zone within the boundaries of MU1. Calculated DM well yields based on measured hydraulic conductivities at each well range from 0.02 to 0.12 gpm and averaged 0.06 gpm. Details regarding the DM well swabbing events are included in Section 5 of Attachment 5 of the MU1 wellfield package.

Strata does not believe that the DM meets the definitions of an aquifer within MU1. Based on WDEQ/LQD Guideline 8 and WDEQ/WQD Rules and Regulations, Chapter 8, an "aquifer" is defined as "a zone, stratum, or group of strata that stores and transmits water in sufficient quantities for a specific use." Since stock watering is the predominant use of groundwater in the area and the minimum yield to sustain a typical stock watering system ranges from 2 to 5 gpm, the DM interval does not appear to meet State of Wyoming definitions (in guidance or regulation) for an aquifer. Similarly, EPA's conservative definition of "limited use groundwater" in 40 CFR Part 192.11(e) includes groundwater with a quantity of water reasonably available for sustained continuous use of less than 150 gallons per day (0.1 gpm). Finally, the EPA provides guidance on the definition of an Underground Source of Drinking Water (USDW) in the document "Technical Program Overview: Underground Injection Control Regulations" (EPA, 2002). The guidance states that "[f]or the purpose of defining a USDW, the Office of Ground Water and Drinking Water uses 1 gpm as the threshold value for determining if an aquifer produces a significant amount of water." Based on these definitions and the technical support provided in Attachment 5 of the MU1 Wellfield Data Package, Strata concludes that the DM interval in MU1 does not meet the specific criteria to be defined as an aquifer or USDW by

multiple state and federal agencies. Furthermore, within MU1 there are shallow aquifers above both the DM and OZ intervals that have much higher well yields than the DM. Given the existence of additional shallow aquifers within MU1 that provide higher well yields, it would not be economically viable to utilize water out of the DM interval and it is unlikely that it would be utilized as a primary water supply for any future wells.

As noted, characterization activities at Mine Unit 1 indicate that the DM in this area of the Ross project does not meet the definitions of an aquifer. Guidance provided by the USGS (2006) recommends that "Low-yielding wells, especially those that exhibit slow recovery or are pumped dry, are not recommended for water quality sampling." The USGS guidance also includes a rule-of-thumb that recommends against sampling wells at which, after being purged, the water levels take more than 24 hours to recover to 90 percent. DM wells were installed in Mine Unit 1 but extraordinary efforts were required to obtain samples, primarily by swabbing the wells dry and then sampling the water that collected in the well over the course of the following days. As such, the DM sand in Mine Unit 1 will be very difficult if not impossible to monitor.

Since the interval is not an aquifer or USDW, it does not make sense to further monitor this interval during operations. Strata is requesting a non-significant revision to WDEQ/LQD Permit to Mine No. 802 in order to allow more flexibility in assessing and eventually monitoring the underlying interval in the excursion monitoring program. In this revision Strata is requesting that the final determination on the number and location of monitor wells completed in the DM unit be determined on a wellfield by wellfield basis based on information developed for the wellfield data package and WDEQ/LQD input.

To support Strata's request the following pages in Strata's Mine Plan have been updated as follows:

- Mine Plan Page 4-1- A bullet point was added to clarify that the DM monitor well density will be established based on site specific geologic and hydrogeologic evaluations.
- Mine Plan Page 4-3- Text was added to clarify that the DM monitor well density and locations will be established in the wellfield package after discussions with WDEQ/LQD.
- Mine Plan Page 5-12 – Text was added to support flexibility in DM monitoring.

Please contact me if you have any questions. You can reach me at (307) 686-4066 or mgriffin@stratawyo.com.

Sincerely,
Strata Energy, Inc.



Michael Griffin
Vice President of Permitting, Regulatory and Environmental Compliance

Mr. David Schellinger
August 21, 2015
Page 3 of 3

References:

USGS (United States Geological Survey) 2006, Collection of water samples (ver. 2.0), U.S. Geological Survey Techniques of Water-Resources Investigations, Book 9, Chap. A4, September 2006. Available on the Internet as of July 2015:
<http://water.usgs.gov/owq/FieldManual/chapter4/html/Ch4_contents.html>

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

Page 1 of 1
Date August 21, 2015

MINE COMPANY NAME: Strata Energy, Inc.

MINE NAME: Ross ISR Project
PERMIT NO. 802

Statement: I, Mike Griffin, an authorized representative of Strata Energy declared that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date.

NOTES: 1) Include all revision or change elements and a brief description of, or reason for, each revision element.

