

**Monticello, Utah, National
Priorities List Sites
Federal Facility Agreement (FFA)
Quarterly Report:
April 1–June 30, 2014**

July 2014



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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**Monticello, Utah, National Priorities List Sites
Federal Facility Agreement (FFA) Quarterly Report:
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Abbreviations

AOA	Area of Attainment
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
gpm	gallons per minute
ICs	institutional controls
LCRS	Leachate Collection and Removal System
LDS	Leak Detection System
LM	Office of Legacy Management
LTS&M Plan	<i>Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites</i>
mg/L	milligrams per liter
MMTS	Monticello Mill Tailings Site
MVP	Monticello Vicinity Properties
NPL	National Priorities List
OU	Operable Unit
TSF	Temporary Storage Facility
UDEQ	Utah Department of Environmental Quality
UDOT	Utah Department of Transportation

1.0 Introduction

This quarterly report appraises the U.S. Environmental Protection Agency (EPA) and the Utah Department of Environmental Quality (UDEQ) of status and near-term schedule, and reporting requirements and activities for the Monticello Vicinity Properties (MVP) and the Monticello Mill Tailings Site (MMTS) for the period of April through June 2014. Quarterly reports are submitted to EPA and UDEQ in January (for the October through December quarter), April (for the January through March quarter), July (for the April through June quarter), and October (for the July through September quarter).

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) assesses the status of the MVP and MMTS remedies through (1) routine inspections (monthly, quarterly, and annually) of site infrastructure and operations that are conducted in accordance with the *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (LTS&M Plan), (2) routine (semiannual) monitoring of groundwater and surface water quality and hydrologic conditions that is conducted in accordance with the *Record of Decision for the Monticello Mill Tailings (USDOE) Site Operable Unit III, Surface and Ground Water, Monticello, Utah, June 2004*, and (3) monthly water quality monitoring of the Operable Unit (OU) III ex situ groundwater treatment system.

The schedule and reporting requirements are determined in consultation with EPA and UDEQ and are also documented in the *Monticello Site Management Plan* (updated annually). Comprehensive data evaluation for the OU III remedy is presented in annual groundwater reports.

1.1 Quarterly Site Status

- Routine surveillance noted no anomalous conditions for the MVP.
- Routine surveillance noted no anomalous conditions for the MMTS.
- Routine surveillance noted no anomalous operating conditions for the repository leachate collection system, for the leak detection system at Pond 4, and for surface features of the disposal cell and Pond 4.
- The ex situ groundwater treatment system operated at full capacity with only minor maintenance. The system operated continuously during the quarter with the exception of being turned off for approximately 11 days to facilitate pending July baseline condition monitoring of the new well network in the Area of Attainment (AOA), which is being conducted as part of the pending OU III Remedy Optimization project.
- Numerous activities were completed associated with optimizing the OU III groundwater remedy, as described in Section 3.3.3.

2.0 Monticello Vicinity Properties

Long-term surveillance and maintenance for the MVP consists of providing radiological control at municipal and commercial excavations in Monticello street and utility corridors, in Utah Department of Transportation (UDOT) rights-of-way, and at property MS-00176-VL (privately owned supplemental standards property). Surveillance observations for this quarter are:

- LM representatives continued to coordinate with City of Monticello officials regarding planned and ongoing construction and excavation activities by the City, UDOT, and utility companies, at roadway and utility corridors through daily planning meetings.
- There were no planned or unplanned excavations in City of Monticello street or utility corridors that required radiological control by LM.
- Neither excessive erosion nor unauthorized excavations were observed at the Highway 191 embankment at Montezuma Creek (supplemental standards property).
- Surveillance of supplemental standards property MS-00176-VL identified no excessive erosion or violation of the land-use restriction.

3.0 Monticello Mill Tailings Site

Long-term surveillance and maintenance for the MMTS consists of (1) operating the onsite disposal cell, (2) maintaining groundwater and land-use institutional controls (ICs) on the former mill site and peripheral properties, and (3) operating and monitoring the groundwater and surface water remedy (ex situ treatment system).

3.1 Operable Unit I

OU I consists of the property of the former Monticello mill (mill site) and the waste disposal facility (repository). Solid wastes were removed from the mill site and peripheral properties (OU II) and encapsulated at the repository as a remedial action that was completed in 1999. LM owns and manages the repository; the City of Monticello owns the former mill site and manages it as a public park.

3.1.1 Repository

Monthly, quarterly, and annual inspections of the repository ensure that remedy controls remain intact and that the waste remains isolated from the environment. Inspection observations and maintenance activities for the reporting period are:

- No anomalous conditions were observed at the repository with respect to the surveillance items included in the LTS&M repository area surveillance checklists (attached for this quarter as Appendix A).
- Water accumulation in Pond 4 remains minimal: a maximum of approximately 3 inches of water is currently present in the northeast quadrant of Pond 4.

- Leachate production from the repository to Pond 4 was normal. Leachate production has decreased from approximately 30,000 gallons per week following final waste encapsulation in 1999 to current values of about 1,000 gallons per week for each of the two repository Leachate Collection and Removal System (LCRS) sumps LCRS 1 and LCRS 2 (for a total of about 2,000 gallons per week). See Appendix B for a graphical depiction of leachate production history.
- The Pond 4 LCRS pumped approximately 300 gallons of water/leachate during late June. This occurred to facilitate planned work in the Pond 4 area. The performance history for the Pond 4 LCRS is summarized as a graph in Appendix B.
- The lower sumps (leak detection system [LDS]) for the repository and Pond 4 received no leachate during the quarter. This is the normal condition. Graphs showing the performance history for the repository LDS and the Pond 4 LDS are included in Appendix B.
- The leachate collection and leak detection systems remained functional during the quarter. However, it was identified that the Pond 4 LCRS flow meter is non-functional. The flow meters and transducers in the Pond 4 LCRS and LDS, and the transducer and transducer cable in Pond 4, are scheduled to be replaced during July 2014.
- Pond 4 work performed in late June included examining and replacing bentonite or grout-type patches with HDPE material at three locations on the pond floor. The work was performed by a liner repair specialist.
- Over 2,000 linear feet of fence was installed in April and May along the DOE site boundary with private property parcel MP-01081 to control access onto DOE property from the adjacent property. The fence was designed to be wildlife friendly.

