STRATA ENERGY INC
A WHOLLY-OWNED SUBSIDIARY OF PENINSULA ENERGY LIMITED

April 5, 2017

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

RE: Strata Energy, Inc., Ross In-Situ Recovery Project
Source Materials License SUA-1601, Docket No. 040-09091
Request to Amend License Condition 11.3 C)

To Whom It May Concern:

Please find herein a request from Strata Energy, Inc. (Strata) to amend License Condition (LC) 11.3 C) of SUA-1601. As background, on July 15, 2015 Strata submitted a similar request to NRC staff to amend SUA-1601 (ADAMS Accession #ML15205A337). In March 2017, the amendment request was withdrawn in order to address technical issues identified by NRC staff during the ensuing period. The following addresses NRC staff concerns and Strata would request that the amendment review proceed.

Strata recently completed activities associated with the preparation of the Mine Unit 1 (MU1) and Mine Unit 2 (MU2) Wellfield Data Packages required by LC 10.13. As part of this effort, and the previous regional characterization conducted throughout the license area, Strata characterized the BFS 2 Sand underlying the ore zone. The BFS 2 Sand represents the first underlying sand beneath the ore zone (OZ) and is the deep monitor (DM) interval for downward vertical excursion monitoring. Based on the guidance in NUREG-1569, *Standard Review Plan for In Situ Leach Uranium Extraction License Applications (SRP)*, exclusion of the requirement to monitor water quality in the underlying aquifer maybe appropriate 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. The following analysis evaluates the DM interval using these criteria as well as a risk analysis should mining solutions migrate downward and concludes that the DM interval should be excluded from the excursion monitoring program for these mine units. Additionally, Strata requests that LC 11.3 C) be amended to provide flexibility in monitoring the DM interval in future mine units using these criteria.

Geologic Background

In general, six intervals of interest are discussed in this analysis. From stratigraphic top to bottom, these include the FH or OZ, BFH 2 Shale lower confining interval, the BFS 2 Sand or DM interval, the BFH 1 Shale, the BFS 1 Sand and finally the Cretaceous Pierre Shale (Kp). The FH or lower Fox Hills is the basal portion of the production zone. The Fox Hills formation is considered a regional aquifer system. The BFH 2 Shale is

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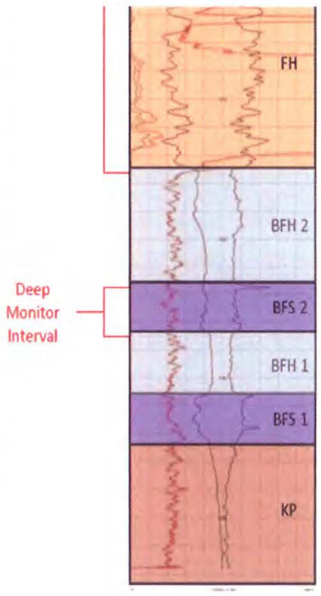
comprised of black to dark gray shales, siltstones and claystones with an average thickness of 32 feet. The BFS 2 Sand consists of thin bedded sandstones and interbeds of shales, siltstones and calcareous cemented sands with a general fining upward sequence. The BFS 2 interval averages 19 feet thick within the license area. Underlying the BFS 2 is the BFH 1 Shale which is described as a dark gray to black shale with zones of claystone and mudstone. Based on a review of 122 logs that intercept the BFH 1 Shale within the license area, the thickness averages 27 feet. The BFS 1 Sand forms the base of the Fox Hills and directly overlies the Pierre Shale. The bottom of the BFS 1 Sand is gradational with the underlying Pierre Shale and typically exhibits a coarsening upward sequence with a sharp upper contact. Based on a review of 44 logs that intercept the BFS 1 Sand, the average thickness is 23 feet. Underlying the lower Fox Hills intervals described above is the regionally pervasive Pierre Shale comprised of several thousand feet of marine clay.



