

**2008 Annual Inspection of the  
Monticello Mill Tailings (USDOE)  
and  
Monticello Radioactively  
Contaminated Properties Sites**

**December 2008**



**U.S. DEPARTMENT OF  
ENERGY**

Office of  
Legacy Management

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# Appendix

## Appendix A—Annual Inspection Checklists

# Executive Summary

The annual inspection of the U.S. Department of Energy (DOE) Monticello Mill Tailings Site (MMTS) and the Monticello Vicinity Properties (MVP) was conducted on September 16–18, 2008. DOE inspects these sites annually to ensure that selected remedies remain protective of human health and the environment. Under those remedies, contamination remains in place at some locations where unrestricted use and unlimited exposure are prevented. Annual inspections (1) verify that DOE long-term surveillance and maintenance (LTS&M) activities implemented throughout the year are effective and appropriate, (2) confirm that the institutional controls restricting land and water use under the MMTS and MVP remedies remain effective, and (3) identify deficiencies and recommend corrective actions as needed. This report summarizes the results of the 2008 annual inspection.

## Repository Findings

The repository is generally well maintained and managed. Site features (e.g., Pond 4 structures, monuments, drainage channels, manholes) were in good condition. However, but several maintenance issues were identified that will be attended to by DOE and on-site personnel. These issues include repairing and replacing broken perimeter fencing at several locations, particularly along the south edge of the site; replacing broken, illegible, or outdated signs; relocating perimeter fencing along the west edge of the site threatened by a large active gully; removing wire from wildlife gates after perimeter fence repairs are complete; repairing a small erosion area near the West Drain Ditch; resolving a discrepancy between the safety posting at the entry gate to Pond 4 and the location of the lifesaving station; and assessing repairs and maintenance needs of field office buildings and support area features. Vegetation on the disposal cell cover is in good condition from an erosional and ecological standpoint. Shrub density remains below target values. Vegetation on the larger repository site is in very good condition, with a diversity of native species and few noxious weeds.

## City Property Findings

There was no violation of institutional controls restricting land and water use evident during the 2008 annual inspection. Radiological scans of mountain bike trails recently installed through the supplemental standards areas indicate no concerns. Drainage and runoff control structures were in good condition. There were no repair or maintenance issues to report to the City of Monticello.

## City Streets and Utility Corridor Findings

No unplanned or unmonitored excavations were evident during the 2008 annual inspection. No new erosion of highway shoulders and along the Highway 191 embankment at Montezuma Creek was evident.

## Private Property Findings

There was no violation of any land or water use restriction evident during the annual inspection conducted in 2008. In 2008, a land use change occurred on Property MP-00990 with the diversion water from Montezuma Creek for irrigation. DOE will evaluate the change to

determine its effect on the risk assessment. No well drilling has occurred in 2008 in or near the Groundwater Restricted Area.

### **Records Findings**

No major deficiencies were noted in radiological as-built drawings, site record books, or surveillance checklists. LTS&M documents were readily available, the Information Repository and Operable Unit III Administrative Record were present and in good condition, and deed restrictions were verified at the San Juan County recorder's office.

## 1.0 Introduction

The annual inspection of the U.S. Department of Energy (DOE) Monticello Mill Tailings Site (MMTS) and the Monticello Vicinity Properties (MVP) was conducted on September 16–18, 2008. DOE inspects these sites annually to ensure that the selected remedies remain protective of human health and the environment. Under those remedies, contamination remains in place at some locations where unrestricted use and unlimited exposure are prevented. Annual inspections (1) verify that DOE long-term surveillance and maintenance (LTS&M) activities implemented throughout the year are effective and appropriate, (2) confirm that the institutional controls restricting land and water use under the MMTS and MVP remedies remain effective, and (3) identify deficiencies and recommend corrective actions as needed. This report summarizes the results of the 2008 annual inspection.

### 1.1 Background Information

Between the early 1940s and 1960, uranium and vanadium ore was intermittently processed at the mill and ore-buying station in Monticello, Utah. The site of the former mill (millsite) is located along Montezuma Creek immediately south of town. Approximately 2.5 million cubic yards of low-level radioactive mill tailings were impounded at the millsite, and over time, some were dispersed to nearby properties by wind and water or used for construction in Monticello. Drainage of liquids from the impounded tailings contaminated groundwater in the underlying shallow alluvial aquifer.

The MVP and MMTS Projects were placed on the National Priorities List (NPL) in 1986 and 1989, respectively, to address mill-related contamination on residential and commercial properties and on the former millsite and adjacent areas. The locations of the Monticello NPL sites are shown in Figure 1. DOE, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as implemented through a Federal Facilities Agreement (FFA), completed remediation of soil contamination at the MMTS and MVP in August 1999. Radiologically contaminated materials were placed in an engineered disposal cell located on DOE property about 1 mile south of the former millsite. The disposal cell, completed in October 1999, and associated support facilities are known collectively as the repository site (see Figure 2).

In some locations, radiologically contaminated material was left in place in compliance with supplemental standards, as codified at Title 40 *Code of Federal Regulations* Part 192.21. These locations, referred to as supplemental standards properties (see Figure 3), occur on City and private property, beneath city streets, and in utility corridors.

In 2000, DOE transferred the former millsite and several adjacent properties (approximately 380 acres) to the City of Monticello with specific land and water use conditions and restrictions. The City restored the millsite as a public park as required under the transfer agreement. Features of the restored millsite and the surrounding land are shown in Figure 4. In addition to the transferred properties, privately owned supplemental standards properties (“Montezuma Creek Restrictive Easement Area” shown in Figure 3) are also subject to land use restrictions. Deeds for the affected properties have been annotated to prohibit soil and sediment removal. In the Groundwater Restricted Area (GWRA; see Figure 3), groundwater use restrictions, implemented

through the water well permitting process at the State Engineer's Office, prohibit domestic-use wells in the alluvial aquifer and improperly designed wells in deeper formations.

## **1.2 Long-Term Surveillance and Maintenance**

Long-term stewardship of the Monticello NPL sites began under the DOE Long-Term Surveillance and Maintenance Program on October 1, 2001, and continues under the DOE Office of Legacy Management (LM). DOE implements routine surveillance and maintenance of the Monticello sites, with oversight by the U.S. Environmental Protection Agency (EPA) Region VIII and the Utah Department of Environmental Quality (UDEQ), to ensure that the selected remedies continue to be protective of human health and the environment. The primary LTS&M components at the Monticello sites are:

- Routine inspection, operation, and maintenance of the on-site permanent disposal cell and leachate management system.
- Routine inspection of all properties affected by land and water use controls to ensure compliance with the controls.
- Annual site inspections and reporting.
- Monitoring and management of radiologically contaminated soil encountered at City and Utah Department of Transportation (UDOT) excavations in Monticello.
- Monitoring groundwater and surface water quality, and annual evaluation/reporting of the water quality restoration effort.
- CERCLA 5-year reviews (begun in 1997) to monitor and document the protectiveness of the MMTS and MVP remedies.

Routine LTS&M activities are conducted in accordance with the procedures provided in the *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites*, Rev. 0, June 2007 (DOE-LM/1465-2007). Contractor personnel stationed at the Monticello field office are responsible for implementing routine LTS&M activities and for monitoring and managing radiologically contaminated materials encountered in excavations. Groundwater and surface water monitoring is conducted by off-site contractor staff. Annual site inspections are also conducted in accordance with the site's LTS&M Plan by DOE-LM and contractor staff with participation by EPA, UDEQ, and the City of Monticello.

## **1.3 Annual Site Inspection Scope**

Annual site inspections of the MMTS and MVP focus on four general topics: DOE Repository Site, City and Private Properties where land or water use restrictions apply, City Streets and Utility Corridors, and Recordkeeping and Administrative Review. Each topic is outlined below and further itemized on inspection checklists provided to inspection team members. Copies of the blank inspection checklists are available as Appendix K in the *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites*, Rev. 0, June 2007.

### 1.3.1 DOE Repository Site

The repository site is inspected for:

- Integrity of constructed features and support facilities (signs, buildings, fences and gates, boundary markers, drainage channels, roads, sediment retention ponds, lysimeter structures, settlement plate covers).
- Groundskeeping and areas of soil erosion or siltation.
- Integrity of the disposal cell cover, rock riprap, and soil side slopes, and health of the plant community.
- Management/operation of the disposal cell leachate collection system and Pond 4.
- Management/operation of the temporary storage facility (TSF), where radiologically contaminated material transferred from supplemental standards properties is impounded until eventual off-site disposal.

### 1.3.2 City and Private Properties

The City and Private Properties comprise the following properties (see Figure 3 for locations):

- City-owned properties transferred from DOE: MP-00391, MP-01077, MP-01040 (north), MP-01041, MP-01042, MS-00893, and MP-00181. All of these properties are restricted to recreational day use. Overnight camping and the building of habitable structures are prohibited.
- Piñon/Juniper Supplemental Standards Properties (a subset of the City-owned properties): MP-00391, MP-01077, and MP-01041 have an added restriction of no soil removal.
- Former millsite properties (a subset of the City-owned properties): MS-00893 and MP-00181. In addition to other restrictions, damage to wetlands is prohibited in these areas.
- GWRA properties (a combination of City-owned and private properties): MS-00893, MP-00181, MP-01077, MP-00211, MP-00179, MP-00947, MP-01083, MP-00951, MP-01084, MP-00990, MG-01033, MG-01026, MG-01027, MG-01029, and MG-01030. Domestic use of groundwater from the alluvial aquifer is prohibited on these properties. This institutional control is administered by the State Engineer's Office through the well permitting process.
- Properties in the Montezuma Creek Restrictive Easement Area (also known as the OU II Soil and Sediment Properties [privately owned properties]): MP-00951, MP-00990, MP-01084, MG-01026, MG-01027, MG-01029, MG-01030, and MG-01033. Portions of these properties have restrictive easements to prohibit soil removal or construction of habitable structures.
- Special zoning ordinances affect property MP-00211 (City-owned but not transferred from DOE) and property MS-00176 (privately owned), which require radiological scanning for certain ground-disturbing activities.

City and private properties are inspected annually to confirm that institutional controls remain effective and to document any site conditions that may affect the protectiveness of the remedies. Properties are inspected for evidence of prohibited activities such as overnight camping,

vandalism, construction of habitable structures, soil removal, and groundwater use. The annual inspection also includes the condition of supplemental standards fencing, evidence of severe erosion or soil movement, condition of drainage controls, compliance with special zoning ordinances, and changes in land ownership or land use. The riparian habitat along Montezuma Creek and the constructed wetlands on the former millsite are inspected for evidence of damage or changes in ecological health.

Physical components of the OU III groundwater treatment system and inactive monitoring well surface completions, located on private property MP-00179, are also inspected annually. Inspectors also note any evidence of ponded water, saturated soil, surface disturbance, or stressed vegetation in the area of the groundwater treatment system.

### **1.3.3 City Streets and Utility Corridors**

DOE manages radiologically contaminated material encountered in City and UDOT (Highways 191 and 491) excavations through ultimate off-site disposal. Annual inspections confirm that current excavations are appropriately monitored and managed by the on-site LM staff. Because of past erosion issues, the Highway 191 embankment at Montezuma Creek (a UDOT right-of-way included in the supplemental standards properties) is inspected for evidence of severe erosion and movement of radiologically contaminated soil.

### **1.3.4 Recordkeeping and Administrative Review**

Recordkeeping by the on-site contractor staff is reviewed during the annual inspection for proper documentation of day-to-day activities. Documentation includes accurate and complete entries in the on-site record books (Repository Site, TSF, City-Owned Properties, Private Property Restricted Areas, and Public Roads and Utilities) and on the radiological as-built maps (detailed property maps maintained on site to identify the locations and results of radiological monitoring). The inspection also confirms that (1) deed annotations applicable to the supplemental standards properties are accurately filed at the County Courthouse, (2) the on- and off-site copies of the Information Repository (IR) are complete and current, (3) the on- and off-site copies of the OU III Administrative Record (OU III AR) remain complete, (4) the current LTS&M Plan, safety manual, and other relevant LTS&M documents are available on site for LM and contractor staff, and (5) on-site employees and City maintenance workers accessing the TSF are appropriately trained in radiological health and safety. Past inspections included an on- and off-site review of the MMTS and MVP Administrative Record, but these files were scanned and sent to the Federal Records Center in Denver, CO, in early 2008 according to CERCLA guidance.

## **1.4 2008 Annual Site Inspection Participants and Schedule**

The following participants conducted the physical site inspection for fiscal year 2008 on September 17 and 18, 2008:

Jalena Dayvault	U.S. Department of Energy, Monticello Site Manager.
Timothy Bartlett	S.M. Stoller Corporation, Site Manager and Project Hydrogeologist.
Todd Moon	S.M. Stoller Corporation, on-site representative.
Linda Sheader	S.M. Stoller Corporation, Plant Ecologist and curator of IR and OU III AR.
Paul Wetherstein	S.M. Stoller Corporation, point of contact, Environmental Compliance group.

The following regulatory officials attended portions of the inspection and participated in the summary meeting:

Paul Mushovic U.S. Environmental Protection Agency, Remedial Project Manager.  
Brent Everett Utah Department of Environmental Quality, CERCLA Branch Manager.  
Duane Mortensen Utah Department of Environmental Quality, Section Manager.

The following City official attended a portion of the inspection at the invitation of DOE:

Benny Musselman Streets Supervisor, City of Monticello.  
Myron Lee Monticello City Manager.

The following individuals were contacted in conjunction with the annual inspection:

Mark Stilson Utah Department of Natural Resources, Division of Water Rights.  
Steve Richards Training Specialist, S.M. Stoller Corporation

#### Tuesday, September 16, 2008

L. Sheader performed the administrative and records inspection. T. Bartlett distributed inspection checklists, and team members exchanged cell phone numbers.

#### Wednesday Morning, September 17, 2008

Inspection team members convened at the Monticello field office for a pre-entry site briefing by T. Moon. The briefing was followed by a discussion of landowner issues, LTS&M activities, and general site conditions. J. Dayvault, T. Bartlett, and P. Wetherstein inspected the TSF accompanied by EPA and UDEQ. L. Sheader and P. Wetherstein inspected the repository cover, settlement plate covers, drainage features, and wildlife fence. J. Dayvault and T. Bartlett inspected manholes, Pond 4, City-owned properties transferred from DOE, and property MP-00211. B. Musselman and M. Lee accompanied the inspectors during portions of the City-owned properties inspection.

#### Wednesday Afternoon, September 17, 2008

J. Dayvault and T. Bartlett inspected the City Streets and Utilities, UDOT rights-of-way, Property MS-00176, the Soil and Sediment Properties, and the GWRA. L. Sheader and P. Wetherstein inspected the site perimeter and sediment retention ponds. Inspection team members and regulators convened at the field office for a summary meeting.

#### Thursday Morning, September 18, 2008

T. Bartlett and J. Dayvault inspected the former haul road (property MP-01077) and properties MP-01042 and MP-01041. L. Sheader and P. Wetherstein inspected the inactive OU III monitoring wells. The field inspection concluded at approximately 11:00 a.m., and all participants departed the site.

## 2.0 Site Inspection Results

### 2.1 DOE Repository Site and Disposal Cell

The repository site consists of the property boundary fence; inner wildlife fence; runoff and runoff drainage controls; disposal cell cover and outlying areas; leachate management and telemetry systems; Pond 4; and the support buildings and TSF.

#### 2.1.1 Repository Perimeter

A conventional barbed wire stock fence (“perimeter fence”), containing several gates, marks the repository site boundary and discourages human trespass and livestock entry. Forty numbered location reference signs (E and P1–P39) are fixed to the fence or to separate posts. The site entrance gate is locked at night and at other times when on-site personnel are not present. Three storm water collection basins (Sediment Ponds A, B, and C), associated with engineered drainage controls at the repository, are also monitored during the site perimeter inspection. Discussions are under way concerning the possible decommissioning of these ponds. If the ponds are decommissioned, monitoring will be discontinued.