3.1.2 Temporary Storage Facility

Routine surveillance of the Temporary Storage Facility (TSF) ensures that maintenance and radiological controls that govern access to, and placement, storage, and transfer of, contaminated material in the TSF are current and effective. No anomalous conditions were observed for the TSF with respect to the surveillance items included in the LTS&M TSF area surveillance checklist (attached for this quarter as Appendix A).

A minor quantity of waste (approximately 1 cubic yard) that was generated from the June Pond 4 work was placed in the TSF during the quarter. The inventory of contaminated material in the TSF remains at approximately 26 cubic yards. Approximately 4 cubic yards of the contaminated material derives from street and utility excavations from previous quarters. Radiologically contaminated material from supplemental standards properties has not been placed in the TSF since 2011. Approximately 21 cubic yards of the material in the TSF derives from maintenance and repairs to Pond 4 in August 2013.

LM initiates the transfer of TSF materials for permanent disposal at the LM Grand Junction, Colorado, Disposal Site when the contents reach 75 cubic yards. The most recent transfer of TSF materials to the Grand Junction disposal site occurred in June 2010.

3.1.3 Former Mill Site

Surveillance of the former mill site (properties MP-00181-VL and MS-00893-VL) is conducted to ensure compliance with ICs that were implemented to preserve the OU I remedy for soil and groundwater. The ICs applicable to the former mill site are no installation of domestic-use wells in the alluvial aquifer, no construction of habitable structures, no camping, and preserving the properties as a public park for day-use recreation.

City maintenance workers continue to develop walking and bike paths; these areas are not within supplemental standards areas and conform to the established ICs. Observations for this quarter are:

- No nonconformance with water- and land-use restrictions was observed.

3.2 Operable Unit II

OU II consists of private and City-owned properties peripheral to the former mill site. Surveillance of OU II properties is conducted to ensure compliance with ICs that were implemented to preserve the OU II remedy for soil and groundwater. Observations for this quarter are:

- Montezuma Creek Restrictive Easement Area (supplemental standards properties, both City-owned and privately owned): No evidence of nonconformance with land-use restrictions (no soil removal or construction of habitable structures in supplemental standards areas) was observed.
- Groundwater-use restrictions (no installation of domestic-use wells in the alluvial aquifer) were applied to several OU II properties under the 2004 covenant by which DOE transferred selected properties to the City of Monticello. No instance of nonconformance with this restriction was observed during the quarter.
- Property MS-00211-VL (City-owned): No evidence of nonconformance with the land-use restriction on building construction was observed.
- Pinyon-juniper supplemental standards properties (City-owned): No evidence of nonconformance with land- and groundwater-use restrictions was observed. New city bike path construction and maintenance activities on this property, this quarter, conformed with ICs.
- No storm events (exceeding 2.8 inches of rain in a 24-hour period) required nonroutine surveillance of supplemental standards cleanup properties. Climatological data are included in Appendix C.

3.3 Operable Unit III

OU III consists of groundwater and surface water that were contaminated as a result of operation of the former Monticello mill. The contaminated groundwater lies within the shallow alluvial aquifer beneath the valley of Montezuma Creek; contaminated surface water is present within Montezuma Creek.

3.3.1 Groundwater Restricted Area

Surveillance of properties where residual groundwater contamination is present is conducted semiannually in spring and fall to ensure compliance with the groundwater-use restriction (no installation of domestic-use wells in the alluvial aquifer). The affected OU III properties constitute the Monticello Groundwater Restricted Area, as defined and administered by the State of Utah Division of Water Rights. Surveillance observations are:

- No evidence of nonconformance with the groundwater-use restriction since its implementation in May 1999.

3.3.2 Ex Situ Groundwater Treatment System

In accordance with the OU III contingency remedy implemented under the January 2009 Explanation of Significant Difference, contaminated alluvial groundwater is extracted from a single groundwater well and is treated using zero-valent iron in two ex situ treatment vessels. This treatment system, located on private property, is approximately 600 feet east of the former mill site.

Treated groundwater is discharged to Montezuma Creek. The maximum allowed rate of discharge to Montezuma Creek is 10 gallons per minute (gpm). The effluent is required to comply with discharge limits for pH and total iron. Although an infiltration trench is available to receive treated water for local discharge to the aquifer, its use was discontinued in 2009 because of limited capacity to receive and transmit water.

Performance of the treatment system, cumulatively and during April through June 2014, is summarized as follows:

- Continuous operation during the quarter (through June 23, 2014) at approximately 9.4 gpm. Major maintenance or repairs to the system were not required. The system was shut down on June 23, 2014, for approximately 11 days (during late June into early July) to allow aquifer stabilization to facilitate pending July baseline condition monitoring of the new well network in the AOA (see Section 3.3.3).
- Effluent discharge to Montezuma Creek did not exceed the allowed rate of 10 gpm.
- Effluent iron concentrations and pH met discharge allowances (Table 1).
- Approximately 1.1 million gallons of groundwater were treated during the quarter. Monthly and cumulative treated volumes are shown in Table 2.
- Approximately 3.2 pounds of uranium were removed from the aquifer during the quarter. Monthly and cumulative mass removed are shown in Table 2.
- No treated water was transferred to the infiltration trench.