VOLUME NUMBER	PAGE, MAP OR OTHER PERMIT ENTRY TO BE REMOVED	PAGE, MAP OR OTHER PERMIT ENTRY TO BE ADDED	DESCRIPTION OF CHANGE
Volume 5	Mine Plan 4-1	Mine Plan 4-1	Added bullet point to clarify the DM monitor well density will be established based on
Volume 5	Mine Plan 4-3	Mine Plan 4-3	site specific geologic and hydrogeologic evaluations.
Volume 5	Mine Plan 5-12	Mine Plan 5-12	Added text to clarify the DM monitor well density and locations will be established in the wellfield package.
			Added text to support flexibility in DM monitoring.

4.0 WELLFIELD DESIGN AND CONSTRUCTION

4.1 Baseline Wellfield Package

Strata understands that a permit condition will require submittal of a wellfield data package for each mine unit in order to initiate mining activities. The wellfield data package will be a comprehensive hydrologic evaluation of the initial mine unit, detailing wellfield conditions as they exist prior to subsurface disturbance and will be much more specific to the actual conditions within the proposed mining area than the information presented thus far. The wellfield data packages for each mine unit will be submitted as addenda to this Mine Plan. The initial wellfield package (Mine Unit 1) will be submitted to WDEQ/LQD for approval, as well as to NRC for review and verification. Subsequent wellfield packages will be submitted and approved by WDEQ/LQD and provided to NRC. In order to prepare the wellfield packages it will be necessary to implement a more in depth baseline groundwater monitoring program, which is described in Section 4.1.1. In addition to the in depth groundwater monitoring program, Strata will also further define the exempted portions of the OZ aquifer and use the monitor wells to do additional hydrologic testing as described in Sections 4.1.2 and 4.1.3, respectively.

At a minimum, the wellfield package will contain the following items:

- Geologic demonstration of mineralized zone hydraulic isolation from vertically adjacent aquifers.
- Results of aquifer testing, which demonstrates that the perimeter production zone monitor wells are in communication with the mine unit mineralized zone wells.
- Results of the geologic and hydrogeologic evaluation of the underlying monitoring interval which will establish the density of DM monitor wells.
- Data from the overlying and underlying aquifers demonstrating a lack of hydraulic communication with the ore zone aquifer.
- Potentiometric surface maps for the mineralized portion of the ore zone as well as the overlying and underlying aquifers.
- Baseline water quality data and proposed monitor well UCLs.
- Verification of exemptability of the ore zone aquifer within the perimeter monitor well ring.
- Location and completion details for monitor wells and production zone baseline water quality wells.
- Average mine unit baseline water quality and proposed target restoration values.
- MIT records.

In accordance with WDEQ/LQD guidelines, baseline well clusters are proposed for the Ross ISR Project wellfield baseline monitoring program. Each cluster will include up to three wells, targeting a 10-20 foot thick sandy shale in the Fox Hills Formation below the ore zone (designated as the DM unit), the ore zone completed in the lower Lance/Fox Hills (designated as the OZ unit), and a shallow Lance Formation sandstone that is the first water bearing unit above all mineralized zones (designated as the SM unit). The DM unit exhibits highly variable thickness, significant depths, low water yields, very slow recovery following stress, and a general lack of geologic consistency in many areas within the Ross permit boundary. Therefore, the completion of a monitor well in the DM unit will be dependent on site specific geologic and hydrogeologic conditions observed during mine unit delineation drilling. A final determination on the number and location of DM unit monitor wells, based on discussions with WDEQ/LQD, will be provided in the wellfield package for each mine unit. SM and DM interval wells will utilize a fully penetrating completion while the OZ wells will target specific roll front horizons. Beyond the well clusters utilized for pre-license monitoring, no additional surficial aquifer (SA unit) wells are proposed for the wellfield areas. The existing network, combined with the CPP area SA piezometers, monitors areas both upgradient and downgradient from proposed wellfields. Similarly, the proposed DM and SM well locations target areas downgradient from mining activities. Exhibit MP.4-1 depicts existing and proposed monitor well clusters.

Similar to the existing cluster wells, wellfield baseline monitor wells in the proposed mining areas will be equipped with dedicated submersible pumps, pressure transducers and a sounding tube. By using the pressure transducers to monitor water levels in real time, sample collection protocols can be followed as the yield can be adjusted to prevent well pump off in addition to providing accurate long-term hydraulic characteristics. In addition, water level responses during sampling have proven to be effective for determining suitable pumping rates prior to aquifer testing. Pre-license submittal data from monitor wells completed in the ore zone indicate little natural variability. Given the low storage coefficients measured during aquifer test analyses, water level changes appear to be very good indicators of stress to the ore zone aquifer system. Field parameters to be monitored beyond yield and water level are listed in Table MP.4-1.

