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LOST CREEK ISR, LLC

April 14, 2014

Mr. John Saxton
U.S. Nuclear Regulatory Commission
Mail Stop T-8F5
11545 Rockville Pike,
Rockville, MD 20852

**Re: Report on Pond Freeboard Exceedance
License SUA-1598**

Dear Mr. Saxton:

Per your April 9, 2014 request, please find below the conclusions of the investigation of the pond freeboard exceedance as well as the corrective actions.

Background

The Lost Creek Technical Report (Section 5.7.8.3) as well as NRC license condition 10.8A require that a minimum of three feet of freeboard be maintained in each of the two holding ponds at the Lost Creek Mine. On March 26, 2014, during a Wyoming Department of Environmental Quality – Land Quality Division Inspection, the inspector and the Lost Creek Manager of EHS recognized that the water levels in both ponds exceeded freeboard limits. A subsequent review of the daily pond inspection reports showed that the water level exceeded freeboard beginning on February 9, 2014. Copies of the Daily Inspection Reports were forwarded to the NRC on April 11, 2014.

Root Cause Analysis

An investigation into the root causes of the non-compliance was performed by the company President, Vice President of Regulatory Affairs and the Director of Human Resources. The objectives of the investigation were to gain a full understanding of the currently instituted standard procedures and the specific conditions which led to a persistent non-compliant condition for one of the facilities operational requirements. The following individuals were interviewed:

Mine Manager
Radiation Safety Officer
Plant Foreman
Manager of EHS
Plant Operators

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Findings

Contributing factors were determined to include:

- Combined wellfield and plant operations were periodically producing more waste water than could be handled by the waste water disposal system. The excess water was sent to the ponds instead of adjusting the generation of waste water to match disposal capacity. Water was being drawn from the ponds and sent to the disposal wells when the capacity was available. Please see the attached water balance information as per the NRC request.
- A failure of site personnel to clearly communicate compliance concerns occurred. Operators followed their responsibilities by observing and recording the pond levels on a daily basis. The inspection reports were posted in the control room and available for site management review. While the daily inspection form clearly states the freeboard requirement immediately below the blank space where operators entered the freeboard level, it is unclear that the issue was verbally communicated to the level of Mine Manager at the point in time that it became evident. Eventually, the requirement was ignored by operations personnel under the assumption that senior site management was aware and was continuing to instruct them to place water in the pond.
- The former Plant Foreman resigned his position on March 14. The vacant position was filled on March 27. The loss of the former Plant Foreman and the transition to a new Plant Foreman may have been a factor in the communication failure.
- During the winter, accurate water levels can be difficult to read due to ice and snow. Some individuals assumed the water level was well below the top of the ice. However, the investigation did not find that anyone attempted to determine what the actual water level below the ice was.
- A spring thaw occurred during the week of March 24. Prior to then, ice and snow cover affected the ability to confidently measure the water level. The issue was identified on March 26. The ice cleared completely from the ponds on March 29.
- There was some confusion on how to read the water level gauge. The Manager of EHS had reviewed the procedure with the Plant Foreman but there was a failure to communicate this matter to all the Plant Operators.
- The Manager of EHS is required by procedure to periodically review the Daily Pond Inspection Forms. The Manager of EHS had inspected the forms on February 19th but thought the numbers on the report were incorrect due to failure to read the water level correctly. Ice and snow cover made field verification of the numbers difficult at the time. The records were not reviewed again until March 26.

Corrective Action

A number of corrective actions have been taken to bring the water level below the freeboard limit and prevent similar occurrences in the future.

- On March 27 the Manager of EHS informed the Vice President of Regulatory Affairs that the water level in both ponds exceeded freeboard. The Vice President of Regulatory Affairs instructed the Mine Manager via telephone that the water level had to be dropped as quickly as possible to below the minimum freeboard.
- On March 28 the President and the Vice President of Regulatory Affairs went to the mine site to inspect the ponds, begin an investigation into the cause of the exceedance and determine a course of action.