The reactive media is exchanged when the effluent concentration of uranium exceeds about 150 micrograms per liter (about one-half of the influent concentration) or if flow through the treatment vessels is reduced to approximately 5 gpm or less. Media exchange occurs about once per year under current operating conditions. The reactive media was last exchanged during September 2013. Flow rates and uranium removal for the quarter indicate effective treatment capacity and no imminent need to exchange the treatment media.

Table 1. Treatment System Compliance Summary

Treatment System Effluent to Montezuma Creek	April 2014	May 2014	June 2014
pH ^a	6.9	7.2	7.3
Iron (total, mg/L) ^b	12	13	14

^a pH discharge allowance range = 6.5–9.0 standard units

^b Iron discharge limit = 45.4 milligrams per liter (mg/L) at outfall to Montezuma Creek

Table 2. Treatment System Performance Summary

Treatment Parameter	April 2014	May 2014	June 2014 ^{a, b}
Gallons treated	425,680	420,380	297,800
Average treatment rate, gpm	9.4	9.4	9.4
Uranium influent, micrograms per liter	340	350	380
Uranium effluent, micrograms per liter	9.8	13	20
Uranium mass removed, pounds	1.1	1.2	0.9
Cumulative uranium mass removed, pounds	70.6	71.8	72.7
Cumulative volume treated (million gallons)	30,570,982	30,991,364	31,289,156

^a Through June 23, 2014.

^b Volume total estimated based on 9.4 gpm pumping rate.

3.3.3 OU III Contingency Remedy Optimization Project

The contingency groundwater remedy being implemented by the existing ex situ treatment system will be optimized by expanding pump-and-treat remediation in the AOA, where hydrogeologic boundaries and elevated concentrations of uranium in groundwater are both well defined. The groundwater Contingency Remedy Optimization project will use a network of eight vertical extraction wells strategically placed in the AOA to extract contaminated groundwater, which will be transmitted in a buried pipeline to an existing evaporation pond (Pond 4) located on DOE property about 1 mile south of the AOA. The contingency remedy optimization is consistent in concept with the requirements of the Record of Decision and the Explanation of Significant Difference. In support of the pending construction of the Contingency Remedy Optimization project, the major project activity components occurring this quarter were:

- DOE addressed comments received from EPA and UDEQ on the *Draft Groundwater Contingency Remedy Optimization Remedial Design/Remedial Action Work Plan* and submitted a draft final work plan to the regulators on April 30, 2014. Comments received on the draft final were addressed in the final work plan, which was submitted to the regulators on June 6, 2014. Approval of the final work plan was received from EPA and UDEQ in a letter dated June 20, 2014.
- DOE established a 20-year easement with the private property owner of the AOA property in April 2014.

- An easement was signed to transfer well and water right ownerships for monitoring well 83-70 from DOE to the private property owner. This well is completed in the Burro Canyon Formation. The terms of this easement require prior DOE approval for any modifications being made to the well and well equipment, and limit water rights to the established terms. Transfer of the well and water right ownership is pending. This easement is included, with private landowner information redacted, as Appendix D.
- The State of Utah Department of Natural Resources Division of Water Rights approved the Water Right No. 09-2347 Application for Permanent Change of Water for modifications made to the OU III contingency remedy optimization's points of divergence in correspondence signed on June 19, 2014. The modification allows the extraction of water to occur from the eight extraction wells.
- The eight extraction wells were installed in May.
- The 16 contingency remedy optimization monitoring wells were installed in May and June.
- The private access road and gates were upgraded in June to accommodate the pending increased construction traffic.
- Easement/project access control fencing was installed on the private property in April.
- The 100% construction specifications and design drawings packet revision was completed on June 25; the revision incorporated and provided clarification on outstanding items.
- Floor patches in Pond 4 were replaced and tested in anticipation of accepting additional water into the pond for evaporation.
- The solicitation and procurement phase of obtaining a construction subcontractor for the main infrastructure work (e.g., installing piping for the extraction wells, installing pumps and controls, constructing a control building with an aboveground batch tank, installing the buried transmission pipeline and ancillary equipment to Pond 4, upgrading the berm road around Pond 4) was completed. Bid tours were conducted on April 16 and May 21; the subcontract was awarded on June 20; and the Notice to Proceed was issued on June 27.

4.0 Schedule of Activities and Deliverables

Table 3 summarizes the completion of recent activities and deliverables and the pending near-term activities and reporting requirements for the Monticello National Priorities List (NPL) sites.

Table 3. Recent and Near-Term Activities and Deliverables

Activity/Deliverable	Schedule
Recent	
Monthly ex situ groundwater treatment system monitoring.	Completed for April, May, and June 2014 (results summarized in Tables 1 and 2).
Monthly MMTS OU III technical meeting.	Last meeting held June 19, 2014.
<i>Final Groundwater Contingency Remedy Optimization Remedial Design/Remedial Action Work Plan.</i>	Approval of the final report was received from EPA and UDEQ in a letter dated June 20, 2014.

