



Long-Awaited Moab Contracts Awarded!

June 20, 2007, marked an important day for the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project: the U.S. Department of Energy (DOE) Environmental Management Consolidated Business Center (CBC) awarded a Remedial Action Contract, or RAC, and a Technical Assistance Contract, or TAC.

Remedial Action Contract

The RAC was awarded to EnergySolutions, a nuclear services company headquartered in Salt Lake City, Utah. The RAC is a \$98.4 million contract awarded through a competitive bid process under the DOE National Indefinite Delivery/Indefinite Quantity contract that extends through September 2011. The RAC contractor will be finalizing the design for how to move the tailings to a permanent disposal site at Crescent Junction, Utah, developing that tailings-removal system, building the disposal cell, beginning transport of the tailings, and handling day-to-day maintenance and operations at the Moab and Crescent Junction sites. To perform its scope of work, EnergySolutions teamed with Jacobs Engineering Group, Inc., for engineering design services; Envirocon, Inc., for construction activities associated with removal of the tailings pile; and Neilson Construction, Inc., for infrastructure construction support.

Technical Assistance Contract

CBC awarded the TAC to S&K Aerospace, Inc., a tribally owned company headquartered in St. Ignatius, Montana. This small business 8(a), sole-source award is for a 1-year base period with an additional four 1-year option periods. The value of this contract

may be up to \$22 million if all projected services are provided and all option periods are exercised. The TAC contractor will provide technical and administrative support services to DOE, including records management, training, information technology and telecommunications, public affairs, government property management, document support, project integration, and environmental safety and health, and serve an oversight role for RAC functions. The TAC contractor will also continue the ground water interim action efforts and conduct radiological surveys of vicinity properties in Moab. S&K Aerospace is a sister corporation to S&K Technologies, Inc., which is a teaming partner on this contract, along with Professional Project Services, Inc. (Pro2Serve), a technical and engineering services company.

"The new contractors worked diligently with DOE to transition responsibilities from S.M. Stoller Corporation, the incumbent contractor," said Donald Metzler, Moab Federal Project Director. The RAC and TAC contractors assumed their respective project responsibilities effective August 3.

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Donald Metzler welcomes Jeff Stevens (left) of the RAC and Joe Ritchey (right) of the TAC as the new contractors for the Moab UMTRA Project.

Message From the Federal Project Director

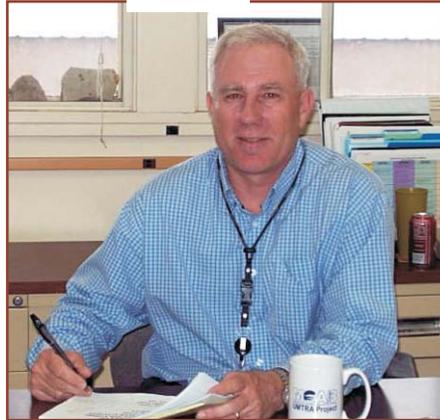
It is an exciting time for the Moab UMTRA Project. With the award of the two new contracts to EnergySolutions and S&K Aerospace, Inc., there is renewed enthusiasm and energy toward moving forward with the project.

The Stoller team and its subcontractors accomplished a tremendous amount of work during the past couple of years. The site and associated systems are in excellent condition for the new contractors.

DOE will be hosting an Open House on Wednesday, August 29, from 4:00 to 7:00 p.m. to introduce the new contractors to the community. We will be holding the Open House at the Moab site so the public can see some of our many efforts thus far to prepare for tailings removal. I encourage each of you to stop by and visit us then.

I want to take this opportunity to recognize a member of the DOE Office of Environmental Management (EM) staff who works with me on the Moab Project and whom many of you know, Joel Berwick. Joel accepted the well-deserved position of Senior Facility Representative for the project. His duty station is in Moab so you will be seeing him more frequently around town.

Two new DOE EM staff members have joined our team: Jeff Parkin, Crescent Junction Facility Representative, and Theresa Nash, Quality Assurance and Compliance. They are also currently stationed out of the Moab site. Jeff and Theresa came to our project from the DOE Rocky Flats Site near Denver, Colorado, and both have become valuable additions to our staff.



Donald Metzler, Federal Project Director

In this edition of the *Tailings Times* we highlight the award of the two new contracts for the project, the infrastructure construction at the Crescent Junction disposal site, the beneficial support we receive from the DOE Environmental Management Consolidated Business Center, and the environmental side of our work. We will

also show you how we're reducing the contaminated footprint at the Moab site, catch you up on our Moab site improvements and ground water remediation activities, and, of course, talk about our commitment to safety. Previous editions of the *Tailings Times* are available on the Moab Project website at <http://gj.em.doe.gov/moab/> under the General bullet. 🌊

Tailings Times is published periodically by the U.S. Department of Energy Office of Environmental Management at Grand Junction, Colorado, to inform stakeholders of progress to date on the Moab UMTRA Project and plans for future activities.

