



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

TO: Water Quality Control Commission

**FROM: Virginia Brannon, Division Director
David Berry, Coal Regulatory Program
Tony Waldron, Minerals Regulatory Program
Bruce Stover, Abandoned Mine Land Program**

DATE: November 8, 2014

RE: FY 2013-2014 SB 89-181 Annual Report

We appreciate the working relationship between the Division of Reclamation, Mining and Safety and the Water Quality Control Division and are pleased to submit the attached Annual Report.

Attachments

SB 89-181 Annual Report

FY 2013-2014

This annual report to the Water Quality Control Commission (WQCC) is required under the provisions of SB 89-181 and the Memorandum of Understanding (MOU) adopted by the Mined Land Reclamation Board (MLRB) and the WQCC. The Division of Reclamation, Mining and Safety (DRMS) is an implementing agency under the provisions of SB 89-181. As such, DRMS is responsible for ensuring that mine operators comply with state ground water quality standards. It is the responsibility of the WQCC to classify waters of the state and set standards for those waters. If the WQCC has not set site specific ground water standards, DRMS uses the numeric protection levels, referenced in the WQCC adopted narrative ground water standards, to set appropriate permit conditions to protect ground water.

Minerals Program

DRMS analyzes all operations that have the potential to be classified as Designated Mining Operations (DMO) to ensure that their operations are protective of ground water. Under HB 08-1161, all conventional and in situ uranium mines have DMO status. DRMS also requires non-DMO mining operations, including some aggregate operations, to initiate ground water sampling where there is a potential for impacts to ground water quality.

As of this reporting period, the Minerals Program requires approximately 32 mine sites to conduct some type of ground water quality monitoring. Of these sites, 27 are hard rock mining operations and five are construction material extraction operations. The hard rock mining operations include the following three sites that are new additions to this report for the 2013-14 reporting period: the Precious Mine, located in Crowley County, and the JD-7 Pit and JD-9 Mines, located in Montrose County.

Please see the attached table for specific information about these sites.

Coal Program

The Colorado Coal Program currently regulates a total of thirty-seven coal mines, of which nine are actively producing mines. The active mines include one that exports previously stockpiled coal and one that is a load out facility. The producing mines are both surface pit and underground operations. Twenty mines are in various phases of reclamation or temporary cessation. Six mines are reclaimed sites for which the permits were revoked. One new underground mine permit is approved, but the bond has not been posted, so permit issuance has not yet occurred pending bond submittal. Approximately 80 percent of Colorado's coal production results from underground operations. The predominant method of underground mining is longwall mining.

Please see the attached table for specific information about these sites.

Accomplishments

During the 2013 - 2014 reporting period, the Coal Program accomplished the following functions:

1. The Coal Program effectively implemented various rules pertaining to ground water protection at Colorado coal mines. The Coal Program's current requirements for monitoring and detailed pre-disturbance permitting will continue to provide proper ground water quality protection.
2. The Coal Program conducted reviews of Annual Hydrologic Reports submitted by operators. This allows for timely identification of hydrology sampling anomalies and deficiencies, in addition to water quantity and quality trends.
3. The Coal Program continued to focus coal mine permitting activities on minimization of impacts to the hydrologic balance and prevention of material damage. These activities included the ongoing review and update of Cumulative Hydrologic Impact Analyses (CHIA).
4. The Coal Program continued to focus regular coal mine field inspections and monitoring activities on minimization of impacts to the hydrologic balance and prevention of material damage. During FY 2014, the Coal Program conducted 382 inspections.
5. The Coal Program and WQCD communicated periodically during the last year to discuss specific issues of mutual concern.

Objectives

1. The existing Cumulative Hydrologic Impact Analyses for the various river basins that contain coal mining will be reviewed and upgraded on an ongoing basis.
2. The Coal Program will continue to focus regular field inspection and monitoring activities, as well as permitting activities, on minimization of impacts to the hydrologic balance and prevention of material damage.
3. The Coal Program will continue to communicate with the WQCD, as needed, for the purpose of discussing and resolving issues of mutual concern.