Table 3 (continued). Recent and Near-Term Activities and Deliverables

Activity/Deliverable	Schedule
Recent	
OU III Groundwater Contingency Remedy Optimization Project	See new Section 3.3.3 of this report for recent activities and deliverables completed.
Information Repository Update	The index was updated through February 2014, and the repository was physically updated on May 30, 2014.
Near-Term	
July baseline condition monitoring of AOA.	Scheduled for July 1, 2, and 3, 2014. A second baseline monitoring round is tentatively scheduled to be conducted in August 2014.
Monthly technical meeting with DOE, EPA, and UDEQ.	Next meeting tentatively scheduled for August 6, 2014.
DOE submittal of the draft final Site Management Plan, Section 5.0, Annual Update (penalty milestone).	Draft Final to be submitted to EPA/UDEQ by August 1, 2014.
Monthly ex situ groundwater treatment system monitoring.	On schedule for July, August, and September 2014.
Field construction of OU III contingency remedy optimization infrastructure.	Tentative mobilization date July 16; tentative construction start date July 22, 2014. Tentative construction completion (excluding revegetation) scheduled for the end of October 2014.
2014 annual site inspection.	Week of September 8, 2014.
DOE submittal of OU III annual groundwater report.	Submit to EPA and UDEQ in October 2014.

Appendix A

Monthly and Quarterly Surveillance Checklists

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Repository Area Surveillance Checklist

Monthly surveillance Quarterly surveillance: February May August November
 Storm event triggered surveillance due to _____ inches of rainfall over the past 24 hours.

Inspection Item	Acceptable		Comments and Recommendation
	Yes	No	
Condition of:			
Fences, gates, and locks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Very minor repairs needed.</i>
Roads ^a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Signs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Site monuments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Drainage ditches ^a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Manholes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vegetation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of erosion of:			
Top of disposal cell ^a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Disposal cell sideslopes ^a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ditches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surrounding area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of:			
Vandalism	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Intrusion by livestock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Burrowing animal damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>New Prairie Dog Holes But no animals sighted.</i>
Intrusion by humans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Accumulation of trash	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional Quarterly Surveillance Requirements
 Note: All transects, shown in Figure 3-1, must be walked during this inspection.

Condition of:			
Settlement plate structures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Manholes ^b	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sediment ponds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of:			
Structural instability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional comments:

Signature: *Frank Smith* Monticello LM Representative Date: 5-15-14

^aInspections required following a significant storm event
^bOpen to inspect quarterly

Monthly Pond 4 Surveillance Checklist

Level of water in Pond 4 ≈ 14-inches

Inspection Item	Acceptable		Comments and Recommendation
	Yes	No	
Condition of:			
Fences, gates, and locks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Roads	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Signs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>starting to fade.</i>
Visible piping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visible liner and anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>anchors no longer in pond.</i>
Rescue equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of erosion of:			
Top of Pond 4 berm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pond 4 sideslopes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ditches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surrounding area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Seepage from Pond 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Overtopping of Pond 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of:			
Vandalism	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Intrusion by wildlife	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Prairie Dogs in the pond.</i>
Intrusion by humans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Accumulation of trash	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional comments:
Less Burrowing animal holes on the top of the berm. Prairie Dog holes in the soils in the bottom of the pond.

Monticello LM Representative: *Samuel Smith* Date: *4-23-14*

Monthly Pond 4 Surveillance Checklist

Level of water in Pond 4 ~ 8" NE CORNER

Inspection Item	Acceptable		Comments and Recommendation
	Yes	No	
Condition of:			
Fences, gates, and locks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Roads	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Signs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visible piping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visible liner and anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rescue equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of erosion of:			
Top of Pond 4 berm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pond 4 sideslopes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ditches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surrounding area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Seepage from Pond 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Overtopping of Pond 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of:			
Vandalism	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Intrusion by wildlife	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Intrusion by humans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Accumulation of trash	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional comments:
 900' OF RAD ROPE REPLACED, SOME ANIMAL BURROWS EVIDENT
 AT TOP OF BERM.

Monticello LM Representative: David Allen Date: 5/14/14

Monthly Pond 4 Surveillance Checklist

Level of water in Pond 4 ~ 3-inches

Inspection Item	Acceptable		Comments and Recommendation
	Yes	No	
Condition of:			
Fences, gates, and locks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Roads	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Signs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visible piping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visible liner and anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Anchors no longer exist.</i>
Rescue equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of erosion of:			
Top of Pond 4 berm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pond 4 sideslopes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ditches	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surrounding area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Seepage from Pond 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Overtopping of Pond 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Evidence of:			
Vandalism	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Intrusion by wildlife	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>No Prairie Dogs seen but holes are there.</i>
Intrusion by humans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Accumulation of trash	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional comments:

Simbeck Liner was ensik and performed 1 repair and tested 2 areas with a vacuum test. The tests past with good results.

Monticello LM Representative: *Frank Smith*

Date: *6-26-14*

Monticello Long-Term Surveillance and Maintenance
Temporary Storage Facility Record Book
Inspection Report

Acceptable?
Yes / No

Yes Was the gate locked upon arrival?

Yes Are signs posted in accordance with Section 3.4.4?

Yes Are all postings legible?

Yes Are enclosures on the concrete bin and stored drum containers tight?

Yes Are containers in good physical condition (no rust, no holes, no bulges, etc.)?

25 yd³ How much radiologically contaminated material is in the concrete bin? Note: the material should be shipped when the volume in storage approaches 75 percent of the storage capacity.

Yes Is the surface area of the TSF in good physical condition (no erosion, no flood damage, no excessive vegetation growth, etc.)?

Yes Has radiological monitoring been conducted in accordance with Section 3.4.5?

Yes Is the security fence in good condition?