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Crescent Junction Disposal Site Preparations

Infrastructure Construction

The Record of Decision for the Moab UMTRA Project specified relocation, predominantly by rail, of the mill tailings and tailings-contaminated materials at the Moab site to a permanent disposal site 30 miles north of Moab at Crescent Junction, Utah.

Last summer, we began to prepare the Crescent Junction site to receive the tailings. An office trailer staging area was constructed south of where the disposal cell will be built. One office trailer was relocated from another UMTRA site, and two new trailers were brought in. One doublewide trailer houses the conference room and employee break room, and the singlewide will be used as office space.

A 24 foot-wide access road was constructed from the old U.S. Highway 50 near the Interstate 70 exit at Crescent Junction to the office trailer area. A 20,000-cubic-yard pile of recycled (rotomilled) asphalt was located at the former Green River, Utah, landfill. The asphalt was deemed suitable for use at the Crescent Junction site in lieu of the roadbase surface that was originally planned. A 6-inch lift of the asphalt was placed on the access road subbase. "The recycled asphalt provides a hard surface, requires less maintenance, and eliminates the need for dust suppression," said Donald Metzler, Moab Federal Project Director. Recycled asphalt was also used to cover the parking lot adjacent to the trailers. Directional signs were posted



A subcontractor excavates the trench for the sewerline at the Crescent Junction site.



Many improvements have been made at the Crescent Junction site in preparation for receiving the mill tailings.

along the access road, and a site identification sign was erected near the site entrance.

We installed an on-site sewer collection and septic system and constructed approximately 7 miles of 3-inch potable waterline from Thompson Springs that replaced an aging, leaking waterline. Power and telephone lines were installed to supply electricity and telephone service to the Crescent Junction site. We built a silt fence around the support zone and a storm water retention pond south of the trailers to collect rainwater runoff. A 6-foot chain-link fence topped with three strands of barbwire was installed around the support area perimeter.

Options for transporting the contaminated materials by rail are currently being evaluated. Eighty-four loads of rail panels, totaling approximately 16,000 linear feet, were received from the DOE Fernald Site in Ohio and are being stored at the Crescent Junction site for future use in building rail spurs.

DOE revegetated 37 acres of disturbed soils related to construction activities along the access road, waterline, office trailer area, and retention pond. Despite the dry spring and summer conditions, early vegetative growth looks promising. We have also implemented associated erosion control devices.

DOT Exemption Granted

In July 2006, DOE received authorization from the U.S. Department of Transportation (DOT) for

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Crescent Junction Disposal (continued from page 3)

a special permit associated with the shipments of low-level radioactive uranium mill tailings that will be transported from the Moab site to the disposal site at Crescent Junction.

In November 2005, DOE began the application process for the special permit that allows alternative requirements for packaging, hazard communication, and container-specific radioactivity determinations. Approved types of packaging include railcars, intermodal containers, haul trucks, and pup trailers. Each container must be securely covered and durably marked as specified in the permit, including the designation of "For Radioactive Materials Use Only." The transporter must carry a copy of the special permit and other specified shipping papers with each shipment. The special permit eliminates the need for DOE to characterize the contents of each railcar or truckload before shipment. Instead, the permit allows a calculated maximum radioactivity concentration per package.

"This was a long and sometimes tedious process," said Donald Metzler, Moab Federal Project Director. "However, in the long run, this special permit will save us extensive time and money. This DOT exemption removes several hurdles and keeps us progressing toward our ultimate task of moving the tailings."

The initial special permit is granted for 2 years and must be renewed every 4 years thereafter. The special permit (number DOT-SP 14283) is available on the DOT Pipeline and Hazardous Materials Safety Administration website at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm.

Carbon-14 Dating

Limited, small volumes of ground water were discovered in boreholes that were drilled at the Crescent Junction disposal site during site characterization in



Rail from the DOE Fernald Site stored at the Crescent Junction site will be used to construct rail spurs.

spring 2006. Because the ground water is very saline or salty and the hydraulic conductivity is very low in the subsurface Mancos Shale, the shale does not allow the ground water to move through it easily.

The U.S. Nuclear Regulatory Commission (NRC) suggested that DOE use carbon-14 dating to estimate the ground water age. Carbon-14 (radiocarbon) dating is a way of determining the age of certain materials less than approximately 60,000 years old. Carbon-14 is radioactive, with a half-life of about 5,700 years. This method is well suited for determining the age of ground water. Water samples collected from two boreholes were analyzed by a laboratory in Cambridge, Massachusetts. On the basis of the laboratory results, the ground water in both boreholes was at least 40,500 years old. The samples were collected in triplicate, and analytical results were consistent, indicating that the precautions used during sampling were effective in eliminating sample contamination.

The radiocarbon dating results were good news to DOE because they illustrate that ground water beneath the site has been isolated from freshwater recharge and has been stored in the geologic formation for a long time. Geologic isolation provides strong substantiation that the Crescent Junction site is suitable for long-term storage of the Moab mill tailings.

