

**Monticello NPL Sites
Federal Facilities Agreement Meeting
Minutes & Action Items**

Location Monticello, Utah – DOE Office of Legacy Management field office

Date September 27, 2006

Attendees David Bird – Utah Department of Environmental Quality
Paul Mushovic – U.S. Environmental Protection Agency
Art Kleinrath – U.S. Department of Energy
Tim Bartlett – S. M. Stoller

Meeting topics and discussion points are summarized separately under the headings that follow. Attachment 1 to this report includes the agenda and handout materials provided at the meeting. This report also includes disposal cell and Pond 4 leachate collection data (Attachment 2), quarterly site inspection results (Attachment 3), and project schedule and deliverables through the next two quarters (October 2006 through March 2007). With this additional content, this report fulfills the FFA quarterly reporting requirements for the Monticello NPL sites for the period of July through September 2006 (site meteorological monitoring data is not available for this period because the weather station is under repair).

Topics of Discussion

A. Status of Current Documents

1. LTS&M Plan: A draft of the plan will be submitted to the regulators on 10/28/06. This will follow validation of the working draft during the annual site inspection (week of 9/27/06), and resolution of EPA/UDEQ comments received 9/19/06 and discussed 9/29/06. The LTS&M Plan is the comprehensive document that directs how long-term surveillance and maintenance activities are conducted for the Monticello NPL sites. Submittal of the final plan is anticipated for late November 2006.
2. Site Management Plan: The annual update to Section 5.0 was delivered to EPA and UDEQ at the meeting. The final SMP was completed in October 2003. Section 5.0, "Project Schedules and Milestones", is updated each year by September 30 to project the enforceable milestones and non-enforceable target dates for site activities anticipated over a 3-year rolling schedule (current fiscal year + 2). A draft of the annual update was submitted to EPA and UDEQ during the last week of July 2006 for review. The September 30 submittal date for the final version is an enforceable milestone.

Monitoring results through April 2006 indicate that the progress of ground water restoration is slower than predicted by the site ground water model in two regions of the alluvial aquifer. With the existing data, a determination of the exact cause of the slower than expected progress is not possible. However, possible factors include (1) recent drought conditions that have deprived the aquifer of normal recharge for contaminant flushing and (2) flow restriction through the reactive barrier, which may locally decrease ground water flow velocity. Neither of these transient effects was represented in the steady state ground water model. The apparent deviation between actual and model-predicted concentration trends may also in part be due to model input parameters such as the distribution coefficient for uranium. As a result of the slower than expected progress of ground water restoration, DOE, in consultation with EPA and UDEQ, will develop and implement an alternate analysis of ground water concentration trends (see below).

Action Item: DOE will develop a "second statistical test" with which to analyze uranium concentration trends at alluvial aquifer monitoring wells. This second test will be an alternative to that prescribed in the post-ROD ground water remedy evaluation plan (Appendix B of the ROD for OU III). A letter report will be submitted to EPA and UDEQ in November 2006 to describe the method and to present the results of its application to the Monticello OU III data. In addition to the current 5-region method, a suggested variation of the second test is to sub-dividing the aquifer into two regions, as either upgradient or downgradient of the reactive barrier.

Action Item: Stoller will provide EPA and UDEQ graphs that depict measured uranium concentration over time at individual monitoring wells (including wells 200 and 202) grouped according to the defined aquifer regions used in evaluating OU III ground water restoration in accordance with the post-ROD performance evaluation plan (Appendix B of the ROD for OU III). These graphs will assist data users in identifying particular areas of the aquifer that deviate from the model prediction and should be included in future OU III annual monitoring reports.

Following a review of the above action items, DOE, EPA, and UDEQ will convene to discuss the findings and determine the appropriate response within the current CERCLA 5-year review.

D. OU III Ecological Monitoring

DOE presented and discussed results of ecological monitoring conducted through spring and early summer 2006 to evaluate selenium concentrations in sediment, surface water, and aquatic macroinvertebrates in the constructed wetlands and sediment retention pond. Results of the associated waterfowl and wetland bird surveys conducted in spring 2006 at those locations were also presented and discussed. Ecological monitoring for selenium began in October 2004.