In addition to the wellfield area baseline monitor well clusters that are located in proposed mining areas, perimeter monitor wells are proposed to act as both baseline wells and sentries. Perimeter monitor wells are intended to

very well. In addition, the hydrogeologic system analyzed by Mayo was highly stratified and lacked the confinement measured at the Ross ISR Project.

Deep monitor wells completed in the aquifer underlying (DM) the mining zone and shallow monitor wells completed in the aquifer overlying (SM) the mining zone will be installed to detect vertical migration pending capability of the interval(s) to meet the definition of an aquifer. Baseline water quality and quantity will be collected from monitor well clusters spaced at one cluster per 3-4 acres of wellfield. Figure MP.4-1 shows the proposed locations of the baseline wellfield monitoring clusters, as well as the currently installed regional baseline clusters. Completions for the deep and shallow monitoring wells will likely mimic the regional baseline cluster installations while the ore zone baseline wells will likely resemble the observation wells installed for the multi-well aquifer test with more limited, gamma-based completions.

5.9.1 Upper Control Limits and Excursion Monitoring

After baseline water quality is established for the monitor wells for a particular production unit, upper control limits (UCLs) are set for chemical constituents that would be indicative of a migration of lixiviant from the wellfield. Consistent with the ISR GEIS (NRC 2009), the constituents chosen for indicators of lixiviant migration and for which UCLs are set are chloride, conductivity, and total alkalinity. Chloride was chosen due to its low natural levels in the native groundwater and because chloride is introduced into the lixiviant from the IX process (uranium is exchanged for chloride on the IX resin). Chloride is also a very mobile constituent in the groundwater and will show up very quickly in the case of a lixiviant migration to a monitor well. Conductivity was chosen because it is an excellent general indicator of overall groundwater quality. Total alkalinity concentrations should be affected during an excursion as bicarbonate is the major constituent added to the lixiviant during mining. Water levels are obtained and recorded prior to each well spacing. Rising water levels are indicative of an imbalance in the wellfield which could result in excursion. Although water levels are not proposed as an official excursion indicator, modeling indicates that such changes may provide



Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matthew H. Mead, Governor

Todd Parfitt, Director

December 10, 2015

received
12-11-15

Mike Griffin
Vice President, Permitting, Regulatory and Environmental Compliance
Strata Energy, Inc.
P.O. Box 2318
1900 W. Warlow Drive, Bldg. A
Gillette, WY 82717

**RE: Approval of Non-Significant Revision Application, Strata Energy Ross Project,
Permit No. 802, TFN 6 2/170, Change No. 7**

Dear Mr. Griffin:

This letter approves your Non-Significant Revision which will provide criteria used to determine monitoring well completion, specifically in the underlying aquifer or DM zone. This approval does not allow Strata Energy to complete and monitor less than one monitoring well per 40 acres in the DM zone.

Receipt of this letter grants the Strata Energy Ross Project permission to change your Mine Plan as described. In the event that revisions other than those listed on the Index of changes inadvertently occurred within this package, those revisions are not automatically considered approved.

The LQD tracks this NSR as Change No. 7.

If you have questions, please contact me in the Sheridan District III Office (675-5611).

Sincerely,

David Schellinger
Natural Resources Analyst

Cc: Jennifer Mickle
District III



MSR
12/11/15



December 31, 2015

Mr. David Schellinger, Permit Coordinator
Wyoming Department of Environmental Quality-Land Quality Division
2100 West 5th Street
Sheridan, WY 82801

RE: Strata Energy Ross In Situ Recovery Project LQD Permit to Mine No. 802 Non-Significant Revision to the Permit, Update to Mine Plan Section 4.1.1

Dear Mr. Schellinger,

Consistent with WDEQ/LQD Rules and Regulations in Noncoal Chapter 7 and Noncoal Chapter 11, Strata herein requests a non-significant revision (NSR) to Permit to Mine No. 802. Section 4.1.1 of the Ross ISR Project Mine Plan requires that Strata install perimeter monitor (PM) wells spaced 400 feet apart and at a distance of 400 feet from the edge of the wellfield. Strata is requesting that Section 4.1.1, specifically page 4-4 be revised to allow a variable PM well spacing and offset distance of 300 to 500 feet from the wellfield production areas and between the PM wells. This additional flexibility in well spacing will allow Strata to avoid natural features, historic sites, existing infrastructure, and environmentally sensitive areas while ensuring the ability to provide timely detection of horizontal excursions. The discussion following provides more specific technical details and analysis to support the requested NSR to the Permit.