Remedial Action Plan

The Moab UMTRA Project team completed a major milestone last August: the draft Remedial Action Plan (RAP) document that presents the basis for constructing a disposal cell at Crescent Junction. The seven-volume RAP includes a Remedial Action Selection Report, which provides a summary-level description of the remedial action and a discussion of technical findings, and five attachments that contain calculation sets and supporting information covering various aspects of the remedial action.

"The RAP took a significant amount of work and our project team prepared it in about a year. Such a short timeframe for an effort of this magnitude is almost unheard of in the DOE system," said Donald. The plan was submitted to NRC for its review and concurrence. NRC comments were incorporated into a revised RAP that was submitted to NRC in June. NRC representatives plan to visit the Moab and Crescent Junction sites in late September. 

Helping Mother Nature Helps Us

We have taken several steps at the Moab and Crescent Junction sites to be friendly to our animal and aquatic friends with whom we share our space. In return, we received a little unexpected help from Mother Nature.

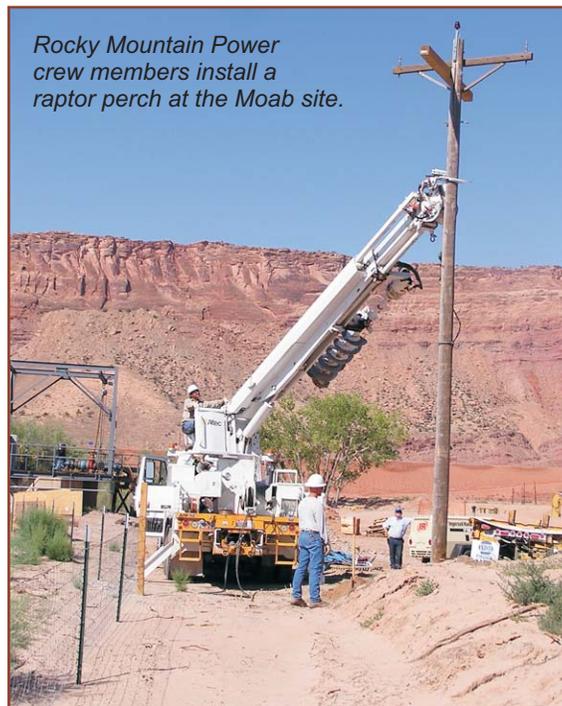
“Shocking” Fish Tale

In our July 2006 edition of *Tailings Times*, we included a story about the new river water storage pond that was being constructed at the site adjacent to the existing pond that had been in place since the mill was in operation. After the new pond was filled, we began the process of draining the old pond so that we could clean up the soil underneath and surrounding it. Some fish living in the old pond had probably been carried in through the pipeline that pumps river water to the pond.

Before the old pond was emptied, DOE and the U.S. Fish and Wildlife Service wanted to ensure that no threatened or endangered species of fish were living in the pond. To check for possible endangered fish, fish recovery team members from the Utah Division of Natural Resources came to the site and used electrified probes to temporarily stun the fish. The electric shock caused the fish to float to the surface. Several site



Fish recovery team members net “shocked” fish from former water storage pond.



Rocky Mountain Power crew members install a raptor perch at the Moab site.

employees, including summer interns, assisted in netting and transferring approximately 30 fish, mostly carp and a few black bullheads, to the new pond. No threatened or endangered species were identified.

Perch on High

We have made extensive revegetation efforts at the Moab site to establish native plant species to replace tamarisk and other undesirable vegetation. But tree and shrub seedlings are vulnerable to damage by the many rabbits and small rodents at the site. Raptors are birds of prey that are beneficial in controlling the population of these small

animals. Last July, a raptor pole was installed near the Colorado River on the southeast side of the Moab site in cooperation with the local power company, Rocky Mountain Power.

John Cordova, Operations Manager for Rocky Mountain Power in the Moab office, volunteered a former utility pole for reuse as a raptor perch. A volunteer crew with Rocky Mountain Power dug a hole in an area where mill tailings have been removed that afforded unrestricted views of the Colorado River corridor.

“Raptor perches encourage raptors or birds of prey to utilize the relatively lush revegetation areas and to control rodent populations,” said Ed Baker, Senior Environmental Engineer for EnergySolutions. “Perches make it easier for raptors to spot prey and allow them to efficiently hunt by providing strategic vantage points.”

Rocky Mountain Power offered additional used poles and a crew to create two raptor perches with nesting boxes at the Crescent Junction disposal site. To help offset wildlife impacts related to project activities, DOE provided funding to purchase materials to

Helping Mother Nature (continued from page 5)

construct the nesting boxes. The U.S. Bureau of Land Management (BLM), a partner in this cooperative task, contributed equipment and volunteers to build the nesting boxes and assisted with locating perch installations that met viewing and nesting requirements.