Monitoring methods and results for the wetland birds and macroinvertebrates are summarized in the annual monitoring report for OU III and thoroughly documented in other separate reports (see "A" above). Monitoring results for sediment and surface water

establishment were investigated but discounted. A comprehensive report on the shrub study is currently in preparation for the EPA and will be submitted later this fall. A separate report documenting vole ecology and likely effects to the Monticello cover is also in preparation and will be submitted to EPA and UDEQ later this fall.

Settlement Plates—Elevation survey data presented from July 2006 indicates no measurable settlement of the disposal cell. The data will be included in the 2006 annual inspection report and the 2007 CERCLA 5-yr review. Settlement plate surveys will occur every 5 years in the summer preceding the CERCLA 5-yr review.

Action Item: Stoller will recommend management strategy for the repository cover based on the findings of vegetation monitoring and related studies. The recommendations will be presented at the next FFA meeting (March 2007).

F. CERCLA 5-Year Reviews for Monticello NPL Sites

A proposed schedule and scope for the current 5-yr review was presented and discussed. General agreement on the schedule and scope was not achieved other than the final reports should be signed by June 2007 and that the 5-yr reviews completed in June 2002 could serve as templates, however the 2007 MMTS report must address OU III. **Note:** The 2002 5-year reports are dated June 2002 and signed by DOE (Art Kleinrath) June 20, 2002. EPA Director of Federal Facilities and UDEQ CERCLA Branch Managers finalized the reports by signing in August 2002.

Much discussion was focused on the role of the public in providing input. Also, the schedule for EPA and UDEQ reviews came into question and whether a draft or final report is made available to the public. DOE, EPA, and UDEQ agreed that the scope of the interview process includes owners of properties adjacent to MMTS property and Victims of Mill Tailings Exposure representatives.

Action Item: Art Kleinrath will develop a proposed schedule and scope of the CERCLA 5-yr review for the Monticello NPL sites based on precedence from other sites he is working on.

Action Item: Paul Mushovic will solicit input from within EPA to clarify EPA policy regarding public involvement in the 5-yr review process.

G. Treatment Cell Status

Laboratory analytical results for treatment cell influent and effluent samples were presented (attached) and discussed. The treatment cell continues to perform very well at sustained rates of about 5 gallons per minute. The newly constructed infiltration trench is performing well. Design and performance of the treatment cell was presented at the EPA Remediation Design Technologies Forum during the week of October 10, 2006 (presentation abstract attached).

final plan; however, a final draft for DOE, EPA, and UDEQ review is tentative for late October/early November 2006, followed by the final submittal in December.

An issue arose as to whether property MP-1083 (Lynn Adams, owner) should be included in the Ground Water Restricted Area for OU III. The GWRA is administered by the State Engineer's Office to prevent domestic use of contaminated ground water from the alluvial aquifer. The restricted area currently includes the southwest corner of this property although the property is probably not underlain by the alluvial aquifer.

Action Item: Stoller agreed to contact the State Engineer Office to clarify the boundary definition and the process of reviewing well permit applications with respect to the ground water restricted area. **Note:** On October 13, 02206, Joe Slade contacted Tim Bartlett to inform that Lynn Adams had received a permit to drill a well on his property (MP-1083). Joe faxed Tim a map of the restricted area showing the location of the proposed well, clearly outside of the restricted area (also, a properly constructed bedrock well, as proposed in the application, is allowed in the restricted area). Lynn Adams had received the map from the State Engineer's Office, which had correctly granted the permit with the information provided by the landowner. Tim Bartlett contacted Mark Stilson of the State Engineer's Office to confirm the process. Mark indicated that in reviewing future applications for wells located near the boundary, he would contact Tim to discuss the application.

Action Item: As part of the current CERCLA 5-yr review, Stoller on-site representatives will ensure that all affected landowners are notified of the ground water restriction.

UDOT Memorandum of Understanding—expiration status of the MOU was questioned but not resolved. **Action Item:** DOE reviewed the MOU and confirmed that the agreement extends indefinitely until terminated by mutual written consent. Renewal is not necessary.

L. Near-Term Meeting Schedule

FFA Meeting—The next FFA meeting will be held in March 2007 at a date and location yet to be determined. Draft minutes of FFA meetings are due to EPA and UDEQ within 30 days and will be finalized within 60 days of the meeting.

