



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 9, 2018

Mr. Scott Schierman
Uranium One Americas, Inc.
907 N. Poplar Street, Suite 260
Casper, WY 82601

RE: LQD 2016-2017 Annual Inspection Report, Uranium One, Willow Creek ISR Project, Permit No. 478

Dear Mr. Schierman:

Enclosed is a copy of the Annual Inspection Report conducted on November 29, 2017 at the Willow Creek ISR Project, Permit No. 478. This inspection was conducted with your assistance and the assistance of Mr. Kevin Filbert of Uranium One.

If you find incorrect or misleading statements in the report, please respond in writing. A copy of this report will be placed in the permanent inspection file for Permit No. 478, Willow Creek ISR Project, as will any written comments you may have.

If you have any questions or comments, please contact me at 307-675-5619 or at luke.mcmahan@wyo.gov.

Regards,

Luke McMahan, P.G.
Project Geologist
WDEQ-LQD District 3

Attachment: 2016-2017 Annual Inspection Report

cc: Mr. Ron Linton, US Nuclear Regulatory Commission, Mail Stop T-8F5,
11545 Rockville Pike, Rockville, MD 20852 w/attach.



MSK
1/10/18

IN SITU MINE INSPECTION REPORT

Wyoming Department of Environmental Quality, Land Quality Division
2100 West 5th Street Sheridan, WY 82801
Phone: (307) 673-9337 FAX: (307) 672-2213



Permit Number:	PT0478	Permittee:	URANIUM ONE USA INC
Inspection Date:	11/29/2017	Inspector(s):	Luke McMahan
Report Date:	1/9/2018	Participant(s):	Scott Schierman, Kevin Filbert
Last Inspection:	10/18/2016	Current Bond:	\$21,707,323
Inspection Reason(s):	Annual	Field Conditions:	Clear, windy, dry, all areas accessible, ~55° F
		Approval Date:	4/18/1978

Status:	Active	Approved Acreage:	14986.38
County:	Johnson	Mineral:	Uranium

Opening Comments

The Annual Inspection for Uranium One's Willow Creek Mine was conducted by LQD District 3 Project Geologist Luke McMahan on November 29, 2017. The inspection was conducted with the assistance of Mr. Scott Schierman and Mr. Kevin Filbert of Uranium One. The inspection consisted of a records review which was conducted at the Christensen Ranch Facility field office and a field inspection which was conducted at Willow Creek's Christensen Ranch and Irigaray sites.

Current and Proposed Activities:

During the reporting period, mining operations at the Christensen Ranch Site consisted of production in Mine Unit 7, Mine Unit 8 and Mine Unit 10. Although there was no injection into Mine Unit 5 (Module 5-2) and production was reduced in Mine Unit 7 during the reporting period, a bleed was maintained in these mine units in order to retain an inward gradient in these wellfields. Uranium One continued to process uranium loaded resins from Strata Energy through the Irigaray Central Processing Plant. There was no drilling or well completions that occurred at the Mine during the reporting period. No new building or wellfield construction occurred during the reporting period. Uranium One continues to work on final decommissioning of Irigaray Mine Units 1 through 9 in accordance with the Mine's Decommissioning Plan under the oversight of the Nuclear Regulatory Commission (NRC) (**Photos #2 & #3**). Final surface reclamation procedures set forth in the LQD Permit to Mine for the Irigaray wellfields is anticipated to commence following completion and approval of radiological surveys associated with NRC decommissioning requirements. Groundwater restoration and subsequent restoration reports for Christensen Ranch Mine Units 2, 3, 4, 5, and 6 remain under review by LQD and NRC.

Records Review:

Mechanical Integrity Testing: hard copy and electronic MIT records were viewed during the inspection. The Mine's electronic tracking system and database which lists MIT results and testing due dates for individual wells was viewed. Results of mechanical integrity testing are submitted to LQD in the quarterly excursion monitoring reports.

Spill Records and Reporting: electronic tracking of spills and spill reporting was viewed during the inspection. Four (4) reportable spills occurred during the reporting period. Written notifications and spill reports were submitted to LQD in accordance with the permit requirements.

Excursion Records: electronic excursion records were available for review at the Christensen Ranch office. No monitoring wells were reported to be on excursion status during the 2016-2017 reporting period.

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Well Completion Records: hard copy files which included MIT data sheets, well construction data sheets, and geophysical logs were viewed during the inspection. No issues with the record keeping were noted.

Monitoring Well Water Quality Data: hard copy water quality data is available at the Christensen Ranch office in the quarterly reports. Electronic water quality data and tracking records are also available and were viewed during the inspection. Excursion monitoring data is submitted to LQD in quarterly monitoring reports.

Well Plugging & Abandonment Records: electronic files and the Mine's tracking system for determining when wells need to be P&A'd or repaired in accordance with LQD requirements was viewed during the inspection. Information regarding wells plugged and abandoned during the reporting period is submitted to LQD in the quarterly excursion monitoring reports and in annual reports.

