

FACT SHEET



The U.S. Department of Energy Office of Environmental Management in Grand Junction, Colorado, manages the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project near Moab, Utah. This fact sheet provides an overview of the project.

Overview of Moab UMTRA Project

Project Scope

The scope of the Moab UMTRA Project is to relocate mill tailings and other contaminated materials from a former uranium-ore processing facility (millsite) and from off-site properties known as vicinity properties in Moab, Utah, to an engineered disposal cell constructed near Crescent Junction, Utah. The scope also includes active remediation of ground water at the millsite (Moab site). Figure 1 shows the general location of the project sites. The U.S. Department of Energy (DOE) Office of Environmental Management in Grand Junction, Colorado, has primary responsibility for managing the Moab Project.

Moab Site Description

The Moab site is located about 3 miles northwest of the city of Moab in Grand County, Utah. The site encompasses approximately 480 acres, of which about 130 acres is covered by the mill tailings pile. Other federally owned land borders the site on the north, south, and west. Sandstone cliffs border the site on the west. The Colorado River forms the southeastern boundary. U.S. Highway 191 parallels the northern site boundary, and State Route 279 crosses the western portion of the site. Figure 2 shows some of the site features.

Background and History

Uranium Reduction Company constructed the Moab mill in 1956 and operated it until 1962 when the assets were sold to Atlas Minerals Corporation (Atlas). Uranium concentrate (called yellowcake), the milling product, was sold to the U.S. Atomic Energy Commission through December 1970 for use in national defense programs. After 1970, production was primarily for commercial sales to nuclear power plants. During its years of operation, the mill processed an average of about 1,400 tons of ore a day. The milling operations created process-related wastes and tailings, a

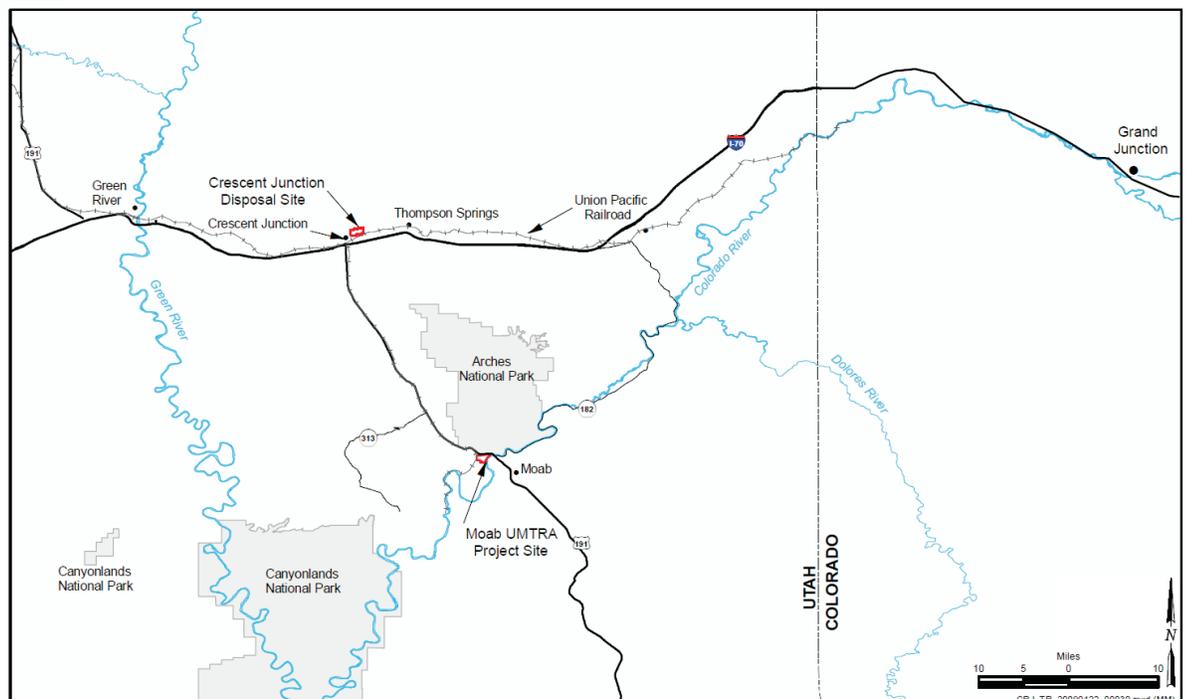


Figure 1. Location of Moab UMTRA Project Sites



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radioactive sand-like material. The tailings were pumped to an unlined impoundment in the western portion of the property that accumulated over time, forming a pile more than 80 feet thick. Although more than 90 percent of the uranium was removed during processing, radium and other decay products remained in the tailings, which have an average radioactivity of 665 picocuries per gram of radium-226. The tailings, especially in the center of the pile, have a high water content. In the past, excess water in the pile drained through underlying soils, contaminating the ground water.

Atlas operated the site until 1984 under a license and regulatory authority provided by the U.S. Nuclear Regulatory Commission (NRC). Atlas demolished the processing buildings and buried them in the southern corner of the tailings pile and placed an interim cover over the pile as part of decommissioning activities conducted between 1988 and 1995. There is an estimated 16 million tons (12 million cubic yards) of mill tailings and other contaminated materials present in the pile.