The DM or BFS 2 Sand Interval is a Poor Producer of Water

All of the DM wells constructed to date within the Ross license area (including 14 in MU1, 22 in MU2 and 6 regional baseline monitor wells spaced throughout the license area) have produced very limited amounts of water. The regional baseline wells constructed in the DM interval pumped dry during the sampling events and Strata was not able to conduct any constant rate aquifer tests at the wells. Likewise, due to the depth of the DM interval (which requires a high head pump) and low flows produced by the DM wells, Strata had difficulties matching a pump to the DM interval in order to conduct a pumping test in the DM interval for MU1 and MU2. Rather than conducting a traditional pumping test on the DM wells in MU1 and MU2, Strata conducted a slug out test to characterize the MU1 and MU2 DM wells. Using empirical equations developed by Horslev 1951, to evaluate slug out tests, Strata estimated the hydraulic conductivity in the DM interval near many of the DM wells. The slug out test results and analyses are summarized in detail within Appendix 5 of the respective wellfield data packages for MU1 and MU2 (Strata 2015 and 2016). Table 1 summarizes the estimated hydraulic parameters at the DM wells in MU1 and MU2. While Strata was not able to develop hydraulic parameters from the regional baseline DM monitor wells, the wells responded very similar to the wells in MU1 and MU2. Therefore, the hydraulic parameters of the DM interval are likely similar throughout the Ross license area.

One metric by which aquifers are evaluated is the yield. WDEQ/LQD's Guideline No. 4 In Situ Mining Noncoal provides guidance on yield and states, "[s]ufficient quantities generally, means ½ gallon per minute (gpm) sustained for 24 hours." The Theis drawdown method (Theis 1935) was used to predict yields at each DM well based on hydraulic parameters included in Table 1 and an assumed steady-state was reached at 24 hours. The maximum available drawdown for the purposes of the yield was calculated based on the assumption that the water level could be drawn down to a level 20 feet above the pump depth should a pump be installed in the well. As demonstrated in Table 1, average yields calculated for the DM interval in both mine units are lower (0.07 gpm for MU1 and 0.45 gpm for MU2) than the guidance threshold for aquifer classification as identified by WDEQ/LQD.

Table 1. Estimated Hydraulic Parameters of Underlying Wells

Well I.D.	K (ft/day) (Hvorslev 1951)	Aquifer Thickness (ft)	T (ft2/day)	Top Completion Interval (ft)	Static (ft BMP)	Available Head (ft)	24 Hr Yield (gpm)
MU1-DM1	0.0020	23	0.05	519	107.1	371.9	0.13
MU1-DM2	0.0007	20	0.01	511	102.1	368.9	0.03
MU1-DM3A	0.0010	20	0.02	514	108.1	365.9	0.06
MU1-DM4	0.0018	25	0.05	483	110.7	332.3	0.12
MU1-DM5	0.0007	23	0.02	513	120.3	352.7	0.05
MU1-DM6	0.0023	15	0.03	535	134.8	360.2	0.08
MU1-DM7	0.0009	20	0.02	509	135.9	333.1	0.05
MU1-DM8	0.0022	22	0.05	470	96.0	334.0	0.12
MU1-DM9	0.0005	16	0.01	510	265.9	204.1	0.02
MU1-DM10	0.0028	21	0.06	501	107.7	353.3	0.15
MU1-DM11	0.0016	21	0.03	520	125.4	354.6	0.1
MU1-DM12	0.0005	21	0.01	480	170.0	270.0	0.02
MU1-DM13	0.0007	25	0.02	489	125.1	323.9	0.05
MU1-DM14	0.0005	23	0.01	533	195.6	297.4	0.03
Average 24 Hour Yield of DM Wells in MU1							**0.07**
MU2-DM01	0.022	20	0.43	590	141.7	398.3	0.97
MU2-DM02	0.013	20	0.25	580	131.6	398.4	0.59
MU2-M04A	0.005	20	0.1	590	149.5	390.5	0.25
MU2-DM05	0.012	17	0.2	600	152.8	397.2	0.48
MU2-DM06	0.018	18	0.32	600	145.6	404.4	0.75
MU2-DM08	0.023	12	0.28	620	169.0	401.0	0.66
MU2-DM09	0.016	18	0.29	630	177.5	402.5	0.68
MU2-M10A	0.005	17	0.09	651	202.9	398.1	0.24
MU2-DM11	0.003	21	0.07	700	156.1	493.9	0.23
MU2-M12A	0.006	20	0.12	671	225.7	395.3	0.3
MU2-DM14	0.007	18	0.12	650	190.2	409.8	0.31
MU2-DM15	0.008	20	0.16	720	239.2	430.8	0.43
MU2-DM16	0.009	15	0.13	710	223.6	436.4	0.36
MU2-DM17	0.006	16	0.1	720	224.3	445.7	0.29
MU2-DM18	0.005	22	0.1	640	160.5	429.5	0.28
MU2-DM19	0.004	19	0.08	640	161.0	429.0	0.23
MU2-DM20	0.008	20	0.16	640	162.0	428.0	0.43
MU2-DM21	0.011	13	0.14	670	178.7	441.3	0.39
MU2-DM22	0.011	19	0.2	700	235.4	414.6	0.5
MU2-DM23	0.013	20	0.26	580	125.4	404.6	0.62
Average 24 Hour Yield of DM wells in MU2							**0.45**