Compliance Assessment

Inspection Topic	In Compliance
Drill Holes	N/A
• Delineation Drilling	Yes
Temporarily capped pilot holes in undeveloped portions of Mine Unit 10 and temporarily capped delineation drilling holes in undeveloped Mine Units 11 & 12 were viewed during the inspection (Photo #23). No issues were identified at the surface with these temporarily capped holes. The reclamation status for the temporarily capped pilot holes in Mine Unit 10 is discussed in Section IV of the Annual Report. However, the reclamation status of temporarily capped delineation holes located in Mine Units 11 & 12 needs to be clarified as was discussed during the inspection. This issue is being addressed under Comment #3 of LQD's Review Memorandum for the 2016-2017 Annual Report (dated 12/15/17), and therefore this issue is not listed under the <i>Actions Required</i> section of this inspection report.	
General	N/A
• Deep Disposal Wells	Yes
The Willow Creek Mine has two (2) Class I Deep Disposal Wells, Christensen Ranch DW-1 and Christensen Ranch 18-3. Both wells are located at the Christensen Ranch Facilities area. The wells are permitted for injection of industrial wastes under the WDEQ Water Quality Division (WQD) Permit UIC 10-219. Construction, operation, mechanical integrity testing standards and the cost of reclamation are under the purview of the WQD UIC permit. However, the bond amount posted by Uranium One for reclamation of the wells is held by LQD in accordance with the LQD permit to mine for Willow Creek. Both wells were operational at the time of the inspection. No evidence of significant leakage or spills around the wellheads or around the well facilities was observed (Photos #7 & #8).	
• Facilities	Yes
Both the Irigaray Plant and Christensen Ranch Plant facilities were viewed in passing, however, the inspector did not enter the plant facilities during this inspection. The solid waste disposal area for common trash at the Christensen Ranch site was viewed. Although a minor amount of wind-blown trash was observed in the area, the containment fencing above and around the trash bins appeared to be effectively preventing wind-blown trash from migrating away from the trash bin location (Photo #10). The burn pit located adjacent to the maintenance area at the Christensen Ranch site was also viewed and found to have appropriate signage and fencing. There was no wind-blown debris observed to be around or migrating away from the pit location (Photo #9).	

Inspection Topic	In Compliance
• Ponds	Yes
<p>The evaporation ponds (active and inactive) located at the Irigaray and Christensen sites were viewed in passing. The Irigaray facility has seven (7) ponds, three of which have had their liners removed and are no longer in use. The remaining four, IR-B, IR-D, IR-RA, and IR-RB were in use at the time of the inspection and no issues were identified with the Irigaray ponds. The Christensen facility has five (5) ponds, all of which were in use at the time of the inspection (Photo #6). No issues with the Christensen facility ponds were identified during the inspection.</p>	
• Signs	Yes
<p>The permit signs for the Irigaray site and the Christensen Ranch site were found to be up to date and posted with the appropriate information (Photos #1 and #5).</p>	
• Topsoil Stockpiles	Yes
<p>Based on the Annual Report and the Annual Inspection, a total of 49 topsoil stockpiles (Photos #4 & #11) and two (2) subsoil stockpiles (Photo #21) are present at Willow Creek Mine. All of these stockpiles were viewed during the annual inspection and were found to be in stable condition with no erosional issues. Two (2) of the topsoil stockpiles, #23 & #30 were found to be missing topsoil identification signs. Following the inspection, Uranium One posted topsoil signs at stockpiles #23 and #30 and emailed photographs of the identification signs posted at stockpiles #23 and #30 to the inspector on November 30, 2017 (Photos #12, #13, #14, #15). Topsoil stockpiles #35 & #36, not listed in the Annual Report topsoil stockpile table but shown on the Annual Report map for the Christensen area, could not be located during the inspection. Although #35 & #36 could not be located, it was noted during the inspection that these stockpiles were quite small and relatively difficult to see from a distance. Following the inspection, Uranium One found and verified the mapped locations for stockpiles #35 & #36, and emailed photographs to the inspector on November 30, 2017 (Photos #16, #17).</p> <p>Of the Forty-nine topsoil stockpiles viewed during the inspection, three (3) of the topsoil stockpiles were not listed in the Annual Report stockpile table or on the Annual Report maps. The three unnamed topsoil stockpiles were found located next to the maintenance area burn pit (43.802264, -106.031164), located next to the Mine Unit 3 access road (43.807297, -106.034825), and located next to the access road between Mine Unit 4 and Mine Unit 5 (43.785218, -106.028453). These stockpiles were found to be stable and posted with a topsoil identification sign (Photos #18, #19, #20). As requested in LQD's annual report review memorandum, these stockpiles will need to be added to the applicable annual report table and map.</p>	
Well Fields	N/A
• Aquifer Restoration	Yes
<p>Christensen Ranch Mine Units 2, 3, 4, 5 & 6 have undergone restoration efforts. Groundwater restoration reports submitted to LQD in association with Christensen Ranch Mine Units 2, 3, 4, 5, and 6 remain under review by LQD.</p>	