BTAG Meeting—A BTAG teleconference call will be conducted in November 2006. At that time the BTAG will have reviewed all available ecological monitoring data currently reported for the Monticello selenium investigation. The purpose of the meeting is to discuss what further actions may be necessary based on site conditions.

M. Deliverables Schedule (October through March 2007)

LTS&M Plan: revised draft final to DOE, EPA, UDEQ late October/early November 2006 for concurrent final review.

LTS&M Plan: final, by December 31, 2006.

ATTACHMENT 1

**MONTICELLO NPL SITES
FFA MEETING AGENDA and ANNUAL INSPECTION SCHEDULE
SEPTEMBER 27 - 29, 2006
MONTICELLO, UTAH**

I. FFA MEETING
Wednesday 8 am – Noon

Document Status

1. LTSM Plan: final due 10/21/06 following validation of working draft during annual inspection
2. SMP; update of Section 5.0 for FYs 07, 08, and 09: final due 9/30/06—on schedule
3. OU III Annual Monitoring Report: due 9/30/06—on schedule
4. Annual Cover Vegetation Monitoring Report: due 12/31/06—on schedule
5. Wetland Bird Survey, 2006: due 9/30/06—on schedule
6. Wetland Macroinvertebrate Monitoring, 2006: due 9/30/06—on schedule
7. Report on FY 2006 Annual Inspection: due 12/31/06

FY 2005 Annual Site Inspection

Status on punch-list items: all items completed by January 2006—refer to 2005 Annual Inspection Report

OU III Annual Monitoring

Water quality & hydrologic monitoring—refer to FY 2006 annual monitoring report
-ground water restoration in certain regions is slower than expected; a 2nd statistical test for trend analysis is therefore required, the method and results of which will be provided to DOE/EPA/UDEQ in late October for concurrence prior to inclusion in the CERCLA 5-year review

Ecological monitoring

- Abiotic media sampling and analysis—refer to handout
- Biotic media sampling and analysis—refer to OU III annual monitoring report
- Bird Surveys—refer to OU III annual monitoring report; FY 2006 results consistent with FY 2005 results

Repository Cover

- ACAP—refer to handout
- FY 2006 Cover Vegetation Monitoring—refer to handout
- EPA Cover Investigation (ESL Report)—refer to handout
- Settlement plate survey results, FY 2006

CERCLA 5-Year Review

Proposed Scope & Schedule (assume final report due 6 months after site inspection)

- Use 2002 5-yr review reports as templates for scope, schedule, and reporting
- Site Inspection: September 27-29, 2006

- Disposal cell transects (team 1)
- Outer perimeter inspection & sediment pond B (team 2, after completion of land re-use reconnaissance)

Thursday 9/28/06

8:00 am

Finish repository inspection (team 1)

- Pond 4, TSF, area between inner and outer fences (including sediment ponds A & C)

Record keeping inspection (team 2)

- Record books
- Radiological as-built drawings

11:00

Teams meet at millsite staging area

- One team to inspect millsite and MP-211
- Second team to inspect City Streets, UDOT Highways, MP-176, and City properties