Abandoned Mine Land Program

Since October 2013, reclamation construction work has been completed or is underway on 6 mining-related water quality improvement projects. Mine sites undergoing reclamation construction in 2014 include:

- Mary Murphy Mine/Golf Tunnel Bulkhead
- London Mine tailings reclamation

- London Butte Mine waste rock and tailings reclamation
- Hough Mine waste rock and tailings reclamation
- Pennsylvania Mine bulkhead
- Redwell Basin artesian drill-hole plugging

An additional 9 projects underway to investigate, characterize and develop final reclamation designs include:

- Waldorf/Santigo Mine on Leavenworth Creek
- Rico –Argentine Mine underground rehabilitation and investigation
- Uncompaghre Mine Reclamation Project
- Red and Bonita Mine
- Carbonero Bulkhead investigation
- Gertrude-Venture Mine waste rock project
- Bullion King Mine
- Pergio Mine drainage investigation
- Standard Mine underground investigation and characterization project

Also since last year, maintenance work was performed at multiple previously completed mine water-quality improvement NPS 319 projects, including numerous mines in the Animas Basin.

In addition to these on-ground projects, DRMS continues to provide technical assistance to watershed groups and federal agency partners, and provides matching funds for additional projects sponsored by those groups. In 2014, DRMS and CDPHE continued implementing the statewide initiative to develop and bring mining related water quality improvement projects to a “shovel-ready” state on priority watersheds, using funding from the State Power Authority. The first four of these projects are now completed, including the Saint John Mine above Montezuma in Summit County, where historic mill tailings were reclaimed and wetlands re-established, the London and London Butte Mines on Mosquito Creek above Fairplay and the Rattler Mine in Gilpin County. Six other sites identified in the first phase initiative have been characterized and funding has been requested for reclamation at four additional mine sites.

Additionally, Phase 3 of the 2011 CDPHE-DRMS initiative to inspect and improve, or make repairs, to previously constructed mine waste and tailings reclamation projects conducted under the Non Point Source Program was performed in the summer of 2014. Inspections and documentation of the conditions at over 30 previously reclaimed sites, some dating back to 1989, were previously completed in 2012.

Please see the attached table for specific information about these sites.