##### Perimeter Fence

Approximately 25 percent of the perimeter fence, located along the south edge of the repository site, is damaged from winter snowfall and livestock activities (Photo 1). Cattle from the adjacent property have regularly crossed the broken fence onto the repository property (Photo 2). Because of the extent of the damage, replacement of this portion of the south perimeter fence is recommended. Between perimeter signs P25 and P26, a fence post appears sunken because of siltation. Replacing the fence will correct this problem, but the area will continue to be monitored. A slack area exists in the perimeter fence near perimeter sign P15 that also requires repair. A slack area also exists between perimeter signs P32 and P33 but does not compromise fence integrity at this time.

All perimeter gates are in good condition. However, it is recommended that the “No Hunting” signs posted at each gate be replaced, as they are generally illegible (Photo 3). No evidence of vandalism (e.g., bullet holes) is present.

**Action Item:** DOE will hire a subcontractor to replace portions of the perimeter fence along the south edge of the repository site. The new fence will be designed to better withstand livestock pressure. Minor fence repairs at perimeter sign P15 also will be performed.

**Action Item:** “No Hunting” signs will be replaced at all perimeter gates.

##### Location Reference Signs

All location reference signs are present. Perimeter sign P12 is severely cracked, and the lettering on sign P28 has eroded away, probably from blowing snow. Both signs require replacement. The entry sign (E) has peeling paint but remains legible. Some perimeter signs are cracked at the bolt attachments (P11, P13, P26, P27, P30 and P31) and will continue to be monitored. A sign displaying contact information on the site access gate is out of date.

**Action Item:** Perimeter signs P12 and P28 will be replaced.

**Action Item:** Contact information sign on the main site access gate will be updated to remove Joe Slade's name and contact numbers (retired).

#### Boundary Markers

All six boundary markers are present and in good condition.

#### Erosion/Gullies

A gully between signs E and P2, described in the 2007 inspection report, has lengthened and deepened, and it continues to undercut fence posts (Photo 4). Relocating the affected posts is recommended to maintain the integrity of the perimeter fence. The gully is formed by storm runoff channeled along the Highway 191 right-of-way to North Draw. It has recently deepened from a water line break at the City of Monticello's manhole located near the site entrance. T. Moon repaired the break shortly after its discovery.

A large gully or small ravine (Photo 5) near sign P26, described in previous monitoring reports, shows signs of additional headcutting. This gully threatens portions of the fence line and it will continue to be monitored. Draws crossing the fence line between perimeter signs P15 and P16 and between signs P8 and P9 will be monitored. Potentially active headcutting was also noted near perimeter signs P31 and P7; these areas will also be monitored.

**Action Item:** Between perimeter signs E and P2, the fence line will be relocated several meters inside the DOE property boundary to avoid the active gully, or the gully will be reconstructed.

#### Perimeter Vegetation

Vegetation between the perimeter and wildlife (inner) fences is healthy and is composed primarily of desirable species. Some patches of non-noxious Platte thistles were identified, but few other weedy species are evident. One patch of diffuse knapweed, a noxious species, is growing near the entrance gate. On-site personnel have planned herbicide treatment. Inspectors identified no significant accumulations of tumbleweeds or trash along the fence line.

#### Sediment Ponds

No water was observed in Sediment Pond A, B, or C. There is no evidence of water reaching the spillways, which are in good condition. Lids capping the standpipes are intact, and the standpipes remain in a vertical position. Sediment accumulation is minor, and there is no evidence of recent sedimentation. Pond interiors are absent of debris and noxious weeds. In previous inspection reports, minor gully erosion has been noted on the inside of the south berms of Sediment Ponds A (Photo 6) and B (Photo 7). These gullies, and recently formed gullies on the south berm of Sediment Pond C (Photo 8), though active, do not threaten berm integrity at this time. Unless the ponds are decommissioned, recently formed cattle trails on the south berm of Sediment Pond C will continue to be monitored because these areas are now more prone to potential erosion. The outlets of each pond are not obstructed. In 2004, the drain at the inlet to Sediment Pond C (Photo 9) was repaired, and the repaired section remains functional. Sediment Pond B is located outside of the repository perimeter fence. The access gate to Sediment Pond B is in good condition, but a 30-foot section of the northern edge of the fence is broken and requires repair (Photo 10).

**Action Item:** Broken fence section at Sediment Pond B will be repaired.

## 2.1.2 Wildlife Fence and Drainage Controls

The wildlife fence is a 6-foot-high wire mesh fence surrounding the disposal cell portion of the repository site. The fence contains a vehicle access gate on the west end, a Pond 4 access gate on the east end, and five narrow gate apertures that allow ingress and egress of wildlife. Engineered rock-lined drainage controls that collect and direct runoff from the disposal cell are the West Drain Ditch, South Drain Ditch, East Toe Trench, and North Toe Trench. These features prevent erosion of the disposal cell and direct water to three collection basins (Sediment Ponds A, B, C, included in the repository perimeter inspection).

### Wildlife Fence

All sections of the wildlife fence are in good condition, and have no evidence of vandalism or damage. The gates are normally left open, but in 2008, cattle gained access to the site through breaks in the south perimeter fence. To prevent their access to the repository cover, the wildlife gate apertures have been temporarily wired closed, and vehicle gates are kept closed except when the repository is occupied. After perimeter fence repairs are complete, it is recommended that all gates be reopened.

**Action Item:** After perimeter fence repairs are completed, remove wire from wildlife gates and resume keeping vehicle access gate open.

### West Drain Ditch

In 2002, eroded areas in the channel immediately north of the inner fence were repaired, and the channel was lined with rock all the way to North Draw (Photo 11). The West Drain Ditch and these repaired sections are in good condition. A small armored gully running into the west side of the West Drain Ditch shows fresh headcutting (Photo 12). It is recommended that this minor headcut be armored with rock to prevent continued erosion.

**Action Item:** Place rock armor in headcut of gully running into West Drain Ditch.

### South Drain Ditch

The South Drain Ditch (Photo 13) is in good condition. Erosion rills are present on the ditch's north side in places. Some rills have stabilized, and others appear fresh but remain small. These features do not require action other than continued monitoring.

### East Toe Trench and North Toe Trench

Some rock at the surface of both toe trenches is degrading; windblown sediment has accumulated at the surface, and in places, plants are becoming established (Photo 14). However, erosion or bypass of these trenches is not evident. Soils and vegetation have accumulated in the drainage downgradient from the East Toe Trench (Photo 15), but flows are not impeded. Soils and vegetation have also accumulated in the drainage downgradient from the North Toe Trench; some slopes in this area show evidence of minor sheet erosion.

## 2.1.3 Disposal Cell Cover

### Vegetation

Desirable plants are well established on the cover, and no barren areas, eroded areas, or phreatophyte shrubs were identified (Photos 16 and 17). However, dead sagebrush plants are scattered across the cover. These shrubs were probably weakened by vole damage in 2006,

which left them susceptible to the effects of recent summer drought. Trace quantities of two species of Category C noxious weeds are found on the cover: bindweed (*Convolvulus arvensis*) and jointed goatgrass (*Aegilops cylindrica*). Because management goals for Category C weeds include prevention of spread rather than eradication, and neither species has increased on the site in several years, active management is not warranted at this time. Apart from the annual site inspection, detailed annual monitoring of cover vegetation has occurred since 2000. Although the condition of the cover's vegetation can affect cell performance, the revegetation success criteria used during annual monitoring are not linked to cell performance criteria. Results of this monitoring are summarized below and detailed in a separate report, *2008 Revegetation Monitoring of the Monticello, Utah, Disposal Site Cover*, November 2008.

For purposes of vegetation monitoring, the repository site is divided into four zones (see Figure 5). In 2007, success criteria were met in Zones A2 and A3. In 2008, Zones A1 and B were monitored, and results were similar to 2007 results. Most success criteria continue to be met or exceeded, but deficiencies in forb cover and shrub density persist. Shrub density dropped in Zone A1 since 2007 but increased in Zone B. Shrub density data from three general regions of Zone A1 were compared. Density is substantially higher in the west than the east and is lowest in the center. Desirable grasses comprise a similar portion of the cover across the repository. A live rabbitbrush planting effort was undertaken in fall 2007 in Zone A1, but the effort was largely unsuccessful. DOE will consider future plantings, as live planting remains the best option to increase the cover's shrub density. The incidence of noxious weeds remains low at the site, and weed populations remain well controlled.

Vegetation on the repository's soil-covered side slopes and outlying areas is in good condition (Photo 18). Plants have also established on portions of the rock riprap armoring (Photo 19), mainly rabbitbrush (*Ericameria nauseosa*) and yarrow (*Achillea millefolium*), with occasional patches of oak brush (*Quercus gambelii*). None of this vegetation is of concern because it does not overlie tailings or threaten the integrity of the side slopes.

#### Burrowing

Burrows of small rodents were identified in several places on the repository cover, but burrowing is expected and is not excessive. One large mammal burrow identified during the 2007 inspection has been filled and is no longer evident. Small soil undulations are present in a patch of abandoned rodent burrows on the southeast portion of the cover just below the apex.

#### Stability

No area of the cover indicated settling, slumping, fracturing, seepage, ponding, or significant erosion. The steep, rock-lined slopes show no evidence of rock movement or degradation, settling, slumping, or erosion.

### **2.1.4 Miscellaneous Disposal Cell Features**

#### Roads

The graveled road surrounding the disposal cell and the road to Pond 4 (Photo 20) are in good condition. Weeds up to 18 inches high grow in places but do not impede travel.

### Embedded Lysimeter

External features of the embedded lysimeter were inspected, and no drainage or seepage was detected at the outlet or along cover penetrations. Instrumentation installations are in good condition.

### Raptor Perches

Six raptor perches, erected along the outer edge of the road in 2007, are in good condition. On-site staff reports use of the perches by birds of prey.

### Site Monuments

Two granite site monuments identify ownership, historical information, and content of the disposal cell. The monuments, located immediately within the access gate and near the apex of the disposal cell, are legible and undamaged.

### Settlement Plates

Nine settlement plates, identified by the letters A through I, are located on the disposal cell. The outer protective casings (12-inch PVC pipe) and the inner plates are intact and undamaged. Data from elevation surveys of the settlement plates in 2006 indicated no evidence of settlement. Settlement plate elevations are surveyed every 5 years; the next survey is scheduled for 2011.

### Manholes

There are five manholes within the repository boundary. Manholes 1 and 3 enclose equipment for the disposal cell leachate collection and detection system. Manholes were not entered during the annual inspection, but the interior of Manhole 3 was observed from above ground (Photo 21). All manhole covers are secure and operable, appropriate safety warnings and entry procedures are posted, the exterior pump access ports are undamaged, telemetry surface installations are in good condition, and no leakage or drainage is evident. Covers of the video ports on MH-1 and MH-2 (inspection ports shown on Figure 2) are locked and secure.

## **2.1.5 Repository Telemetry System and Leachate Production**

Monitoring of leachate production is performed automatically via the repository telemetry system. Upgraded in 2007, it relays data to the DOE-LM "SOARS" system for off-site viewing, evaluation, and management. The telemetry data are routinely summarized by on-site staff and provided to DOE, EPA, and UDEQ in quarterly reports. Annual inspection of the repository telemetry system is conducted through interview with on-site staff. All pumps, flow meters, pump controls, water level sensors, software, and communications devices are in working order. Currently, less than 1,800 gallons of water per week is pumped from the disposal cell leachate collection and recovery system (LCRS; the upper liner system) and delivered to Pond 4. Initially (in 1999), leachate production was about 30,000 gallons per week. To date, no water has been collected in the disposal cell leak detection system (LDS; the lower liner system).

## **2.1.6 Pond 4**

Pond 4 (Photo 22) is a lined solar evaporation pond that collects water pumped from the disposal cell LCRS. Pond 4 also collects a small amount of precipitation. Pond 4 is constructed with an LCRS and LDS. The Pond 4 LCRS has collected water infrequently in the past when the pond was used to store construction water or at times of increased precipitation. The Pond 4 LDS has never collected water.

### Gate, Fence, Entrance and Perimeter Signs

An 8-foot-high chain link security fence surrounds Pond 4. Locked chain link gates are present at the northeast and southwest corners, and a locked vehicle access gate is located in the west fence. The security fence and all gates are in good working condition. There is no evidence of vandalism or trespass. Warning signs (water hazard, contaminated water, no trespass, controlled area) on the perimeter fence are easily visible and legible, but contact information posted on the entrance gate is out of date.

**Action Item:** Contact information sign on the Pond 4 access gate will be updated to remove Joe Slade's name and contact numbers (retired) and add Todd Moon's cell phone number.

### Pond Perimeter and Berm

The pond's rope barrier is in place, and warning signs (contamination area) are visible and legible. There is no visible evidence of damage (burrowing, erosion, slumping) to the berm. Vegetation on the slopes of the berm is well established.

### Lifesaving Equipment

Water rescue equipment is stored in a weatherproof metal cabinet on the berm near the northeast corner of Pond 4. The cabinet is highly visible, adequately labeled, and in good condition. The contents of the cabinet (throw buoys, rope, rope ladder, personal flotation devices) are easily accessible and in good condition. However, the location of the lifesaving station is not consistent with the posting at the entry gate. The access gate posting requires life jackets inside the fence, but the jackets are located far inside the fence.

**Action Item:** Resolve the discrepancy between the safety posting at the entry gate and the location of the lifesaving station.

### Pond 4 LCRS/LDS Control Cabinet

The cabinet is in good condition. No evidence of insects or rodent damage is present, and the cabinet remains weatherproof.

### Liner, Liner Anchors, and Pond Interior

No holes or evidence of holes in the pond liner were observed. Liner anchors, consisting of sand-filled polyethylene pipe installed in 2007, are in good condition. The northeast corner of the pond contains approximately 6 inches of water. Windblown silt and sand covers much of the pond floor to a depth of 2–4 inches. Vegetation in Pond 4 is not significant.

## **2.1.7 Support Buildings and Temporary Storage Facility (TSF)**

The Monticello field office buildings are in satisfactory condition (Photo 23). On-site personnel suggested some repairs and maintenance items, including replacement of skirting, roofing, and the building overhang, and installing a sidewalk. Several nonfunctional electrical panels on the northern fence of the support area (Photo 24) may also be removed. An infestation of Russian knapweed, a noxious species, was identified along the west fence of the support area. Herbicide has been purchased for on-site personnel to treat the infestation.

The TSF is a restricted-access, gravel-surfaced area enclosed by an 8-foot-high chain link fence. The fence is appropriately posted with access control signs. Within the enclosure is a three-sided

concrete bin with moveable cover for temporary storage of radiologically contaminated material from City and UDOT excavations. The cover is in good working order. At the time of the inspection the TSF bin contained approximately 55 cubic yards of materials. The TSF also contains a small shed for tarps and miscellaneous tools. Vandalism and trespassing are not evident.

**Action Item:** Assess repairs and maintenance needs of field office buildings and support area and implement repairs as necessary.

## **2.2 City-Owned Properties Transferred from DOE and City Property MP-00211**

Specific restrictions on City-owned properties transferred from DOE in 2000 are outlined in Section 1.3.2. Results of the 2008 inspection are described below.

### **2.2.1 Recreational Use**

#### Public Access

The City-owned properties transferred from DOE are easily accessible to the public. In 2007, these properties were annexed by the City of Monticello, and hunting is not allowed within city limits. In addition, “No Hunting” signs are posted at the entrance to property MP-01040 (north) from Highway 191 and on fencing along the west side of the supplemental standards area of property MP-00391. The public access signs at both entrances are posted and legible (Photo 25).

#### Day Use and Overnight Camping

No evidence of camping was observed on any property.

### **2.2.2 Construction of Habitable Structures**

On-site personnel observed no evidence of habitable structures or construction activity at any of these properties during the 2008 inspection or through the year. No construction activities subject to special zoning ordinance were planned or evident on MP-00211.