Friday 9/29/06

8:00 am

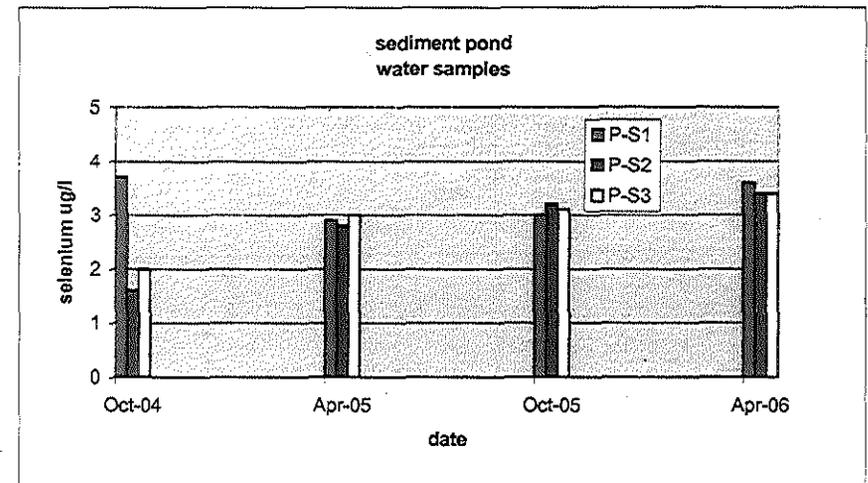
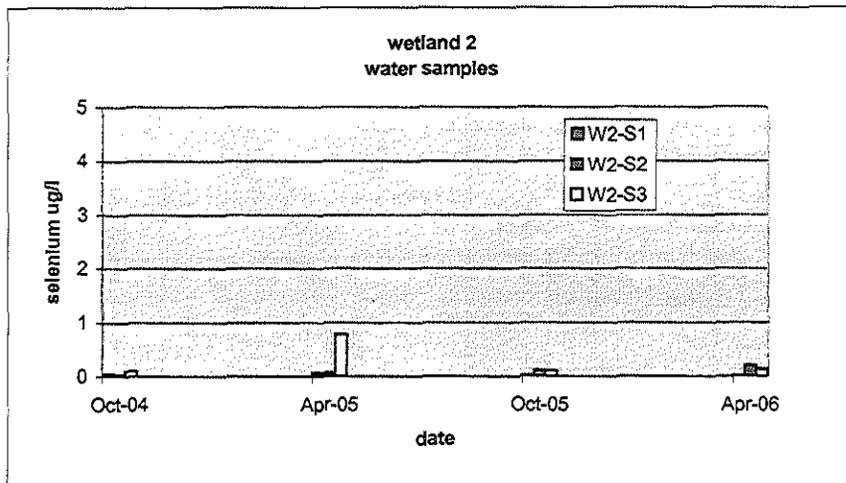
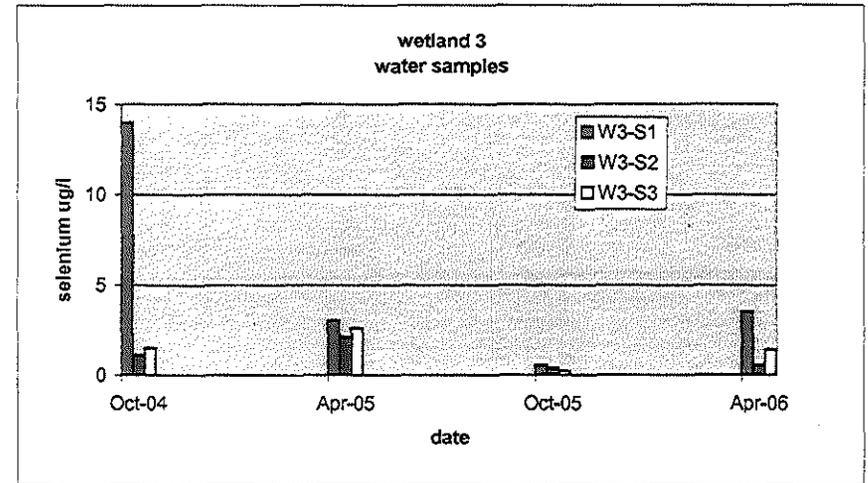
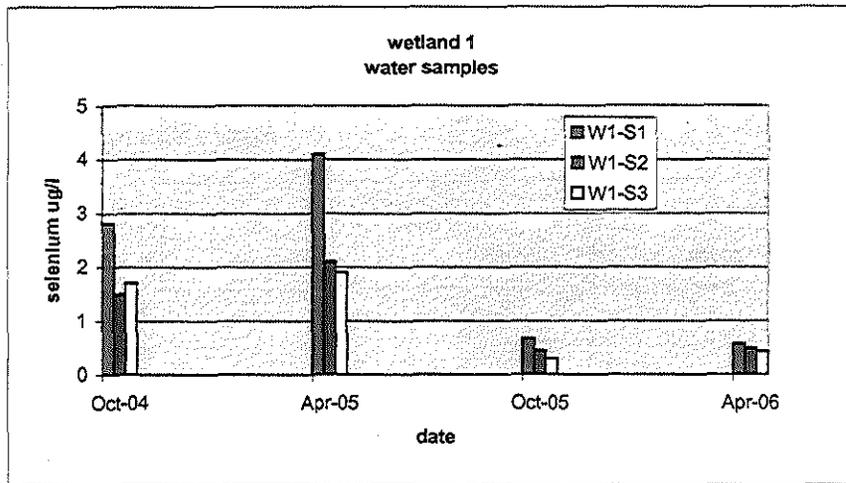
Meet at field office