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- On March 28 plant and wellfield operations were reduced to generate minimal levels of waste water in a coordinated effort to accelerate the rate of pond level reduction. A SERP was convened to review wellfield bleed requirements and the Panel recommended maintaining a minimum hydrologic bleed of approximately two to three gallons per minute and a corresponding production flow rate of approximately 400 gallons per minute. This equates to a bleed rate of 0.5 to 0.75% as required. The Mine Manager was also instructed to systematically suspend non-essential plant operations including resin elutions, yellowcake precipitation and filtration, and product drying in order to minimize the generation of waste water while the pond level remediation was occurring.
- On March 28 a program of pumping waste water from the ponds to the disposal systems was initiated. All available disposal capacity was dedicated to remediating the pond levels.
- On March 28 instructions were issued that no water would be routed to the ponds without review and approval by senior site management until the levels were returned to below freeboard limits.
- As of the date of this letter, plant processing has been maintained at minimal levels since water levels are still slightly above the freeboard limits.
- On April 4 a well flow stimulation procedure was conducted on disposal well #4 in an attempt to improve operating availability and flow rates for the well.
- Refresher training for site personnel who operate and inspect the holding ponds has been initiated. All training will be documented and retained by the RSO.
- The two Standard Operating Procedures for the ponds were reviewed to determine if they were sufficient. While no significant concerns were identified, the two SOPs were combined into a single document for ease of use. The draft SOP has been routed for review and approval. Upon final approval all Plant Operators will be required to read and understand the updated procedure. The training will be documented and filed with the Radiation Safety Officer.
- The current SOP requires the Manager of EHS and Operations Manager to periodically review the Daily Pond Inspection Forms. The language in the draft SOP will be revised to set a specific time interval for review.
- The method of recording the pond levels will also be changed to prevent any confusion on the part of the operators.
- The current pond level gauge is frequently covered with drifting snow when the pond freezes over. A new pond gauge system is under consideration with the goal of making it easier for operators to read during the winter. The Engineering Group will make the final determination regarding the type and installation method of a gauge.
- The investigation determined that at least two senior site employees failed to perform their responsibilities at an acceptable level. Both employees were disciplined according to company policy.
- As of April 11 Mr. Wayne Heili is acting as the interim Mine Manager.
- On April 11 the companies' President and Vice President of Regulatory Affairs met with site supervisors and later with all site personnel to stress the importance of maintaining regulatory compliance. Site supervisors were reminded that production cannot be allowed to take precedence over compliance.

If you have any questions pertaining to this submittal, please feel free to contact me at our Casper office.

Regards,



John W. Cash
Vice President Regulatory Affairs

CC: Mrs. Melissa Bautz, Land Quality Division
Mrs. Theresa Horne, Ur-Energy Littleton Office

Lost Creek ISR, LLC
Project Water Balance

Date	Production Flow (net gpm)	Injection Flow (net gpm)	Bleed Flow (net gpm)	LCDW1 Waste (net gpm)	LCDW4 Waste (net gpm)	Fresh Process Water from Fresh Water Storage (net gpm)	North Pond Level (inches above FB)	South Pond Level (inches above FB)	Net Added Waste Water (gpm)
1-Feb	976.21	972.09	8.13	3.22	29.10	32.32	na	na	8.13
2-Feb	935.01	931.76	7.62	2.63	17.69	12.43	na	na	-0.28
3-Feb	927.13	926.24	7.37	3.16	13.79	0.83	0	-12	-8.74
4-Feb	983.19	978.42	7.49	2.87	22.66	15.62	0	-12	-2.43
5-Feb	1073.94	1068.92	7.84	2.12	17.56	11.69	0	-12	-0.19
6-Feb	1088.53	1084.51	7.49	0.52	20.17	13.61	0	-12	0.40
7-Feb	1042.02	1041.71	7.65	6.89	17.55	12.09	0	-12	-4.70
8-Feb	1048.17	1047.98	7.69	4.04	17.59	16.18	0	-12	2.24
9-Feb	1033.76	1035.60	6.11	4.17	14.45	16.66	0	0	4.14
10-Feb	1028.65	1029.41	7.23	0.83	23.19	22.80	6	-12	6.00
11-Feb	1011.58	1011.97	7.24	2.66	5.50	20.78	0	3	19.87
12-Feb	1085.58	1085.80	7.82	3.95	9.22	8.46	0	3	3.10
13-Feb	1168.21	1167.23	7.40	4.39	14.87	10.27	0	6	-1.59
14-Feb	1221.36	1218.88	6.88	1.30	27.10	18.25	0	12	-3.28
15-Feb	1211.80	1209.44	7.23	3.38	22.99	20.19	0	12	1.05
16-Feb	1183.73	1181.59	6.56	2.29	17.34	11.38	6.0 *	6.0 *	-1.70
17-Feb	1236.01	1232.82	7.50	5.87	16.48	5.94	6	12	-8.91
18-Feb	1245.66	1243.10	7.32	2.01	28.60	28.03	na	na	4.74
19-Feb	1248.59	1244.39	6.59	1.90	17.57	7.41	0	12	-5.47
20-Feb	1219.47	1214.04	7.54	2.58	19.88	9.62	0	12	-5.31
21-Feb	1314.39	1308.02	7.25	4.36	22.30	16.44	0	12	-2.96
22-Feb	1261.12	1254.50	7.28	-0.04	21.30	32.16	0	12	18.17
23-Feb	1304.37	1297.36	7.91	4.02	16.06	15.72	6	6	3.55
24-Feb	1296.19	1288.54	7.81	4.32	20.88	10.43	6.0 *	12	-6.97
25-Feb	1094.25	1089.80	7.92	1.82	16.16	31.60	6.0 *	6.0 *	21.54
26-Feb	913.52	929.07	7.43	2.31	6.75	23.36	6.0 *	6.0 *	21.73
27-Feb	988.59	989.09	7.46	1.53	21.85	14.05	12	12	-1.87
28-Feb	1043.09	1043.25	7.11	3.82	19.63	19.31	12	12	2.96
1-Mar	1048.82	1046.23	7.86	-0.04	21.47	8.87	12	12	-4.70
2-Mar	1038.51	1037.99	7.41	2.17	27.00	11.32	12	12	-10.44
3-Mar	1062.54	1061.82	7.91	6.12	11.25	9.21	18	12	-0.26
4-Mar	1073.59	1073.01	6.92	4.66	19.89	17.88	18	12	0.26
5-Mar	1075.28	1073.81	7.52	0.88	12.68	5.92	18	12	-0.12
6-Mar	1066.41	1064.89	8.01	5.93	29.63	21.14	18	18	-6.40
7-Mar	1098.43	1095.84	7.56	0.74	9.57	11.69	18	18	8.94
8-Mar	1107.43	1106.04	6.10	1.67	11.29	15.45	18	18	8.59
9-Mar	1045.26	1044.87	6.34	2.99	10.07	19.26	18	18	12.54
10-Mar	1175.89	1174.02	6.16	4.60	21.76	13.75	18	18	-6.46
11-Mar	1329.33	1324.96	6.27	1.79	17.01	14.90	18	18	2.38
12-Mar	1369.49	1365.35	5.54	1.56	28.06	15.89	18	18	-8.18
13-Mar	1391.69	1383.96	7.38	2.92	11.54	7.00	18	18	-0.08

