Remediation of Physical Safety Hazards

New Placers Mine Safeguard Project
Golden, Santa Fe County, New Mexico

Submitted By:
Chris Teske, Abandoned Mine Land Coordinator
Bureau of Land Management Abandoned Mine Land Program
1800 Marquess St
Las Cruces, NM 88005
(575) 525-4323
cteske@blm.gov

Project Start Date:
September 27, 2018

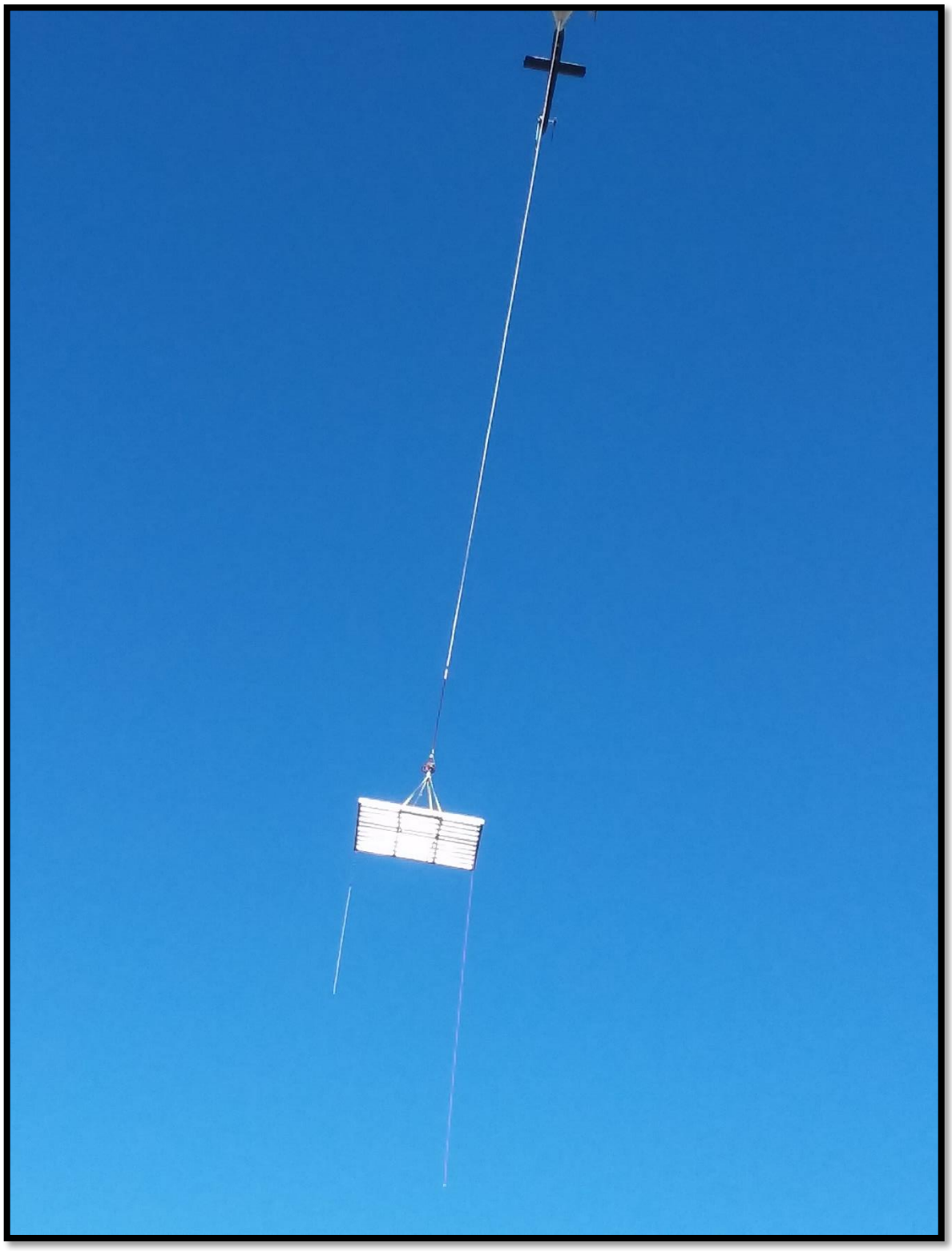
Project Completion Date:
February 28, 2020