*MU2-DM07 and MU2-DM13 were omitted due to insufficient data

Furthermore, WDEQ/LQD's guidance is very conservative. 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, a well that yields less than this will not normally provide a viable source of stock water. Furthermore, WDEQ/LQD's guidance specifies yield over a 24-hour period. True steady state yields in the DM wells summarized in Table 1 would be less because longer pumping periods will result in decreased yields. For example, if the Theis analysis were conducted over a longer period (20 years), yields at virtually all of the DM wells are expected to decline by more than 50 percent.

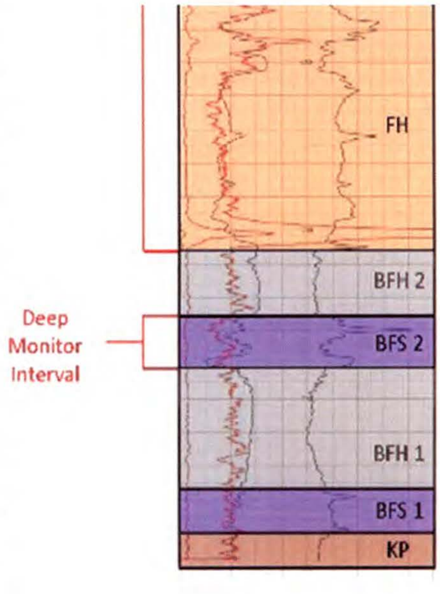
In addition, within the Ross License area there are shallow aquifers above both the DM and OZ intervals that have much higher well yields than the DM. Given the presence of a series of overlying aquifers that provide higher well yields and better water quality, it would not be economically viable to utilize the DM interval as a primary water supply for any future stock watering systems.

The DM Interval Yields Poor Water Quality

The water quality of the BFS 2/DM interval is distinct from other zones due to the relatively high concentrations of chloride. Chloride concentrations measured from regional baseline wells and MU1 and MU2 monitor wells were all distinctively higher (concentrations ranging from 182 to 818 mg/L) than overlying aquifers (concentrations ranging from 2 to 17 mg/L). The results from the three DM interval sampling programs averaged 475 mg/L chloride. Based on the elevated concentrations of chloride along with TDS, sulfate and iron (to name a few) the water would be suitable for livestock use only and not a source for drinking or irrigation water based on WDEQ/WQD Chapter 8 standards. Additionally, within the DM interval exceedances of EPA primary MCLs were not uncommon for gross alpha and arsenic, while secondary standards for pH, TDS, chloride and aluminum were frequently exceeded in the various monitoring programs. In summary, water quality in the DM interval is poor in comparison to water available in the overlying aquifers.

The Underlying Aquitard(s) are Thick with Few Drillhole Penetrations

In addition to the BFS 2 interval yielding low quantities and poor water quality, an analysis of the underlying aquitards demonstrates substantial thickness. Underlying the production zone within the license area are two marine shale intervals, the BFH 1 and BFH 2. The aggregate thickness of the two shales averages 59 feet within the license area, with a maximum of 76 feet and a minimum of 42 feet as measured from 122 electrical logs. Only six logs had a cumulative thickness of less than 50 feet and all of these were over 40 feet. The 50-foot threshold is significant, as standard practices at other licensed facilities including Crow Butte (SUA-1543), North Butte (SUA-1548) and Willow Creek (SUA-1341) were not required to monitor the underlying interval when the aquitard thickness exceeded 50 feet. All of this assumes that the BFS 1 Sand is an aquifer; due to the depth, lack of



penetrations (44) and other factors, no hydrogeologic information is available for the interval. However, based solely on the resistivity signature of the interval, it appears very fine grained and likely to be a poor producer of water. In summary, the cumulative thickness of the underlying aquitard(s) generally exceeds 50 feet and averages 59 feet which in standard industry practice corresponds to a large aquitard as prescribed in the SRP.