Perimeter monitor well spacing and offset distances from 300 to 500 feet enable timely detection of horizontal migration of fluids and is consistent with other ISR facilities. Strata's perimeter monitor well spacing is currently fixed at 400 feet from the wellfield. The fixed perimeter monitor well spacing and offset is problematic as other spatial constraints exist within the permit boundary. These include historic and cultural sites, water bodies, wetlands, and existing infrastructure such as roads and pipelines, which make it difficult to maintain a constant offset and spacing distance around the wellfields. These constraints were clearly in evidence during development of Mine Unit 1 and Strata would like to prevent similar occurrences in the future. In order to avoid areas where Strata is not allowed access or cannot physically construct monitor wells, additional flexibility in the monitor well spacing and offset is necessary. To improve operational flexibility, Strata is requesting variable monitor well spacing and offset between 300 and 500 feet. As described in the following paragraphs, variable perimeter monitor well spacing ranging from 300 to 500 feet has been supported by modeling conducted by Strata, is typical of other ISR facilities, and is a typical spacing evaluated in NRC guidance (NUREG/CR-6733 "A Baseline Risk-Informed, Performance-Based Approach for In Situ Leach Uranium Extraction Licensees").

Consistent with the WDEQ/LQD Guideline 4, the Mine Plan included an analysis of the width of the area between the wellfield and perimeter monitor wells. Strata modeled perimeter monitor well spacing and determined that monitor wells spaced between 200 and 600 feet from the wellfield were adequate to enable timely detection of horizontal migration of fluids. As noted in the Mine Plan pages 4-4 and 4-5; "Simulations of excursions from a wellfield were modeled, points recording the modeled heads were located at 200 feet, 400 feet, and 600 feet from the active wellfield in both the downgradient and upgradient directions. The local wellfield imbalance was simulated for 30 days and resulted in nearly an 18 and 14-foot increase in water level 400 feet upgradient and downgradient from the wellfield, respectively. Similarly, nearly a 10 and 12-foot head change was apparent 600 feet both upgradient and downgradient from the wellfield, respectively. Results of the simulation run for the upgradient and downgradient scenarios are presented on Figures MP.4-3 and MP.4-4. Most importantly, the simulations indicate that a head change or hydraulic anomaly would rapidly become apparent in the perimeter wells, well before any geochemical influences would be detected."

A spacing and offset of 300 to 500 feet is typical of other ISR facilities in the region. Attachment 1 provides a comparison of the well spacing at 13 facilities (including Ross). All of the ISR facilities in Attachment 1 have a perimeter monitor well spacing and offset ranging from 300 to 500 feet. At most of the facilities, the offset distance between the perimeter monitor wells is similar to the spacing between the perimeter monitor well and the wellfield pattern area. Monitor well spacing and offset of 300 to 500 feet was also considered a typical perimeter monitor well spacing for the analyses conducted in Section 4.3.3 of NUREG/CR-6733 (NRC 2001). Similarly, as suggested in Guideline 4, Section VI, Subsection E this spacing is appropriate based on aquifer characteristics presented in Strata's Mine Unit 1 Wellfield Data Package.

Strata is proposing to offset the monitor wells at approximately the same distance as the wells are spaced from the wellfield. As described in Section 4.3.3.3 of NUREG/CR-6733, by maintaining monitor well offset distances at approximately the same distance as the wells are spaced from the edge of the wellfield, the maximum angle formed by lines drawn from any production or injection well to the nearest two monitor wells is 53 degrees. Analyses included in Section 4.3.3.2 suggests that with such monitor well spacing, the lateral spreading of a horizontal excursion plume would reasonably be expected to be greater than the monitor well spacing. NRC guidance referenced in NUREG/CR-6733 advises that the maximum angle formed by the lines drawn from any production or injection well to the nearest two monitor wells should be less than 75 degrees. In Strata's case, a maximum angle of approximately 53 degrees will be maintained between any production or injection well to the nearest two perimeter monitor wells in most scenarios. This spacing and offset is appropriate and provides a high degree of confidence that any potential excursion would be detected.

The more homogeneous the aquifer, the more likely it is that an excursion plume will act in the way that it was modeled in NUREG/CR-6733. As described in the MU1 Wellfield Data Package, the production zones at Ross demonstrate a high degree of homogeneity within the wellfield

Mr. David Schellinger
December 31, 2015
Page 3 of 5

areas. Therefore, Strata's proposed variable well spacing and offset is appropriate, and offers much needed operational flexibility with the same or perhaps enhanced ability to timely detect lateral solution migration. Clearly, with the requested flexibility in PM well spacing and offset distances, the commitment in Section 4.1.2 of the Mine Plan to confine uranium recovery operations in the exempted aquifer remains unchanged and in full effect. At LQD's request, Attachment 2 provides the buffer analysis for a spacing and offset distance of 500 feet, the maximum that Strata would install PM wells. In this scenario, the buffer distance between the PM wells and aquifer exemption boundary is calculated to be 120 feet. Similarly, the buffer distance at the minimum spacing and offset distance of 300 feet was calculated to be 75 feet.