- Review inspection status/assign follow-up tasks
- OU III soil and sediment area inspection
- Monitoring well inspection verification
- Meet at field office to conclude annual inspection: summarize findings, assign follow up tasks

Note: Field personnel will be on-site week of 10/2 and 10/9/06 for OU III monitoring event and OU III biomonitoring (wetlands sediment and surface water sampling) and may be available for follow up work for the annual inspection.

Noon

Depart site



Toxicity threshold = 5 ug/L

Timothy Bartlett

From: Jody Waugh
Sent: Monday, August 28, 2006 4:03 PM
To: Timothy Bartlett
Subject: Monticello Lysimeter Water Volumes

Tim,

During an earlier Monticello FFA meeting, I was asked to estimate water volumes related to the cap flap in the imbedded (ACAP) lysimeter at Monticello. Specifically, I was asked to estimate (1) how much water had passed through the lysimeter drainage collection system in 2005, and (2) how much water would build up behind the cap flap if the lysimeter drain pipe clogged.

2005 Drainage: ~25,360 gallons

Basis: Volume of water measured in lysimeter dosing basin during 2005; equivalent to 3.2 mm drainage over 3 hectares.

Water Build-up if Drain Clogged: Range = 1472 to 2061 gallons

Basis: Volume of polygon behind cap flap and possible range of porosity values for the coarse sand drainage layer.

Let me know if you or the FFA have questions.

Jody

Summary of Vegetative Cover Success and Shrub Study Results at the Monticello, Utah, Repository, 2006

Shrub Study Results:

Unlikely contributors to poor shrub growth on the repository cover:

- Lack of mycorrhizae: vesicular arbuscular mycorrhizae were apparent on almost all sampled plants in the cover and in the analog areas.
- Soil nutrition: some areas of low shrub growth coincide with good soil nutrition, and some areas of good shrub growth coincide with poorer soil nutrition.
- Soil Bulk Density: No significant differences were found in average soil bulk densities between low density and high density shrub areas (Zone A1). Slight differences (and possibly significant differences if sample size had been larger) in bulk density did exist between some areas:
 1. Zone A2 soils were higher than other areas, most likely because of higher rock content.
 2. Zone A1 and Zone A2 soils were higher than the analog site soils, most likely because the cover soils had been compacted during construction of the repository cover.Bulk densities at greater than 2 ft depth may be significant, but these have not yet been measured.
- Sources of plant material: The source of much of the shrub seed used on the repository cover was Utah. Live plantings done in areas adjacent to the cover (Areas A2 and B) are healthier than shrubs on the cover.

Likely contributors to poor shrub growth on the repository cover:

- Soil structure: areas showing evidence of well-developed soil structure (in which natural soil fractures are clearly discernable along horizontal and vertical planes) and/or large rocks in the subsurface appear to support better shrub growth. Zone A1 soils show evidence of weak structure (in which natural soil fractures are difficult to discern and, in this case, often occur along horizontal planes) or of no structure at all. This difference may be attributed to the compaction of Zone A1 soils by heavy equipment during repository construction. Samples deeper than 2 ft were not collected; therefore, soil fertility and bulk density effects, and deeper soil structural features (e.g., compacted layer below historic plow layer) from depth have not been assessed.
- Factors affecting germination: meteorological factors may have affected the germination and persistence of seeded rabbitbrush, both in 2000 and 2005.

Effects from wildlife:

- Vole damage to shrubs was extensive across the repository cover, with an estimated 15 percent shrub mortality. Of the dead shrubs, 94 percent had signs of vole presence. Vole presence and damage in analog areas was less.
- Historically, poor shrub growth may not have been greatly influenced by vole damage, but in 2006, vole populations noticeably increased and this may be a major contributor to current shrub conditions. The potential for vole damage should be factored into any future management actions.
- Black-tailed jackrabbits may also contribute to shrub predation, but are not likely a major factor.