Inspection Topic	In Compliance
• Spills	Yes
<p>In August of 2017 Willow Creek Mine reported a spill from the Mine Unit 2 trunk line where a 10" x 6" poly transition which ties-in Module 2-2 to the Mine Unit 2 trunk line had failed. Groundwater is pumped from this wellfield and conveyed through the trunk line in order to maintain an inward gradient in the wellfield. Assessment of spill impacts and repair of the trunk line had been completed prior to the inspection. The site of the spill and repair was viewed during the inspection and all repair work was observed to be complete (Photo #22). Mine Unit 2 has undergone groundwater restoration efforts and therefore is no longer being mined. Groundwater restoration has not yet been approved by LQD for Mine Unit 2.</p>	

Actions Required

There are no unresolved Maintenance Items

Actions Completed Since Last Inspection

Inspection Topic	Inspection Date	Proposed Resolution Date	Resolution Date
Signs	12/29/2015	12/31/2016	10/18/2016
Update Mine Identification signs at Christensen Ranch and Irigaray with the current agent/contact person.			

Inspection Summary Comments

No violations were issued as a result of this inspection. No new maintenance items were generated as a result of this inspection. As discussed during the inspection, the reclamation status of temporarily capped delineation holes located in Mine Units 11 & 12 needs to be clarified. However, this issue is being addressed under Comment #3 of LQD's Review Memorandum for the 2016-2017 Annual Report (dated 12/15/17), and therefore is not listed under the *Actions Required* section of this inspection report. At the time of this inspection, the approved reclamation bond had been posted by Uranium One in the amount of \$21,707,323 as set forth in the LQD Director's Bond Letter dated April 3, 2017.

Inspection Recipient and Attachment Information

Recipient	Email	Address/Notes
Operator	No	URANIUM ONE USA INC

Attachment Types: ☒ Photo Addendum ☐ Map(s) ☐ Table(s) ☐ Other

Attachment Notes

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Type	FileName	Size (MB)	# Pages
Cover Letter	PT478_Annual_IR_cvrltr_01.09.18.pdf	0.06	1
Photos	PT478_Annual_IR_Photo Log_11.29.17LM.pdf	2.67	11



Photo #1: Irigaray Site Permit Sign.

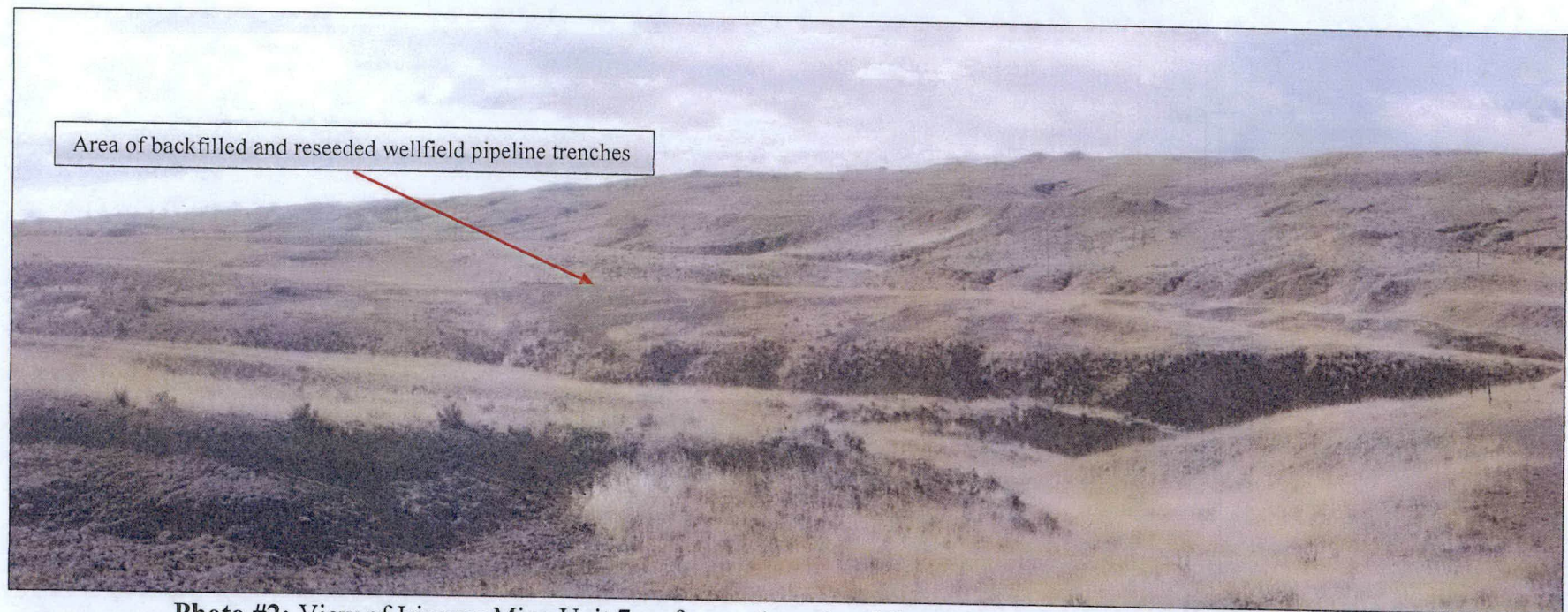


Photo #2: View of Irigaray Mine Unit 7 surface reclamation following removal of wellfield infrastructure.