To support Strata's request, page 4-4 of the Mine Plan Volume (#5) has been revised to remove the 400 feet commitment and replace it with a spacing and offset distance of 300 to 500 feet.

To facilitate the NSR, an Index of Change including the replacement page is included with this request.

Please contact me if you have any questions. You can reach me at (307) 686-4066 or mgriffin@stratawyo.com.

Sincerely,
Strata Energy, Inc.

A handwritten signature in blue ink, appearing to read 'M. Griffin', with a stylized flourish at the end.

Michael Griffin
Vice President of Permitting, Regulatory and Environmental Compliance
Enclosures: As Noted

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

Page 1 of 1
Date December 31, 2015
TFN

MINE COMPANY NAME: Strata Energy, Inc.

MINE NAME: Ross ISR Project
PERMIT NO. 802

Statement: I, Mike Griffin, an authorized representative of Strata Energy declared that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date.

NOTES: 1) Include all revision or change elements and a brief description of, or reason for, each revision element.

VOLUME	PAGE, MAP OR OTHER	PAGE, MAP OR OTHER	DESCRIPTION OF CHANGE
NUMBER	PERMIT ENTRY TO BE REMOVED	PERMIT ENTRY TO BE ADDED	

Volume 5 Mine Plan 4-4

Mine Plan 4-4

Revise text to reflect 300 to 500 feet perimeter monitor well spacing.

provide early detection of the movement of mining lixiviants laterally outside of the target production areas during ISR operations. A typical layout of the proposed perimeter monitor well rings is shown on Figure MP.4-1. Completion of the perimeter monitor wells will likely be fully penetrating across both the lower Lance and upper Fox Hills mineralized sandstones. Aquifer testing detailed in the supplemental report on the pre-license tests (Addendum D6-7 in Appendix D6) utilized a fully penetrating well as a sentry (12-18OZ) while pumping a nearby well (OW1B57-1) with a more discreet, production type completion. Results indicate that the response time in the fully penetrating well, when it was acting as an observation well, was very similar to the response time when the fully penetrating well (12-18OZ) was pumped and the partially penetrating well (OW1B57-1) was monitored. The nearly instantaneous response in the fully penetrating well indicates that even with significant heterogeneity, local wellfield imbalances would be observed by a head change in the perimeter monitor well. Given the data collected during pre-submittal baseline efforts, water level deviations appear to be very useful for detecting stress on the aquifer system. Figure MP.4-2 depicts a typical relationship between a perimeter monitor well and the adjacent wellfield. Like wellfield baseline wells, perimeter monitor wells would be equipped with dedicated submersible pumps and a sounding tube for manual water level measurement. They may also be equipped with data logging pressure transducers.

The regional groundwater model developed for the Ross ISR Project indicates that spacing of 400 to 600 feet between the production wellfields and perimeter monitor well ring is sufficient to detect an excursion. The offset between the perimeter monitor wells and the spacing between the production wellfields and perimeter monitor well ring boundaries will be 300 to 500 feet. Addendum MP-2 details the results of the groundwater model mining and excursion detection/recovery results. To summarize the results, simulations of excursions from a wellfield were modeled and points recording the modeled heads were located at 200 feet, 400 feet, and

ATTACHMENT 1

Ross ISR Project Analogs

Attachment 1 Comparisons Between Ross and Other ISR Properties.