Comments: IN GOOD SHAPE

David J. G.
Signature of Monticello LM Representative

5/14/14
Date of Inspection

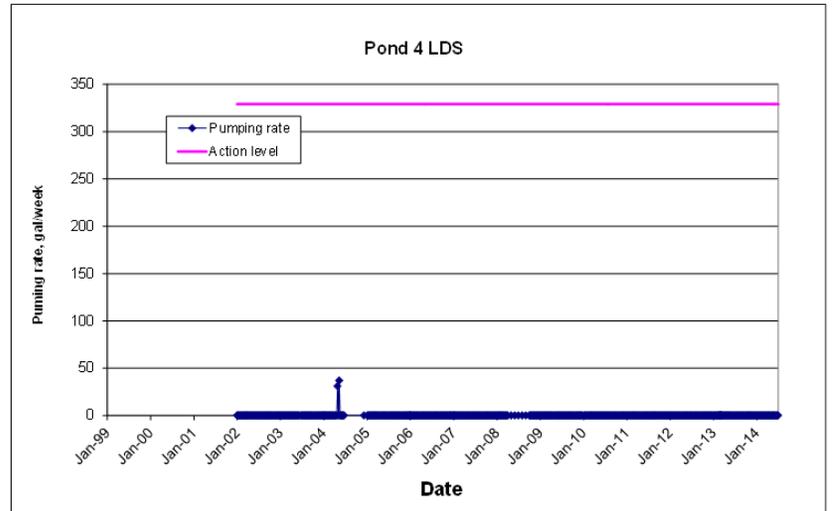
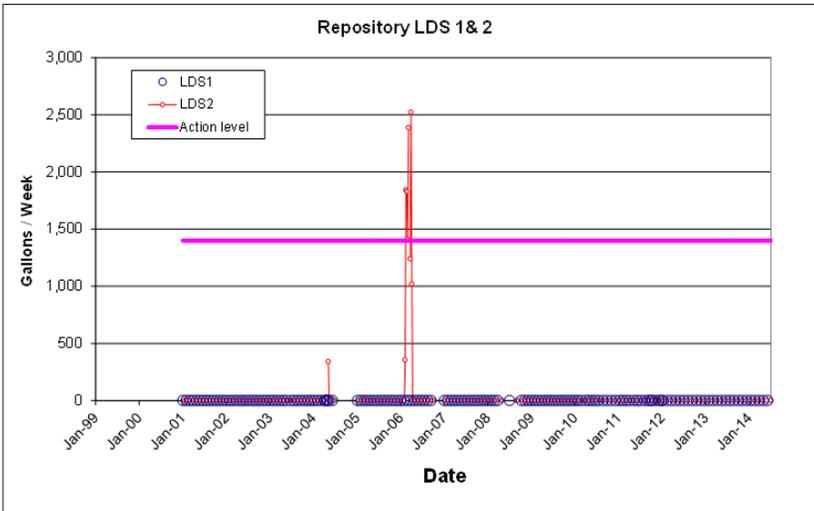
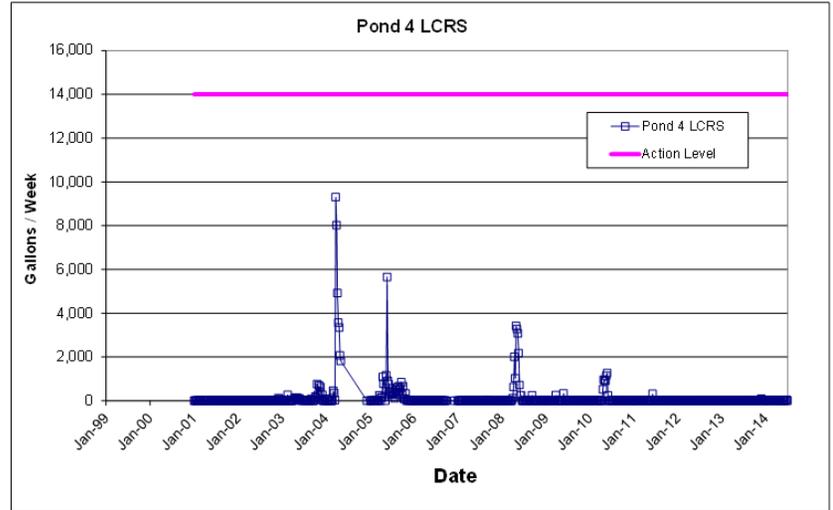
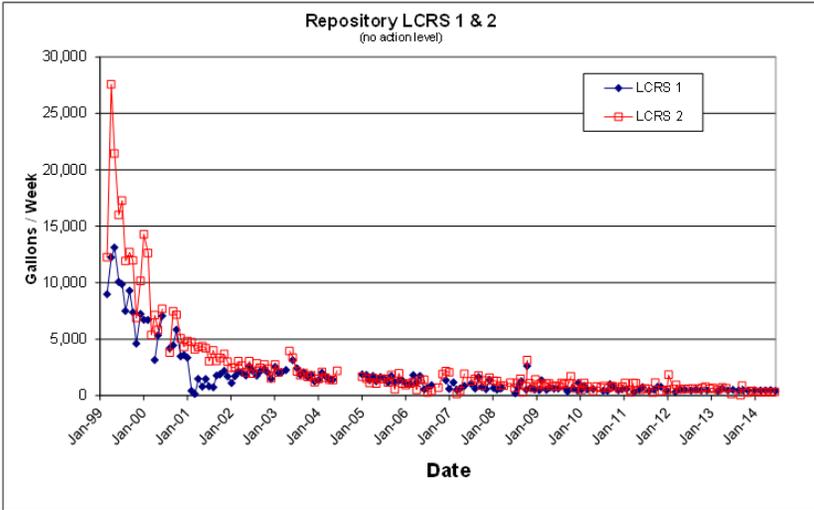
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Appendix B

Graphs Showing Performance History for Repository and Pond 4 Leachate Collection and Recovery Systems and Leak Detection Systems