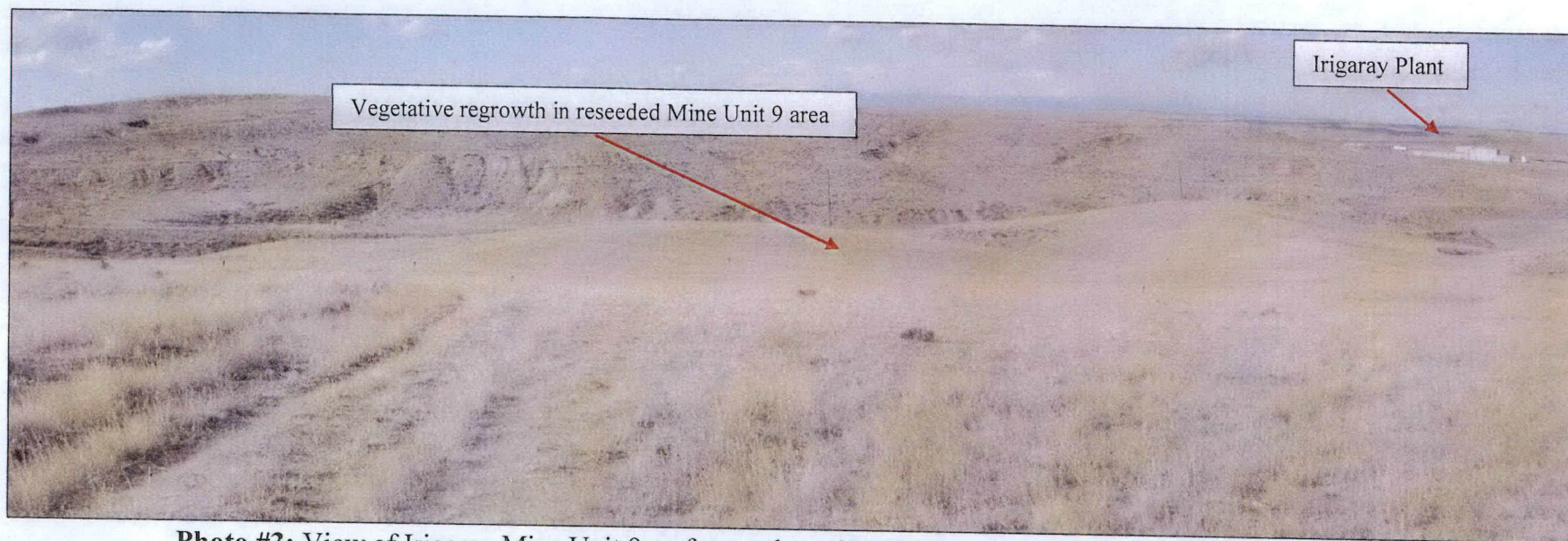


Photo #3: View of Irigaray Mine Unit 9 surface reclamation following removal of wellfield infrastructure.

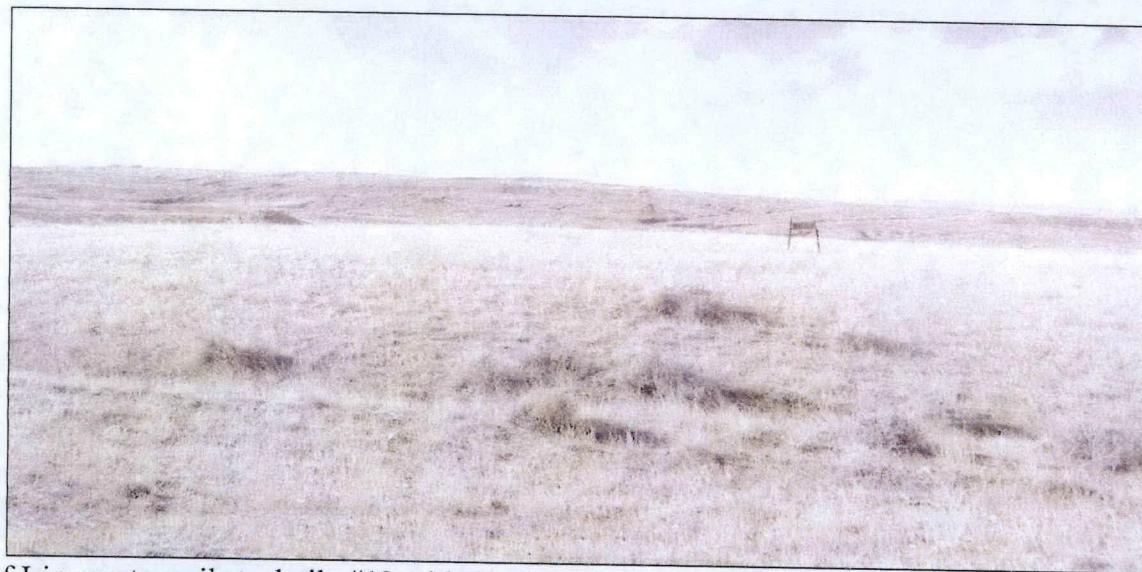


Photo #4: View of Irigaray topsoil stockpile #12 with ID sign, vegetative growth and signage typical of IR stockpiles viewed.