Facility	Licensee	License No.	Uranium Host Formation	Age	Depositional Environment of Host Aquifer(s)	Ore Zone Baseline Well Density (one well per X acres)	Perimeter Monitor Well Ring Max. Distance/Offset (feet)	Source
Ross	Strata Energy	SUA-1601	Lance and Fox Hills	Late Cretaceous	Marine and Marginal Marine Fluvial	2	400/400	(1)(2)
Willow Creek	Uranium One USA	SUA-1341	Wasatch	Eocene	Terrestrial Fluvial	3	300/300 downgradient 500/500 sides & upgradient	(3)(4)
Crow Butte	Crow Butte Resources dba Cameco	SUA-1534	Basal Chadron Sandstone	Eocene	Terrestrial Fluvial	4	300/400	(5)(6)
Smith-Highland	Power Resources dba Cameco	SUA-1548	Fort Union and Wasatch	Eocene	Terrestrial Fluvial	3	300/300 downgradient 500/500 sides & upgradient	(7)(8)
Gas Hills	Power Resources dba Cameco	SUA-1548	Wind River	Eocene	Terrestrial Fluvial	3	300/300 downgradient 500/500 sides & upgradient	(7)(8)
North Butte	Power Resources dba Cameco	SUA-1548	Wasatch	Eocene	Terrestrial Fluvial	3	300/300 downgradient 500/500 sides & upgradient	(7)(8)
Ruth	Power Resources dba Cameco	SUA-1548	Wasatch	Eocene	Terrestrial Fluvial	3	300/300 downgradient 500/500 sides & upgradient	(7)(8)
Moore Ranch	Uranium One Americas	SUA-1596	Wasatch	Eocene	Terrestrial Fluvial	3	500/500	(9)(10)
Nichols Ranch	Uranerz Energy Corp.	SUA-1597	Wasatch	Eocene	Terrestrial Fluvial	4	500/500	(11)(12)
Hank Unit	Uranerz Energy Corp.	SUA-1597	Wasatch	Eocene	Terrestrial Fluvial	4	500/500	(11)(12)
Lost Creek	Lost Creek ISR	SUA-1598	Battle Springs	Eocene	Terrestrial Fluvial	4	500/500	(13)(14)
Dewey-Burdock	Powertech USA	SUA-1600	Lakota and Fall River	Early Cretaceous	Terrestrial Fluvial (Lakota) Marine and Marginal Marine (Fall River)	4	400/400	(15)(16)
Reno Creek	AUC	N/A	Wasatch	Eocene	Terrestrial Fluvial	4	400/400	(17)

Sources:

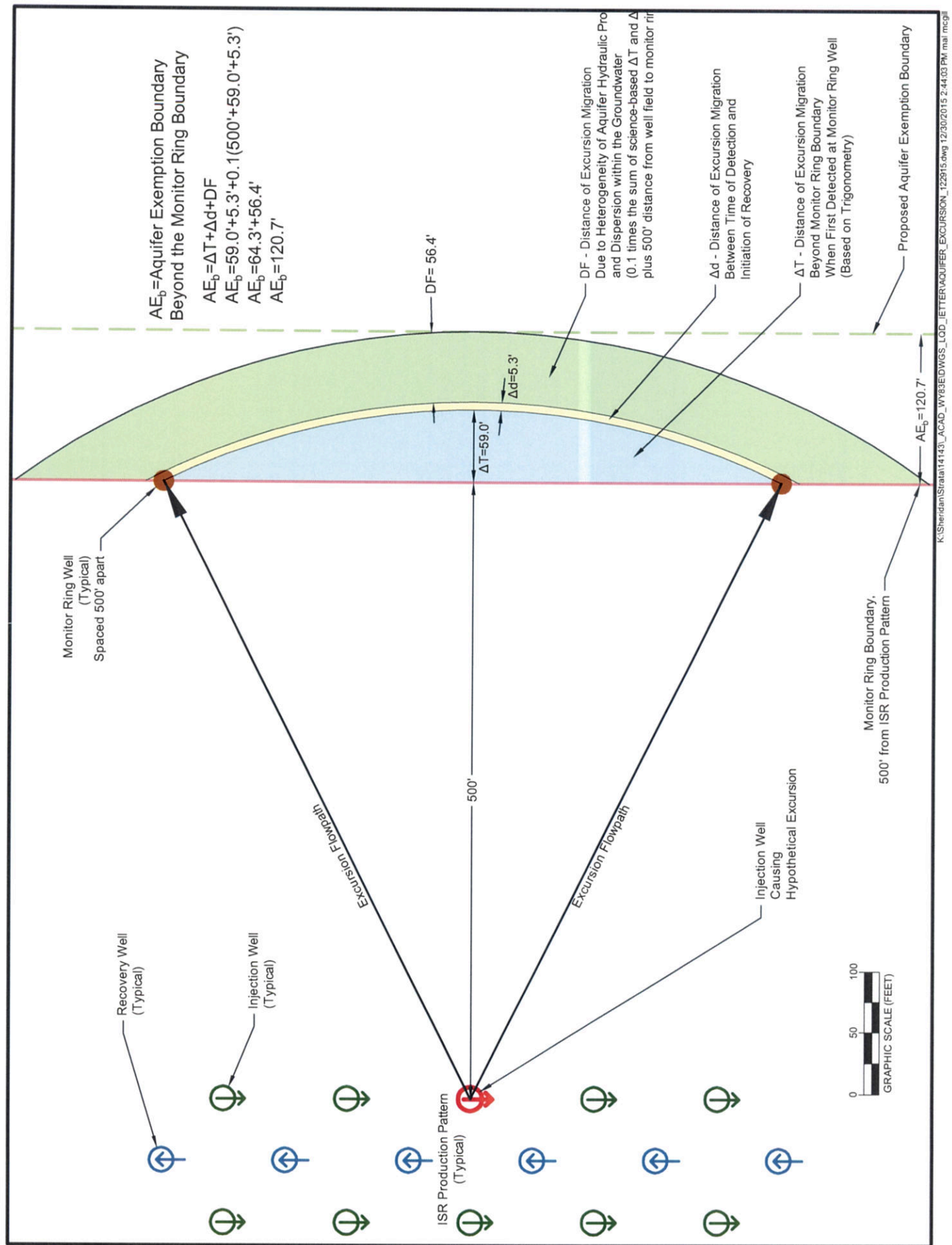
- (1) NRC (U.S. Nuclear Regulatory Commission), Materials License SUA-1601, Amendment 2. Dated July 15, 2015. NRC Adams Accession No. ML15181A273.
- (2) Strata Energy, Ross ISR Project USNRC License Application - Technical Report, December 2010. NRC Adams Accession No. ML110120063.
- (3) NRC, Materials License SUA-1341, Amendment No. 3, Dated October 21, 2014. NRC Adams Accession No. ML14212A173.