Construction Cost:
$343,000

Cooperating Organizations:
Bureau of Land Management
New Mexico Mining and Minerals Division Abandoned Mine Land Program
Office of Surface Mining Reclamation and Enforcement
Bat Conservation International
RMC Consultants
Mine Gates Environmental

Date Submitted:
June, 14 2021

New Placers Mine Safeguard Project



History:

The New Placers Mining District encompasses the San Pedro Mountains and is located south of Santa Fe along the Turquoise Trail. The San Pedro Mountains, along with both the Cerrillos Hills and the Ortiz Mountains to the north forms a mineral belt where deposits of gold, silver, copper, turquoise, zinc, lead, coal, and other minerals are found. This belt, called the San Pedro-Ortiz poryphyry belt, is the oldest mining area in the United States and dates to 900-1300 A.D. when Native peoples harvested from the mineral deposits for paint, to fashion ornaments, and for religious ceremonies.

San Pedro-Ortiz poryphyry belt was first prospected for silver by the Spanish during the 1580s, making it the oldest European mining area in what is now the United States. Around 1600, the silver mines of Cerrillos and San Pedro were being worked by the Spanish, who erected smelters and other reduction facilities. Despite the discovery of precious metals, little development was done during Spanish Colonial times, but in 1839, when the region was still part of Mexico, placer gold was discovered. This discovery resulted in the first mining boom in the San Pedros and, together with the nearby Old Placers boom of 1828, marked the first gold rushes in the American West. By the end of the 1840s many inhabitants moved on for richer prospects or out of fear of reprisals by the American victors of the recent Mexican War.

In the early 1880s New Mexico witnessed a mining rush with the opening of remote areas to industry by the transcontinental railroad and the expansion of the national economy, resulting in a dramatic increase in the price of base metals. Copper was in increasing demand for wire production as north America and Europe adopted electric power. The “Big Copper Mine” on San Pedro Mountain thus became the focus of mining in the new Placers district during the 1880s and into the next century.

The community of San Pedro was established in 1880 as a direct result of copper mining operations funded by Eastern American capital: San Pedro & Cañon del Agua Co. (1880), Santa Fe Copper Co. (1888), and Santa Fe Gold & copper mining Co. (1899). These companies created a copper-mining landscape in the San Pedros that consisted of underground mines, an aerial tramway to transport the ore, mills, smelters, and the little mining camp of San Pedro, the remains of which can still be seen today from NM 344. In 1918 the Santa Fe Co. smelter burned, and the copper mine was closed for the last time. The National recession following World War I tolled the death knell for the little community of San Pedro, and by the early 1940s, San Pedro was a ghost town.

Overview:

There are hundreds of abandoned mine features located on public and private land parcels in the San Pedro Mountains that pose a safety risk to the public, endanger wildlife, and harm the environment. , The New Placers Mine Safeguard Project focused on closing a large portion of the most hazardous features, consisting of 173 closures in total.

The New Placers Mine Safeguard Project is a continuing effort in coordinating the abilities as well as funding the partnerships between the Bureau of land Management (BLM), New Mexico Mining and Minerals Division, Abandoned Mine Land Program (NMMMDAMLP), Office of Surface Mining Reclamation and Enforcement (OSMRE), Bat Conservation International (BCI) and three contracted agencies: RMC Consultants, Mine Gates Environmental, and Westland Resources. The New Placers Mine Safeguard Project utilized the design build concept that had been developed in prior BLM projects. The contractors were given the ability to be innovative in the type of closure they constructed as long as it met the requirements of the wildlife recommendations and the closure design was approved by BLM prior to the installation. The design build option brought the cost of mine closures down dramatically compared with previous project contracts.