Hard Rock Mining Operations

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>AGC RESOURCES LLC CASH AND WHO DO MINES (Permit No. M-1983-141) Boulder County</p>	<p>The Operator began a ground water characterization program in 2007. This included sampling of two surface water stations and the Cash Mine water pool, and installation and sampling of monitoring wells above and below the mine. A comprehensive report of these activities was submitted in March 2009.</p>	<p>No mining has occurred since the end of 2008.</p> <p>The Division approved the Operator's request to place the site into Temporary Cessation. The period of Temporary Cessation will last from June 13, 2013 until June 13, 2018, or until the Operator notifies the Division that active mining operations have resumed. Groundwater monitoring will continue on a quarterly basis.</p> <p>In October 2013, DRMS approved Technical Revision No. 7 (TR-7). TR-7 revised the monitoring plan to address the following:</p> <ol style="list-style-type: none"> 1) Eliminate the following parameters from the sampling suite: <ul style="list-style-type: none"> aluminum, chromium, cobalt, copper, fluoride, iron, lead, lithium, mercury, nickel, selenium, and vanadium. <p>The Cash Well monitoring location was eliminated and replaced with the Cash Mine Pool from the 3rd Level Adit.</p>
<p>AGC RESOURCES LLC GOLD HILL MILL (Permit No. M-1994-117)</p>	<p>The mill is inactive. The permit requires monitoring of the four monitoring wells located below the mill tailings impoundment on a</p>	<p>No milling has occurred since the end of 2008.</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>Boulder County</p>	<p>quarterly basis for verifying the integrity of the geomembrane liner. Although not required by the permit, the Operator has previously sampled the pond in the tailings impoundment, the Times/Wynona Mine located above the tailings impoundment, the Hazel A Adit located below the tailings impoundment, and Left Hand Creek.</p>	<p>The Division approved the Operator's request to place the site into Temporary Cessation. The period of Temporary Cessation will last from June 13, 2013 until June 13, 2018, or until the Operator notifies the Division that active milling operations have resumed. Groundwater monitoring will continue on a quarterly basis.</p> <p>In October 2013, DRMS approved Technical Revision No. 9 (TR-9). TR-9 revised the monitoring plan to address the following:</p> <ol style="list-style-type: none"> 1) Eliminate the following parameters from the sampling suite: aluminum, chromium, cobalt, copper, fluoride, iron, lead, lithium, mercury, nickel, selenium, and vanadium. 2) Remove Left Hand Creek water sampling location. 3) Remove Hazel A water sampling location. 4) Cease collection of samples from Wynona Mine until such time as the mine is used for water storage. <p>MW1 (mill well) was established as the compliance point for Gold</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>CLIMAX MOLYBDENUM COMPANY HENDERSON MINE AND MILL (Permit No. M-1977-342) Clear Creek and Grand Counties</p>	<p>Permit conditions protective of ground water at the Henderson Mine and Mill include ground water interception wells and a pipeline system located below the tailings ponds to pump potentially contaminated ground water back to the tailings ponds. Leak testing is conducted each year.</p> <p>The ground water monitoring program includes quarterly monitoring of one well at the mine, and two wells at the mill. A third well has been established at the mill to gather ambient ground water quality information ahead of tailing pond expansion.</p>	<p>Hill Mill.</p> <p>An Environmental Protection Plan (EPP) and Groundwater Monitoring Plan were approved by the Division in 2012 and implementation of the plans by Climax Molybdenum Company at the Henderson Mine and Mill facilities started in 2012.</p> <p>Monitoring activities at the site have continued in 2013. The Groundwater Monitoring Plan is evaluated for the mill and mine facilities based on the results of the groundwater monitoring results.</p>
<p>BATTLE MOUNTAIN RESOURCES INC. SAN LUIS PROJECT (Permit No. M-1988-112) Costilla County</p>	<p>The San Luis Project is currently in reclamation mode and cyanide processing has not occurred since 1996. The permit requires ground water monitoring at twenty-one wells, including several water wells located outside the permit area (Shalom Ranch and the San Luis Town Well).</p> <p>Ground water monitoring is conducted at this site to verify containment of cyanide solution at the lined mill tailings facility and to assess the progress of ground water management in the West Pit. West Pit groundwater quality is managed by pumping to prevent contact with polluting strata. The pumped water is then treated and discharged as regulated by the WQCD.</p>	<p>Monitoring activities at the site have continued unchanged during the past year with the exception of replacement of monitoring well M-14, due to erratic TDS values. A new M-14 was installed and the Division is monitoring the new data. At this time, the monitoring data indicate compliance and successful containment of cyanide solutions.</p>