### **2.2.3 Supplemental Standards Areas on Piñon/Juniper Properties**

No evidence of soil removal by human activity or natural processes was noted on any of the Piñon/Juniper Properties supplemental standards areas during the 2008 inspection. The supplemental standards areas are enclosed by four-strand wire fence. These fences were constructed to physically delineate the areas where supplemental standards were applied. The fencing is inspected for physical integrity. Aside from some past undercutting of fence posts, which will continue to be monitored, the fencing that encloses the supplemental standards areas was intact during the 2008 inspection, except for sections breached by the City of Monticello to install mountain bike trails. Radiological scans of the mountain bike trails in the supplemental standards areas indicate no concerns, and survey records are available at the Monticello Field Office. DOE will monitor these areas on a regular basis.

## **2.2.4 Drainage and Runoff Control Structures**

All riprap armored structures, dams, check dams, berms, and runoff control drainages are intact and functional. Locations of these features are shown on Figure 4. No major erosion issues were noted during the 2008 inspection. Erosion issues, if found, are reported to the City of Monticello. Photos 26, 27, and 28 show the condition of the City-owned properties, and Photo 29 shows the former haul road.

## **2.2.5 Wetlands and Riparian Habitat**

Restoration of the former millsite included rechanneling Montezuma Creek, constructing three wetlands adjacent to the creek, and establishing wetland and riparian habitat in these areas according to EPA-specific criteria. These criteria were met in 2004, and the wetlands are protected by cooperative agreement. Under this agreement, the City will not disturb the areas without prior approval from appropriate state and federal agencies and is not responsible for repairing damage to these areas by natural cause.

The creek channel and wetlands show no evidence of damage by human activity or natural cause. The wetlands and riparian zone are ecologically healthy, and frequent wildlife use is apparent. Willow growth is dense along the banks of Montezuma Creek, and cattails, rushes, and sedges are dominant plants in the wetlands.

## **2.2.6 Groundwater Use**

No evidence of groundwater use or water-well drilling on City-owned properties with groundwater restrictions was observed during the 2008 inspection or through the year. No applications to drill were filed with the Utah Department of Natural Resources Division of Water Rights for these areas (see Section 3.6).

## **2.3 City Streets and Utility Corridors**

Radiologically contaminated soil remains in some places beneath streets and utility corridors in Monticello, in the Highway 191 embankment over Montezuma Creek, and UDOT rights-of-way along Highways 191 and 491. Supplemental standards have been applied to these areas. Through a cooperative agreement with the City, on-site staff monitors all City and UDOT excavations in Monticello for radiologically contaminated material. The City transports any radiologically contaminated material to the TSF under direction of the on-site staff.

Throughout the course of the 2008 inspection, city streets were inspected at random for unmonitored or unplanned excavations. None were identified. Excavations at Abajo Drive, noted during the inspection, had not penetrated the surface, but on-site Stoller personnel planned to conduct radiological scanning. On-site personnel were aware of all planned excavations, including gas line upgrades scheduled for 2008 and 2009.

All excavations of Highways 191 and 491 are monitored by on-site Stoller personnel. UDOT has the option of returning contaminated material to the excavation as backfill or having City workers, under the direction of on-site personnel, haul the material to the TSF.

During the 2008 inspection, no active construction or excavation was observed along Highway 191 because summer utility work was complete. Road construction along Highway 491 is scheduled for 2009. Evidence of unmonitored or unplanned excavations in these rights-of-way was not apparent. No new erosion of the highway shoulders and along the Highway 191 embankment at Montezuma Creek was evident. An erosional slump on the highway embankment near the northwest corner of the millsite, first noted in the 2006 inspection report, is stable. The slump was scanned shortly after its detection and showed no evidence of radiological contamination.

## **2.4 Private Property MS-00176-VL**

Monticello zoning ordinance requires a special building permit based on radiological scanning results before construction of a habitable structure on this property. There is no evidence of erosion, soil removal, or construction of habitable structures. Road base was added to the existing road in 2008, and the road was widened. A deposit of tree debris is also present, although it appears not to have originated on the property.

A portion of this property was sold in 2006. The portion that was sold does not have supplemental standards areas, but the new owner did not remove the land use restriction annotated to the deed.

## **2.5 Properties in the Montezuma Creek Restrictive Easement Area**

Photos 30 and 31 show portions of Montezuma Creek from one of these properties. There was no evidence of significant erosion or soil removal from the restricted areas of these properties during the 2008 inspection. In 2006, a new residence was constructed on property MP-00990 (L. Adams, landowner) outside the supplemental standards area. At that time, on-site personnel assisted Mr. Adams in delineating the restricted area of this property. Mr. Adams cultivates a portion of the property in the restricted area in compliance with the land use restriction. Cultivation is permitted as long as the soil is not moved outside of the area. In 2008, Mr. Adams began diverting water from Montezuma Creek near monitoring well 92-09 to apply to cultivated areas. This represents a change in land use, which will be evaluated by DOE to determine potential risk.

Mr. Brian Bowring currently owns property MP-00951. On-site staff reported that the land was for sale in 2007. On-site personnel reported no changes in land ownership on this or any other property in the Restrictive Easement Area in 2008.

**Action Item:** Evaluate risk of land use change on Property MP-00990.

## **2.6 Groundwater Restricted Area**

In the past year there has been no well drilling activity in or near the GWRA. This was confirmed on September 11, 2008, by M. Stilson of the State Engineer's Office, who indicated to

P. Wetherstein that there were no applications filed in the past year for water wells in or near the Monticello GWRA.

## 2.7 Operable Unit III

### Permeable Reactive Barrier (PRB) and Auxiliary Treatment System

A groundwater treatment system comprising the PRB and treatment cell is on private property MP-01079 east of the former millsite. These features are inspected each year to ensure that ranching, the current land use, is not adversely affected. Visible components of the groundwater treatment system (vaults [Photo 32], telecommunications antenna, electrical panel, fence enclosures) are in satisfactory condition. No evidence of ponded water or saturated soil is present. Inspectors noted one area of dead vegetation, resulting from known excavation activities, and this area has not yet revegetated.

### Water Quality Monitoring and Well Inspection

Operable Unit III water quality is monitored at an established network of active groundwater monitoring wells and surface water monitoring sites. Active wells are inspected during sampling in April and October of each year, and field personnel noted no deficiencies in routine well inspections in 2008. One broken monitoring well on the former millsite west of the footbridge across from Christensen's drain was identified as a remnant of a well abandoned by DOE in 2006. All inactive wells at the PRB were inspected during the 2008 inspection. The wells are generally in good condition, but several (T3-5 and R2-M5) have cracked concrete pads or are missing one or both cover bolts (R5-M10, R7-M2, R3-M1, R4-M1, and R5-M2). Illegible identification labels for many inactive wells were repainted during the inspection. A number of unlabeled wells and PRB air vents exist, two of which are missing one or both cover bolts. A copy of the LTS&M Plan map was updated to show the locations and names, if available, of these unlabeled surface completions, as well as several labeled wells not on the map. This will assist in locating wells in future inspections and in correctly repainting faded identification labels. DOE also plans to replace missing bolts from inactive PRB well completions.

**Action Items:** Create a new field map that shows missing wells for use in future annual inspections and replace missing bolts from inactive PRB well completions.

## 2.8 Administrative and Records Inspection

L. Sheader completed the records inspection on September 16, 2008. The following documents/records, recorded by on-site staff, were inspected for completeness and accuracy of information:

- Radiological as-built drawings.
- Site record books, which include the repository, TSF, City-Owned properties, private property restricted areas, and public roads and utilities.
- Surveillance checklists, which include Meteorological Monitoring Data; TSF Access/Security Logs; and Monthly, Quarterly, and Pond 4 Surveillance Checklists. Pond 4 and Repository LCRS and LDS Monitoring Records are recorded electronically.

The following categories of documents/records were inspected to ensure that pertinent information for implementing LTS&M activities is readily available to on-site staff and the general public:

- LTS&M Plan, including site-specific emergency response information.
- LM Health and Safety Manual.
- LM CERCLA Site QA Plan and Monticello site-specific section.
- Administrative Record and Information Repository.
- LTS&M training records (applicable to on-site and City employees accessing the TSF).

Deed restrictions (verified in the San Juan County recorder's office) were inspected to ensure that administrative controls remain in effect with the City and County.

No major deficiencies were noted in any of the above administrative categories. T. Moon corrected minor deficiencies in recordkeeping on September 16, 2008. Several copies of outdated manuals were found at the field office; it is recommended that these manuals be discarded. It was noted that the Grand Junction copy of the Information Repository, recently relocated from a records vault to Building 938, Room 247, was not updated with the Monticello copy in April 2008. Complete updates to both copies will occur in November 2008.

**Action Item:** Remove all outdated manuals from Monticello field office shelves.

**Action Item:** Ensure that the location of Grand Junction copies of Information Repository and OU III Administrative Record is cited correctly in public documents and update the Grand Junction copy of Information Repository to be equivalent to the Monticello copy.

### 3.0 Conclusions and Recommendations

The 2008 annual inspection confirmed that DOE LTS&M activities implemented throughout the year remain effective and appropriate, and institutional controls restricting land and water use under the MMTS and MVP remedies remain effective. No corrective actions are necessary. The following recommendations address maintenance and monitoring issues identified during the 2008 annual inspection. These recommendations are scheduled to be addressed in Calendar Year 2009. Completion of these items will be documented in the corresponding FFA quarterly report to EPA and UDEQ.

- Replace portions of the perimeter fence along the south edge of the repository site. The new fence will be designed to better withstand livestock pressure. Also, perform minor fence repairs at perimeter sign P15 and repair the broken fence section at Sediment Pond B.
- After perimeter fence repairs are completed, remove wire from wildlife gates and resume keeping vehicle access gate open.
- Replace "No Hunting" signs at all perimeter gates.
- Replace perimeter signs P12 and P28.

- Update the contact information sign on the main site access gate and Pond 4 gate to remove Joe Slade’s name and contact numbers and add Todd Moon’s cell phone number.
- Between perimeter signs E and P2, relocate the fence to avoid the active gully or reconstruct the gully. **Note:** UDOT retains an easement along the Highway 191 right-of-way where this fence and gully are located. Any work in the easement should be coordinated with UDOT.
- Place rock armor in the headcut of the gully running into West Drain Ditch to prevent further erosion.
- Evaluate risk of land use change on Property MP–00990.
- Assess repairs and maintenance needs of the field office buildings and support area and implement repairs as necessary.
- Create a new field map that shows missing inactive wells near the PRB for use in future annual inspections.
- Remove all outdated manuals from Monticello field office shelves.
- Ensure that the location of Grand Junction copies of Information Repository and OU III Administrative Record is cited correctly in public documents, and update the Grand Junction copy of Information Repository to be equivalent to the Monticello copy.
- Resolve the discrepancy between the safety posting at the entry gate and the location of the lifesaving station at Pond 4.
- Replace missing bolts from inactive PRB well completions.

## **4.0 Photograph Log and Photographs**

Photographs were taken to document findings of the 2008 annual inspection. The location and orientation of the photographs listed below are identified in Figures 2, 3, and 4. A Field Photograph Log associated with all photographs taken during the 2008 annual inspection is included as Attachment 5 to the Annual Inspection Checklists (Appendix A).

1. Damaged outer fence near perimeter sign P27; Cattle trail from adjoining Johnson property
2. Cattle grazing (unsolicited) between outer and inner fences
3. Damaged “No Hunting” sign near Sediment Pond B
4. Gully in Highway 191 right-of-way along west outer fence
5. Ravine immediately south of the inflow channel to Sediment Pond C
6. Sediment Pond A
7. Sediment Pond B
8. View into Sediment Pond C, cattle within the outer fence
9. Drainage channel from the repository to Sediment Pond C
10. Damaged fence near Sediment Pond B
11. View from terminus of West Drain Ditch into North Draw
12. View down West Drain Ditch showing the minor headcut area identified during the 2008 inspection
13. View up South Drain Ditch

14. View of the North Toe Trench showing sedimentation and vegetation
15. Drainage north of the East Toe Trench showing vegetation and soils accumulation
16. View of the repository cover from apex of repository
17. View over the cell from apex of western end
18. Repository side slope from a raptor pole at the northwest corner
19. View across the western riprap cover facet showing vegetation growing in rock
20. Pond 4 and access road
21. Interior of Manhole 3
22. Pond 4 interior and warning sign
23. Support buildings at the Monticello field office
24. Electrical panels on the north fence of the support area
25. New parking area at the trail access at the end of S200E Street
26. Former millsite. Wetland 2 at the center of the photo.
27. Former millsite showing Montezuma Creek, connects with Photos 26 and 28.
28. Former millsite. Wetland 1 is at the left of the photo.
29. View down the former haul road corridor at property MP-01077
30. View upstream of Montezuma Creek from west of the sediment retention pond
31. View over Montezuma Creek valley near the sediment retention pond
32. Vaults of auxiliary treatment cells at the groundwater treatment system