Photo #5: View of Christensen Ranch Site Permit Sign.

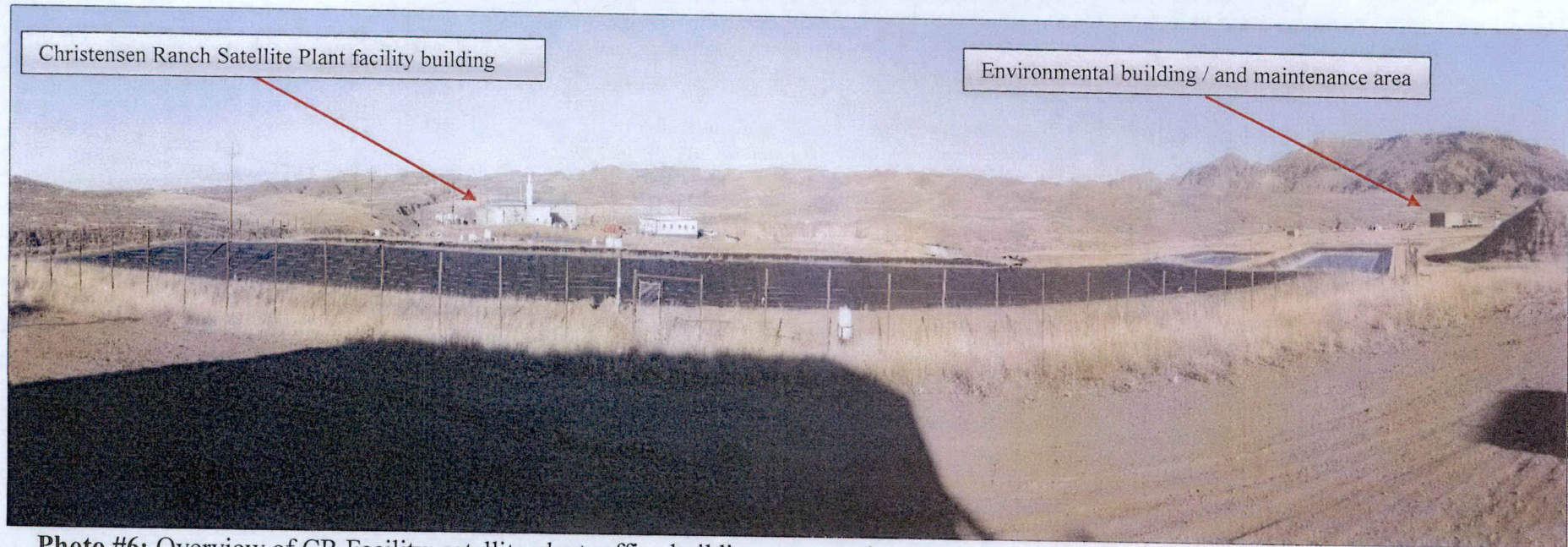


Photo #6: Overview of CR Facility; satellite plant, office building, evaporation ponds and maintenance area, looking NE from DDW site.