<p>CATALIX INTERNATIONAL, LLC PRECIOUS MINE (Permit No. M-2013-008) Crowley County</p>	<p>This 110d permit was approved in 2013 and includes an Environmental Protection Plan. Shale will be mined in open pits and processed using acids in aqua regia treatments for leaching out gold and platinum. Piezometers will be installed around the pits. Ground water quality will be monitored in a downgradient ground water point of compliance well.</p>	<p>Start-up is pending submittal of the financial warranty.</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>EXXONMOBIL COLONY OIL SHALE PROJECT (Permit No. M-1980-047) Garfield County</p>	<p>In the past, ExxonMobil has conducted ground and surface water monitoring programs of varying scopes with various objectives. However, the only reporting requirements were for surface discharge at Pond 5 as specified by the NPDES program. In June 2007 ExxonMobil implemented a water monitoring program taking monthly water levels and quarterly samples for chemical analysis in three wells (one up-gradient and two down-gradient). In January 2008 a fourth well was installed down-gradient of an electrofrac experiment location to provide rapid detection of any groundwater impact from the experiment. Drilling and fracturing tests were conducted in 2008.</p>	<p>Currently low to mid level heating tests are being conducted that are designed not to release toxic substances.</p>
<p>OCCIDENTAL OIL SHALE, INC. LOGAN WASH (Permit No. M-1977-424) Garfield County</p>	<p>Final reclamation of the main facilities began during summer 2003 and continued through 2008. Maintenance of reclamation and remaining facilities continues. Discharge of water from within the sealed mine consists of mine water and retort water. Mine water from the lower portal and from the research portal are monitored for flow rate and sampled on a weekly, monthly and quarterly schedule (depending on analyte) when the site is accessible and flow is present at the outfall. NPDES monitoring is reported to the WQCD.</p>	<p>Mine water and retort water are monitored monthly at the portal locations for flow rate. The retort water discharges to an evaporation pond.</p>
<p>LKA INTERNATIONAL, INC. GOLDEN WONDER MINE (Permit No. M-1978-091 UG) Hinsdale County</p>	<p>LKA International, Inc., (LKA) collects water from a shallow off-site sampling well on Deadman Gulch and from the Lake Fork above and below the confluence with Deadman Gulch. During 2006 and 2007 LKA collected surface water from several points along Deadman Gulch and ground water from the underground mine workings. Except during seasonal runoff periods, Deadman Gulch is dry.</p> <p>Adit discharge has not been observed or reported for several years, since the operator has impounded water in an underground sump in the workings. Operator neutralizes underground impounded water with sodium bicarbonate. Ground water monitoring locations are shallow sumps on and below the waste rock dump, acting as wells.</p> <p>During 2007 through 2009 a series of small seeps were observed issuing from the waste rock dump, and additional sampling ensued to determine sources of the water. The operator installed lined diversion</p>	<p>Lined diversion structures appear to be functioning effectively, as no seeps were noted at the toe of the waste dump in 2010 or 2013. Diversion structure consists of welded polyethylene pipe and limestone-lined open ditch.</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity																		
<p>COTTER CORPORATION SCHWARTZWALDER MINE (Permit No. M-1977-300) Jefferson County</p>	<p>structures to isolate the waste dump from surface run-on, and installed two piezometers to monitor for possible connection of underground mine water and seep flow. Piezometer sampling was approved to be discontinued when the piezometers were found to be dry.</p> <p>This underground uranium mine operated from 1953 to 2000, and is now in reclamation. The mine is a Designated Mining Operation. Mine pool water and ground water in alluvial fill are contaminated with uranium, sulfate, and other constituents.</p> <p>The operator treats mine pool water using an in-situ biological process. The site also has a reverse osmosis system for treating pumped mine pool water and an ion exchange system for treating alluvial ground water that is captured in underground sumps.</p> <p>The operator monitors ground water quality in 11 alluvial wells, 8 bedrock wells, and in themine pool. Concentrations of selected analytes in mine pool water sampled on June 16, 2014 were: :</p> <table border="1" data-bbox="812 541 1055 1507"> <thead> <tr> <th>Analyte</th> <th>Concentration</th> <th>Standard</th> </tr> </thead> <tbody> <tr> <td>Manganese</td> <td>2.57 mg/L</td> <td>0.05 mg/L</td> </tr> <tr> <td>Molybdenum</td> <td>0.65 mg/L</td> <td>0.035 mg/L</td> </tr> <tr> <td>Radium 226</td> <td>219 pCi/L</td> <td>5 pCi/L</td> </tr> <tr> <td>Sulfate</td> <td>1580 mg/L</td> <td>250 mg/L</td> </tr> <tr> <td>Uranium</td> <td>6.50 mg/L</td> <td>0.03 mg/L</td> </tr> </tbody> </table>	Analyte	Concentration	Standard	Manganese	2.57 mg/L	0.05 mg/L	Molybdenum	0.65 mg/L	0.035 mg/L	Radium 226	219 pCi/L	5 pCi/L	Sulfate	1580 mg/L	250 mg/L	Uranium	6.50 mg/L	0.03 mg/L	<p>Mine pool pumping and RO treatment have been shut down since rain storms in September 2013 damaged the mine's main access road. Pumping and RO are expected to resume when road reconstruction is complete, either in late 2014 or early 2015. Ion exchange treatment of alluvial water has continued.</p>
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<p>DEADWOOD GULCH MINING CO. INCAS MINE (Permit No. M-1986-076) La Plata County</p>	<p>The facility is permitted for a cyanide vat leach system to leach gold and silver, and previously produced small (~10 tons per year) quantities of tailings. The site is permitted as a DMO, and is required to sample surface and groundwater during the seasons that its mill and leaching facility is active. The site is monitored for pH, EC, TDS, sulfate and WAD cyanide. The site has an NPDES permit for historic adit discharge.</p>	<p>There was no mining or milling activity during 2012 or 2014, and no water quality samples were taken. The operation was put into temporary cessation in June of 2014 after verification that all hazardous materials had been removed from the site.</p>																		
<p>WILDCAT MINING</p>	<p>The permit was converted to a 112d through approval of CN-01 which</p>	<p>On September 16, 2011, WQCD</p>																		