Exploration and delineation drillhole penetrations below the mineralized sections of the Lance and Fox Hills Formations are relatively few. A total of 122 drillhole penetrations to the BFS 1 Sand are known within the license area. Of these, only 44 penetrate through the BFS 1 to Pierre Shale. Table 1 in TR Addendum 2.6-E indicates a total of 1,952 exploration and delineation drillholes within the license area. Therefore, 122 drillholes or 6.3% penetrated through the BFS 2 Sand while 44 holes or 2.3% penetrated through the BFS 1 Sand. For comparison, the number of monitor wells targeting the underlying water bearing interval totals 42 which nearly equals the number of drillholes penetrating to the Pierre Shale. Considering these values, it is reasonable to suggest that few boreholes penetrate the aquitard as suggested by the SRP.

Deep Monitor Wells Would Significantly Increase the Risk of a Vertical Excursion

Within current operational areas, few un-reabandoned drillholes remain that could transmit mining solutions downward. There are zero (0) drillholes that penetrate the DM interval within MU1 that have not been re-abandoned. There is one (1) drillhole within the MU2 pattern area that both penetrated the DM interval and was not locatable for re-abandonment. This drillhole's location is approximately 32 feet from the nearest operational well. There are five (5) additional boreholes within the MU2 perimeter monitor well ring, but outside of the wellfield pattern area, that both penetrated the DM interval and were unable to be located for re-abandonment. The closest of these drillholes is approximately 79 feet from the nearest mining well. Given the low number of potential communication pathways and their distance from operational wells, the risk of downward vertical fluid movement is expected to be low.

With so few penetrations to the DM interval, DM monitor wells constitute the highest number of penetrations below the production zone. The risk of a bad well completion is minimized by the mechanical integrity testing program and the extensive aquifer testing completed prior to operations. However, if the DM wells were not installed, the risk of a vertical excursion would be lower. Frequent sampling of the DM interval also has the potential to increase the likelihood that fluids may flow from the OZ to the DM interval by increasing the pressure differential between the zones. Because the DM interval is such a poor water producing interval, sampling events often draw water levels in the wells down 300 to 400 feet. As discussed in the following section, the natural vertical gradient to the OZ aquifer from the DM interval is approximately 20 feet. As such, the sampling events induce gradients that are orders of magnitude greater than the natural gradient. Due to the significant vertical gradients induced by monitoring of the DM interval, the risk that water would enter the DM if a leaky drillhole were present increases dramatically. The following section describes the potential environmental impacts if water were to enter the DM interval through a leaky drillhole.

Potential Environmental Impacts of Downward Migration of Mining Solutions

In the event that mining solutions from the OZ aquifer were transmitted to the DM interval, the low hydraulic conductivity in the DM impedes water flowing into and through the DM interval. The rate of water movement into and through the DM interval will largely depend on the pressure differential between the OZ aquifer and DM interval as a potential communication pathway, which would depend on location and the phase of ISR production. Based on water levels measured in support of the MU1 wellfield data package, prior to ISR operations the water level in the OZ aquifer was approximately 19 feet higher than the water level in the DM interval. Similarly, in the MU2 wellfield data package, water levels in the DM aquifer were typically between 7 and 16 feet lower than the water levels in the OZ aquifer. During ISR operations an operational bleed is induced in the OZ aquifer. Therefore, the water level in the OZ aquifer will decrease during operations. For example, as compared to the OZ water levels presented in the MU1 wellfield data package, the 2015-2016 WDEQ-LQD Annual Report shows that the water levels in the perimeter monitor wells on the west side of MU1 have dropped between 5 and 11 feet. As such, the average gradient between the OZ aquifer and DM interval will decrease during operations due to the drawdown of the water levels in the OZ aquifer induced by the bleed.