Attachment 1 (continued)

- (4) WDEQ-LQD (Wyoming Department of Environmental Quality, Land Quality Division), Uranium One's Willow Creek (Christensen Ranch) Unit 10B Well Field Data Package, Permit No. 478, TFN 5 5/381, March 7, 2013.
- (5) NRC, Materials License SUA-1534, Amendment 26, Dated March 6, 2012. NRC Adams Accession No. ML110320374.
- (6) NRC, Safety Evaluation Report (Revised), License Renewal of the Crow Butte Resources ISR Facility, Materials License SUA-1534, August 2014. NRC Adams Accession No. ML14149A433.
- (7) Cameco Resources, Materials License SUA-1548, License Renewal Application Technical Report, February 2012. NRC Adams Accession No. ML12163A067.
- (8) Cameco Resources, North Butte Mine Unit 2 Wellfield Data Package, February 2014.
- (9) NRC, Materials License SUA-1596, Amendment No. 2, Dated November 23, 2010. NRC Adams Accession No. ML103120221.
- (10) NRC, Safety Evaluation Report for the Moore Ranch ISR Project, Wyoming, Materials License SUA-1596, September 2010. NRC Adams Accession No. ML101310291.
- (11) NRC, Materials License SUA-1597, Amendment No. 3, Dated August 28, 2014. NRC Adams Accession No. ML14212A457.
- (12) NRC, Safety Evaluation Report for the Nichols Ranch ISR Project, Materials License SUA-1597, July 2011. NRC Adams Accession No. ML102240206.
- (13) NRC, Materials License SUA-1598, Amendment No. 3, Dated July 15, 2015. NRC Adams Accession No. ML14162A069.
- (14) NRC, Safety Evaluation Report for the Lost Creek Project, Materials License SUA-1598, August 2011. NRC Adams Accession No. ML112231724.
- (15) NRC, Safety Evaluation Report for the Dewey-Burdock Project (Revised), Materials License SUA-1600, April 2014. NRC Adams Accession No. ML14043A347.
- (16) NRC, Final SEIS for the Dewey-Burdock Project, January 2014. NRC Adams Accession No. ML14024A477.
- (17) NRC, Draft Materials License for the Reno Creek ISR Project, Dated July 8, 2015. NRC Adams Accession No. ML15154B634.

Attachment 2

PM Ring to Aquifer Exemption Buffer Analysis





Department of Environmental Quality



To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

Todd Parfitt, Director

January 4, 2016

received
1-7-16

Mike Griffin
Vice President, Permitting, Regulatory and Environmental Compliance
Strata Energy, Inc.
P.O. Box 2318
1900 W. Warlow Drive, Bldg. A
Gillette, WY 82717

RE: Strata Energy Ross ISR, Permit No. 802, Mine Plan Non-Significant Revision, TFN 6 6/190

Dear Mr. Griffin:

The LQD District 3 Office received the NSR on December 31, 2015 under your cover letter of the same date. A review of the materials has been completed and the LQD staff has discovered deficiencies that must be adequately addressed to complete the review of this permitting action.

Please review the attached Memorandum and provide responses at your earliest convenience. If you have any questions please contact me at (307)675-5611.