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>CORPORATION IDAHO MILL (Permit No. M-1981-185) La Plata County</p>	<p>included the old permit area under M-2006-069 and M-2010-003. The operator has installed groundwater monitoring wells at the site. Surface water sample locations have been established in order to provide baseline conditions for 5 quarters. Mining and milling is not yet approved at this site.</p>	<p>issued a correspondence, clarifying the historic mine drainage from the Idaho No. 1 Adit must be permitted through the NPDES process.</p>
<p>RESURRECTION MINING CO. BLACK CLOUD MINE (Being Reclaimed under a Consent Decree File No. M-2008-083) Lake County</p>	<p>The approved ground water monitoring plan specifies quarterly monitoring of six wells and one surface water sampling station cross gradient and down gradient from the tailing impoundment. A point of compliance is established down gradient of the impoundment and numeric protection levels are established. The Black Cloud Mine pool is pumped and piped to the Yak Tunnel Water Treatment Plant.</p>	<p>Site under reclamation.</p>
<p>ENERGY FUELS RESOURCES CORPORATION, INC. WHIRLWIND MINE (Permit No. M-2007-044) Mesa County</p>	<p>The mine was on standby status as of October 2008. The Division placed the mine into temporary cessation on May 6, 2013. The operator installed a monitor well below proposed mine dump areas in October of 2008 as part of the requirements for a DMO EPP. An existing upgradient well is utilized for sampling to establish baseline data. Sampling was conducted from October 2008 through April 2010 on a bimonthly schedule. Ground water sampling is, as of June 2010, required to be conducted and submitted to DRMS on an annual basis. The mine has a water treatment and discharge permit through WQCD. No treatment or discharge occurred in 2013-14. A mine pool developed in historic workings over several decades. The mine pool water was used for drill water, dust control, and pumped to the surface during recent mine activities. It is anticipated that the pool will reform over an extended period of time. The operator is monitoring pool levels and can turn on pumps if they reach undesirable levels prior to reactivation of the mine.</p>	<p>Annual well sampling and annual reporting continues.</p>
<p>RIO GRANDE SILVER, INC. BULLDOG MINE (Permit No. M-1977-215) Mineral County</p>	<p>Water monitoring was terminated by the former operator. Rio Grande Silver (RGS) has applied for a permit amendment consisting of an Environmental Protection Plan (EPP) which includes a water sampling and monitoring program. The EPP amendment must be approved and a WQ baseline established before the mine can be reactivated or possible mill constructed. There is currently no observed discharge to the surface. RGS has been voluntarily sampling surface water throughout</p>	<p>The mine is in Temporary Cessation (TC) status, and no construction, mining, or processing is occurring. Water sampling may occur while permit is in TC.</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
	their unpatented claim area.	The permit is being amended to a DMO in anticipation of mine reactivation. The new EPP will include new GW monitoring.
COTTER CORPORATION JD-7 PIT (Permit No. M-1979-094HR) Montrose County	Due to HB-1161 this mine is a Designated Mining Operation (DMO) and the Division required the operator to submit an Environmental Protection Plan (EPP). The EPP was approved on February 21, 2014. The site is currently in temporary cessation. During mining, water accumulated in the underground mine is treated and discharged in accordance with an NPDES permit.	The site is in temporary cessation. There was no activity during the fiscal year.
COTTER CORPORATION JD-9 MINE (Permit No. M-1977-306) Montrose County	Due to HB-1161 this mine is a Designated Mining Operation (DMO) and the Division required the operator to submit an Environmental Protection Plan (EPP). The EPP was approved on February 11, 2014. The site is currently in temporary cessation. During mining, water accumulated in the underground mine is treated and discharged in accordance with an NPDES permit.	
CAMP BIRD COLORADO, INC. CAMP BIRD MINE (Permit No. M-1982-090) Ouray County	After several years of reclamation activity, the operator began new surface activity in the fall of 2012 including reconstruction of a sedimentation pond and a pipeline conveying portal discharge to the pond. The operator has applied for a new or renewed discharge permit from WQCD. Upstream and downstream surface water sampling has begun on a quarterly basis.	Surface water analysis from recent sampling event have been received by DRMS and are being evaluated for DMO status along with other criteria.
FORTUNE REVENUE SILVER MINES, INC. REVENUE MINE (Permit No. M-2013-032) Ouray County	Operation was approved as a 112d-1 permit in 2013, and included an EPP. The main portal discharges water that is piped to lined settling pond, to reduce suspended zinc before it is released to Sneffels Creek. Operator is required to monitor surface and groundwater and implement mine water handling plan. Onsite water treatment will be considered if found to be needed. Sampling plan includes five locations for groundwater and four locations for surface water. A permit transfer from Star Mine Operations to Fortune Revenue Silver Mines was completed in October 2014.	Operator began quarterly surface and groundwater sampling in 2012. The Division approved a mine water handling plan to involve onsite treatment.
AMERICAN SODA, LLC	American Soda ceased production in 2004 and started reclamation of the	Ground water quality monitoring