Water for Wildlife

Last summer, we installed a wildlife water guzzler near the Crescent Junction disposal site. Joe Cresto, retired Moab BLM wildlife biologist, was the primary force behind the construction effort. The guzzler is located on former BLM property in a remote corner of DOE's temporary withdrawal area and was set up in cooperation with BLM to assist wildlife in getting often-scarce drinking water, especially during winter months. "When we constructed the new potable waterline from Thompson Springs to the disposal site, we eliminated the water leaks of the old pipeline," said Ed. "Unfortunately, this also inadvertently removed a water source for animals."

The guzzler consists of a collection platform, sediment basin, 1,700-gallon water storage tank, and water dispenser. The guzzler is designed to collect and store rainwater as a water source for antelope, bighorn sheep, possibly chukars, and other wildlife in the area. An additional guzzler was installed this June east of Thompson Springs.

Beetles Binge on Tamarisk

As with many areas along rivers and streams throughout western United States, parts of the Moab site have been invaded by tamarisk. Tamarisk, or saltcedar, is a dominant riparian shrubby tree that thrives along waterways in drier climates. We have painstakingly removed some tamarisk-dense areas at the site using



Antelope and other wildlife can now access freshwater year-round from this guzzler.

a mechanical brush cutter, herbicides, or various irrigation methods to discourage tamarisk germination and establishment.

Tamarisk vigorously spreads because it has no natural enemies, and its hardy characteristics allow it to outperform native counterparts. Biological control is the use of one living organism to suppress another. A beetle from China has been identified as a biological control method for tamarisk. Commonly known as the tamarisk leaf beetle, it has been feeding on tamarisk in other parts of the world for millions of years. The U.S. Department of Agriculture (USDA), through its Animal and Plant Health Inspection Service, authorized permits to release the beetles into cages at selected sites across the western United States. The beetles have not been approved for release on federal property, but USDA won't stop their migration to federal land if they were initially released on private or state land.

Mother Nature returned a favor to us beginning last August when a release of tamarisk leaf beetles on private property near the Colorado River upstream from the Moab site spread to the DOE property. And spread, and spread, and spread. "It was amazing to see the path of 'brown' the beetles left behind as they traveled down the river," said Fred Smith, EnergySolutions Field Supervisor. Tamarisk beetles are native to Eurasia, as is the tamarisk they feed on exclusively. "They seem to be interested only in the tamarisk plant," said Ed. Once they defoliate a tamarisk tree, they move on. "Beetle



Heavy infestation of beetle larvae on a tamarisk tree.

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Moab Site Getting “Shipshape”

The improvements planned for the Moab site that we featured in the last edition of *Tailings Times* are complete.

Office Trailers

The new office trailer area east of the former location was prepared, and four new doublewide office trailers are in place and have electricity, telephone lines, and Internet access. The four existing office trailers were moved to this expanded trailer area. The radiological access-control trailer was one of the first to be installed. This trailer is larger than the former one and now much closer to the Contamination Area boundary. Another trailer serves as a combination conference room and employee break room. Showers and restrooms are housed in a singlewide trailer. “Everyone is enjoying our nice, roomy new digs,” said Irwin Stewart, EnergySolutions Senior Project Manager.

UMTRA, Monticello, and WISMUT Photographs

In furnishing the new trailers at both the Moab and Crescent Junction sites, we paid homage to the long history of uranium mining and milling by decorating the trailer conference rooms with photographs of former UMTRA Project sites, WISMUT sites in Germany, and the former Monticello (Utah) mill and disposal site.

Donald Metzler, Moab Federal Project Director, has been involved in UMTRA Project sites for 18 years. “I have also had the opportunity to travel to Europe several times to meet with my esteemed colleagues with WISMUT, the German government-owned environmental remediation firm,” said Donald. Since the inception of the WISMUT cleanup in Germany, there has been a strong cooperative tie between the DOE UMTRA Project and the German uranium mining and mill cleanup.

In addition, the former uranium-ore processing site at nearby Monticello was a DOE site remediated under a different regulatory driver than UMTRA, but nonetheless, the cleanup and disposal of the Monticello millsite tailings in an engineered disposal cell was a successful cleanup project. “I think it’s appropriate for us to recognize the mill tailings cleanup work that was done before the Moab site came under DOE jurisdiction,” said Donald.



New office trailers have been set up at the Moab site.

Other Improvements

The Moab site entrance was temporarily relocated to the east end of the site during remediation of the U.S. Highway 191 north and south rights-of-way and reconfiguration of the site access road. A guard station was added at the temporary site entrance to monitor traffic entering and exiting the site. The new site entrance and access road were completed and the guard station was relocated in late November. An access road was constructed through the site to the ground water interim action well field. Through a previously negotiated agreement with an adjacent private property owner, we used the property owner’s road to access the well field. This new road now provides site personnel direct access to the well field without traversing private property or traveling on public roads (U.S. Highway 191 and Potash Road).