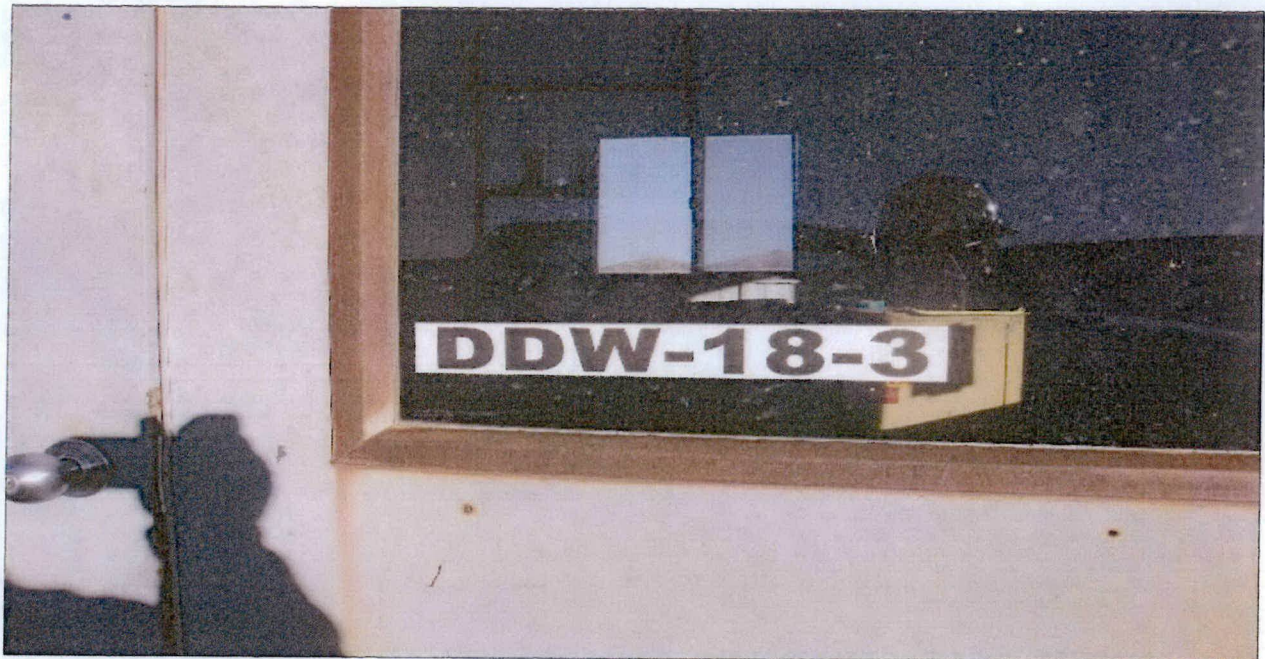


Photo #7: View of Christensen Ranch Facility DDW-18-3.



Photo #8: View of Christensen Ranch Facility DDW-18-3.

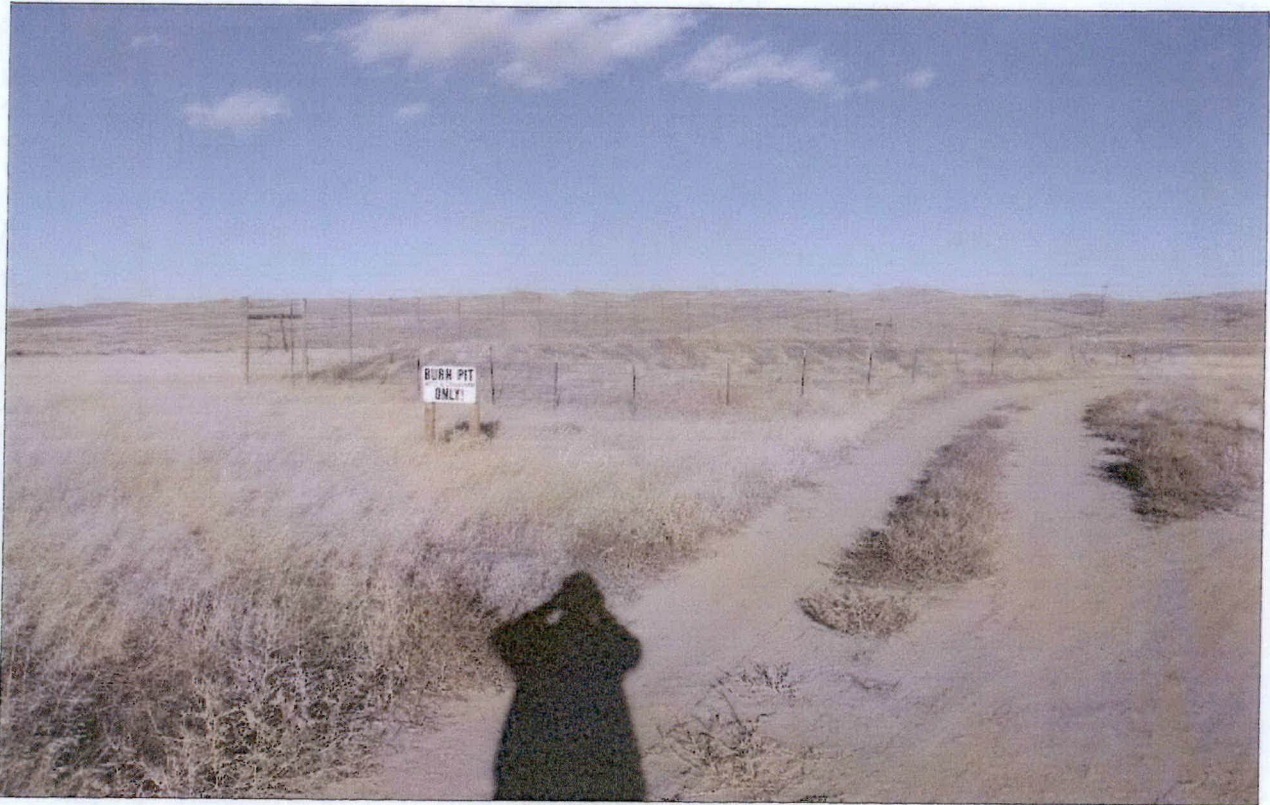


Photo #9: View of Christensen Ranch Facility burn pit.



Photo #10: View of Christensen Ranch Facility solid waste disposal (common trash).



Photo #11: View of Christensen Ranch Topsoil Stockpile #28, typical of CR stockpiles viewed.