Additional information:

- Shrub density on the cover is comparable to the density in other newly planted areas, but shrubs are much smaller on the cover. Density is much lower on the cover than in nearby mature sagebrush areas.
- The effects of competition were not measured because qualitative monitoring data do not suggest that this has been a major factor affecting shrub establishment. However, early competition from cheatgrass may have been a factor in some portions of the low shrub density area.

Annual Vegetation Monitoring:

Positive trends:

- Total desirable cover has been met in all four zones for the first time. This is expected to continue indefinitely; desirable species are all perennial or woody.
- Species composition has remained diverse in all four zones for several years.
- Dominant desirable grass and shrub species have re-generated well over time.
- The frequency and relative cover of desirable grasses have met success criteria over time, and are expected to continue.
- Though noxious weeds exist across the site, they do not appear to be spreading.

State to widen mill tailing study to include additional cases

The State of Utah will take a closer look at the impact of a uranium and vanadium-processing mill on the health of Monticello-area residents.

The Utah Department of Health announced on August 4 the next steps to address the concerns of residents regarding a perceived increase in cancer rates in the community.

Public health officials will take the following steps by December, 2006:

- Collect detailed patient information to confirm a diagnosis of cancer among individuals in Monticello that were never reported to the Utah Cancer Registry for various reasons. The UDOH will then conduct a follow-up study of cancer incidence to include the additional individuals.

- The UDOH will conduct a Public Health Assessment of the Monticello mill site and vicinity. The assessment will evaluate environmental data, past and current exposure data, health effects data and community health concerns.

- The UDOH, SEUDHD and Monticello community will work to develop educational activities and prevention programs for residents.

- The UDOH and SEUDHD will hold public meetings with the community and elected officials to present the findings of the cancer investigation and the Public Health Assessment.

"We hope that these next steps will bring us closer to

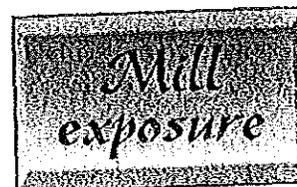
understanding the cancer incidence in Monticello and any possible connection to the mill," said Dr. David N. Sundwall, executive director, UDOH. "The community needs answers, and we are committed to working with them to find those answers using the best science and resources available to us."

Earlier this year, the UDOH completed a health consultation report (study) at the request of the SEUDHD to determine if the Monticello community had higher rates of individuals diagnosed with cancer as compared to the state of Utah collectively. The findings of the study were inconclusive.

Extensive work by the Victims of Mill Tailings Exposure Committee (VMTE) has succeeded in gaining the attention of state and federal officials.

The VMTE group has gathered more than 400 names of one-time Monticello-area residents who have suffered from the effects of cancer and other suspicious diseases.

From 1943 through 1960, a uranium and vanadium processing mill operated just southeast of Monticello, Utah. The mill site and surrounding properties were considered public health hazards and were placed on the National Priorities List. Remediation of contaminated soils from the mill site and affected areas surrounding mill property was completed in 2000.



The Victims of Mill Tailings Exposure committee is eager to include every possible case of exposure to the Monticello mill tailings in the state's new study. If you know of anyone who has suffered, possibly as a result of exposure to the mill tailings, please contact the City of Monticello at 435-587-2271. Impacts also include respiratory disease.