A severe thunderstorm last July caused extensive damage to the existing rail service road that exits from Potash Road and created large gullies that made the road impassable. Planned upgrades to the service road and some additional repair work of erosion caused by the storm were completed in September 2006. Improvements were made to the drainage, grading, and gravel surface on the entrance side of the service road, which is now usable again.

Moab Wash traverses west to east around the northern portion of the tailings pile and to the Colorado River. When storm events occur, the water and associated debris wash out sections of site roads that cross the wash. DOE plans to realign Moab Wash sometime in

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Moab Site Getting "Shipshape" (continued from page 8)

the future. In the meantime, this spring and summer we constructed crossings at the middle and lower sections of the wash to prevent future storm damage. These crossings are intended as temporary fixtures and were not designed to withstand major storm events. The crossings consist of culverts covered with 2 feet of rock and fill and a grouted rock cap to stabilize the structures. A rock riprap apron was placed on the sides of the wash at the inlet and outlet of the crossing structure.

Reduction of Contaminated "Footprint"

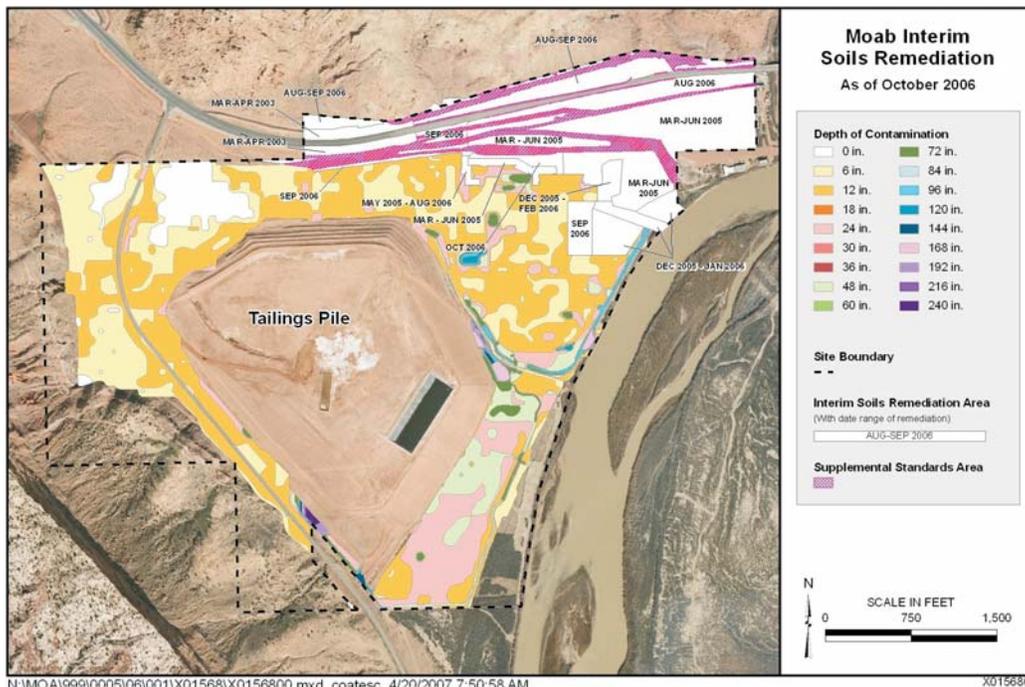
One of the interim steps DOE is taking toward moving the 130-acre tailings pile is to clean up the contaminated soil that surrounds the pile, thereby reducing the contaminated "footprint" of the site. In 2003, DOE began excavating radiologically contaminated soil in non-pile areas of the project site and hauling it to the top of the tailings pile. Additional interim soils remediation occurred in 2006 with removal of the former river water storage pond soils and remediation of north and south rights-of-way along U.S. Highway 191.

The contaminated footprint of the Moab site has been reduced by approximately 73 acres through interim soils remediation. "The interim soils remediation helps



The lower Moab Wash crossing was completed in May. A rock apron abuts each side of the grouted rock crossing.

to consolidate the tailings to the pile and allows more areas at the site to be accessible without entering the restricted Contamination Area," said Bob Hopping, Pro2Serve Vicinity Property Lead. The figure, below left, is updated from the one in a previous edition of this newsletter and shows the extent and estimated depth of assessed contamination, the areas that have been remediated, and the date range when each remediation occurred. We will continue to reduce the contaminated footprint by remediating additional soils within the DOE property boundary.



As areas are cleaned up, DOE seeds and mulches the areas to establish vegetative cover to control windblown dust. Revegetation activities include planting and seeding of desirable, native species, and weed control. More than 60 acres was revegetated in 2006, including soils under the former river water storage pond, around the river water pump inlet, along the U.S. Highway 191 rights-of-way, and on a privately owned vicinity property that was remediated. Because of the lack of measurable precipitation this spring and

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Interim soils remediation figure showing additional areas remediated as of October 2006.