1. Damaged outer fence near perimeter sign P27; Cattle trail from adjoining Johnson property



2. Cattle grazing (unsolicited) between outer and inner fences



3. Damaged “No Hunting” sign near Sediment Pond B



4. Gully in Highway 191 right-of-way along west outer fence



5. Ravine immediately south of the inflow channel to Sediment Pond C



6. Sediment Pond A



7. Sediment Pond B



8. View into Sediment Pond C, cattle within the outer fence



9. Drainage channel from the repository to Sediment Pond C



10. Damaged fence near Sediment Pond B



11. View from terminus of West Drain Ditch into North Draw



12. View down West Drain Ditch showing the minor headcut area identified during the 2008 inspection



13. View up South Drain Ditch



14. View of the North Toe Trench showing sedimentation and vegetation



15. Drainage north of the East Toe Trench showing vegetation and soils accumulation



16. View of the repository cover from apex of repository



17. View over the cell from apex of western end



18. Repository side slope from a raptor pole at the northwest corner



19. View across the western riprap cover facet showing vegetation growing in rock



20. Pond 4 and access road



21. Interior of Manhole 3



22. Pond 4 interior and warning sign



23. Support buildings at the Monticello field office



24. Electrical panels on the north fence of the support area



25. New parking area at the trail access at the end of S200E Street



26. Former millsite. Wetland 2 at the center of the photo.



27. Former millsite showing Montezuma Creek, connects with Photos 26 and 28



28. Former millsite. Wetland 1 is at the left of the photo.



29. View down the former haul road corridor at property MP-01077



30. View upstream of Montezuma Creek from west of the sediment retention pond



31. View over Montezuma Creek valley near the sediment retention pond



32. Vaults of auxiliary treatment cells at the groundwater treatment system

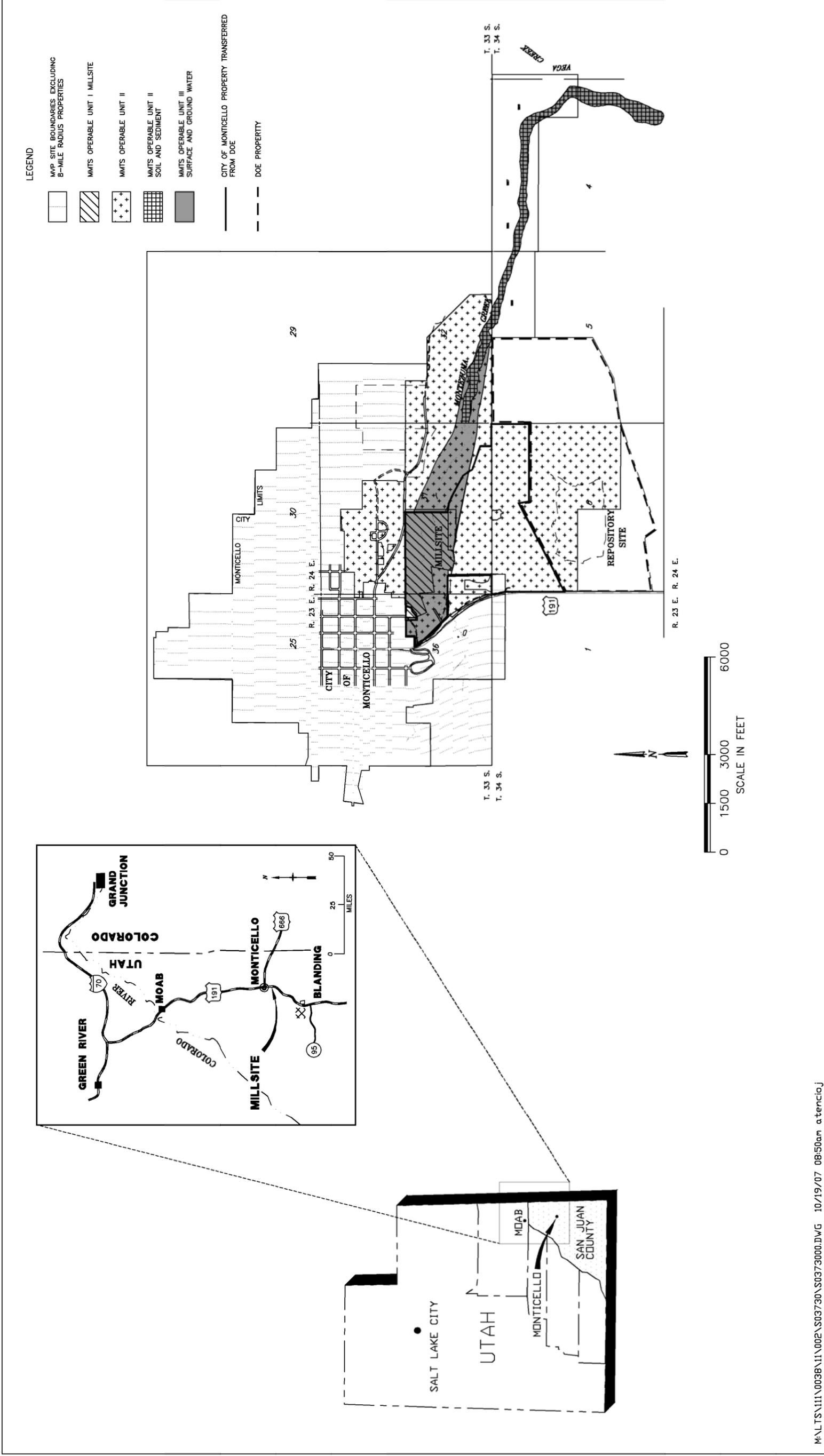


Figure 1. Location and Features of Monticello MMTS and MVP Sites

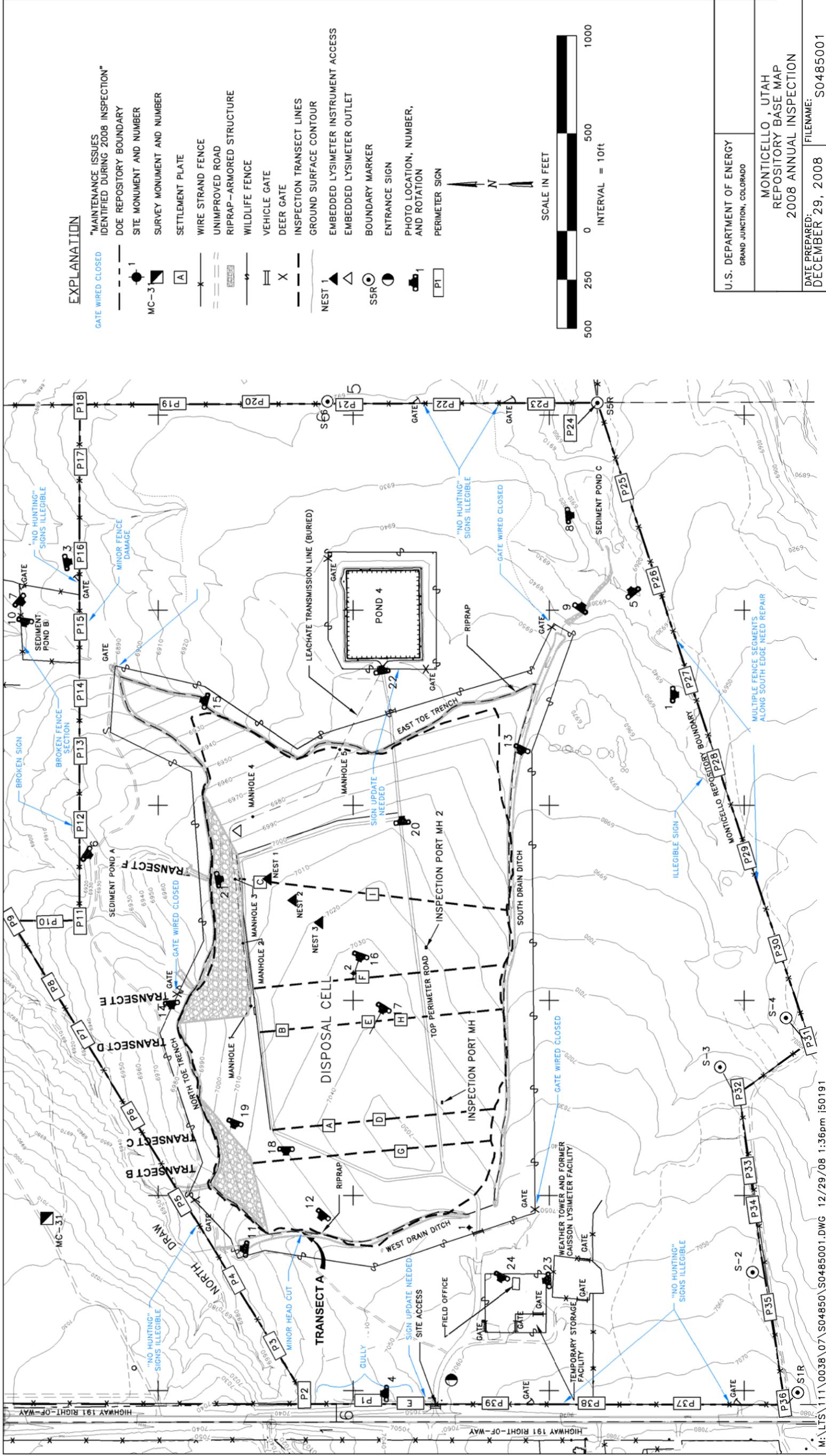


Figure 2. Monticello, Utah, Repository Site

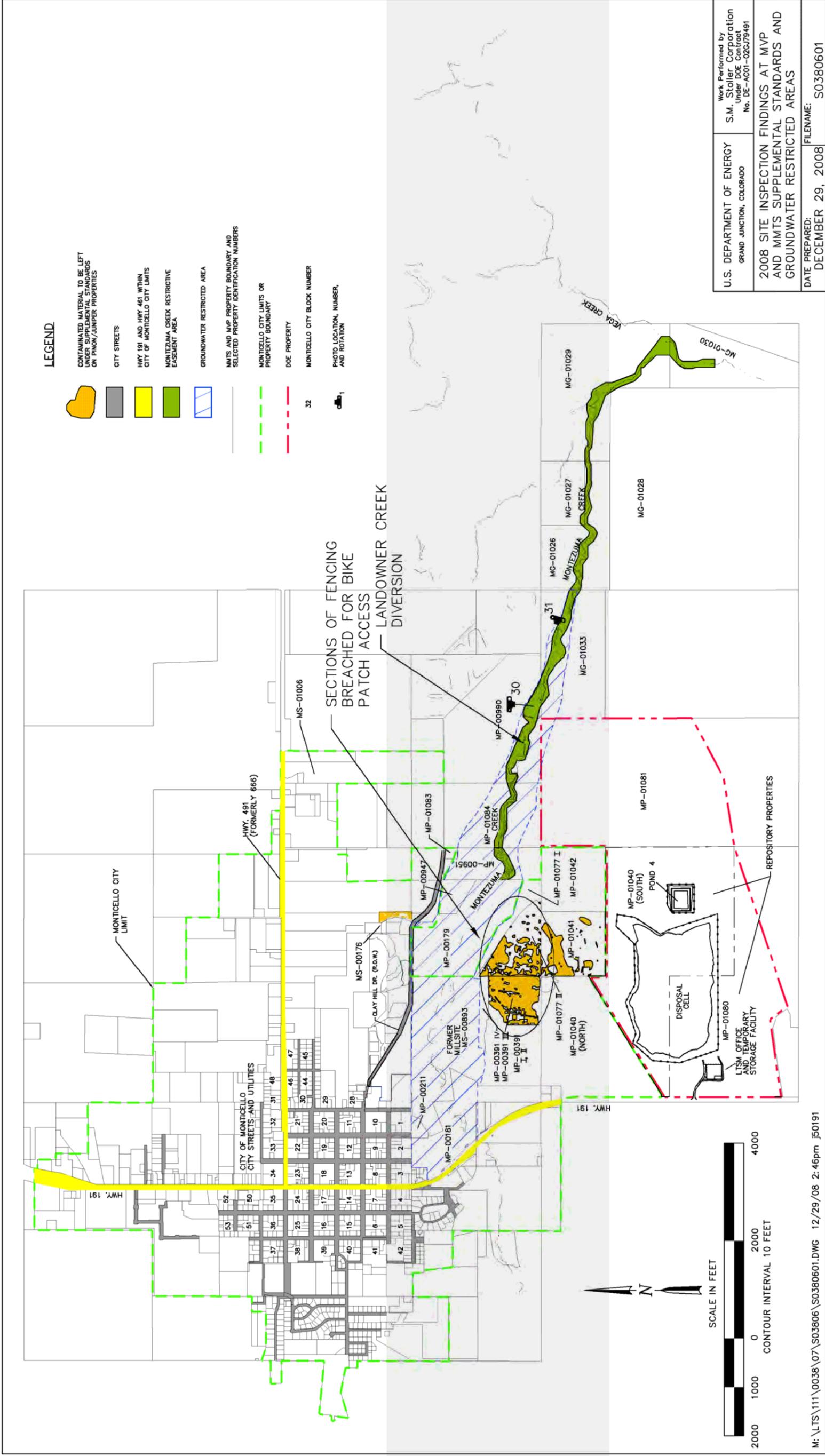


Figure 3. MMTS and MVP Supplemental Standards and Groundwater Restricted Areas

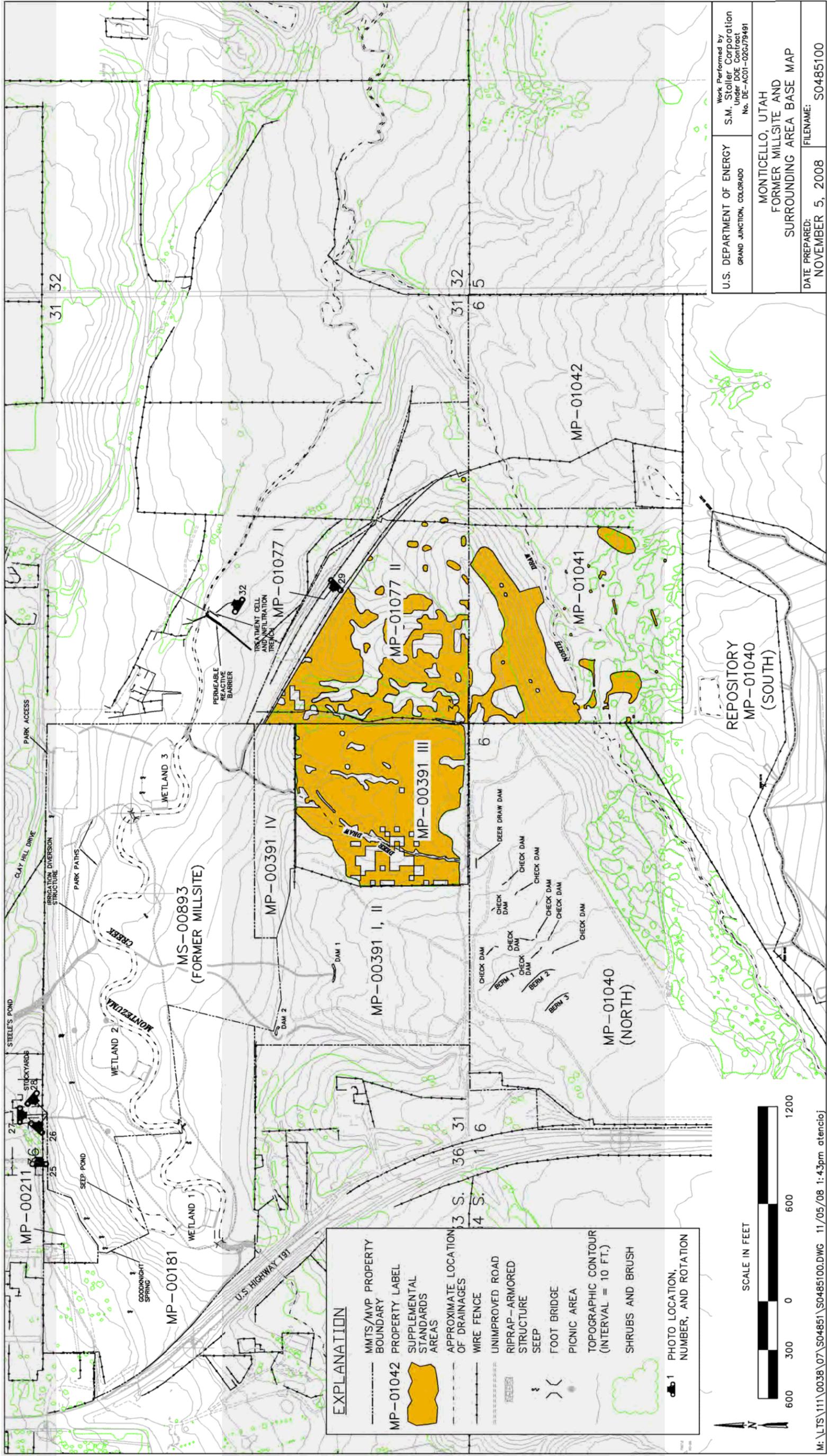
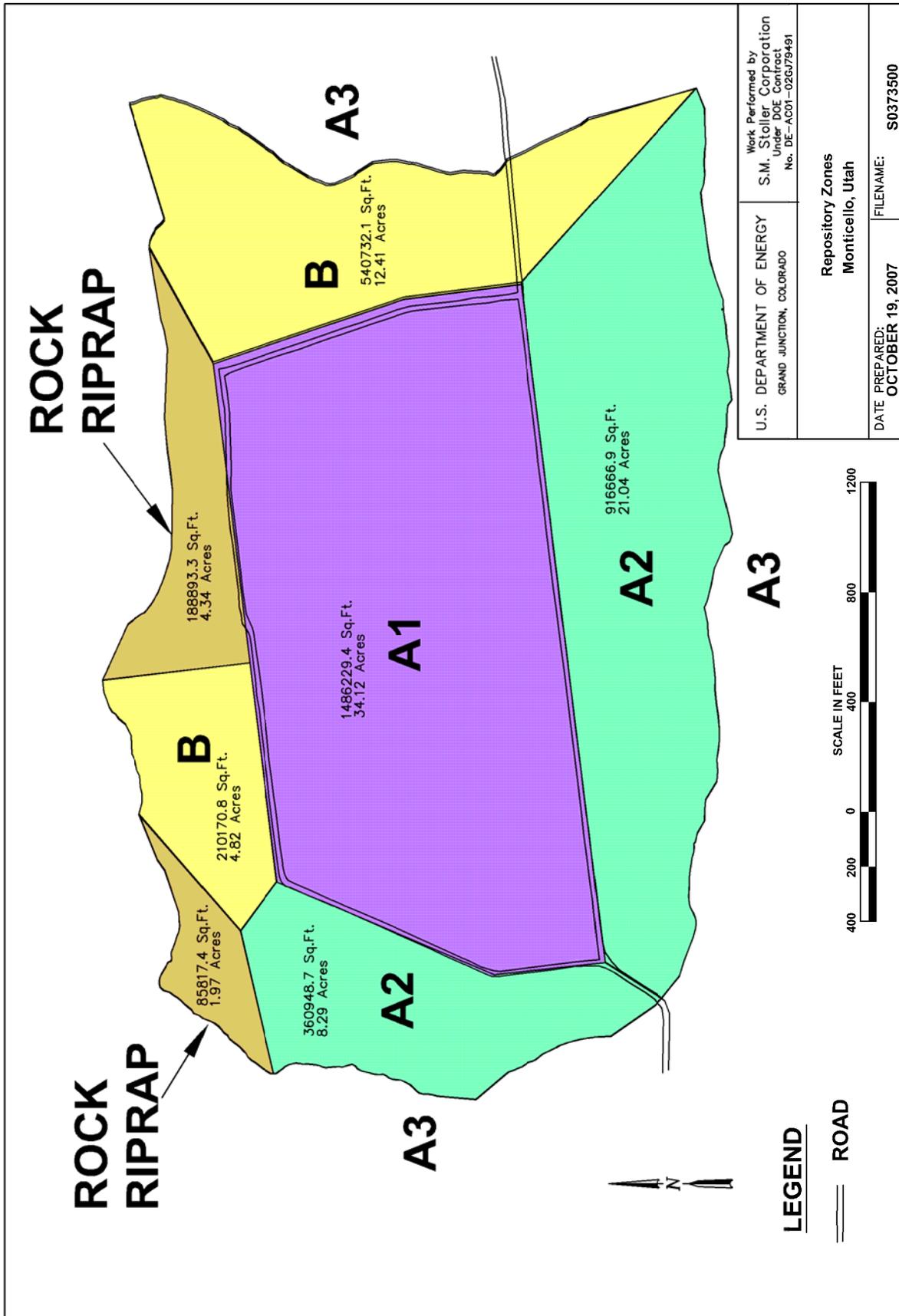