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
YANKEE GULCH PROJECT (Permit No. M-1999-002) Rio Blanco County	site.	is continuing at a reduced rate for both the interim status period and for the possibility that commercial production may once again resume.
NATURAL SODA, INC. NAHCOLITE PROJECT (Permit No. M-1983-194) Rio Blanco County	Thirty two active monitoring wells are located at the mine with water quality samples obtained from discrete zones. A total of seventeen wells are equipped with continuous water level measurement transducers and data acquisition and storage systems. Ground water monitoring includes water levels and over 50 water quality parameters. An annual monitoring report is submitted to DRMS, the BLM and the EPA.	Monitoring activities at the site have continued unchanged during the past year.
COLORADO GOLDFIELDS, INC. PRIDE OF THE WEST MILL (Permit No. M-1984-049) San Juan County	Operations at the Pride of the West Mill (previously named Howardsville Mill) site were both historic and modern. The site is currently under a Cease and Desist Order from the Board. The operator is precluded from importation of ore materials for metallurgical processing or reactivation of the milling circuits until corrective actions are satisfied. The operator must fully demonstrate the proposed mining and milling activities will comply with the requirements of the Act and Rules.	During 2013-2014, the Operator implemented portions of the plans approved through TR-11 and advanced final reclamation for the upper tailing pond, the lower tailing pond and the mill drain pond. On June 27, 2011, DRMS approved TR-11, addressing final reclamation of the existing upper tailings pond, lower tailings pond and the mill drain pond. On July 20, 2012 DRMS conditionally approved AM-03, addressing Environmental Protection Plans for 8 of the 10 Environmental Protection Facilities proposed at the site. DRMS did not approve the EPP for the mill tailings repository; therefore, the operation is approved for site maintenance, water monitoring, and commencement of final