San Juan Record Monticello, Utah Wednesday, August 16, 2006

Thanks for assistance

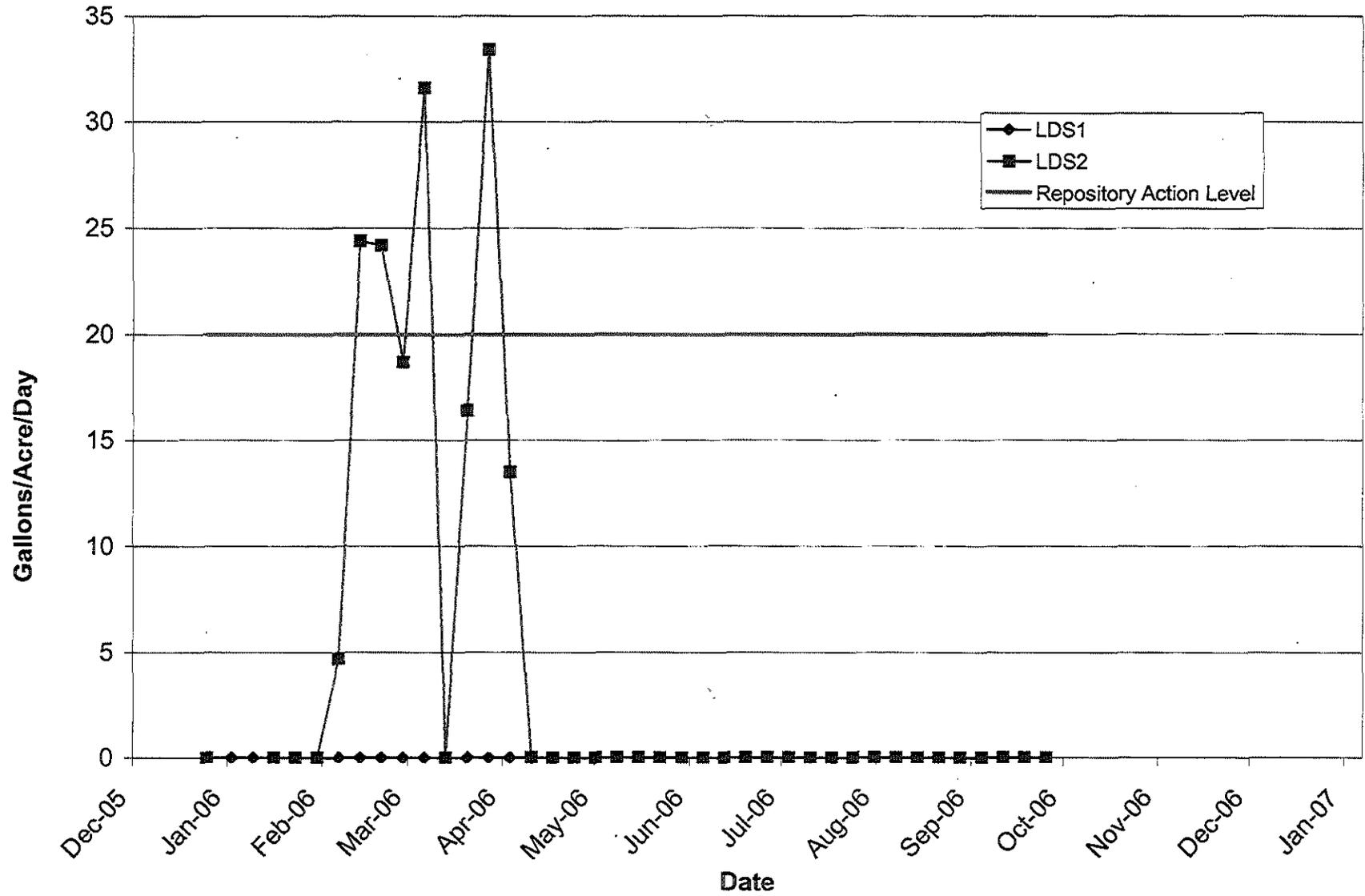
Dear Editor:

The members of the Victims of Mill Tailings Exposure committee (VMTE) would like to thank all the people that have donated time and money to our cause of documenting those who have been impacted by exposure to the Monticello mill tailings. The special ladies that rode on the buggy, thank you. A big thank you to all the people that have lost loved ones and donated money in their memory.

Thank you so much,
VMTE Committee

ATTACHMENT 2

Repository Leak Detection System (LDS), 2006 Data



ATTACHMENT 3

Quarterly Repository Surveillance Checklist

Monticello LTSM Representative Joe Slade Date 7-4-2006
Signature

Meteorological Data for the period beginning See weather Data log ending _____

Average wind speed _____ Prevailing wind direction _____
 Average temperature _____ High Temperature _____ Low Temperature _____
 Current barometric pressure _____
 Total precipitation _____ Inches of Precipitation in last 24 hours _____