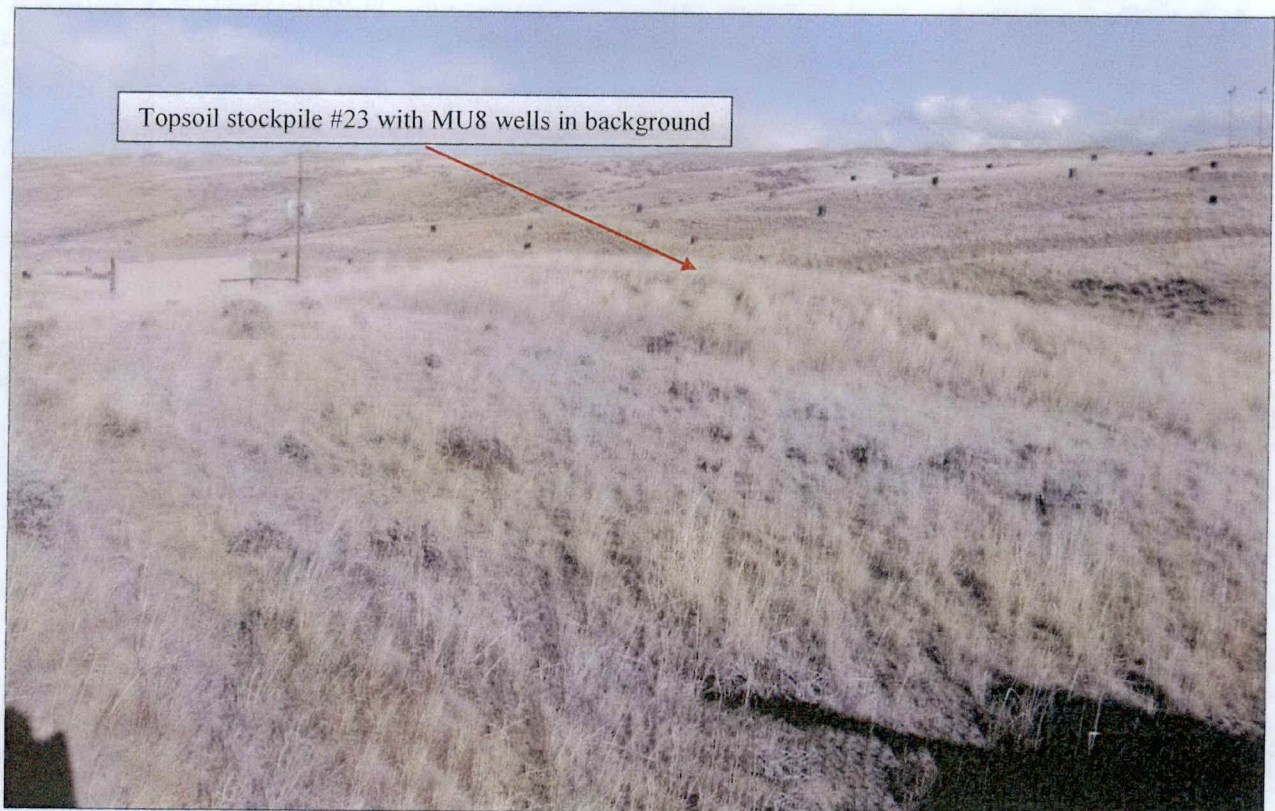


Photo #12: View of CR Topsoil Stockpile #23, no topsoil identification sign present.



Photo #13: View of CR Topsoil Stockpile #23 with topsoil identification sign posted.