Figure 4. Monticello, Utah, Former Millsite and Surrounding Area



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## **Appendix A**

### **Annual Inspection Checklists**

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**MMTS Annual Inspection Checklist**

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<b>I. MMTS Site Information</b>	
<b>Site name:</b> Monticello Mill Tailings (USDOE) Site; Operable Units I, II, and III	<b>Date of inspection:</b> 09/17/2008
<b>Site Location:</b> Monticello, Utah: EPA Region 8	<b>EPA ID:</b> UT 3890090035
<b>Lead Agency:</b> U.S. Department of Energy Office of Legacy Management (DOE-LM)	
<b>PCOR Date:</b> September 2004	
<b>Operational and Functional Date:</b> September 29, 2004 (construction complete date)	
<b>NPL Deletion Date:</b> 2045 (projected time for ground water and surface water restoration)	
<b>Partial Deletion:</b> October 13, 2003 (deletion of properties not impacted by surface water and ground water contamination).	
<b>Current Year O&amp;M Budget:</b>	
<b><u>MMTS Inspection Components/Facilities</u></b>	
<ol style="list-style-type: none"> <li><b>1. DOE-Owned Property: Repository Site</b> <ul style="list-style-type: none"> <li>• Access Controls (fencing, gates, signage)</li> <li>• Disposal Cell (vegetated cover, settlement plates, erosion controls/drains, sediment ponds)</li> <li>• Leachate Management System (pumping and monitoring equipment, telemetry system, solar evaporation pond)</li> <li>• Temporary Storage Facility (temporary storage of radiologically contaminated material encountered in city street and utility excavations)</li> <li>• Information repository and record keeping/documentation</li> <li>• DOE-LM Field Office</li> </ul> </li> <li><b>2. City-Owned Properties with Institutional Controls</b> <ul style="list-style-type: none"> <li>• Deed restrictions to limit land use on supplemental and non-supplemental standards properties transferred to City of Monticello from DOE</li> <li>• Special Zoning (Overlay Zone OL-1) for property MP-00211-VL (radiological controls incorporated into building permit process)</li> <li>• Ground water use restriction (conditional with land transfer for properties overlying the shallow aquifer)</li> <li>• Cooperative Agreement (control of radiologically contaminated material encountered beneath City streets and in utility corridors)</li> </ul> </li> <li><b>3. Private-Owned Properties with Institutional Controls</b> <ul style="list-style-type: none"> <li>• Land use restrictions on supplemental standards properties along Montezuma Creek</li> <li>• Ground water use restrictions (administered by State Engineer Office to disallow use of contaminated ground water within the Groundwater Management Area)</li> </ul> </li> <li><b>4. Other</b> <ul style="list-style-type: none"> <li>• OU III ground water and surface water monitoring network</li> <li>• DOE-operated ground water treatment systems (permeable reactive barrier and ex-situ treatment cells)</li> </ul> </li> </ol> <p style="text-align: center;"><b>See attached maps for the location of site inspections features identified in this checklist</b></p>	

## II. Annual Inspection Preparation

DOE has conducted annual inspections at the MMTS and MVP since 2001, and CERCLA 5-year reviews since 1997. The CERCLA 5-year reviews are required by statute when (1) “upon completion of the remedial action, hazardous substances, pollutants, or contamination will remain on site, and (2) when the ROD was signed on or after October 17, 1986 (the effective date of SARA) and the remedial action was selected under CERCLA §121. The MMTS and MVP NPL sites meet both of these conditions. Currently, there is no provision for discontinuation of 5-year reviews. The MMTS and MVP inspections and reviews are conducted concurrently.

Annual inspections are performed by DOE-LM to identify and correct potential deficiencies in LTS&M operations at an early stage. DOE-LM performs these inspections and reviews with the objective of ensuring that the selected remedies remain protective of human health and the environment. Annual inspections performed by DOE-LM are designed to

- Ensure that routine surveillance, maintenance, and monitoring is adequate at the Monticello NPL sites.
- Ensure that institutional controls remain relevant and effective.
- Evaluate the condition of areas of special concern (e.g., disposal cell cover, monitoring wells, drainage controls, PRB, vegetative restoration).
- Identify LTS&M deficiencies and recommend corrective action.
- Provide data for CERCLA 5-year reviews (**Note:** the annual inspection immediately preceding the 5-year report period is conducted within 6 months of the submittal date for the CERCLA 5-year review report.)

The Site Manager will appoint a Chief Inspector to plan and conduct the annual inspection and to prepare the annual inspection report. The annual inspection is generally scheduled in September to coincide with the FFA biannual meeting and at a time that is seasonally advantageous to field work. Annual field inspections review the work performed on-site by the Monticello LM Representative in the past year and document current site conditions by qualified team. The procedure for conducting annual site inspections at the Monticello NPL sites is detailed in Section 6.0 of *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (June 2007, Rev. 0).

The following tasks were completed in preparing for the current MMTS annual inspection:

	Y	N
Review previous site inspection reports, recent FFA quarterly reports, and any maintenance or corrective action performed over the past year.	X	
Review recent OU III water quality data for concentration trends and extent of contamination.	X	
Schedule the site inspection. Notify EPA and UDEQ at least 2 weeks prior to the site visit and invite their participation.	X	
Team members are provided with background information, site maps, and inspection checklists.	X	
Contact the State Engineer's Office for information on water well permit applications within or near the Ground Water Management Area during the past year.	X	(Attachment 1)
Verify the names and telephone numbers of the parties with whom access or notification agreements have been executed.	X	
Verify the key contact information listed in Section 6.1 of the LTSM Plan.	X	

### III. Inspection Team Members

Inspection team contact information.

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**Other inspection participants or interviewees may include:** US EPA RPM, UDEQ RPM, National Park Service, Fish and Wildlife Service, Utah State Engineer's Office, City of Monticello (refer to LTSM Plan Section 6.1 for additional contact and notification information).

**IV. Interviews (attach additional sheets as needed)**

1. On-site LM Representative Todd Moon 9/17/2008  
Name Date

Summary/problems/ suggestions: \_\_\_\_\_

Utility work, especially highways occurring; gas line in October; new subdivisions; onsite work not able to get to this summer; approximately 1 ft of water in pond; all data automatic; upper system flatlining (probably end of construction water); lower system static.

Land use/landowner issues: new city manager, Myron Lee; new to area; needed to orient new people to operation; occasional people who acquire property – Todd copies completion reports – few if any calls this summer. No change in ownership for Supplemental Standards areas. City has installed new trails at Millsite and keeps weeds down at request of community. Now used regularly. No issues/activities in canyon to Todd's knowledge.

2. On-site LM Representative \_\_\_\_\_  
Name Date

Summary/problems/ suggestions: \_\_\_\_\_

N/A

**3. City of Monticello**

\_\_\_\_\_

\_\_\_\_\_

Summary/problems/ suggestions: \_\_\_\_\_

No interview conducted in 2008 with City of Monticello officials.

**4. State Engineer**

\_\_\_\_\_

\_\_\_\_\_

Summary/problems/ suggestions: \_\_\_\_\_

Mr. Mark Stilson, Utah Dept. of Natural Resources, Division of Water Rights, was contacted regarding well permits before the annual inspection (See Attachment 1)

**5. Other**

Name \_\_\_\_\_

Date \_\_\_\_\_

Summary/problems/ suggestions: \_\_\_\_\_

Note: one transfer on 7/9/08 was recorded on the materials transfer log but not on the main entry log.

Problem corrected on 9/16/08 by Todd Moon.

Notes from records inspection, 9/16/08, by LS:

2 copies of STO2 were also on shelf; manual outdated

City employees escorted at TSF all visits (Benny Musselman and Wayne Acox)

Grand Junction copy of IR not updated in 4/2008 because of move; will relocate to Bldg 938, Room 247 and update at that time.

Training records up to date (confirmed via e-mail with Steve Richards of SM Stoller ; Attachment 2)

**V. Administrative and Records Inspection**

	Readily Available		Current	
	Y	N	Y	N
<b>1. General LTSM Documents</b>				
Long-Term Surveillance and Maintenance (LTSM) Plan	X		X	also in IR
Radiological As-built Drawings	X		X	
LM Health and Safety Manual	X		X	
Site Specific Emergency Response Information (in LTSM Plan)	X		X	Appendix C
LM CERCLA Site QA Plan and Monticello Site Specific Section	X		X	& 08 QA Man.
<b>2. LTSM Training Records</b>				
On-site Employees				Todd Moon current RCT thru 10/31/08
City Workers – B. Musselman RW II thru 12/31/08; Wayne Acox RW II thru 3/31/10 (Attachment 2)				
<b>3. Administrative Record Collections</b>				
MMTS/MVP				N/A; sent to Fed Records Center in 2008
MSG OU III	X		X	
<b>4. Information Repository</b>				
On-site	X		X	
Grand Junction Office	X			X

**5. Record Books** (refer to LTSM Plan Appendix B for record book management and entry protocol)

	Y	N	Y	N
Repository Site Record Book				
(all routine and non-routine daily activities maintaining/operating the repository site, cell cover, LCRS and LDS systems, and Pond 4)	X		X	
TSF Record Book				
(refer to LTSM Plan Section 3.4 for TSF Record Book entries/content)	X		X	
City-Owned Properties Record Book				
(refer to LTSM Plan Section 4.4 for record book entry information)	X		X	
Private Property Restricted Areas Record Book				
(refer to LTSM Plan Section 4.4 for record book entry information)	X		X	
Record book entries/documentation	X	satisfactory		
		unsatisfactory		

**6. Surveillance Checklists and Records**

Pond 4 LCRS and LDS Monitoring Records	recorded electronically
Repository LCRS and LDS Monitoring Records	recorded electronically
Meteorological Monitoring Data	X X
TSF Access/Security Logs	X X
Monthly Repository Surveillance Checklists	X X
Quarterly Repository Surveillance Checklists	X X
Monthly Pond 4 Surveillance Checklists	X X

**7. DOE/City Cooperative Agreement** (Amendment 2 [M002] through 6/27/05)

Expiration date 6/27/05

**8. Zoning Restriction—Overlay Zone OL-1**

Restriction is verified as current through City for property MP-00211-VL

Note: inspections of TSF occurred 8/29/08, 6/24/08, 5/7/08, and 11/20/07

**9. Deed Restrictions** (verify property deeds are properly annotated regarding MMTS Institutional Controls in the San Juan County Recorder Book)

**Properties Transferred from DOE to City of Monticello** **IC Annotations in Place**  
Y N

DOE ID	Parcel	Document	Book	Page	
MP-00181-OT	A33230367201 (1) & 33S23E367204 parcel 2	E061691	B788	100-113	X
MP-00391-VL	33S24E316001(4)	E061691	B788	100-113	X
MS-00893-OT	33S24E315400(3)	E061691	B788	100-113	X
MP-01040-VL (north portion)	34S24E061200(6)	E061691	B788	100-113	X
MP-01041-VL	34S24E060600(7)	E061691	B788	100-113	X
MP-01042-VL	34S24E060000(8)	E061691	B788	100-113	X
MP-01077-VL	33S24E318400(5)	E061691	B788	100-113	X

Note: Correction to Quitclaim Deed for properties transferred to City recorded as E062130, B789, P450-452.

**Montezuma Creek Soil and Sediment Properties**

DOE ID	Parcel	Document	Book	Page	
MP-00990-CS	33S24E324800	E063343	B793	831-852	X
MG-01033-VL	34S24E050000	E063343	B793	831-852	X
MS-01026-VL	34S24E043000	E063343	B793	831-852	X
MS-01027-VL	34S24E042400	E063343	B793	831-852	X

Note: Correction to Warranty Deed recorded as 073394 830/611 10/21/04 for these 4 properties

MG-01030-VL	34S24E047200	E063255	B793	526-538	X
MG-01029-VL	34S24E040000	E063219	B793	390-404	X
MP-00951-VL	33S24E317200	E063926	B796	188-202	X
MP-01084-VL	33S24E326000	E063926	B796	188-202	X

Comment \_\_\_\_\_

Note: Check to see citation for location of GJ records OUIII documents will be added to **AR** April update.

(per Paul Mushovic) \_\_\_\_\_



**4. Vandalism/trespassing**

Not evident                       Evident (locate on map)

Describe evidence \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**B. Repository Perimeter**

**1. Outer Fencing and Gates**

Physical Condition is:                       Satisfactory                       Repairs/Maintenance Needed

Describe repairs needed (locate on map) \_\_\_\_\_

Entire south side of site contains broken fence that allows access by cattle. Strands broken, slack, and missing

Slack area of wire fence at Perimeter Sign 15

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Signs**

40 numbered reference signs and posts in place and in good condition

Repair/replacement needed at sign(s) #12 almost cracked through – needs replaced;  
#28 lettering eroded away – needs replaced

Some signs cracked at bolts and require monitoring: 31, 30, 27, 26, 13, and 11

Entry sign (E) has peeling paint but legible

All No Hunting signs need replaced by gates around perimeter; 2 signs illegible by back gate

**3. South Boundary Markers**

All six markers located                       Marker(s) \_\_\_\_\_ not located

**4. Erosion/Gullying**

Not evident                       Evident (locate on map)

Describe: Major headcutting in gully near sign P27; recent and deep. Draws under fence between  
Signs P15 and P16 and between P8 and P9. Deep gully along fence between P1 and P2, probably  
result of broken water at City manhole, repaired by Todd Moon. This gully threatens fence posts.