A Theis analysis was conducted to determine the magnitude of expected drawdown or mounding that would occur due to each well in a simulated wellfield. As shown on Figure 1, the analysis was conducted for three adjacent 7-spot patterns containing thirteen injection wells and 3 three production wells. Using the principle of superposition, the effects of each individual well were combined to determine the net response due to all the wells at defined points in the wellfield. Following are the assumptions used in the analysis:

- 7-spot patterns each have one production well with six injection wells placed 75 feet away in an octagon pattern.
- Each production well withdraws 20 gpm from the OZ aquifer.
- For each pattern, 3.3 gpm is injected into each injection well. Where an injection well is shared by 2 patterns the injection rate is 6.6 gpm and where an injection well is shared by 3 patterns the injection rate is 9.9 gpm.
- A 1% bleed.
- The Theis time period was 2 years.
- Transmissivities (T) of 25 ft^2/day and 65 ft^2/day.
- Storage Coefficient (S) of 0.0001 and 0.00016.
- The potential conduit fully penetrated the DM interval.
- The potential conduit was located between a production well and an injection well operating at the highest rate of 9.9 gpm.

Two separate analyses were performed with different hydraulic parameters to evaluate how differing OZ aquifer hydraulic conditions will affect the water levels in the aquifer during operations. A T of 25 ft^2/day and S of 0.0001 represents the lower range of hydraulic values measured in a small portion of the MU1 wellfield. A T of 65 ft^2/day

and S of 0.00016 represents typical aquifer parameters measured throughout most of MU1. Transmissivities in MU2 were typically similar to or higher than those in MU1.

Table 2 summarizes the results of the analysis. As shown on Table 2 the lower transmissivity resulted in the highest head changes. At a transmissivity of 25 ft^2/day, the maximum estimated water level rise near the injection well is 26.4 feet above pre-mine water levels. Five feet from the injection well the maximum estimated water level rise is 7.3 feet and at 10 feet the water level is drawn down below the pre-mine level. Within 35 feet of the production well the drawdown in the OZ aquifer is greater than 20 feet which is significant because generally the natural head gradient between the OZ aquifer and the DM interval is 20 feet or less. With a higher transmissivity (T=65 ft^2/day), which is more typical of most of the MU1 wellfield and slightly lower than most of the MU2 wellfield, the water level changes near the injection and production wells are much smaller. In both cases, near the production wells, the water level is drawn down more than the natural head gradient between the OZ aquifer and the DM aquifer.

Table 2 Summary of Water Level Changes from 3 Adjacent Patterns After 2 Years of Operation

Distance from Production Well (ft)	**Distance from Injection Well (ft)**	**OZ Water Level Change (ft) at T=25ft²/day, S=0.0001**	**OZ Water Level Change (ft) at T=65ft²/day, S=0.00016**
1	74	-109.5	-42.5
5	70	-70.3	-27.3
15	60	-42.1	-16.4
25	50	-29.0	-11.3
35	40	-20.9	-8.2
45	30	-13.9	-5.5
55	20	-7.1	-2.8
65	10	-1.4	-0.6
70	5	7.3	2.8
74	1	26.4	10.2

As shown in Table 2, the greatest risk for mining solutions entering the DM interval would occur immediately adjacent to the injection wells. Near the production wells the gradients would be reversed and fluids would actually flow from the DM interval to the OZ aquifer if an open drillhole were present. As noted above, very few drillholes penetrate to the DM interval. With the exception of 1 drillhole identified in MU2, all of the exploration drillholes within current wellfields that penetrate to the DM interval have been re-abandoned. Therefore, the risk of an open drillhole causing a direct path for mining fluids to travel from the OZ aquifer to the DM interval is low due to the fact that there are very few potential pathways for communication. Furthermore, the low hydraulic conductivity of the DM interval results in lower velocities and therefore distances traveled by the solutions. Simply stated, if mining solutions were to enter into the DM interval they will travel so slowly that a significant amount of time would be required for the solutions to reach a DM monitor well. Based on the transmissivity and hydraulic conductivity values measured in MU2, the time required for solutions to flow a specific distance under an induced gradient were calculated for two scenarios:

1) A worst case scenario: an unplugged drillhole was located within 5 feet of an injection well within the portion of the DM interval with the highest measured

hydraulic conductivity. For this scenario the head between the OZ aquifer and DM interval was estimated at 40 feet and the DM hydraulic conductivity estimated at 0.022 ft/day (T=0.43).