The difficulties of getting to the point of reclamation were not limited to physical barriers, but included complex coordination with other agencies, private landowners, and compliance challenges (e.g. cultural resource avoidance measures, endangered plant species, and wildlife exclusion measures). These challenges were overcome with the cooperative efforts from all parties involved. The project started in 2014, several years prior to the closure of the physical safety hazards. New Placers Project was initiated when NMMMDAMLP approached BLM with the project idea. The cooperation between the partners did not stop there. When it came to public outreach, NMMMDAML and the BLM held several joint meetings for outreach with the public, mining claimants, and mineral collectors.

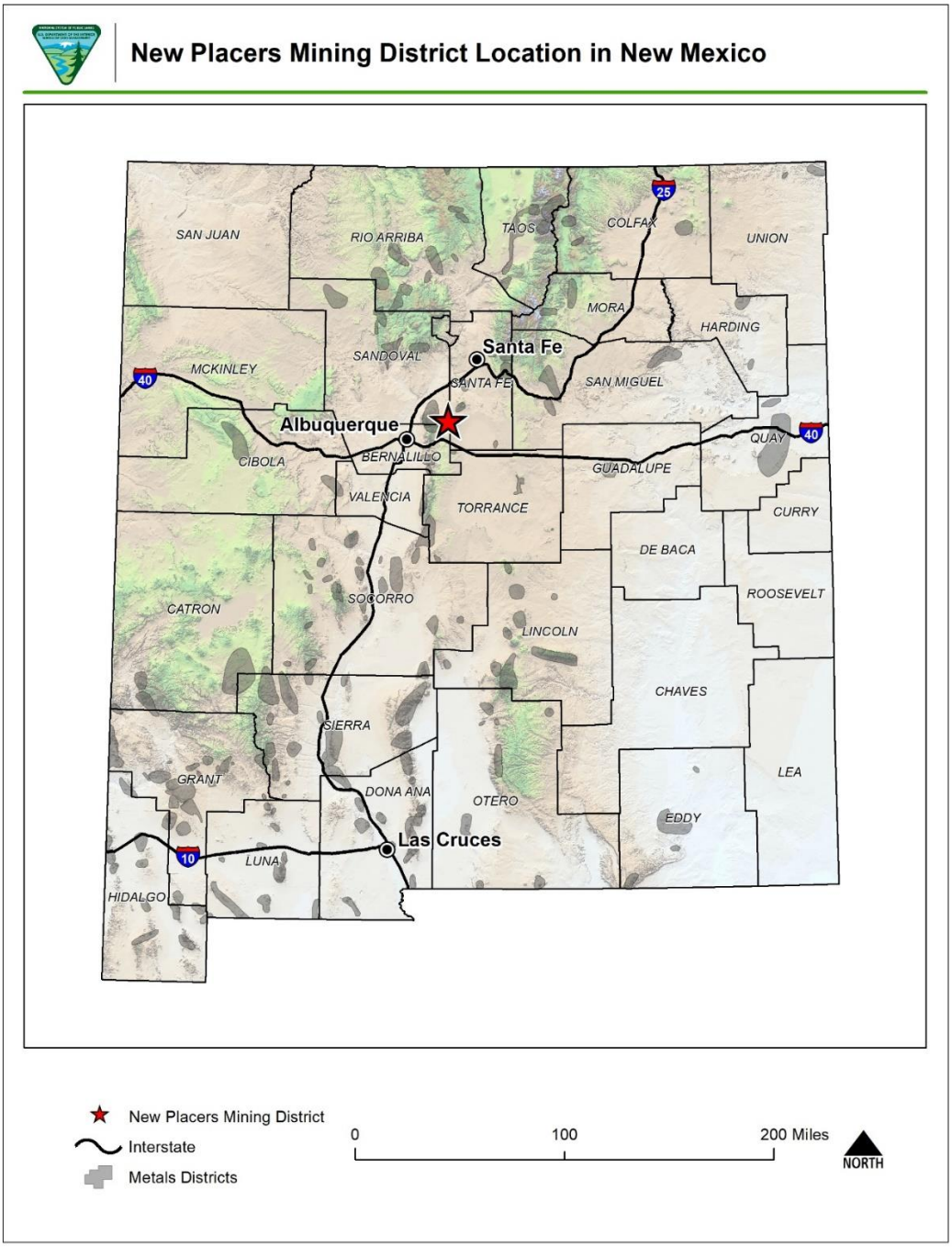
Starting in 2014, the BLM submitted budget requests for New Placers Mine Safeguard Project. and secured funding for wildlife inventories that began in February of 2015 and finished in June of 2018. In the 2018 fiscal year, BLM secured additional funding for the closure project to start in fiscal year 2018 and run thru 2020.