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Graphs Showing Performance History for Repository and Pond 4 Leachate Collection and Recovery System (LCRS) and Leak Detection System (LDS)



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Appendix C

Climatological Summaries

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MONTHLY CLIMATOLOGICAL SUMMARY for APR. 2014

NAME: Monticello Office CITY: STATE:
 ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	43.5	53.6	4:30p	35.5	5:30a	21.5	0.0	0.00	12.9	42.0	3:00p	NE
2	34.9	44.0	2:30p	27.7	10:00p	30.1	0.0	0.00	7.8	29.0	1:30p	NE
3	32.2	43.4	4:00p	25.2	7:30a	32.8	0.0	0.00	9.5	28.0	10:00a	SE
4	37.1	47.5	4:30p	25.7	7:30a	27.9	0.0	0.00	5.1	21.0	1:00p	WNW
5	39.2	47.1	4:00p	31.6	7:00a	25.8	0.0	0.00	7.0	26.0	4:00p	NW
6	38.6	47.2	5:30p	29.8	6:00a	26.4	0.0	0.00	13.1	35.0	3:30p	SSE
7	43.4	54.0	5:30p	32.9	5:30a	21.6	0.0	0.00	10.1	34.0	2:30p	N
8	49.4	60.9	3:00p	39.4	2:00a	15.6	0.0	0.00	7.8	22.0	2:30p	S
9	55.0	66.8	2:30p	41.6	2:00a	10.1	0.1	0.00	7.3	26.0	3:00p	SW
10	56.7	69.7	4:00p	41.1	6:30a	8.8	0.4	0.00	6.8	49.0	4:00p	NNW
11	56.8	67.5	3:30p	44.3	5:30a	8.3	0.1	0.00	6.2	26.0	1:30p	SW
12	54.2	59.6	10:30a	47.1	2:30a	10.8	0.0	0.00	7.3	37.0	3:00p	SW
13	41.6	51.6	12:30a	28.8	12:00m	23.4	0.0	0.11	12.4	37.0	12:00p	NNW
14	31.0	42.5	5:30p	19.2	6:30a	34.0	0.0	0.00	11.8	34.0	1:00a	SSE
15	42.5	54.6	2:00p	25.2	5:30a	22.5	0.0	0.00	6.0	29.0	1:00p	NE
16	45.1	51.3	10:30a	35.4	12:00m	19.9	0.0	0.00	8.2	24.0	1:30p	NNW
17	47.9	61.0	5:30p	32.7	1:00a	17.1	0.0	0.00	4.6	20.0	2:30p	NW
18	55.2	66.9	3:30p	43.1	7:00a	9.9	0.1	0.00	7.1	25.0	1:30p	SW
19	46.5	55.0	6:00p	40.1	7:00a	18.5	0.0	0.14	4.2	20.0	1:00a	NE
20	53.4	65.5	5:00p	40.5	4:30a	11.6	0.0	0.00	6.5	24.0	2:30p	N
21	55.6	66.7	4:30p	42.9	6:00a	9.4	0.1	0.00	2.8	26.0	1:30p	NW
22	58.5	69.6	4:30p	48.1	6:00a	7.0	0.5	0.00	11.7	40.0	4:00p	SSW
23	44.5	56.8	12:30a	31.9	11:30p	20.5	0.0	0.00	11.3	32.0	1:30a	SE
24	45.0	58.5	5:00p	31.7	3:00a	20.0	0.0	0.00	6.1	24.0	5:00p	SE
25	54.0	64.8	5:00p	39.0	3:00a	11.0	0.0	0.00	13.3	35.0	3:00p	SSW
26	40.3	53.3	12:30a	29.3	11:30p	24.7	0.0	0.24	10.2	34.0	10:30a	NE
27	38.1	46.8	5:00p	29.4	12:30a	26.9	0.0	0.04	12.1	34.0	7:30a	NNW
28	38.7	46.1	3:00p	32.3	12:00m	26.3	0.0	0.00	15.9	50.0	2:30p	NNW
29	34.8	43.0	1:00p	26.0	6:30a	30.2	0.0	0.00	12.5	30.0	11:00a	S
30	36.8	44.3	5:00p	28.6	6:00a	28.2	0.0	0.00	14.4	33.0	2:30p	S
	45.0	69.7	10	19.2	14	600.8	1.3	0.53	9.1	50.0	28	NNW

Max >= 90.0: 0
 Max <= 32.0: 0
 Min <= 32.0: 14
 Min <= 0.0: 0
 Max Rain: 0.24 ON 04/26/14
 Days of Rain: 4 (>.01 in) 3 (>.1 in) 0 (>1 in)
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for MAY. 2014