2) Typical scenario: where an unplugged borehole was located more than 10 feet from an injection well in a portion of the DM interval with an average hydraulic conductivity. For this scenario the head between the OZ aquifer and DM interval was estimated at 20 feet and the DM hydraulic conductivity estimated at 0.01 ft/day (T=0.18)

The Theis equation was used to calculate the flowrate from the OZ aquifer into the DM interval as well as the decrease in head within the DM interval away from the leaky drillhole. The travel time was calculated using Darcy's law and an average head for each incremental distance from the simulated leaky drillhole. Table 3 summarizes the results of the analysis. As shown on Table 1, the hydraulic conductivities measured at the DM wells in MU1 were much lower than the hydraulic conductivities in MU2. Therefore, the results presented in Table 3 generally underestimate travel times in the DM near MU1. This analysis also assumes a fully penetrating open hole in the DM interval. Therefore, if the leaky drillhole is partially plugged, flow rates into the DM interval will be even lower than predicted in Table 3.

The travel times in Table 3 demonstrate that if a leaky drillhole were present it would take a significant amount of time for fluids to migrate in the DM interval. For example, many of the injection wells are located 200 or more feet from the nearest DM well. Under a typical operating scenario, it would require approximately 4,329 days (11.9 years) for fluids to migrate the 200 feet distance. The injection wells will likely be operated for much shorter periods of time. Therefore, unless a monitor well were located very near the leak it would be unlikely that fluid would even reach a monitor well during operations. Furthermore, fluids in the DM interval would dilute any mining fluids that might enter into it, further reducing the possibility that a leak would be detected in the unlikely event that it was to occur.

The analysis above assumes that water levels within the DM interval remain stable and that only the OZ aquifer water levels vary. However, because the DM interval is such a poor water producer, Strata's excursion monitoring significantly affects the water levels in the DM interval. Because the DM wells have such low production rates, it is not feasible to use pumps to remove three casing volumes prior to sampling. As a result, Strata uses their swabbing tool to evacuate the well to ensure fresh formation water is present in the well prior to sample collection. As with the swabbing that was performed to develop aquifer parameters in the MU1 and MU2 wellfield data packages, water levels in the wells are drawn down on the order of 300 to 400 feet during each sampling event. The drawdown induced by sampling the DM wells is an order of magnitude larger than the head difference between the OZ and DM intervals that would occur during operations. If a leaky drillhole were located near a DM monitor well, the sampling events could cause water from the OZ aquifer to enter the DM interval. For example, the typical scenario in Table 3 is expected to result in approximately 0.013 gpm flowing from the OZ to DM interval. Using the same analysis and assuming a 400-foot drawdown in the DM interval the expected flowrate between the OZ aquifer and DM interval is 0.4 gpm for the first few hours following swabbing. By ceasing sampling of the DM wells, the greatest risk for a vertical excursion from the OZ to DM intervals can be eliminated.

Table 3 Estimated Travel Time in the DM Interval at Various Distances from a Leaky Drillhole

<table>
<tr><td colspan="4">Scenario 1) Worst case scenario: head between OZ and DM =40 feet at leaky drillhole
T=0.43 ft^2/day, S=0.00001, estimated flowrate from OZ aquifer to DM interval = 0.058 gpm</td></tr>
<tr><th>K (ft/day)</th><th>Distance from Leaky Drillhole (ft)</th><th>*Head Induced by Leak (ft)</th><th>Travel Time (days)</th></tr>
<tr><td>0.022</td><td>0.5</td><td>40.0</td><td>0.6</td></tr>
<tr><td>0.022</td><td>5</td><td>30.5</td><td>7.0</td></tr>
<tr><td>0.022</td><td>10</td><td>27.7</td><td>22.6</td></tr>
<tr><td>0.022</td><td>20</td><td>24.8</td><td>57.3</td></tr>
<tr><td>0.022</td><td>50</td><td>21.1</td><td>156.4</td></tr>
<tr><td>0.022</td><td>100</td><td>18.2</td><td>387.9</td></tr>
<tr><td>0.022</td><td>200</td><td>15.4</td><td>929.8</td></tr>
<tr><td>0.022</td><td>300</td><td>13.7</td><td>1,869.0</td></tr>
<tr><td>0.022</td><td>500</td><td>11.6</td><td>3,667.0</td></tr>
<tr><td colspan="4">Scenario 2) Typical scenario: head between OZ and DM =20 feet at leaky drillhole
T=0.18 ft^2/day, S=0.00001 estimated flowrate from OZ aquifer to DM interval = 0.013 gpm</td></tr>
<tr><th>K (ft/day)</th><th>Distance from leaky borehole (ft)</th><th>*Head induced by leak (ft)</th><th>Time to travel (days)</th></tr>
<tr><td>0.01</td><td>0.5</td><td>20.0</td><td>2.5</td></tr>
<tr><td>0.01</td><td>5</td><td>15.0</td><td>31.0</td></tr>
<tr><td>0.01</td><td>10</td><td>13.5</td><td>101.0</td></tr>
<tr><td>0.01</td><td>20</td><td>12.1</td><td>257.2</td></tr>
<tr><td>0.01</td><td>50</td><td>10.1</td><td>709.0</td></tr>
<tr><td>0.01</td><td>100</td><td>8.6</td><td>1,780.0</td></tr>
<tr><td>0.01</td><td>200</td><td>7.1</td><td>4,329.3</td></tr>
<tr><td>0.01</td><td>300</td><td>6.2</td><td>8,830.4</td></tr>
<tr><td>0.01</td><td>500</td><td>5.1</td><td>17,627.8</td></tr>
</table>