Atlas proposed to stabilize the tailings pile at Moab by permanently capping it in place; however, Atlas declared bankruptcy in 1998 and, in doing so, relinquished its license. Because NRC could not legally possess a site it regulated, NRC appointed PricewaterhouseCoopers as the trustee of the Moab Mill Reclamation Trust and licensee for the site. The trustee initiated site reclamation, conducted ground water studies, and performed site maintenance activities.

Regulatory Setting

Scientists, community leaders, and public officials became more aware of the potential health risks associated with long-term exposure to uranium mill tailings during the 1970s. Public concern about potential human health and environmental effects led the U.S. Congress to pass the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (Public Law 95-604), which required the cleanup of inactive uranium-ore processing sites. In 1983, the U.S. Environmental Protection Agency (EPA) developed regulations [Title 40 Code of Federal Regulations (CFR) Part 192] to protect the public and the environment from potential hazards at the sites.



Figure 2. Moab site features, view looking north



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DOE is responsible for cleaning up UMTRCA Title I millsites, including soils and ground water, to EPA standards (Subparts A and B of 40 CFR 192). The radioactive materials are encapsulated in NRC-approved disposal cells. The NRC general license for post-closure requirements of UMTRCA sites is established in 10 CFR 40, Domestic Licensing of Source Material.

With the enactment of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, Public Law 106–398, Congress changed the designation of the Moab site from Title II to Title I under UMTRCA. The act stipulated that the license issued by NRC for the Moab site materials be terminated and that title to the property and responsibility for cleanup be transferred to DOE. In October 2001, DOE assumed ownership of the Moab site. The federal government pays 100 percent of the reclamation costs.

National Environmental Policy Act Implementation

DOE developed an Environmental Impact Statement (EIS) to fulfill the National Environmental Policy Act requirement of considering the full range of reasonable alternatives and associated environmental effects of significant federal actions. In July 2005, DOE published the final EIS that presented the preferred alternatives of off-site disposal of the tailings pile and other contaminated materials at the Crescent Junction site using predominantly rail transportation, and active ground water remediation at the Moab site. In September 2005, DOE issued the Record of Decision, which detailed the selection of the preferred alternatives and the basis for that decision. DOE amended the Record of Decision in February 2008 to allow for more truck transport on the public highway.

Ground Water Interim Action

DOE utilized previous investigations along with additional soil and ground water sampling to assess the extent of contamination at the Moab site. Elevated concentrations of ammonia can affect young-of-year endangered fish species in backwater channels adjacent to the Colorado River bank. In 2003, DOE began implementation of an interim action system that currently includes eight extraction and more than 30 freshwater injection wells. The system is designed to protect surface water quality and to recover ammonia, uranium, and other contaminants prior to discharge to the Colorado River.

Tailings Removal and Transport



A gantry crane transfers containers to and from the train

In 2008 and 2009, DOE performed extensive infrastructure construction at the Moab and Crescent Junction sites in preparation for moving the mill tailings. In April 2009, DOE began relocating the tailings to the disposal cell. Tailings are excavated and conditioned in drying beds to reach the optimal moisture content for disposal. The tailings are then placed in steel containers with locking lids for transport to Crescent Junction. A gantry crane is used to transfer containers to and from the train at Moab.

The Moab Project is currently shipping one train a day, 2 days a week, carrying 136 containers for a total of about 4,600 tons per trainload. In January 2016, the project reached the halfway mark of 8 million tons of tailings shipped. The project is currently estimated to be completed in 2025.

Crescent Junction Disposal Site

The Crescent Junction site is located northeast of the eastern junction of Interstate Highway 70 and U.S. Highway 191, approximately 30 miles north of the Moab site. This location was selected primarily because of its ideal geological setting.



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Through a series of temporary withdrawals of public domain land and a permanent land transfer by the Department of the Interior, DOE currently owns 500 acres of land and has another 936 acres in a 20-year withdrawal for the disposal cell and surrounding buffer area, the support area, and access road. The permanent transfer area will be fenced when the cell is completed.

At the Crescent Junction site, the containers carrying tailings are unloaded from the train onto trucks that take them to the disposal cell dumping area. The tailings are dumped through end gates in the containers and placed in the cell in 1-foot lifts to meet compaction specifications. The empty containers are reloaded onto railcars and returned to the Moab site.

The cell is rectangular and is aligned in a west-to-east direction. The completed cell will be about 5,200 feet long by 2,400 feet wide and is being constructed in phases. Two phases have been completed, each occupying about 45 acres, and excavation of the third phase was initiated in spring 2016. The cell is excavated about 25 feet below the existing grade and the estimated aboveground height of the compacted materials is 25 feet. The top of the contaminated materials is being capped with a 9-foot-thick, multi-layered cover composed of native soils and rock.



Crescent Junction disposal cell, view looking south

Contacts

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You may also call our toll-free hotline at 1-800-637-4575 or send us an email at moabcomments@gjem.doe.gov. Moab UMTRA Project documents are available on the DOE website at www.gjem.energy.gov/moab and at Grand County Library in Moab.