Long-Awaited Moab Contracts Awarded! (continued from page 1)

So When Are the Tailings Going To Be Moved?

Now that these contracts have been awarded, we know the next question on people's minds is "When are you going to start moving the tailings?" Although DOE is just as anxious for this as the public is, there are a few things that need to happen before hauling of the tailings can commence. One of the first items DOE tasked EnergySolutions with is to create a performance baseline, a document that provides a detailed schedule and cost to complete the project. DOE used a project completion date of 2028 for planning purposes during the fiscal year 2008 budget process. Once the performance baseline is prepared, DOE can determine if this end date can be accelerated. There are numerous steps in the development of the baseline, which is anticipated to receive final approval from DOE Headquarters in May 2008.

The Moab Project is funded at \$28 million for fiscal year 2007, which ends September 30. The fiscal year 2008 funding request is at \$24 million. Funding from fiscal year 2007 that is not used can be carried over to 2008. The performance baseline will specify how much funding DOE will request from Congress for the Moab Project in future years.

Grand Junction Office Relocation

The Moab UMTRA Project will continue to be managed out of the DOE office in Grand Junction, Colorado. The DOE office has relocated to downtown Grand Junction and will be occupying leased space with the TAC contractor on the second floor of the Bank of Colorado building until office space on the fifth floor has been reconfigured to fit our needs.

Employment

RAC staff will primarily be located at the Moab and Crescent Junction sites. The RAC companies have hired 27 employees and subcontractors at the Moab site. A limited staff may be based in Grand Junction to coordinate with TAC and DOE staff. The TAC team hired approximately 20 personnel for its Grand Junction office, most of which were incumbents from Stoller. In addition, three people have been hired from the Moab site to continue operating the ground water interim action system and to conduct radiological surveys of vicinity properties. The contractors will coordinate with the Moab Workforce Services office to post positions as they become available and the positions will also be posted on the Moab website at http://gj.em.doe.gov/moab/additional_info/employment.htm. 

Moab Site Getting "Shipshape" (continued from page 8)

summer, establishing vegetation in some of the areas has been slower than expected. This fall, we plan to replant some areas, transplant additional shrubs, and plant another tree hedgerow immediately north of the office trailer area to enhance the aesthetics of the site from the highway and provide erosion control.

The added weight of the excavated soils on top of the pile assists in dewatering the pile. As of August 15, 2007, approximately 1,227,500 gallons of water (pore fluids), which contain significant amounts of ammonia and other contaminants, has been pumped from the pile and evaporated from a lined evaporation pond. Dewatering the pile reduces the amount of wet material that has to be handled during relocation of the pile. 



Construction of a road through the millsite property provides direct access to the interim action well field.

Ground Water Interim Action System Update

Independent Biogeochemical Study

Each year, the contractor conducts a performance assessment of the pumping wells in the ground water interim action system. The two main contaminants of interest in the ground water plume are ammonia and uranium. Analysis of the chemical data collected in 2004 and 2005 suggests that the interim action system stimulates microbial degradation of ammonia in the hyporheic zone associated with the Colorado River. The hyporheic zone is a region beneath and adjacent to streams and rivers, in this case the Colorado River, where surface water and ground water mix.

In 2006, personnel from the Colorado School of Mines in Golden, Colorado, visited the Moab site in August to conduct fieldwork for a short-term, small-scale study of ammonia biodegradation in the hyporheic zone. Sediment samples collected from the riverbed and water samples from an on-site well and the river were used in a laboratory microcosm study to assess the ability of subsurface microbial populations to stimulate transformation of ammonia into innocuous products. The study indicated that the nitrogen contained in ammonia is transformed into other nitrogen-containing chemicals that are not detrimental to the river ecosystem.

Vegetation Changes May Indicate a Reduction in Ammonia

Plant biologists with the contractor conducted a follow-up vegetation assessment in 2006 to determine changes in types and densities in the plant community immediately downgradient of the ground water interim action system. The first assessment was conducted in 2004 as part of a wetland delineation evaluation of the site. To document vegetation changes, four of the 2004 sample points located between the interim action system and the Colorado River were revisited in 2006.

In 2004, the biologists noted a large population of summer cypress (kochia), an upland plant, growing in the wetland-delineated area above the ammonia ground water plume. This area was confirmed to be a wetland on the basis of soil and hydrology indicators. Because it is atypical to see this type of plant in a wetland, its abundance was attributed to the high tolerance of the species to ammonia. When the biologists returned in 2006, almost all the summer cypress

was gone from the wetland area. A more diverse plant community has developed in its place that includes species with lower tolerances to ammonia.

Though largely anecdotal, this information supports the theory that summer cypress dominated the wetland when ammonia concentrations were above the tolerance levels of wetland plants that would normally inhabit this area but was easily out-competed by true wetland species when ammonia levels dropped. This change in vegetation may be an indication that the interim action system is effectively reducing ammonia levels in ground water near the wetland area. In addition, analytical results of water samples collected in some areas along the riverbank near the interim action well field show decreasing ammonia concentrations. In low concentrations, ammonia (if changed into nitrate by living things) can be beneficial to plants. If ammonia concentrations continue to decrease in the area, this beneficial effect may become apparent.