* Head induced by the leak was calculated using the Theis equation assuming a 2-year period.

Conclusions

This analysis demonstrates that it would be appropriate to exclude the DM interval (BFS 1 and BFS 2) from the excursion monitoring program in MU1 and MU2 for multiple reasons including:

- The DM interval is a very low yielding interval and most wells do not meet WDEQ/LQD's conservative definition of an aquifer. Strata's analysis further indicates that it does not provide suitable quantities of water to be a usable aquifer for agricultural purposes.
- The underlying aquifer is of poor water quality dominated by chloride.
- A thick aquitard is present below the production zone comprised of up to 76 feet of marine clay.
    - Only 2.3% of the 1,952 exploration and delineation drillholes penetrated through the four key intervals underlying the production zone and through numerous hole plugging efforts, Strata can confirm that a drilling rig is required to drill-out and circulate water in order to re-abandon the

majority of exploration/delineation drillholes particularly in high clay intervals.

- Deep monitor wells would increase the risk of a vertical excursion into the underlying aquifer.
    - Frequent sampling of the DM interval will draw down the water levels in the DM interval. Therefore, the environmental monitoring itself increases the risk that fluids may enter into the DM interval in the presence of an unplugged drillhole.
    - Plugging and abandoning the DM monitor wells reduces the risk of the wells acting as conduits for vertical movement of mining solutions.
- The potential environmental impacts to the DM interval in the event a leaky drillhole exists are small.
    - The hydraulic conductivity of the DM interval is very low. As a result, if a leaky drillhole were located in a wellfield, the properties of the DM interval will limit the amount of water that would enter into the DM interval and the distance that the water would travel.
    - The natural gradient between the OZ aquifer and the DM interval is typically around 20 feet or less. During operations, bleed induced in the OZ aquifer will further reduce the gradient. This relatively low naturally occurring gradient will limit how much water would flow from the OZ aquifer to the DM interval in the presence of a communication pathway.
    - Only an unabandoned drillhole immediately adjacent to an injection well creates a significant risk of solution migration. The poor hydraulic characteristics of the DM interval suggest solutions would travel a very limited distance over generally long durations.

Based on the performance of the regional baseline DM monitor wells, which were installed throughout the Ross license area, Strata anticipates that the properties of the DM interval measured within MU1 and MU2 are typical of what will be encountered in future mine units. All 6 of the baseline regional DM monitor wells were poor water producers and pumped dry during multiple sampling events. Furthermore, the water quality in the regional baseline DM monitor wells was similar to the water quality measured in the MU1 and MU2 wells with anomalously high concentrations of chloride. Therefore, flexibility in monitoring the DM interval in future mine units using the criteria used to evaluate the DM in MU1 and MU2 is appropriate.

Strata requests that NRC amend LC 11.3(C) of SUA-1601 as follows:

Current License Condition 11.3(C) Amendment 1:

C) Overlying and Underlying Aquifers. Samples shall be collected from all monitoring wells in the first overlying and first underlying aquifer at a minimum density of one well per 4 acres of wellfield.

Proposed License Condition 11.3(C):

C) Overlying and Underlying Aquifers. Samples shall be collected from all monitoring wells in the first overlying and first underlying aquifer at a minimum density of one well per 4 acres of wellfield unless wellfield-specific conditions as described in the individual wellfield package demonstrates a lower density is justified. In the event that no viable underlying aquifer exists or there is more than 50 feet of shale between the OZ and next continuous sandstone interval no monitoring of the underlying aquifer will be required.