\_\_\_\_\_

**5. Vegetation**

Not excessive       Excessive growth (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**6. Land use changes on adjoining property**

No change       Change

Describe change and impact \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. Vandalism/trespassing**

Not evident       Evident (locate on map)

Describe evidence No vandalism evident except by cows!  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C. Sediment Retention Ponds**

**Sediment Pond A**

**1. Siltation**

Not excessive       Excessive (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Berm Erosion**

Not evident                       Erosion evident (locate on map)

Describe \_\_\_\_\_

Small area of potentially active erosion evident on S. berm

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3. Outlet**

Functional                       Maintenance or repair required

Describe \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4. Dam**

Functional                       Need maintenance or repair

Describe \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5. Vegetation**

Does not impede flow                       Impedes flow

Describe \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Sediment Pond B**

**1. Siltation**

Not excessive                       Excessive (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Berm Erosion**

Not evident                       Erosion evident (locate on map)

Describe \_\_\_\_\_  
Slight sheet erosion on E side of berm; 2 small gullies may still be active  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3. Outlet**

Functional                       Maintenance or repair required

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4. Dam**

Functional                       Need maintenance or repair

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5. Vegetation**

Does not impede flow       Impedes flow

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**6. Fence and Gate**

Physical Condition is:       Satisfactory       Unsatisfactory

Describe repairs needed (locate on map) \_\_\_\_\_

Gate is in satisfactory condition, but fence is broken at bottom of draw. A section approximately 30 ft in length needs to be replaced.

Brent Everett suggested a comparison of fence position to previous photos – has it sedimented in?

**Sediment Pond C**

**1. Siltation**

Not excessive       Excessive (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Berm Erosion**

Not evident       Erosion evident (locate on map)

Describe \_\_\_\_\_  
Area on S side, midway, fairly deep headcutting and some slumping; appears relatively stable due to vegetation  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3. Outlet**

Functional                       Maintenance or repair required

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4. Dam**

Functional                       Need maintenance or repair

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5. Vegetation**

Does not impede flow             Impedes flow

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**D. Repository Run-Off/Run-On Controls** (North and East Toe Drains;  
South and West Drain Ditches)

**1. Settlement**                       Not evident             Evident (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Material Degradation**             Not evident             Evident (locate on map)

Describe \_\_\_\_\_  
Some red rock material in the North Toe Trench is breaking up, but not severely.  
\_\_\_\_\_  
\_\_\_\_\_

**3. Erosion/gullies**                     Not evident                     Evident (locate on map)

Describe Minor areas of erosion stabilized in the past; small area of headcutting in armored gully  
W of W Drainage Ditch should be repaired; rills running into S Drainage Ditch on E end, active but small  
Goes underground at one point (possible repair?)  
Some sheet erosion and rills along E slope near NE wildlife gate; not serious

**4. Siltation**                                 Not evident                     Evident (locate on map)

Describe \_\_\_\_\_  
Soil accumulation in drain below N toe drain; not impeding flows, grasses and forbs in lower end.

**5. Obstructions**                         Not evident                     Evident (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**6. Excessive Vegetation**             Not evident                     Evident (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Note: wildlife gates wired shut at both openings by Todd Moon until cows can be controlled on rest of site.



5. **Liner**     Holes/cracks/tears not evident     Holes/cracks/tears evident (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. **Liner Anchors**         Intact                       Not intact

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. **Siltation and Vegetation in Pond 4**     Not evident                       Evident (locate on map)

Describe/observations \_\_\_\_\_  
Floor covered in silt/sand – windblown 2–4 inches deep; vegetation is not significant  
\_\_\_\_\_  
\_\_\_\_\_

8. **Pond 4 Water Level**

Estimated water depth is    0 \_\_\_\_\_ ft in most of pond  
Describe area of ponding \_\_\_\_\_  
About 6 inches of water in NE corner, dry elsewhere  
\_\_\_\_\_  
\_\_\_\_\_

9. **Vandalism**     Not evident                       Evident (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**F. Repository Cover Inspection**

**1. Top Perimeter Road and Road to Pond 4**

Condition of roads:                     Satisfactory                     Unsatisfactory (locate on map)

Describe \_\_\_\_\_

Weeds in center of road, about 18 inches high in some places. No damage or erosion in road obs.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2. Interior Wildlife Fence and Wildlife Gates**

Physical Condition is:                     Satisfactory                     Unsatisfactory

Wildlife Gates are:                     Open                     Closed

Describe repairs needed (locate on map) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**3. Cover Vegetation**

Trees not present                     Trees present (indicate size, type and locate on map)

Plant stress not evident                     Plant stress evident

Barren areas not present                     Barren areas present (locate on map)

Plant damage not evident                     Plant damage evident – dead shrubs

Noxious weeds not present                     Noxious weeds present (indicate type and locate on map)

Describe observations \_\_\_\_\_

Trace quantities of Class C noxious weeds present; grasses mostly dormant; evidence of cattle grazing

and dung; very occasional vole burrows; squirrel (or other medium-sized rodent) burrows near SP-E;

Areas A2 and B shrubs large and excellent condition.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**4. Rip-Rap Armoring**

- Slumping/sliding not evident       Slumping/sliding evident (locate on map)
- Rock deterioration not evident       Rock deterioration evident (locate on map)

Describe observations \_\_\_\_\_

E side: Soils filling in SE edge with minor soil and rock movement; wildlife use of vegetation at toe;  
vegetation on riprap: Erna, Acmi, some Asci, Maca, Pasm and other perennial grasses; some minor soil  
and rock movement at NW corner; stabilized with vegetation; W side: some oak brush established on rock  
above toe drain.

**5. Settlement/Desiccation/Erosion/Gullies**

- Settlement depressions not evident       Settlement depressions evident (locate on map)
- Desiccation cracking not evident       Desiccation cracking evident (locate on map)
- Erosion/gullies not evident       Erosion/gullies evident (locate on map)

Describe observations \_\_\_\_\_

Old rodent burrow area below top with soil undulations (SE portion of cover)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**6. Holes/Burrows/Biointrusion**

- Holes/burrows/biointrusion not evident       Holes/burrows/biointrusion evident (locate on map)

Describe observations \_\_\_\_\_

Evidence of small rodents very occasionally

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**7. Seepage/Ponding**

- Seepage not evident       Seepage evident (locate on map)
- Ponding not evident       Ponding evident (locate on map)
- Soft subgrade not evident       Soft subgrade evident (locate on map)
- Phreatophytes not present       Phreatophytes present (locate on map)

Describe observations \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**G. Cover Penetrations**

**1. Manholes 1 and 3 (LCRS and LDS access vaults. Caution: confined space entry requirements in effect)**

Covers secure and operable	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Exterior pump access ports are undamaged	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Evidence of leakage into vaults	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Evidence of drainage through cover penetrations	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Telemetry surface installations in good condition	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Vaults are posted as confined-spaces	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Describe observations \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Manholes 2, 4, and 5 (Caution: permit-required confined spaces; no serviceable equipment in Manholes 2, 4, and 5)**

Covers secure and operable	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Evidence of drainage through cover penetrations	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Manholes are posted as confined-spaces	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Describe observations Not inspected \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3. LCR Video Ports**

Covers secure and operable	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Evidence of drainage through cover penetrations	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Describe observations T. Moon verified that ports were locked \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4. Settlement Monuments (A to I)**

Surface completions undamaged	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Inner plates undamaged	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Describe observations \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5. Embedded Lysimeter**

Evidence of seepage at outlet	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Instrumentation installations undamaged	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Evidence of drainage along cover penetrations	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Telemetry surface installations in good condition	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Describe observations \_\_\_\_\_  
Wasp nests in Nest C; otherwise all OK \_\_\_\_\_  
\_\_\_\_\_

**H. Operation of Repository and Pond 4 LCRS and LDS (interview on-site LM operator)**

LCRS and LDS pumps, water level sensors, and flow meters are fully operational	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Telemetry system is fully operational	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Leachate production is below action levels	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Leachate production rates are stable	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Water levels do not exceed top of sumps	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Monitoring data is managed through the LM SOARS system	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

LCRS 1 pumping rate \_\_\_\_\_ gal/week (see attached, Attachment 3)

LCRS 2 pumping rate \_\_\_\_\_ gal/week

LDS 1 pumping rate \_\_\_\_\_ gal/week

LDS 2 pumping rate \_\_\_\_\_ gal/week

Pond 4 LCRS 1 pumping rate \_\_\_\_\_ gal/week

Pond 4 LDS 1 pumping rate \_\_\_\_\_ gal/week

Summarize operating conditions per T Moon \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## VIII. City-Owned Properties Inspection

### A. City-Owned Properties Transferred from DOE

City-owned properties transferred from DOE are:

MP-00181	MP-00391	MP-00893	MP-01040 (North Portion)
MP-01041	MP-01042	MP-01077	

Restrictions applicable to each property are:

Recreational day use	No overnight camping	No habitable structures
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Soil removal is prohibited on properties:

MP-00391	MP-01041	MP-01077
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Installation of water supply wells in the shallow aquifer is prohibited on properties:

MP-00181	MP-00893	MP-01077
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Damage to wetlands is prohibited on properties:

MP-00181	MP-00893
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**Note:** In addition, to the land-use restrictions identified above, the transferred properties are to be inspected for evidence of vandalism, land use changes on and surrounding the property, and the condition of the drainage and runoff control structures. The drainage and runoff control structures are identified on Figure K-2. These features include all identified riprap armored structures, all identified dams, check dams and berms, and all runoff control drainages (ditches) along the north and south margins of the former millsite and along the former haul road (property MP-01077 Phase I).

### General Inspection Findings

	Property											
	181		391		893		1040		1042		1077	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Accessible to public	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>						
Evidence of camping	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>					
Habitable structure	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>					
Gullies/erosion	<input type="checkbox"/>											
Runoff/drainage controls intact and in good repair (see note above)	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>						
Land use changes	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>					
Evidence of vandalism	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>					

Comment/observations/concerns \_\_\_\_\_

At southern edge of MP-00893, head of former acid pile run-on has filled in and overtops the run-on

Diversion ditch; minor gullies are forming above filled in ditch (add to list of potential maintenance issues

for City of Monticello)

A well has broken off below pad west of footbridge across Christensen drain.

\_\_\_\_\_  
\_\_\_\_\_









## X. OU III Monitoring Wells and Water Treatment Systems

### A. Monitoring well surface completions

	Yes	No
Monitoring locations/map verified in current monitoring plan and LTSM plan prior to field inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Well identification labels in good condition	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Outer casing or flush mount vault intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wells are locked/flush mount well lids secured	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring wells are in working condition (confirm with water sampling teams)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

List necessary repairs or well deficiencies see attached (Attachment 4)

Well ID labels repainted during inspection; not legible before inspection

Some bolts missing; cracks in concrete (inactive wells) noted

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### B. Permeable Reactive Barrier (PRB) and Auxiliary Treatment Cells and Infiltration Trench

	Yes	No
Physical components in satisfactory condition (electrical panel, antenna, fence enclosure, vault access)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Evidence of ponded water or saturated soil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Evidence of surface disturbance	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Evidence of stressed vegetation	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comment \_\_\_\_\_

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## **MVP Annual Inspection Checklist**

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## MVP Annual Inspection Checklist

<b>I. MVP Site Information</b>	
<b>Site name:</b> Monticello Radioactively Contaminated Properties (also known as Monticello Vicinity Properties [MVP])	<b>Date of inspection:</b> 9/17/2008
<b>Site Location:</b> Monticello, Utah: EPA Region 8	<b>EPA ID:</b> UTD 980667208
<b>Lead Agency:</b> U.S. Department of Energy Office of Legacy Management	
<b>PCOR Date:</b> September 2, 1999	
<b>Operational and Functional Date:</b> December 1998 (construction complete date)	
<b>NPL Deletion Date:</b> February 28, 2000	
<b>Current Year O&amp;M Budget:</b>	
<b><u>MVP Inspection Components/Facilities</u></b>	
<p>Residual radiological contamination resides in utility corridors in Monticello, beneath city streets, and in the rights-of-way and beneath state Highways 191 and 491.</p> <p>As part of the MVP remedy, institutional controls have been implemented to manage and control radiological contamination encountered during road and utility construction or repair.</p> <p>In addition, a special zoning ordinance and building permit restriction was adopted to manage and control radiological contamination left in place on supplemental standards property MS-00176-VL.</p>	
<b>See attached map for the location of site inspections features identified in this checklist</b>	

## II. Inspection Team Members

Inspection team contact information.

**Name** Jalena Dayvault

**Affiliation** U.S. Department of Energy

970-248-6016

Phone

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E-mail

**Name** Brent Everett

**Affiliation** State of Utah Dept of Env Quality

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**Name** Duane Mortensen

**Affiliation** State of Utah Dept of Env Quality

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**Name** Paul Wetherstein

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**Name** Linda Sheader

**Affiliation** S.M. Stoller Corporation

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E-mail

**Name** Paul Mushovic

**Affiliation** U.S. Environmental Protection Agency

303-294-1983

Phone

mushovic.paul@epa.gov

E-mail

**Name** Todd Moon

**Affiliation** S.M. Stoller Corporation

435-587-3115

Phone

moon.todd@lm.doe.gov

E-mail

**Name** \_\_\_\_\_

**Affiliation** \_\_\_\_\_

Phone

E-mail

**Name** \_\_\_\_\_

**Affiliation** \_\_\_\_\_

Phone

E-mail

**Other inspection participants or interviewees may include:** US EPA RPM, UDEQ RPM, UDOT Local Office, City of Monticello (refer to LTSM Plan Section 6.1 for additional contact and notification information).

## MVP Annual Inspection Checklist

### III. Annual Inspection Preparation

DOE has conducted annual inspections at the MMTS and MVP since 2001, and CERCLA 5-year reviews since 1997. The CERCLA 5-year reviews are required by statute when (1) "upon completion of the remedial action, hazardous substances, pollutants, or contamination will remain on site, and (2) when the ROD was signed on or after October 17, 1986 (the effective date of SARA) and the remedial action was selected under CERCLA §121. The MMTS and MVP NPL sites meet both of these conditions. Currently, there is no provision for discontinuation of 5-year reviews. The MMTS and MVP inspections and reviews are conducted concurrently.

Annual inspections are performed by DOE-LM to identify and correct potential deficiencies in LTS&M operations at an early stage. DOE-LM performs these inspections and reviews with the objective of ensuring that the selected remedies remain protective of human health and the environment. Annual inspections performed by DOE-LM are designed to

- Ensure that routine surveillance, maintenance, and monitoring is adequate at the Monticello NPL sites.
- Ensure that institutional controls remain relevant and effective.
- Evaluate the condition of areas of special concern (e.g., disposal cell cover, monitoring wells, drainage controls, PRB, vegetative restoration).
- Identify LTS&M deficiencies and recommend corrective action.
- Provide data for CERCLA 5-year reviews (**Note:** the annual inspection immediately preceding the 5-year report period is conducted within 6 months of the submittal date for the CERCLA 5-year review report.)

The Site Manager will appoint a Chief Inspector to plan and conduct the annual inspection and to prepare the annual inspection report. The annual inspection is generally scheduled in September to coincide with the FFA biannual meeting and at a time that is seasonally advantageous to field work. Annual field inspections review the work performed on-site by the Monticello LM Representative in the past year and document current site conditions by qualified team. The procedure for conducting annual site inspections at the Monticello NPL sites is detailed in Section 6.0 of *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (June 2007, Rev. 0).