Interim Action Well Field

In previous editions of *Tailings Times*, we discussed the ground water interim action system, which is designed to address elevated ammonia levels in ground water at the Moab site. The system consists of 4 configurations of 10 wells each. At this time, extraction is the primary method used to intercept ammonia in high-concentration areas before it reaches the Colorado River. Another component of the interim action system is an infiltration trench added north of the Configuration 3 well field that became fully operational at the end of September 2006. The 10-foot-deep trench lined with gravel provides a greater surface area over which the water can be injected than the injection wells in the interim action system.

The trench extends from a sand filter system, which receives water from the river water storage pond, to four injection ports. Approximately 160 feet of perforated polyvinyl chloride pipe, similar to that used in a leach field, was buried in the trench. Freshwater from the storage pond is pumped through the filtration system to remove silt and sediment. The filtration system is self-cleaning, and the backwash pump is solar powered. The filtered water is then injected into the subsurface via four injection ports spaced

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Helping Mother Nature (continued from page 6)

activity has to continue for 2 to 3 years to completely kill the hardy tamarisk plants, but the initial results are encouraging,” said Ed. “We are benefitting from a biological control process that we didn’t intentionally implement.”

Early this summer, the beetles returned and have left their characteristic brown path as they defoliate tamarisk on the Moab site. Their span of defoliation is expanding upriver and downriver from the site. Thus far, there don’t appear to be any negative effects on vegetation other than tamarisk. 



Beetles create a “browning effect” as they defoliate tamarisk on the Moab site.

Ground Water Interim Action System Update (continued from page 10)

approximately 40 feet apart that are connected to the infiltration trench. Water is injected into each port at a rate of 2 to 15 gallons per minute. The injection of freshwater into the subsurface creates a hydraulic barrier between the ammonia plume and the back-water areas of the river.



This filtration system (now enclosed) removes silt and sediment from the pond water before it is injected into the infiltration trench.

One purpose of installing the infiltration trench is to compare the freshwater injection rate using the trench to the rate attained through a configuration of injection wells. The injection rates in the trench thus far have averaged about 30 gallons per minute compared to 5 to 10 gallons per minute using Configuration 2 wells. By mid-August, more than 5 million gallons of freshwater had been injected into the infiltration trench.

“Our next step is to determine the maximum injection rate we can achieve before the trench becomes too full to effectively disperse the water,” said Ken Pill, Site Hydrogeologist for Pro2Serve. “We will also try to establish the minimum amount of water that needs to be injected to still be protective of the river.” The trench should require less maintenance than the injection wells. One of the alternatives for long-term remediation of the contaminated ground water at the Moab site is a combination of ground water extraction and diverted river water (freshwater) injection. If the infiltration trench proves to be effective at injecting water and diluting contaminants, it may be a potential component of the long-term ground water remedy for the site. 

Consolidated Business Center Supports Moab Project

The creation of a Consolidated Business Center (CBC) under the DOE Office of Environmental Management (EM) was announced by Secretary of Energy Spencer Abraham in July 2004. Jack R. Craig was named Director of the CBC in October 2004 and has successfully guided the growth of the EMCBC from a conceptual stage to its present organization of 152 employees. Previously, Jack was the Deputy Manager of DOE's Ohio Field Office and Director of the Fernald Environmental Management Project in Ohio. The EMCBC office is located in Cincinnati, Ohio.

CBC Functions

The EMCBC provides business and technical support services for EM closure and small sites; the Moab site is a small site. The consolidated functions that CBC offers to its customer sites include Financial Management, Human Resources, Logistics Management, Information Resource Management, Legal Services, and Contracting. It also manages Closure Cadre resources, which are federal personnel who are physically assigned to individual DOE sites to support them as needed.

"We signed Service Level Agreements with our customer sites that outline the roles and responsibilities of each party and that describe the service level expectations in the functional areas to be provided," said Jack. "This allows us to recognize the differences in needs among customer sites, such as a closure site versus one with an ongoing mission." By consolidating business support functions, CBC reduces redundancies of functions across its DOE customer sites and can improve these functions by establishing standardized processes.

CBC Services for Moab Project

The Moab Project benefits from a number of CBC services. The federal staff associated with the project are supported by CBC's Office of Human Resources for personnel management functions. CBC reviews all easements, access agreements, and legal documents prepared by the DOE office in Grand Junction, Colorado. In addition, the Office of Logistics Management assists with acquiring easements or access agreements with private and public landowners in Moab and Crescent Junction, withdrawing public land for the disposal cell location and cell cover materials, and negotiating transportation agreements, specifically with Union Pacific Railroad.