During the same time NMMMDAMLP secured funding for cultural studies, plant studies, and initiated a compliance process (National Environmental Policy Act) from OSMRE. The Environmental Assessment (EA) and Cultural Resource Survey were completed as a cooperative effort between NMMMDAMLP, BLM, OSMRE, Grouse Mountain Environmental (contractor hired to complete the EA), and Westland Resources (cultural contractor).

BCI completed the wildlife studies and the pre-closure wildlife inspections during the construction phase of the project. BLM contracted and managed the closure phase of the project by selecting two companies, RMC Consultants and Mine Gates Environmental, to complete the 173 project closures. Though BLM was the primary, the contract oversight was managed by BCI, BLM, and NMMMDAML, all with an equal say in project logistics and design that assured environmental disturbance was kept to a minimum and cultural resources were preserved.

Because of the need to limit ground disturbance and due to difficult terrain, both contractors utilized helicopter to lift welding equipment, culverts, steel bat compatible gates, and other materials, to be installed on the mining features. During construction, the companies worked

efficiently with the use of two installation crews, each consisting of three people. Prior to all the work being completed on one mine feature, the third team member would head to the next feature to be gated and prepare for the helicopter to deliver materials. When the helicopter came to pick up the equipment from a completed feature, they were quickly able to hop the equipment to the next feature where the crew member was already waiting to receive it. With this efficiency the helicopter was economical and saved time on the project. The map below shows the general location of the project within the state of New Mexico.



The Project:

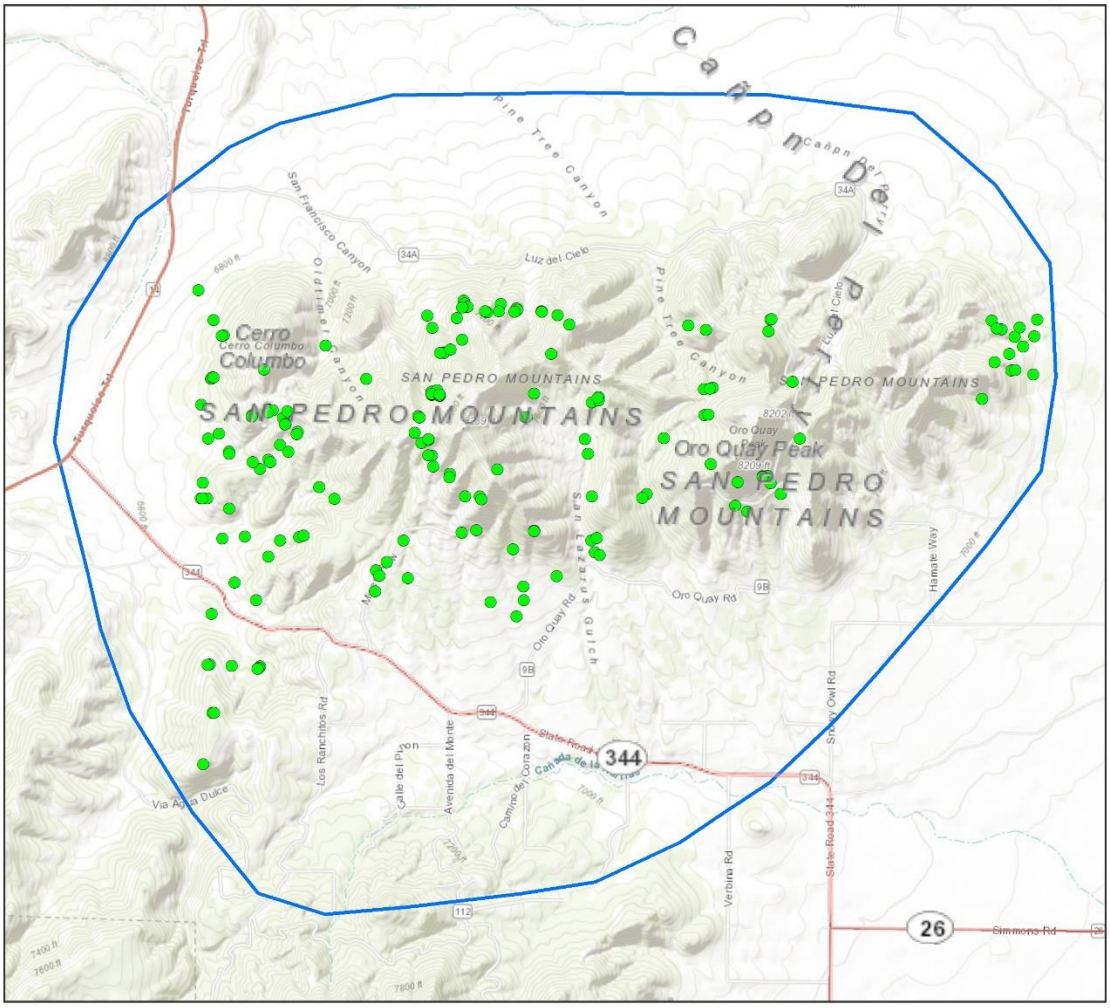
The project began September 25, 2018, with two contractors hired to close 173 mining features across the entire mining district. Mine Gates was first to start their portion of the closure work during a three-month period starting on September 2018 and ending in December 2018. Mine Gates returned in March of 2019 to continue their closure work. Additionally, in the spring of 2019, RMC Consultants began their portion of the closure project. Both companies had to stop during the spring of the project due to the Migratory Bird Act constraints not allowing work during the nesting period. They both continued into the fall with Mine Gates completing their portion of the closure project. RMC Consultants continued into the winter until they could not work any longer due to snow. They returned in March of 2020 to complete all the remaining closures.

Before each closure one member from BCI would enter the mining feature, and clear the site of bats, owls, nesting birds or other wildlife. For mechanical backfills an excavator with a larger bucket was used for areas that were easily accessible and a smaller mini excavator was used for areas that were less accessible. The larger excavator resulted in a quick and efficient backfills of mine shafts. The larger excavator can easily reach across a shaft and pull in the entire waste rock dump pile without having to move the machine. To minimize land impact, tracks were used to travel to the sites. Once a feature was closed, the excavator would reverse its tracks to the nearest road, thereby minimizing impact. The track marks would then be hand raked to result in a more natural state. The smaller rubber track mini excavator was used in less accessible areas to backfill shafts and adits, as well-as help to install culverts and gates into mining features.

Throughout the project, every effort was made to minimize impact to the unique historical resources of the project area. We were also very careful to only minimally impacting the biota of this desert environment.

The detail map below shows the location of the various mine features addressed in the project.

New Placers Mine Safeguard Project



0 1 2 Miles

NORTH

Legend

- Remediated Mining Feature
- New Placers Mining District

Location in New Mexico

Backfilling:

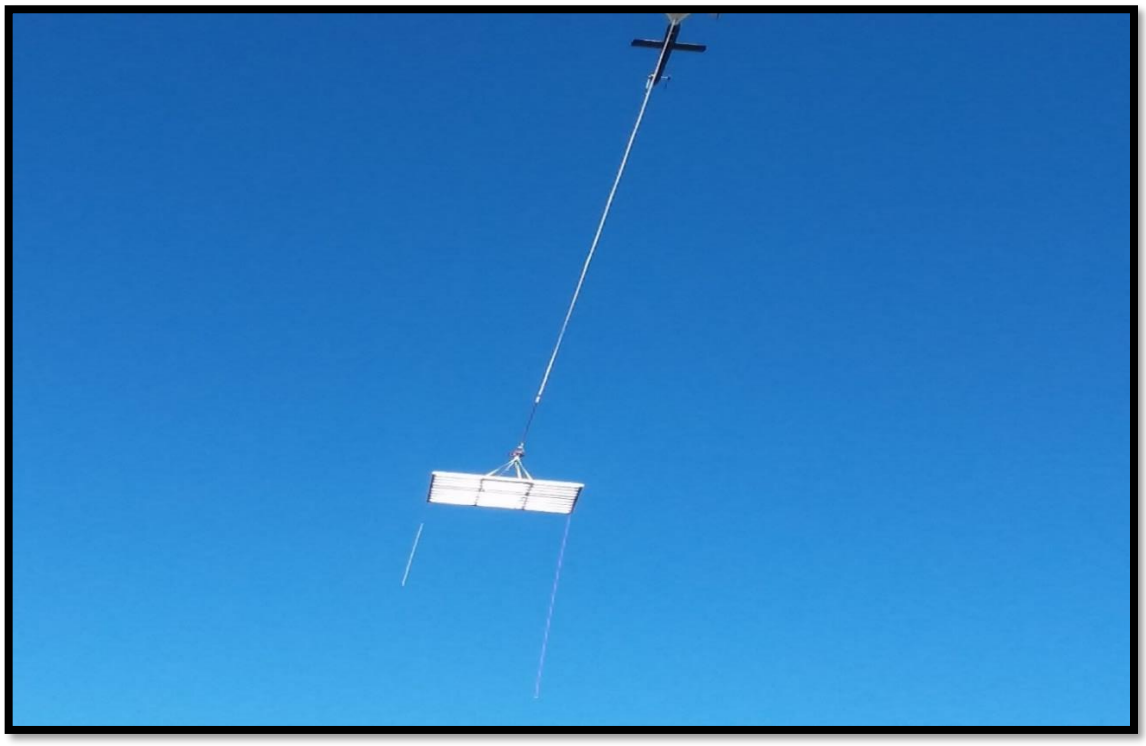
The below example is one of many backfilled type closures. Within this project there were 100 backfills that were completed, and of those 100 there were 40 hand backfills on features that were inaccessible for any type of equipment. Many of the backfills had PUF (Poly Urethane Foam) installed prior to backfilling them. The remaining 60 mechanical backfills were completed easily with the use of excavators.

The Gate Installation:

This project consisted of 73 mining features that required bat compatible closures. There were 20 Culverts with gates installed, 51 wildlife gates, two mesh closures and one cupola. Many of the features were not accessible with equipment so they either had to be flown in or had materials caried to these sites.
For this project, 20 gates were prefabricated and flown to the site. An additional 10 mining features had the materials flown to them and the gates were constructed onsite. The remaining gated features had the materials and or culvert hauled to each feature with equipment or vehicles and were constructed onsite.

Helicopter Placed:

The most inaccessible features had to be flown in. On this project, 30 features had gates, materials, and additional equipment flown to them to install preconstructed gates or to have gates constructed onsite.



Mesh Installed:

When the features are too large to be gated and it is difficult to install an onsite-built gate, we utilize mesh. This feature was too difficult to get equipment to and very large. Due to the limitations mesh was chosen as the best alternative. A steel frame was built around the feature and the mesh attached to the mesh. The rolls of mesh were hand carried to the site and installed without equipment. The anchoring rods were drilled into the ground and welded with the use of hand-held welders caried to the site.

Site Built Gates:

References:

1. Sherman, James E., and Barbara H. Sherman 1975 Ghost Towns and Mining Camps of New Mexico. University of Oklahoma Press, Norman.

2. Baxter, William The Gold of the Ortiz Mountains: A Story of New Mexico and the West's First Major Gold Rush. Lone Butte Press, 2004.