The following tasks were completed in preparing for the current MVP annual inspection:

	Y	N
Review previous site inspection reports, recent FFA quarterly reports, and any maintenance or corrective action performed over the past year.	X	<input type="checkbox"/>
Schedule the site inspection. Notify EPA and UDEQ at least 2 weeks prior to the site visit and invite their participation.	<input type="checkbox"/>	<input type="checkbox"/>
Team members are provided with background information, site maps, and inspection checklists.	X	<input type="checkbox"/>
Verify the names and telephone numbers of the parties with whom access or notification agreements have been executed.	X	<input type="checkbox"/>
Verify the key contact information listed in Section 6.1 of the LTSM Plan.	X	<input type="checkbox"/>
Verify annual contact with UDOT regarding planned highway projects in Monticello for the current UDOT fiscal year.	X	<input type="checkbox"/>
Verify regular contact with City of Monticello regarding planned or unplanned excavations in Monticello.	X	<input type="checkbox"/>





**5. Other**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Summary/problems/ suggestions: \_\_\_\_\_

\_\_\_\_\_  
Note from JD: "State – Sed Pond Certification"

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## MVP Annual Inspection Checklist

<b>V. Administrative and Records Inspection</b>				
	<b>Readily Available</b>		<b>Current</b>	
	<b>Y</b>	<b>N</b>	<b>Y</b>	<b>N</b>
<b>1. General LTS&amp;M Documents</b>				
LTSM Plan	x	<input type="checkbox"/>	x	<input type="checkbox"/>
LM Health and Safety Manual	x	<input type="checkbox"/>	x	<input type="checkbox"/>
Site Specific Emergency Response Information (in LTSM Plan)	x	<input type="checkbox"/>	x	<input type="checkbox"/>
LM CERCLA Site QA Plan and Monticello Site Specific Section	x	<input type="checkbox"/>	x	<input type="checkbox"/>
<b>2. LTS&amp;M Training Records – see MMTS checklist; same individuals involved</b>				
On-site Employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
City Workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>3. Administrative Record Collections</b>				
MMTS/MVP	n/a – AR sent to Fed Record Center 2008			
<b>4. Information Repository</b>				
On-site	x	<input type="checkbox"/>	x	<input type="checkbox"/>
Grand Junction Office – in process of relocation to Bldg 938, Rm 247; will update after move				
<b>5. Record Books</b>				
Public Roads and Utilities Record Book	x	<input type="checkbox"/>	x	<input type="checkbox"/>
Documentation/recordkeeping requirements met	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
Information readily traced to updated drawings	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
Radiological scan information for eroded/excavated material recorded	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
Entries include TSF transfers	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	<input type="checkbox"/> N/A
Entries include information on stockpiled material and follow-up scan results, as applicable	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	<input type="checkbox"/> N/A
Hwy 191/491 entries include information on scan results and material returned to the excavation	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	<input type="checkbox"/> N/A
Storm event surveys documented	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	<input type="checkbox"/> N/A
<b>10. Radiological As-Built Drawings</b>				
Readily available and current	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
Drawing updated annually 2/8/08	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
Documentation/recordkeeping requirements met	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
Radiological scan information recorded	x	satisfactory <input type="checkbox"/>	unsatisfactory <input type="checkbox"/>	
<b>6. Agreements</b>				
DOE/UDOT Memorandum of Understanding	x	<input type="checkbox"/>	n/a	
<b>7. Zoning Restriction—Overlay Zone OL-1</b>				
Restriction is verified as current through City for property MP-00176-VL			<input type="checkbox"/>	<input type="checkbox"/>
<b>8. Deed Restrictions</b> (verify property deeds are properly annotated regarding MVP Institutional Controls in the San Juan County Recorder Book)				

**Utah Department of Transportation Properties**

DOE ID	Parcel	Document	Book	Page	IC Annotations in Place	
					Y	N
MS-00895-OT	A33230367811	E068703	B814	533	X	<input type="checkbox"/>
MS-00892-OT	A33230367202	E068704	B814	534	X	<input type="checkbox"/>
MS-01021-OT	A33230367812	E068705	B814	535-536	X	<input type="checkbox"/>
MS-01020-OT	A33230369001	E068706	B814	537-538	X	<input type="checkbox"/>

Comment \_\_\_\_\_

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## MVP Annual Inspection Checklist

### VI. Field Inspection

#### A. City Streets and Utilities

Institutional controls include radiological scanning of all city street and utility excavations and removal of radioactive material to the TSF under direction of the on-site LM Representative.

##### 1. Roads/Utilities under Construction

	Y	N
Unmonitored excavations observed during inspection	<input type="checkbox"/>	X
Planned excavations are identified by on-site LM Representative (locate on map)	X	<input type="checkbox"/>
Radiologically control and management of radiologically contaminated material is properly managed (confirm with on-site LM Representative)	X	<input type="checkbox"/>
The utility locator service is contacted regularly by the on-site for planned excavations in Monticello	X	<input type="checkbox"/> → 72 hour notice

Comment \_\_\_\_\_

191 – no active construction/excavation; summer utility work completed

491 – road construction scheduled for next year

Gas line upgrades scheduled for this year and next year

Excavation at Abajo Dr (near Lloyds Lake turn-off) have not penetrated surface; will be scanned

later today

\_\_\_\_\_

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#### B. UDOT Highways 191 and 491 Rights-of-Way

##### 2. Roads under Construction

	Y	N
Unmonitored excavations observed during inspection	<input type="checkbox"/>	X
Planned excavations are identified by on-site LM Representative (locate on map)	X	<input type="checkbox"/>
Radiologically control and management of radiologically contaminated material is properly managed (confirm with on-site LM Representative)	X	<input type="checkbox"/>
The local UDOT official is contacted periodically for UDOT projects in Monticello (confirm with on-site LM Representative)	X	<input type="checkbox"/>

**3. Erosion** (highway shoulders and Highway 191 embankment at Montezuma Creek)

Not evident                       Evident (locate on map)

Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

	<b>Y</b>	<b>N</b>	<b>N/A</b>
Eroded material has been scanned for radiological contamination and properly managed (confirm with on-site LM Representative)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comment \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C. Property MS-00176-VL** (Note: observations and activities for MS-00176-VL are recorded by the on-site LM Representative in the Private Properties Restricted Areas Record Book).

ICs include Monticello zoning district Overlay Zone (OL-1) that requires radiological scanning of the footprint of new habitable structures through a special building permit. Radiologically contaminated material is removed under the direction of the on-site LM Representative and managed at the TSF.

	<b>Y</b>	<b>N</b>
Unmonitored excavations observed during inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Planned excavations are identified by on-site LM Representative (locate on map)	N/A	
Site conditions imply ICs properly implemented	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comment \_\_\_\_\_

Added road base to existing road – 2008 and widened

Tree debris deposit. They were not removed from 176, just deposited here

\_\_\_\_\_  
\_\_\_\_\_



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**U.S. Department of Energy Office of Legacy Management**

**Telephone/Meeting/Conference Record**

**Date** September 11, 2008 ..... **Time** 3:30 p.m. ....  
**Project** Monticello ..... **Site** Monticello UT .....  
**Task** Monticello Mill tailings Site water issues ..... **Subject** Two subjects: 1. Determine any drilling activities in the Monticello Ground Water Restricted Area over the past year. 2. Clarify requirements for proving beneficial use of ground water associated with DOE water right # 09-2120 (DOE well # 83-70) .....

<b>Attendees</b>	<b>Company</b>	<b>Phone Number</b>
Mark Stilson .....	Utah Dept. of Natural Resources, .....	435-613-3750 .....
.....	Division of Water Rights (UDNR DWR) .....	.....
.....	.....	.....
Paul Wetherstein .....	S.M. Stoller Corp. ....	970-248-6645 .....
.....	.....	.....

**Summary**

Following is a summary of discussions with Mr. Mark Stilson, UDNR DWR, concerning the subjects noted above.

1. Determine any drilling activities in the Monticello Ground Water Restricted Area over the past year: Mr. Stilson stated there have been no drilling activities in the Monticello Ground Water Restricted Area over the past year (neither applications to drill nor actual drilling). He also stated that the only related activity he was aware of was Mr. Lyle Adams pumping surface water from Montezuma Creek and storing it in a pond to use for irrigation and/or livestock watering. Mr. Stilson thinks this activity has been occurring for at least two years.

2. Clarify requirements for proving beneficial use of ground water associated with DOE water right # 09-2120 (DOE well # 83-70): The status of DOE water right # 09-2120, all of which is a matter of record with the UDNR DWR, was reviewed with Mr. Stilson as follows:

- DOE was granted the water right in October 2003;
- DOE uses well # 83-70 for ground water monitoring as part of Monticello Mill Tailings Site (MMTS) activities;
- DOE has an agreement with the land owner where well # 83-70 is located (Mr. Kedric Somerville) that he may use water from this well for irrigation and livestock watering;
- The deadline to submit "proof of beneficial use" for water associated with water right # 09-2120 is October 31, 2008.

## **U.S. Department of Energy Office of Legacy Management**

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Mr. Stilson acknowledged there are two different ways to prove beneficial use (the forms noted below are attached for reference):

- (1) Using the State's formal "Proof of Beneficial Use" form.
- (2) Using the State's "Water User's Claim" form.

Mr. Stilson acknowledged the Proof of Beneficial Use form is much longer and more complicated than the Water User's Claim form. However, there is a significant difference in the outcome of using these forms. Assuming there are no problems with the information on the form, using the Proof of Beneficial Use form results in the water right being officially certified "in house" by the UDNR DWR. However, using the Water User's Claim form results in the UDNR DWR submitting the water right to the judicial system for a certification decision. Mr. Stilson commented that this judicial process is often very long, and it could take years for a judge to certify a water right. Mr. Stilson also commented that, in general, a Proof of Beneficial Use has stronger legal standing than a Water User's Claim.

Mr. Stilson stated that, though somewhat detailed, the map submitted by DOE-LM with the original application for water right # 09-2120 in 2003 is not adequate to serve as the Proof of Beneficial Use map. The Proof of Beneficial Use map must illustrate more details about irrigated areas and livestock facilities, such as the location of watering troughs, barns, corrals, and pastures.

Mr. Stilson stated that the State checks a property to ensure water is being used beneficially as described in the water right application – irrigated land is checked, livestock facilities are checked, etc.

Mr. Stilson stated there is no fee associated with submitting either the Proof of Beneficial Use form or the Water User's Claim form.

### **Follow-Up Action Required**

Develop more detailed Proof of Beneficial Use map per UDNR DWR requirements.  
Possibly follow up with Kedric Somerville to confirm that he has been using water beneficially as described in the application for water right # 09-2120.

**File:** MNT 400.02 (through Dianna Roberts)

**cc:** Tim Bartlett (e); Carl Jacobson (e); Cheri Bahrke (e); Paul Wetherstein (e)

**Sheder, Linda**

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**From:** Richards, Steve  
**Sent:** Wednesday, October 08, 2008 2:40 PM  
**To:** Sheder, Linda  
**Subject:** RE: request for training records

Hello Linda,

Todd Moon: He is an RCT. RadWorker is suppressed for anyone who is an RCT. RCT requal 10/31/2008. Has been notified.

Benny Musselman: HS117 RadWorker II refresher, 12/5/2006 - 12/31/2008

Wayne Acox: HS113 RadWorker II, 3/6/2008 - 3/31/2010

I hope this is the information you needed.

Thank you.

Steve Richards  
Training Specialist  
SM Stoller Corp.  
U.S. Department of Energy--Office of Legacy Management  
2597 B 3/4 Road  
Grand Jct., CO 81503  
(970) 248-6750

-----Original Message-----

**From:** Sheder, Linda  
**Sent:** Wednesday, October 08, 2008 2:13 PM  
**To:** Richards, Steve  
**Subject:** request for training records

Hi Steve,

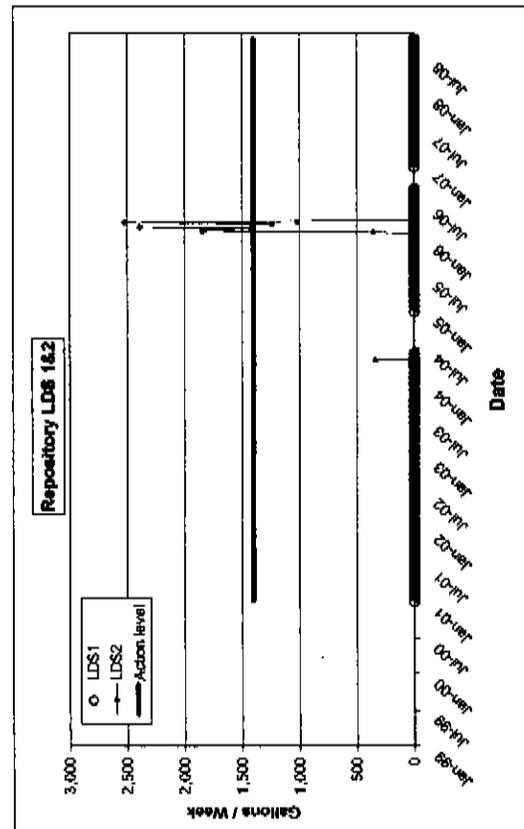
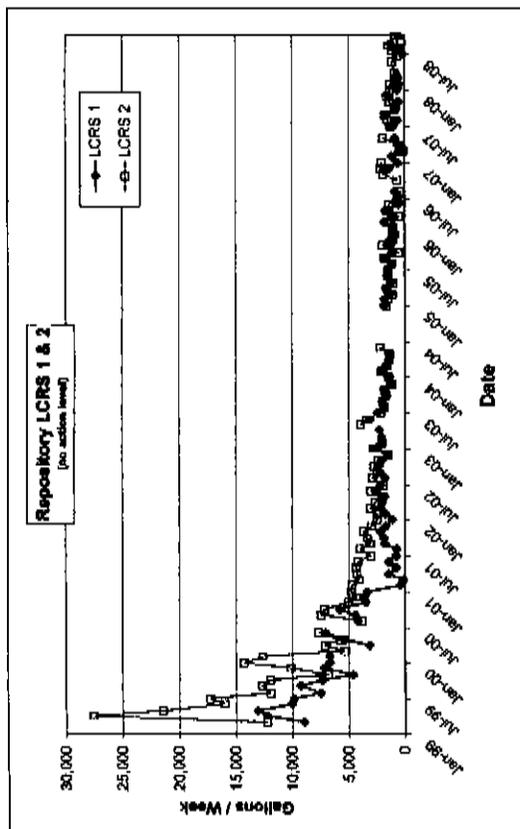
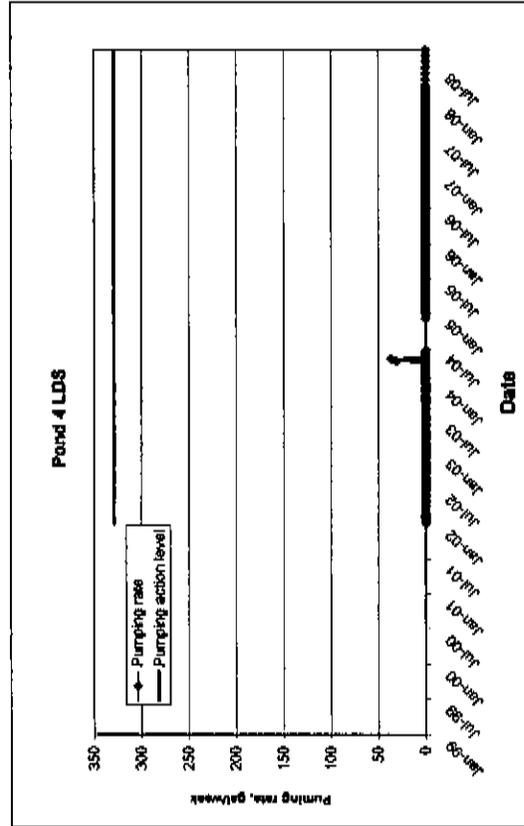
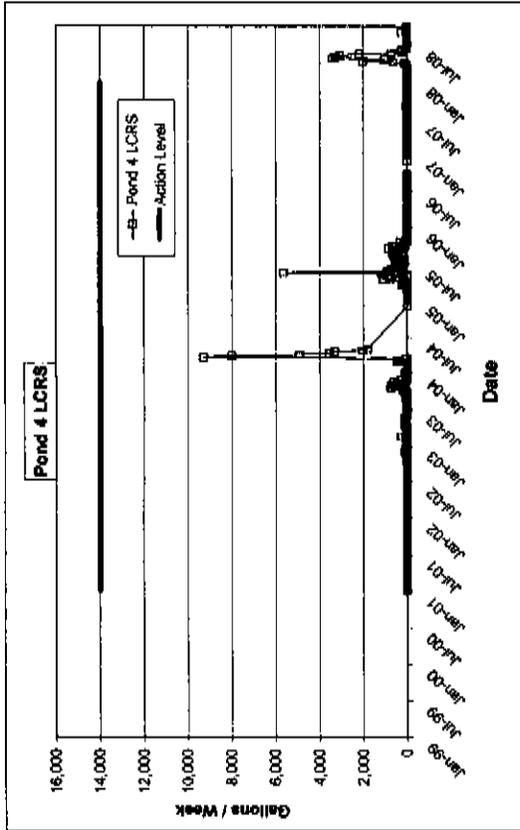
I am in the process of completing the Monticello annual inspection report, and one of my inspection tasks was to verify training records for people with access to the Temporary Storage Facility at the Monticello site. Would you please look up the following people to see if they are current on their Rad training, and to which level they are trained?