Legal Services handles Freedom of Information Act requests and assists us with such items as the county's Conditional Use Permit application process and resolutions. "The Moab Project people have worked very hard to establish a good working relationship with the Grand County, Utah, community. The Conditional Use Permit exemplifies this relationship. My negotiations with the county were made much easier because of the work done by the contractor and by Don Metzler with DOE," said Simon Lipstein, Attorney-Advisor for CBC.

The Office of Contracting is responsible for awarding and administering the Moab Project prime contracts. As discussed in the cover article, CBC awarded two new prime contracts for the project in June.

"It is nice to have the services of CBC available to us for the Moab Project," said Donald Metzler, Moab Federal Project Director. "We are grateful for the assistance they have given us thus far in several areas." Additional information about the CBC is available on its website at www.emcbc.doe.gov. 

Innovative Safety Messages

In February 2006, the contractor for the Moab UMTRA Project rolled out a safety incentive program to enhance the safety culture of the project and to encourage employees to make safety their number one priority. Each month, employees are recognized for their safety attitudes and actions, and a luncheon is held for all employees working at either the Moab or Crescent Junction site. A short safety program is also presented each month. Examples of past programs are a safety skit, fire extinguisher training, safety-related games, and guest speakers from other DOE sites, the contractor, or the local community.

Safety-Related Games

Safety-related games provide an innovative way to deliver safety messages. The games we've played at the meetings are Safety Jeopardy, Safety BINGO, Safety Feud, and a safety crossword puzzle. The Jeopardy game included the categories of On the Road Again (Driving Safety), It's Electrifying! (Electrical and Utility Safety), If You Build It . . . (Construction Safety), Can You Dig It? (Excavation Safety), and Potpourri (Miscellaneous). Two teams of employees vied to give the correct questions to the answers in each category.

For the Safety BINGO game, game cards were created with pictures of items in the categories of Signs/Alarms, Tools or Instruments, People, Vehicles and Equipment, and Personal Protective Equipment. Each game card was unique and players had to determine, based on descriptions read about the items, whether or not they had that item on their game card. This game involved everyone and tested individuals' knowledge of what they're working with. The atmosphere became very lively during this game!

"Survey says" . . . in the Safety Feud game two "families" of employees faced each other and tried to be the first to name the top survey responses in the topics of types of personal protective equipment, items in an emergency car kit, training classes/briefings, and postings/signs. Survey responses came from the employees, who had taken the survey at the previous month's safety meeting.

The safety crossword was played at the May meeting. Attendees worked in teams at their tables to solve the puzzle. The answers were then revealed to the group on a screen and the team that finished the puzzle first was awarded a prize.



A team of employees tried to be the first to name the top five survey responses in the Safety Feud game.

"I think the employees enjoy the games as a fun way to learn about safety," said Irwin Stewart, EnergySolutions Senior Project Manager. "They provide a change of pace from the standard meeting."

Management of Change

Joe Ocken, Safety Director for Envirocon, Inc., was the keynote speaker at the August 2006 safety luncheon and gave an interesting presentation on Management of Change. The basic premise of this concept is that Management of Change programs tend to focus on designed changes. Less obvious are the small changes identified in the field that need to be recognized and managed in a manner appropriate for the daily employee level of detail.

An example he shared was the driver of an articulated truck. One day the usual type of truck she drove for her work activities was being serviced. The alternate truck she drove that day had a different mechanism for stepping out of the truck. Although she was a skilled and experienced driver, the simple change in the type of wheel-well step led to an injury. The different type of step was a small, but important, change. If the employee had recognized the hazard associated with this change and managed that change at her level, the investigators felt the accident and injury could have been avoided.

Safety meetings are a good way to share these types of Management of Change adjustments and provide managers and workers with information to improve the quality and safety of subsequent similar work so that change can be incorporated into the planning process. 



How Do I Get Information About the Project?

For more information about the Moab UMTRA Project, contact
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U.S. Department of Energy Grand Junction
200 Grand Avenue, Suite 260, Grand Junction, CO 81501
(970) 257-2115
email: dmetzler@gjem.doe.gov

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 <http://gj.em.doe.gov/moab> and at

Grand County Library

257 East Center Street
Moab, Utah
(435) 259-5421

Library hours:

9:00 a.m. to 8:00 p.m. Monday through Wednesday
9:00 a.m. to 7:00 p.m. Thursday and Friday
9:00 a.m. to 5:00 p.m. Saturday
Closed Sunday

Thompson Springs Fire Station

Off I-70 exit
Thompson Springs, Utah
Contact Lori Bell
Thompson Springs Fire Department
(435) 260-6059

Available by appointment:

8:00 a.m. to 5:00 p.m. Monday through Friday

DOE Office in Grand Junction

200 Grand Avenue, Suite 500
Grand Junction, Colorado
Contact Wendee Ryan
S&K Aerospace, Inc., Public Affairs Manager
(970) 257-2145

Available by appointment:

8:00 a.m. to 4:00 p.m. Monday through Friday

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