Respectfully,

David Schellinger
Soils Specialist
LQD District 3

/ds

Attachment: Memorandum

CC: Cheyenne File w/Attachment



1/5/16

MEMORANDUM

To: File, Strata Energy, Ross ISR, Permit No. 802, TFN 6 6/190

From: ^{DS} David Schellinger, Natural Resources Analyst, LQD District 3

Date: January 4, 2016

Subject: Round 1 Review, Mine Plan NSR

The following comments must be adequately addressed to complete the review process for approval of this NSR.

- 1) During a meeting with Western Water Consultants on December 28, 2015, the LQD staff and the consultants agreed to include an explanation of where in the wellfields the variable spacing would occur in addition to an explanation that as spacing increased, offsets between monitoring wells and production wells would also be adjusted. Strata did not include an explanation of where variable well spacing distances would apply (i.e. 500 ft. upgradient, 300 ft. downgradient and 400 ft. on the sides of wellfields). This information is provided by other operators with permits that allow variable well spacing. Please revise the text to provide an explanation of where variable spacing will occur in the wellfields.

DS/

xc: Cheyenne file

MSK
1/5/16



January 11, 2016

Mr. Dave Schellinger, Soils Specialist
Wyoming Department of Environmental Quality-Land Quality Division
2100 West 5th Street
Sheridan, WY 82801

RE: Strata Energy Ross ISR Project LQD Permit to Mine No. 802, Response to Mine Plan Non-Significant Revision, TFN 6 6/190

Dear Mr. Schellinger,

On January 7, 2016, Strata Energy, Inc. (Strata) received a comment on the Mine Plan non-significant revision (NSR) submitted to WDEQ/LQD on December 31, 2015 requesting flexibility in the spacing and offset distances for the perimeter monitor wells. We appreciate the prompt review of the NSR as well as the follow-up clarification with our consultant, Mr. Ben Schiffer with WWC Engineering. As discussed with Mr. Schiffer, please find herein a response to the comment.

The comment by LQD staff requested that Strata include an explanation of where variable well spacing distances would apply (i.e. 500 ft. upgradient, 300 ft. downgradient and 400 ft. on the sides of wellfields) as this information was provided by other operators with permits that allow variable well spacing. Strata believes that LQD staff were referring to Willow Creek (Permit No. 487), Smith-Highland (Permit No. 633), Gas Hills (Permit No. 687) and North Butte (Permit No. 632) that all have variable spacing of the perimeter monitor wells. It is Strata's understanding that the variable spacing at these mines relates to the natural groundwater flow direction with the spacing and offset distance less in the downgradient direction. The basis for the NSR to Permit No. 802 submitted by Strata requested the variable spacing distance for perimeter wells in order to avoid features on the surface as indicated in the letter supporting the NSR including; 'natural features, historic sites, existing infrastructure and environmentally sensitive areas'. For example, a flexible perimeter well spacing near the Oshoto Reservoir might allow recovery of uranium from areas not previously thought to be accessible. Variable spacing due to the groundwater flow direction was not a consideration for Strata as the Ross site does not have a significant natural gradient that necessitates variable spacing of the perimeter monitor wells. The existing groundwater gradient within the site is largely manmade as a result of adjacent oil recovery activities which will be resolved as the mine progresses south of the Little Missouri River (see Mine Plan page 9-53 and NRC License SUA-1601, Condition 10.19). Therefore, the groundwater flow direction will change locally as both mining progresses and the cone of depression from nearby oil recovery operations are resolved. In summary, the Ross site does not have a significant gradient that necessitates variable spacing of the perimeter monitor wells.



Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matthew H. Mead, Governor

Todd Parfitt, Director

January 21, 2016

received
2-2-16

Mike Griffin
Vice President, Permitting, Regulatory and Environmental Compliance
Strata Energy, Inc.
P.O. Box 2318
1900 W. Warlow Drive, Bldg. A
Gillette, WY 82717

RE: Approval of Non-Significant Revision Application, Strata Energy Ross Project, Permit No. 802, TFN 6 6/190, Change No. 8

Dear Mr. Griffin:

This letter approves the Non-Significant Revision which will allow variable monitoring well spacing to avoid inaccessible locations within the permit.

Receipt of this letter grants the Strata Energy Ross Project permission to change your Mine Plan as described. In the event that revisions other than those listed on the Index of changes inadvertently occurred within this package, those revisions are not automatically considered approved.

The LQD tracks this NSR as Change No. 8.

If you have questions, please contact me in the Sheridan District III Office (307)675-5611.

Sincerely,

David Schellinger
Natural Resources Analyst

Cc: Tammi Pusheck
District III



Mike
Hester