Todd Moon  
Benny Musselman  
Wayne Acox

The latter two are Monticello City employees.

Thanks very much!

Linda



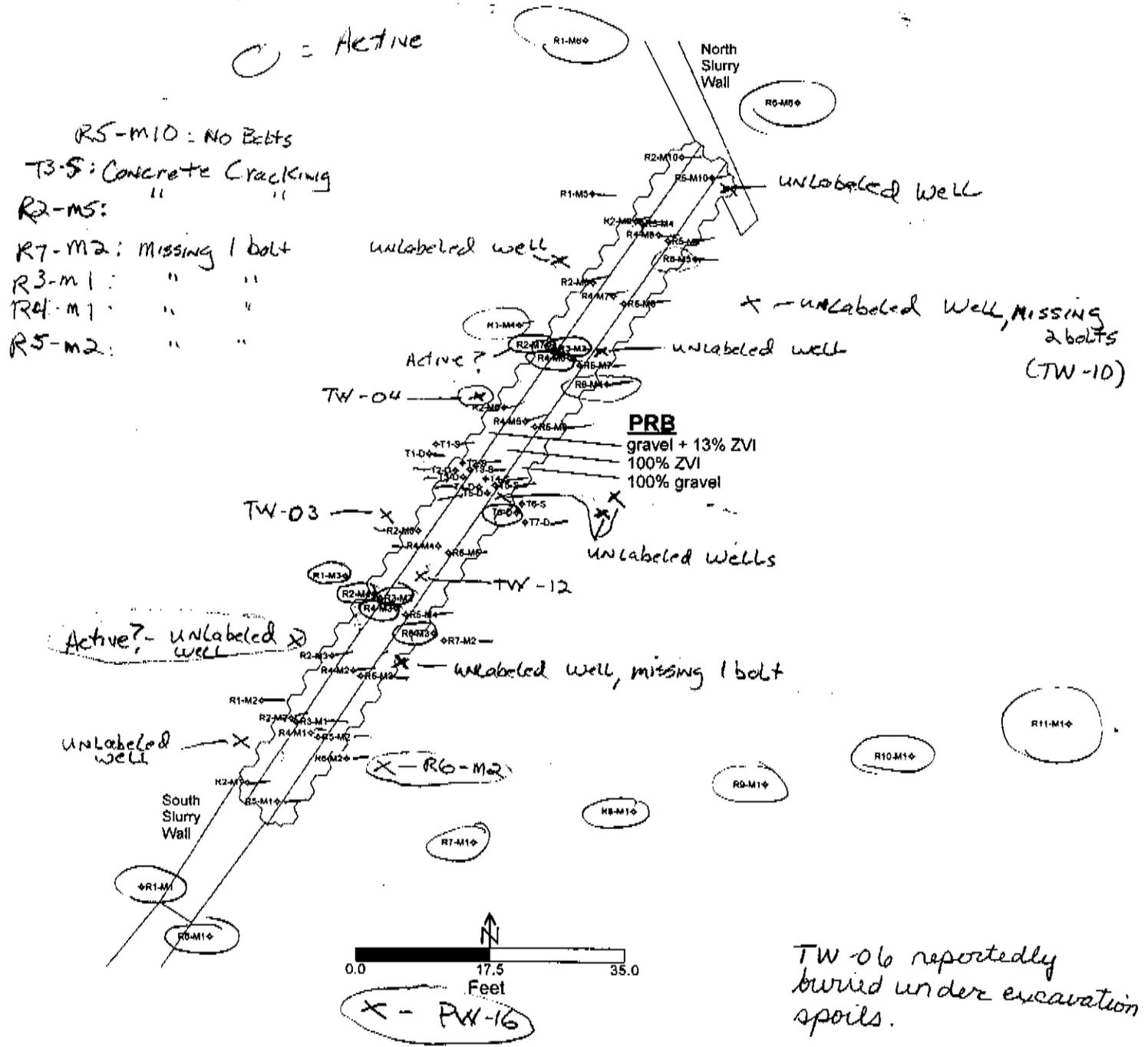


Figure 5-4. PRB Ground Water Monitor Wells and Media Zones

★ Need New White Paint Stick.

## Field Photograph Log

Site: Monticello, UT

Purpose of Visit: Annual Inspection

Date of Visit: September 16-18, 2008

Photo Types: digital

File Name	Azimuth	Field Inspection Photo No.	Trip Report PL No.	Post on Web (Y/N)	Photo Caption
MNT08_001.jpg	45	1	2	Y	Cattle grazing (unsolicited) between outer and inner fences
MNT08_002.jpg	315	2		Y	Wildlife fence, looking NW toward repository from access road outside fence
MNT08_003.jpg	110	3		Y	Irrigated cottonwood trees at trailer park north of millsite. Water seeps down onto millsite
MNT08_004.jpg	180	4		Y	Downslope vegetation in center of photo this side of gravel path is greener from irrigation at trailer park.
MNT08_005.jpg	130	5	26	Y	Vegetation at former millsite. Wetland 2 at center of photo
MNT08_006.jpg	180	6	27	Y	Vegetation at former millsite showing Montezuma Creek, connects with Photos 10 and 13
MNT08_007.jpg	250	7		Y	Vegetation at former millsite
MNT08_008.jpg	220	8	28	Y	Vegetation at former millsite. Wetland 1 is at left of photo
MNT08_009.jpg	0	9		Y	On millsite road, view up drainage ditch control below Steele's pond
MNT08_010.jpg	0	10		Y	Below millsite road looking up drainage control in 211
MNT08_011.jpg	270	11		Y	New parking area at trailhead on property 211
MNT08_012.jpg	225	12		Y	New parking area and trailhead sign/marker
MNT08_013.jpg	200	13		Y	Trailhead sign/marker
MNT08_014.jpg	90	14	25	Y	New parking area at trail access at end of S200E
MNT08_015.jpg	45	15		Y	New parking area at trail access at end of S200E
MNT08_016.jpg	250	16		Y	Damaged outer fence near perimeter sign P27
MNT08_017.jpg	90	17		Y	Damaged outer fence near perimeter sign P27
MNT08_018.jpg	180	18	1	Y	Damaged outer fence near perimeter sign P27; Cattle trail from adjoining Johnson property
MNT08_019.jpg	0	19	4	Y	Gully in Highway 191 right of way along outer fence
MNT08_020.jpg	180	20		Y	Gully in Highway 191 right of way along outer fence
MNT08_021.jpg	0	21		Y	Gully in Highway 191 right of way along outer fence
MNT08_022.jpg	180	22		Y	View up terminus of West Drain Ditch
MNT08_023.jpg	90	23		Y	View of western rip rap facet of repository from terminus of West Drain Ditch
MNT08_024.jpg	45	24		Y	View into North Draw along northwest inner fence from terminus of West Drain Ditch
MNT08_025.jpg	5	25	11	Y	View from terminus of West Drain Ditch into North Draw

File Name	Azimuth	Field Inspection Photo No.	Trip Report PL No.	Post on Web (Y/N)	Photo Caption
MNT08_026.jpg	290	26	19	Y	View across western rip rap cover facet showing vegetation growing in rock
MNT08_027.jpg	45	27		Y	View of eastern rip rap facet down to Sediment Pond A
MNT08_028.jpg	45	28		Y	View downgradient from North Toe Trench
MNT08_029.jpg	265	29	14	Y	View of North Toe Trench showing sedimentation and vegetation
MNT08_030.jpg	20	30		Y	View down East Toe Trench drainage toward Sediment Pond B
MNT08_031.jpg	15	31	15	Y	Drainage north of the East Toe Trench showing vegetation and soils accumulation
MNT08_032.jpg	200	32		Y	View up East Toe Trench drainage toward repository
MNT08_033.jpg	45	33		Y	View over east facet of repository
MNT08_034.jpg	85	34	20	Y	Pond 4 and access road
MNT08_035.jpg	135	35		Y	Repository side slope from repository road and road to Pond 4
MNT08_036.jpg	270	36	18	Y	Repository side slope from raptor pole at northwest corner
MNT08_037.jpg	225	37		Y	View down drainage to Sediment Pond C
MNT08_038.jpg	90	38		Y	Cattle inside outer fence in area of Sediment Pond C
MNT08_039.jpg	295	39	13	Y	View up South Drain Ditch
MNT08_040.jpg	270	40		Y	View up South Drain Ditch
MNT08_041.jpg	270	41		Y	View of repository cover from apex of repository
MNT08_042.jpg	230	42		Y	View of repository cover from apex of repository
MNT08_043.jpg	180	43		Y	View of repository cover from apex of repository
MNT08_044.jpg	120	44		Y	View of repository cover from apex of repository
MNT08_045.jpg	90	45		Y	View of repository cover from apex of repository
MNT08_046.jpg	50	46		Y	View of repository cover from apex of repository
MNT08_047.jpg	10	47		Y	View of repository cover from apex of repository
MNT08_048.jpg	330	48		Y	View of repository cover from apex of repository
MNT08_049.jpg	290	49	16	Y	View of repository cover from apex of repository
MNT08_050.jpg	280	50		Y	View of repository cover from apex of repository
MNT08_051.jpg	225	51		Y	View over cell from apex of western end
MNT08_052.jpg	300	52	17	Y	View over cell from apex of western end
MNT08_053.jpg	20	53		Y	View over cell from apex of western end
MNT08_054.jpg	160	54		Y	View over cell from apex of western end
MNT08_055.jpg	180	55		Y	View up West Drain Ditch
MNT08_056.jpg	0	56		Y	View down West Drain Ditch including head cut area identified in 2008

File Name	Azimuth	Field Inspection Photo No.	Trip Report PL No.	Post on Web (Y/N)	Photo Caption
MNT08_057	-	57		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_058	-	58		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_059	-	59		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_060	-	60		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_061	-	61		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_062	-	62		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_063	-	63		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_064	-	64		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_065	-	65		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_066	-	66		Y	Photos 68-77: Panoramic view from Site Entrance
MNT08_067	100	67		Y	Site entrance gate
MNT08_068	280	68		Y	Support area and TSF
MNT08_069	315	69		Y	Support area, joins Photo 80
MNT08_070	355	70	23	Y	Support buildings at Monticello Field Office
MNT08_071	295	71	24	Y	Electrical panels on north fence of support area
MNT08_072	260	72		Y	Support area, joins Photo 83
MNT08_073	225	73		Y	Support area, joins Photo 84
MNT08_074	310	74	12	Y	View down West Drain Ditch showing minor head cut area identified during 2008 inspection
MNT08_075	225	75		Y	Sediment Pond A
MNT08_076	180	76		Y	Sediment Pond A; joins Photos 87 & 88
MNT08_077	210	77	6	Y	Sediment Pond A
MNT08_078	135	78		Y	Sediment Pond A; joins Photo 89
MNT08_079	45	79		Y	Sediment Pond B
MNT08_080	280	80	10	Y	Damaged fence near Sediment Pond B
MNT08_081	220	81	7	Y	Sediment Pond B
MNT08_082	170	82	3	Y	Damaged "No Hunting" sign near Sediment Pond B
MNT08_083	225	83		Y	View over north side of cover
MNT08_084	225	84		Y	View over northeast facet of cell
MNT08_085	270	85		Y	View over cell, joins 97
MNT08_086	315	86		Y	View over cell, joins 98
MNT08_087	175	87	8	Y	View into Sediment Pond C, Cattle within outer fence
MNT08_088	90	88		Y	Inflow channel to Sediment Pond C
MNT08_089	315	89		Y	Inflow channel to Sediment Pond C

File Name	Azimuth	Field Inspection Photo No.	Trip Report PL No.	Post on Web (Y/N)	Photo Caption
MNT08_090	50	90	5	Y	Ravine immediately south of inflow channel to Sediment Pond C
MNT08_091	125	91	9	Y	Drainage channel from repository to Sediment Pond C
MNT08_092	90	92		Y	Head of drainage along southern outer fence. Same drainage as in Photo 103 and Photos 21-23.
MNT08_093	270	93			View up Montezuma Creek valley. Broader agricultural portion of valley
MNT08_094	270	94			View up Montezuma Creek valley. Broader agricultural portion of valley
MNT08_095	135	95			View over Montezuma Creek valley at transition to narrow steep wall canyon. Sediment Retention Pond at center left
MNT08_096	180	96	31		Joins Photo 108. Well 95-02 at center left
MNT08_097	225	97			Joins Photo 109
MNT08_098	270	98			Upstream of Photos 108-110. Montezuma Creek not visible beneath riparian willows
MNT08_099	285	99	30		Same as Photo 111
MNT08_100	90	100			Same location as Photo 112. View of creek corridor/land use
MNT08_101	135	101			View over east boundary of millsite. Wetland 3 at center right
MNT08_102	160	102			View over east boundary of millsite. Wetland 3 at center right
MNT08_103	160	103			View over east boundary of millsite. Wetland 3 at center right
MNT08_104	135	104			View up haul corridor. Run on drainage control to private land intact
MNT08_105	315	105			View down haul corridor. Run on control ditch intact
MNT08_106	315	106			View down haul corridor
MNT08_107	315	107			View down haul corridor
MNT08_108	135	108			View up haul corridor
MNT08_109	315	109	29		View down haul corridor
MNT08_110	270	110			Entrance to City Park (former millsite)

Photos taken by T. Bartlett, T. Moon, P. Wetherstein and L. Sheader

File Name	Azimuth	Field Inspection Photo No.	Trip Report PL No.	Post on Web (Y/N)	Photo Caption
MNT08_111		J1		Y	Electrical components of Manhole 3
MNT08_112	170	J2	21	Y	Interior of Manhole 3

File Name	Azimuth	Field Inspection Photo No.	Trip Report PL No.	Post on Web (Y/N)	Photo Caption
MNT08_113		J3		Y	Side slope of repository
MNT08_114		J6		Y	View of repository vegetated cover
MNT08_115		J7		Y	View of repository vegetated cover
MNT08_116		J8		Y	Gates and signs at entrance to Pond 4
MNT08_117		J9		Y	Warning sign posted at Pond 4
MNT08_118		J10		Y	Pond 4 side slope and inlet pipe
MNT08_119	80	J11	22	Y	Pond 4 interior and warning sign
MNT08_120		J13		Y	Pond 4
MNT08_121		J15		Y	Widened road on Property MS-00176
MNT08_122		J16		Y	Tree debris pile on Property MS-00176
MNT08_123		J17		Y	Fence line between former millsite and trailer park showing cultivated cottonwoods
MNT08_124		J18		Y	Personnel working at manhole at groundwater treatment system
MNT08_125		J21		Y	Auxiliary treatment cells
MNT08_126	215	J24	32	Y	Groundwater treatment system and outlet to Montezuma Creek
MNT08_127		J25		Y	Alfalfa field over PRB showing vegetation damaged by excavation
MNT08_128		J26		Y	Buried fence post on repository's south perimeter fence
MNT08_129		J27		Y	Sediment Pond C
MNT08_130		J28		Y	Slack section of fence on repository's south perimeter
MNT08_131		J31		Y	Broken section of repository's south perimeter fence
MNT08_132		J32		Y	Broken section of repository's south perimeter fence

Photos taken by J. Dayvault