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<u>Condition of:</u>		
Fence	<u>yes</u>	<u>gates are open to let wildlife in</u>
Roads	<u>yes</u>	
Signs	<u>yes</u>	
Site Marker	<u>yes</u>	
Drainage ditches	<u>yes</u>	
Manholes (open to inspect)	<u>yes</u>	
Settlement Plates (open to inspect)	<u>yes</u>	<u>stan wagner was here this month to survey</u>
Vegetation	<u>yes</u>	
Sediment Ponds	<u>yes</u>	<u>Pond A has a lot of weeds growing in the bottom it is the only place green at this time</u>
<u>Evidence of erosion of:</u>		
Top of Repository	<u>NO</u>	
Repository Sideslopes	<u>NO</u>	
Ditches	<u>NO</u>	
Surrounding area	<u>NO</u>	
<u>Evidence of:</u>		
Structural Instability	<u>NO</u>	
Vandalism	<u>NO</u>	
Intrusion by wildlife	<u>yes</u>	<u>gates to Repos have been opened for access</u>
Burrowing Animal Damage	<u>yes</u>	<u>voles are still going strong</u>
Intrusion by humans	<u>NO</u>	
Accumulation of trash	<u>NO</u>	<u>Some weeds are blowing</u>

Additional Comments

Note: All transects must be walked during this inspection

File Index Number LMNT 4.4

Monthly Repository Surveillance Checklist

Monticello LTSM Representative Joe Stader Date 8-4-2006

Meteorological Data for the period beginning No weather logs - weather station down ending _____

Average wind speed _____ Prevailing wind direction _____

Average temperature _____ High Temperature _____ Low Temperature _____

Current barometric pressure _____

Total precipitation _____ Inches of Precipitation in last 24 hours _____

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<u>Condition of:</u>		
Fence	<u>yes</u>	<u>Gate still open</u>
Roads	<u>yes</u>	
Signs	<u>yes</u>	
Site Marker	<u>yes</u>	
Drainage ditches	<u>yes</u>	
Manholes	<u>yes</u>	
Settlement Plates	<u>yes</u>	
Vegetation	<u>yes</u>	
<u>Evidence of erosion of:</u>		
Top of Repository	<u>NO</u>	
Repository Sideslopes	<u>NO</u>	
Ditches	<u>NO</u>	
Surrounding area	<u>NO</u>	
<u>Evidence of:</u>		
Vandalism	<u>NO</u>	
Intrusion by wildlife	<u>NO</u>	
Burrowing Animal Damage	<u>NO</u>	
Intrusion by humans	<u>NO</u>	
Accumulation of trash	<u>NO</u>	

Additional Comments
Johnson has cows next to us again - no problem though as the feed
on either side is good at this time.

File Index Number LMNT 4.4

Monthly Repository Surveillance Checklist

Monticello LTSM Representative Joe Seade Date 9-1-2006

Meteorological Data for the period beginning No weather logs for month of Aug. ending _____

Average wind speed _____ Prevailing wind direction _____
 Average temperature _____ High Temperature _____ Low Temperature _____
 Current barometric pressure _____
 Total precipitation _____ Inches of Precipitation in last 24 hours _____

Inspection Item	Acceptable (Yes/No)	Comments and Recommendations
<u>Condition of:</u>		
Fence	<u>yes</u>	<u>Gates are not still open</u>
Roads	<u>yes</u>	
Signs	<u>yes</u>	
Site Marker	<u>yes</u>	
Drainage ditches	<u>yes</u>	
Manholes	<u>yes</u>	
Settlement Plates	<u>yes</u>	
Vegetation	<u>yes</u>	
<u>Evidence of erosion of:</u>		
Top of Repository	<u>NO</u>	
Repository Sideslopes	<u>NO</u>	
Ditches	<u>NO</u>	
Surrounding area	<u>NO</u>	
<u>Evidence of:</u>		
Vandalism	<u>NO</u>	
Intrusion by wildlife	<u>X</u>	<u>Vole damage continues</u>
Burrowing Animal Damage	<u>X</u>	<u>" "</u>
Intrusion by humans	<u>NO</u>	
Accumulation of trash	<u>X</u>	<u>Summer Rain has the weeds growing along the fences especially</u>
Additional Comments		

File Index Number LMNT 4.4