Handwritten Readings

[illegible]

Lost Creek ISR, LLC
Project Water Balance

Date	Production Flow (net gpm)	Injection Flow (net gpm)	Bleed Flow (net gpm)	LCDW1 Waste (net gpm)	LCDW4 Waste (net gpm)	Fresh Process Water from Fresh Water Storage (net gpm)	North Pond Level (inches above FB)	South Pond Level (inches above FB)	Net Added Waste Water (gpm)
23-Mar	1418.49	1411.28	9.38	-0.05	18.29	12.37	18	18	3.51
24-Mar	1397.70	1389.22	9.01	4.05	11.54	14.17	18	18	7.58
25-Mar	1365.90	1355.13	10.72	3.43	13.77	9.78	18	18	3.30
26-Mar	1362.49	1352.03	9.86	2.52	11.75	4.16	18	18	-0.24
27-Mar	1443.78	1435.43	10.01	2.76	21.19	21.32	24	24	7.37
28-Mar	523.94	521.97	3.34	2.01	14.06	6.02	24	18	-6.71
29-Mar	0.00	0.00	2.65	2.45	18.50	5.21	24	24	-13.08
30-Mar	0.00	0.00	2.26	2.72	19.67	2.03	18	18	-18.10
31-Mar	150.25	148.44	2.98	2.85	17.77	0.09	18	18	-17.54
1-Apr	372.99	371.19	2.09	4.49	15.01	0.48	16	18	-16.93
2-Apr	397.24	412.33	2.20	3.34	17.57	0.62	14	18	-18.09
3-Apr	391.85	271.56	2.51	2.74	17.94	0.05	13	18	-18.12
4-Apr	395.77	393.15	2.62	1.43	18.98	0.15	12	18	-17.65
5-Apr	395.47	392.85	2.62	5.24	20.12	0.18	12	18	-22.56
6-Apr	396.46	393.99	2.47	2.76	21.85	0.35	12	17	-21.78
7-Apr	394.55	391.64	2.91	0.71	18.34	0.08	12	17	-16.05
8-Apr	392.76	390.23	2.52	3.58	16.49	0.11	12	12	-17.44
9-Apr	394.15	391.76	2.39	6.04	16.98	0.65	12	11	-19.98

Handwritten Readings

North Pond Freeboard (ft)	South Pond Freeboard (ft)
1.5	1.5
1.5	1.5
1.5	1.5
1.5	1.5
2	2
2	1.5
2	2
1.5	1.5
1.5	1.5
1.5	1.5
1.2	1.5
1.1	1.5
1	1.5
1	1.5
1	1.4
1	1.4
1	1
1	0.9

na - No readings recorded

* Based on readings above and below, operator appears to have recorded distance from top of ponds to water level