Please contact me if you have any questions regarding the attached report. You can reach me at (307) 467-5995 or mgriffin@stratawyo.com.

Sincerely,
Strata Energy, Inc.

Michael Griffin
Vice President of Permitting, Regulatory and Environmental Compliance

cc: Mr. John Saxton, USNRC (via email)

References

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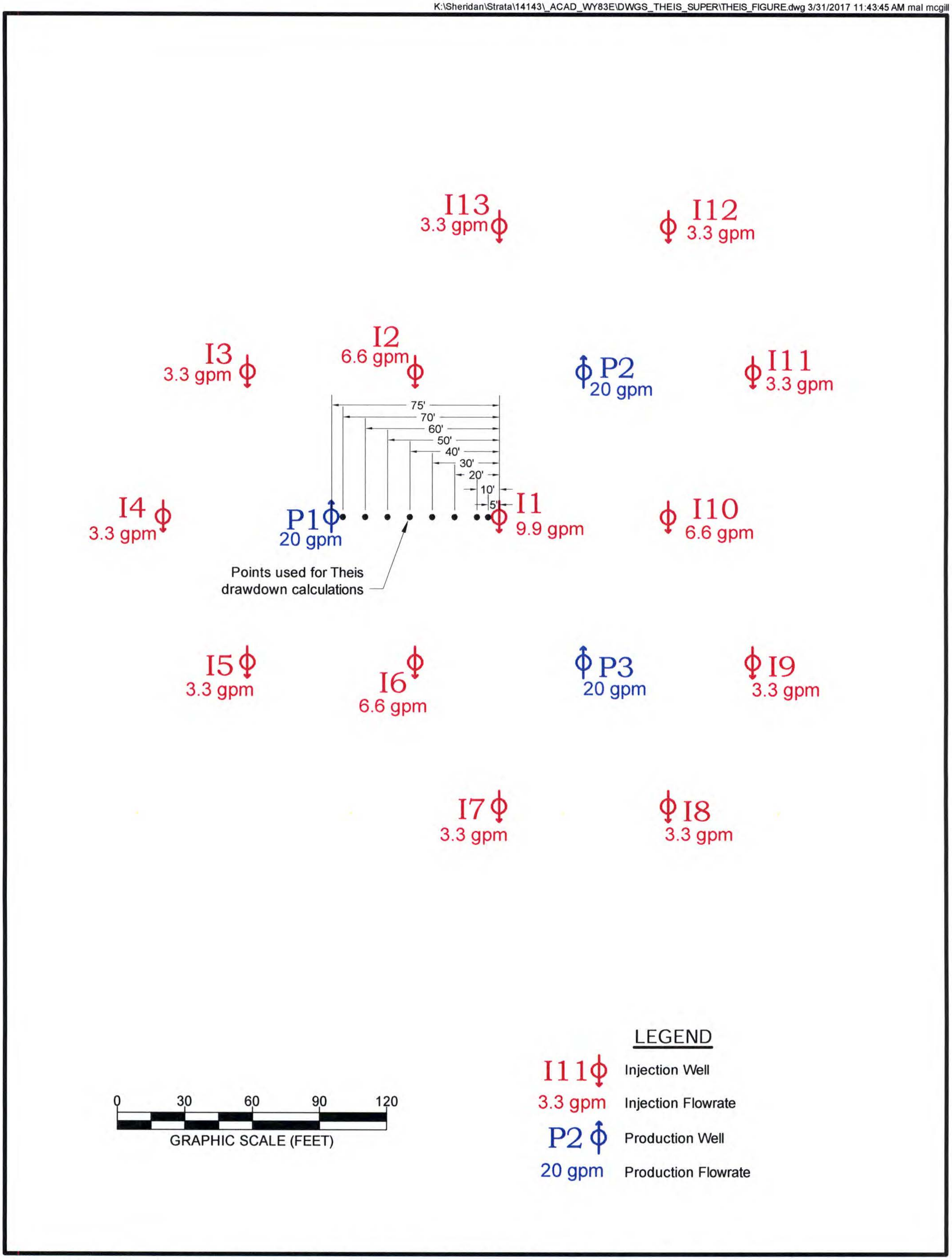

Figure 1. Typical 7-spot Wellfield Geometry Used to Estimate Theis Drawdowns