



Moving a Mountain by Rail! Safe Transportation and Disposal of a Uranium Mill Tailings Pile

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U.S. Department of Energy
MOAB Uranium Mill Tailings Remedial Action Project

PATRAM 2010

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EM *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

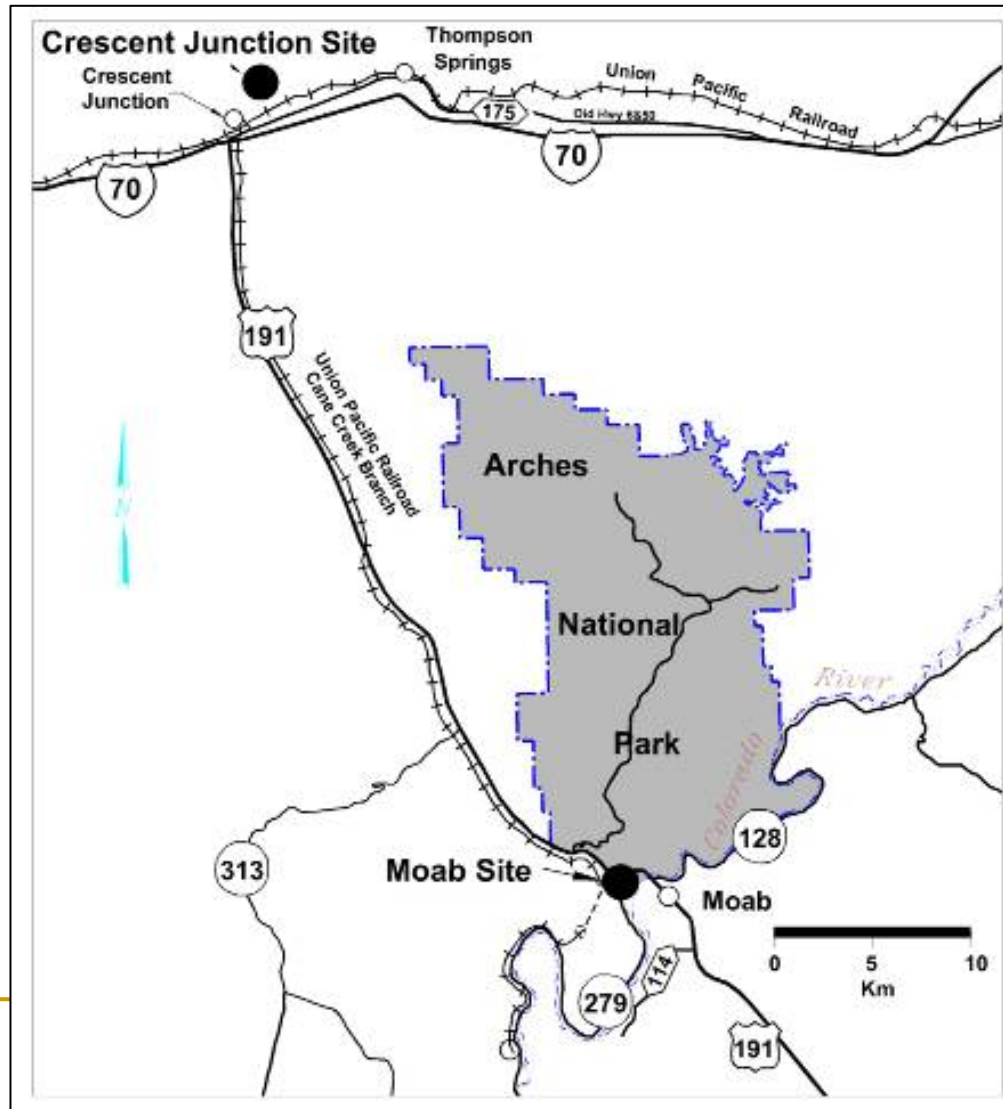
Agenda

- History and Scope
- Site Development for Tailings Haul
- Transport Process
- Disposal Site
- Acceleration Under Recovery Act
- Regulatory Considerations
- Lessons Learned
- Safety Culture
- Status

Location of Moab UMTRA Project Site



Location of Moab Site and Crescent Junction Disposal Site



History

- Cold War resulted in about 800 uranium mines used for building the United States' nuclear arsenal
- Ore processing sites were built on the Colorado Plateau in southwestern United States
- Charlie Steen's fabled 1952 uranium discovery in Utah



Moab Site Background

- Former uranium-ore processing facility (1956-1984)
- Located about 4.8 kilometers northwest of Moab
- 162-hectare site; 53 hectares covered by mill tailings pile
- Toe of pile is 230 meters from west bank of Colorado River
- Largest uranium mill tailings pile (14.5 million metric tons) to be relocated to another site



1957

Moab Site Features



Project Scope

- Relocate uranium mill tailings and other contaminated materials
 - from Moab site to the Crescent Junction, Utah, location for permanent disposal
 - By rail, predominantly
- Actively remediate ground water at the Moab site
- Remediate properties in vicinity of Moab that exceed regulatory standards

Site Development for Tailings Haul

- Negotiations with Union Pacific Railroad
- Infrastructure construction
- Equipment installation
- Training
- Readiness review
- Transportation (began April 2009)



Before



After



Process Cycle



Crescent Junction Disposal Site

- Disposal cell constructed in phases; began excavation of second phase in January
 - Tailings depth is 15 meters total, 7.5 m below grade, 7.5 m above
- Began placement of permanent cell cover layers in summer 2010
 - Cover will be about 3 meters thick



Acceleration Under Recovery Act

- \$108 million additional funding received in fiscal year 2009
- Reduces project completion date by 3 years
- Ship additional two million tons of tailings by end of fiscal year 2011
- Provide more than 200 jobs in the area
- Currently shipping up to 144 containers per train, two trains per day, Monday through Friday

Regulatory Considerations

- Tailings shipped in accordance with U.S. Department of Transportation (DOT) regulations and DOE Orders
- DOE received a Special Permit from DOT
 - Waived certain DOT regulations pertaining to marking, labeling, and manifesting
 - Allowed DOE to use alternate packaging
- DOE also must follow Federal Railroad Administration regulations



Lessons Learned

- Rail operations
 - Facilitated changes in invoicing process
 - UP assigned dedicated project manager
 - DOE trained project staff to inspect railcars
- Container and railcar capacity
 - Original containers do not hold anticipated weight
 - Railcars can not be loaded with four containers at maximum weight
- Safety culture

Safety Culture


- Safety must be integrated into management and work practices at all levels
- Strived to maintain strong safety culture throughout ramp-up of workforce
- Conducted employee safety surveys to solicit feedback
- Safety Action Team to implement safety measures
- “Near miss” reporting station
- “All-Hands Safety” luncheons for each shift
- Management walkdowns
- Resulted in reduction of safety incidents

Status


- Established good working relationship with neighbors and community
- Using efficiencies to increase consistency in shipping maximum trainloads
- Through September 2010, about 2.1 million metric tons (almost 15 percent of the total) of mill tailings shipped and disposed

Additional Information

DOE Environmental Management Headquarters Environmental Management at Grand Junction Home



Moab, Utah, UMTRA Project



- ◆ General
- ◆ Current Status
- ◆ Project Documents
- ◆ Environmental Impact Statement Information
- ◆ Contacts
- ◆ News Releases
- ◆ Additional Information
- ◆ American Recovery and Reinvestment Act Information

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Please email your questions or comments about the Moab, Utah, UMTRA Project to moabcomments@gjem.doe.gov or call toll free at 1-800-637-4575.

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Webcam view of Moab site



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