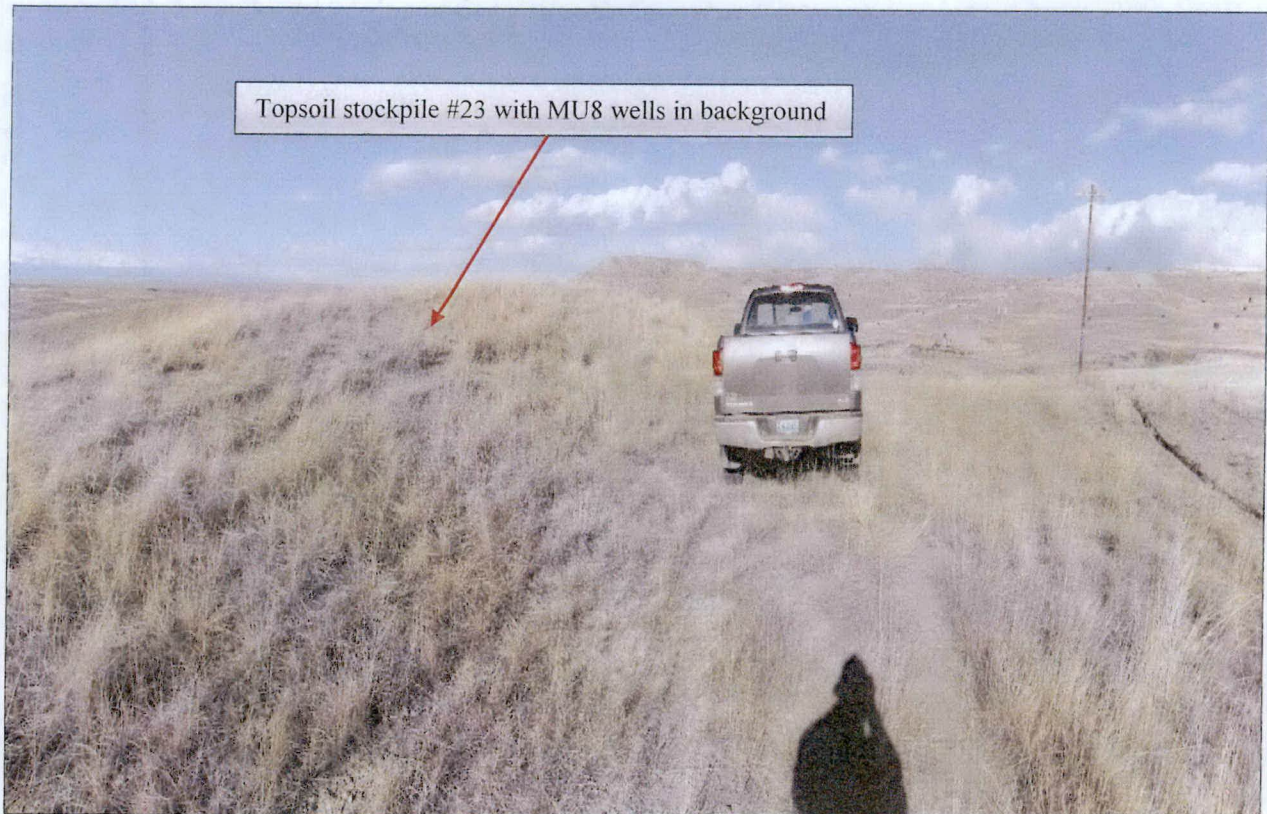


Photo #14: View of CR Topsoil Stockpile #30, topsoil identification signed needed.



Photo #15: View of CR Topsoil Stockpile #30 with topsoil identification sign posted.



Photo #16: View of Christensen Ranch Topsoil Stockpile #35.



Photo #17: View of Christensen Ranch Topsoil Stockpile #36.



Photo #18: unnamed CR topsoil stockpile next to burn pit (43.802264, -106.031164).

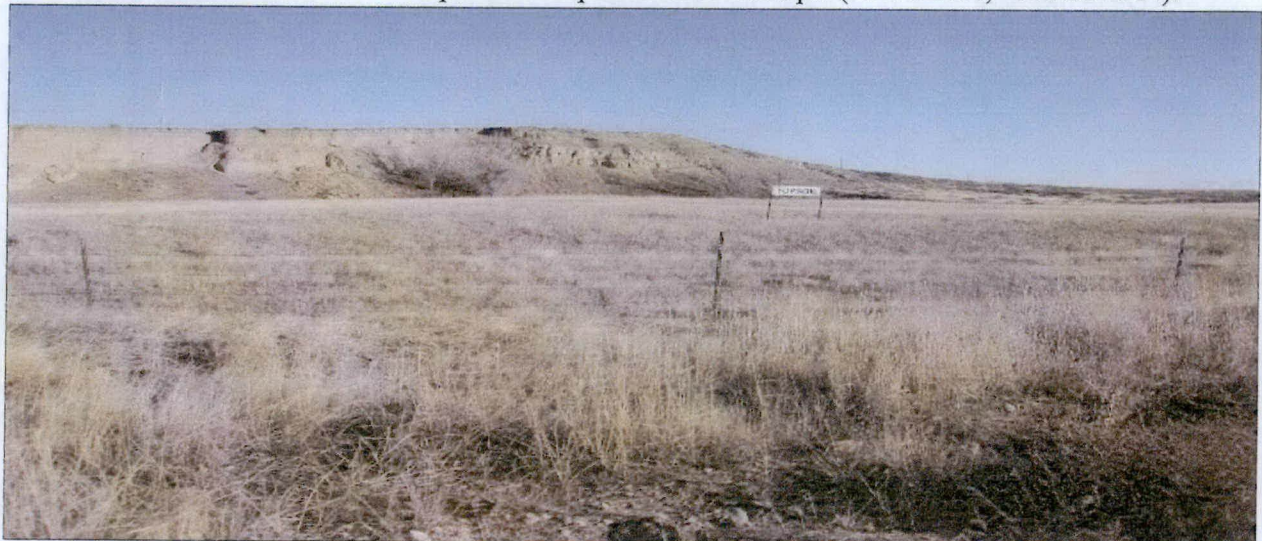


Photo #19: unnamed CR topsoil stockpile next to MU3 access road (43.807297, -106.034825).



Photo #20: unnamed CR topsoil stockpile by MU4/MU5 access road (43.785218, -106.028453)



Photo #21: View of CR Subsoil Stockpile #8, typical of subsoil stockpiles viewed.



Photo #22: View of Christensen Ranch Mine Unit 2 Trunk line spill location and repair.



Photo #23: Representative view of Christensen Ranch Mine Unit 11 temporarily capped delineation drill holes.