NAME: Monticello Office CITY: STATE:
 ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	43.4	54.0	5:00p	33.2	5:00a	21.6	0.0	0.00	11.0	29.0	4:30p	SSE
2	52.5	65.2	4:30p	36.9	6:00a	12.5	0.0	0.00	4.6	23.0	1:30p	ESE
3	59.6	72.4	5:00p	43.6	6:30a	7.3	1.9	0.00	5.8	37.0	6:30p	E
4	60.2	70.2	3:30p	49.7	7:00a	5.5	0.7	0.00	6.9	33.0	3:30p	NE
5	58.7	68.8	2:30p	43.7	7:00a	7.0	0.7	0.00	7.3	35.0	2:30p	NE
6	53.9	60.8	2:00p	44.9	7:00a	11.1	0.0	0.02	13.1	43.0	3:00p	NE
7	42.0	49.6	5:00p	32.1	4:30a	23.0	0.0	0.00	8.2	35.0	3:00p	NE
8	42.1	54.1	6:00p	31.4	3:00a	22.9	0.0	0.00	3.5	21.0	6:30p	E
9	50.3	61.5	6:00p	37.2	5:30a	14.7	0.0	0.00	6.7	31.0	5:30p	ENE
10	52.9	63.7	3:00p	42.3	12:00m	12.1	0.0	0.04	7.4	40.0	9:00p	NE
11	38.2	47.8	1:30a	30.0	12:00m	26.8	0.0	0.07	9.1	37.0	11:00a	SSE
12	32.3	38.9	5:00p	27.1	5:30a	32.7	0.0	0.00	13.5	31.0	3:00a	SSE
13	37.2	47.1	4:30p	29.3	6:30a	27.8	0.0	0.00	14.5	33.0	3:30p	NNW
14	44.9	56.8	4:00p	31.0	6:30a	20.1	0.0	0.00	5.4	27.0	11:30a	NW
15	52.5	63.2	6:30p	38.4	6:00a	12.5	0.0	0.00	4.8	24.0	2:30p	SSE
16	59.6	70.8	2:30p	46.2	6:00a	6.5	1.2	0.00	4.3	22.0	4:00p	ESF
17	63.1	73.8	4:00p	49.4	1:30a	4.5	2.6	0.00	3.4	22.0	4:30p	E
18	64.5	75.7	6:00p	53.0	12:00m	2.7	2.2	0.00	8.2	32.0	3:00p	NE
19	60.6	73.2	4:30p	44.9	6:30a	6.4	1.9	0.00	7.4	32.0	5:00p	NE
20	58.5	70.5	5:00p	41.6	6:00a	7.4	1.0	0.01	10.8	43.0	3:30p	NE
21	59.4	68.6	7:00p	51.4	6:30a	5.8	0.2	0.00	11.6	37.0	9:00a	SSW
22	57.7	66.8	6:00p	48.0	6:30a	7.3	0.0	0.02	8.4	34.0	3:30p	NE
23	51.6	62.8	2:30p	41.9	12:00m	13.4	0.0	0.03	5.2	38.0	4:00p	S
24	49.2	63.3	1:00p	36.9	5:00a	15.8	0.0	0.00	4.8	28.0	2:00p	SSE
25	45.2	54.2	5:00p	36.9	8:30a	19.8	0.0	0.52	4.5	19.0	8:00a	SSE
26	56.1	69.1	5:30p	43.2	5:00a	9.6	0.6	0.00	5.4	19.0	5:30p	NNE
27	65.2	77.8	5:30p	54.1	5:30a	3.4	3.6	0.00	6.1	24.0	10:30a	W
28	69.5	81.9	3:30p	56.0	6:30a	1.8	6.2	0.00	7.1	31.0	5:00p	SSW
29	67.4	75.7	1:00p	59.8	6:00a	1.2	3.6	0.00	4.5	31.0	11:30a	W
30	61.5	72.4	1:00p	49.9	7:00a	4.7	1.2	0.23	4.9	35.0	1:30p	SW
31	66.7	79.0	6:00p	52.6	6:30a	3.1	4.8	0.00	7.1	31.0	2:30p	W

	54.1	81.9	28	27.1	12	371.0	32.4	0.94	7.3	43.0	6	NE

Max >= 90.0: 0
 Max <= 32.0: 0
 Min <= 32.0: 5
 Min <= 0.0: 0
 Max Rain: 0.52 ON 05/25/14
 Days of Rain: 7 (>.01 in) 2 (>.1 in) 0 (>1 in)
 Heat Base: 65.0 Cool Base: 65.0 Method: Integration

MONTHLY CLIMATOLOGICAL SUMMARY for JUN. 2014

NAME: Monticello Office CITY: STATE:
 ELEV: 0 ft LAT: LONG:

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

DAY	MEAN TEMP	HIGH	TIME	LOW	TIME	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	67.4	77.0	4:00p	52.6	11:00p	1.9	4.3	0.00	6.6	33.0	3:30p	W
2	66.2	78.4	4:00p	51.2	3:30a	3.4	4.6	0.00	5.2	24.0	5:00p	NE
3	67.4	77.9	4:30p	55.5	12:00m	1.6	4.1	0.00	10.2	35.0	3:30p	NE
4	65.7	78.2	4:00p	51.0	6:30a	4.0	4.7	0.00	5.0	26.0	3:30p	NE
5	66.3	80.4	3:30p	48.5	6:30a	3.7	5.0	0.00	3.1	19.0	6:00p	E
6	67.5	78.8	3:30p	55.4	1:30a	2.4	5.0	0.00	5.0	18.0	12:00p	SE
7	67.2	78.2	12:00p	51.7	5:30a	2.5	4.8	0.00	6.2	29.0	1:30p	NW
8	63.0	72.0	5:30p	49.5	12:00m	3.5	1.5	0.00	9.5	43.0	9:00a	NNW
9	59.6	73.9	6:00p	46.8	2:30a	7.3	1.9	0.00	7.7	23.0	4:30p	NNE
10	69.8	82.7	5:30p	55.0	4:00a	2.3	7.1	0.00	7.7	27.0	10:30a	W
11	67.1	80.0	3:00p	55.3	6:00a	2.2	4.3	0.00	6.6	39.0	6:00p	NNW
12	67.3	78.8	6:30p	53.8	6:30a	2.8	5.0	0.00	5.6	34.0	8:00p	W
13	69.2	81.2	5:00p	53.5	5:30a	2.2	6.4	0.00	8.8	36.0	3:00p	SW
14	61.1	69.5	1:30p	50.8	6:30a	4.4	0.5	0.00	8.6	37.0	3:00p	NNW
15	64.0	75.8	6:30p	47.8	6:30a	4.6	3.6	0.00	8.6	31.0	4:30p	SSW
16	63.5	77.3	5:00p	46.6	6:30a	4.8	3.3	0.00	10.7	36.0	12:00p	N
17	65.4	77.1	3:00p	50.2	5:30a	3.6	4.0	0.00	14.3	47.0	2:30p	SSW
18	59.1	70.5	4:30p	41.0	6:30a	7.3	1.4	0.00	8.5	37.0	5:00p	N
19	61.6	74.3	4:30p	46.9	6:30a	5.5	2.1	0.00	7.8	32.0	2:00a	N
20	68.4	81.6	4:00p	52.7	6:30a	3.0	6.4	0.00	4.6	22.0	4:30p	WNW
21	70.6	79.1	5:00p	59.0	7:00a	0.5	6.1	0.00	6.6	29.0	2:00p	N
22	70.6	81.5	3:30p	58.6	6:30a	0.8	6.4	0.00	5.2	28.0	1:00p	W
23	71.4	82.8	6:00p	55.1	7:00a	0.9	7.3	0.00	7.2	34.0	5:30p	W
24	71.7	84.6	4:00p	55.6	6:30a	1.3	8.0	0.00	7.6	34.0	4:00p	SSW
25	71.6	83.6	6:00p	56.0	3:30a	1.6	8.2	0.00	7.4	40.0	6:00p	N
26	70.6	82.0	3:00p	53.7	6:00a	1.4	7.0	0.00	9.6	33.0	1:30p	N
27	65.9	73.6	4:30p	58.4	4:00a	1.9	2.8	0.00	7.0	27.0	3:30p	NW
28	67.9	82.0	5:00p	51.9	6:00a	2.8	5.7	0.00	5.6	38.0	4:00p	WNW
29	75.6	88.3	5:30p	60.8	7:00a	0.4	11.0	0.00	5.6	23.0	12:00p	N
30	79.4	87.8	4:30p	70.7	11:00p	0.0	14.4	0.00	12.5	32.0	5:00p	NNW

	67.4	88.3	29	41.0	18	84.6	156.9	0.00	7.5	47.0	17	N

Max >= 90.0: 0
 Max <= 32.0: 0
 Min <= 32.0: 0
 Min <= 0.0: 0

Max Rain: 0.00 ON 06/01/14

Days of Rain: 0 (>.01 in) 0 (>.1 in) 0 (>1 in)

Heat Base: 65.0 Cool Base: 65.0 Method: Integration

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Appendix D

**Easement with Private Property Owner to Transfer Well and Water
Right Ownership of Monitoring Well 83-70**

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UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY

MODIFICATION TO
ACCESS AGREEMENT FOR INSTALLATION AND MAINTENANCE OF
WELLS AND WELL EQUIPMENT – Monticello, UT, Disposal/Processing Sites

Well Agreement Number DE-RO13-04GJ67303, entered into by and between [REDACTED] hereinafter called LICENSOR, and THE UNITED STATES OF AMERICA, by and through the U.S. Department of Energy (DOE), hereinafter called the LICENSEE, on October 9, 2003, is modified as follows:

1. [REDACTED] is the surviving LICENSOR to the original access agreement dated October 8, 2003 and will be the sole signatory for the LICENSOR.
2. LICENSEE will file all documentation with the State of Utah to transfer ownership of well number 83-70 to LICENSOR. LICENSOR accepts the well with the following provisions:
 - a. LICENSOR may not modify the well, either the below ground or above ground components (including the flow meter), without prior LICENSEE consent.
 - b. LICENSOR assumes all future obligations associated with using and maintaining well 83-70 in accordance with State of Utah regulations.
 - c. LICENSEE may use well 83-70 without LICENSOR restriction in support of its Monticello Mill Tailings Site (MMTS) groundwater study. The LICENSOR shall temporarily discontinue use of the well during LICENSEE's use of the well. LICENSOR may abandon the well at LICENSOR's expense, only in accordance with applicable State of Utah regulations, and only after written, LICENSEE approval.
 - d. LICENSEE reserves the right to modify the well at its own expense if it deems such modifications are necessary to support the MMTS groundwater remedial action.
 - e. LICENSOR will remove LICENSOR-owned equipment from the well at the LICENSOR'S expense, if LICENSEE requires such action to meet the groundwater remedial action objectives at the MMTS.
 - f. LICENSOR saves and holds harmless LICENSEE, their authorized representatives, their contractors and subcontractors, from any and all claims, present and future, regarding the LICENSOR's use and operation of well number 83-70.
3. LICENSEE will file the required documentation with the State of Utah to transfer water right 09-2120 (A75022), the point of diversion being well number 83-70, to LICENSOR.
 - a. LICENSOR assumes all responsibility/obligations associated with water right 09-2120 (A75022) and may exercise the water right in accordance with State of Utah laws and regulations. The current water appropriation information and current proof of beneficial use is included (Attachment A).
 - b. The LICENSOR may not appropriate additional water under water right 09-2120 (A75022).

4. If LICENSEE detects MMTS groundwater contamination in well number 83-70, LICENSOR shall cease using well 83-70, until otherwise directed in writing by LICENSEE or State regulators.
5. State of Utah actions and decisions associated with the above well transfer are beyond the control of the LICENSEE.
6. All other previous terms and conditions of this Agreement, remain unchanged and in full force and effect.

LICENSEE
UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY

By: _____
Realty Officer

Date: _____

Address: 2597 Legacy Way
Grand Junction, CO 81503

Phone: _____

LICENSOR

By: _____

Date: _____

Address: _____

Phone: _____