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>SUNNYSIDE GOLD CORPORATION SUNNYSIDE MINE (Permit No. M-1977-378) San Juan County</p>	<p>Approximately 36 spring and seep locations were monitored semi-annually in accordance with the DRMS/WQCD Consent Decree for drainage associated with the mine pools of the American and Terry Tunnels. The Consent Decree was subsequently terminated by the parties. Terry Tunnel bulkhead final closure occurred on October 5, 2000. American Tunnel Bulkhead No. 1 was closed May 14, 2001; Bulkhead No. 2 was closed August 31, 2001; and Bulkhead No. 3 was closed on December 3, 2002. Sunnyside Gold Corporation also removed the water treatment plant pursuant to a court order. Water monitoring continues twice per year in the Animas River above and below the Mayflower Mill site and in Cement Creek above and below the American Tunnel complex.</p>	<p>Sunnyside Gold Corporation continues towards completion of final reclamation, release of warranties, and termination of its reclamation permit.</p>
<p>PINON RIDGE MINING, LLC SUNDAY MINE (Permit No. M-1977-285) San Miguel County</p>	<p>Lower portions of the underground workings accumulate groundwater, which was managed during periods of active mining by using it for drill water, underground dust control and by pumping it elsewhere in the extensive workings. No pumping or other water management is currently occurring. Accumulation of mine pool water has apparently equilibrated, during several years of temporary cessation, and the flooded portion of the workings is not expanding.</p> <p>Due to HB-1161 this mine is now a DMO and the Division required the former operator to submit an EPP.</p> <p>A permit transfer from Energy Fuels Resources to Pinon Ridge Mining was completed in October 2014.</p>	<p>The Environmental Protection Plan (EPP) that was approved in 2012 includes a groundwater monitoring plan. Up-gradient and down-gradient monitoring wells locations were determined, as well as compliance well locations farther down-gradient near the permit boundary. The wells will be located on the adjacent permit area for the Topaz Mine (M-1980-055HR).</p> <p>Well installation approved under the EPP began in the fall of 2012</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>PINON RIDGE MINING, LLC WEST SUNDAY MINE (Permit No. M-1981-021) San Miguel County</p>	<p>Lower portions of the underground workings accumulate groundwater, which was managed during periods of active mining by using it for drill water, underground dust control and by pumping it elsewhere in the extensive workings. No pumping or other water management is currently occurring. Accumulation of mine pool water has apparently equilibrated during several years of temporary cessation, and the flooded portion of the workings is not expanding.</p> <p>Due to HB-1161 this mine is now a DMO and the Division required the former operator to submit an EPP.</p> <p>A permit transfer from Energy Fuels Resources to Pinon Ridge Mining was completed in October 2014.</p>	<p>The Environmental Protection Plan (EPP) that was approved in 2012 includes a groundwater monitoring plan. Up-gradient and down-gradient monitoring well locations were determined, as well as compliance well locations farther down-gradient near the permit boundary. These wells will be located on the adjacent permit area of the Topaz Mine (M-1980-055HR)</p> <p>Well installation approved under the EPP began in the fall of 2012 and continued into 2014.</p>
<p>PINON RIDGE MINING, LLC TOPAZ MINE (Permit No. M-1980-055 HR) San Miguel County</p>	<p>Lower portions of the underground workings accumulated groundwater, which was managed during periods of active mining by using it for drill water, dust control, and by pumping it elsewhere in the extensive workings. No pumping or other water management is currently occurring. Accumulations of mine pool water has apparently equilibrated during several years of temporary cessation, and the flooded portion of the workings is not expanding.</p> <p>Due to HB-1161 this mine is now a DMO and the Division required the former operator to submit an EPP.</p> <p>A permit transfer from Energy Fuels Resources to Pinon Ridge Mining was completed in October 2014.</p>	<p>The operator Environmental Protection Plan (EPP) that was approved in 2012 includes a groundwater monitoring plan. Up-gradient and down-gradient monitoring well locations were determined, as well as compliance well locations farther down-gradient near the permit boundary.</p> <p>Well installation approved under the EPP occurred during 2012-2014.</p>
<p>CLIMAX MOLYBDENUM COMPANY CLIMAX MINE (Permit No. M-1977-493)</p>	<p>The new Environmental Protection Plan and Water Monitoring Plan (as required by AM-06) has been approved by DRMS, the additional new monitoring wells described in the plan have been installed, and the improved monitoring program continues. Numeric protection levels for</p>	<p>The new EPP and Water Monitoring Plan have been implemented by Climax as approved by DRMS. The new</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
Summit, Lake, and Eagle Counties	<p>groundwater should be set this winter after review of data collected to-date. Additional groundwater characterization is underway by Climax as a result of current monitoring data. All previously existing measures to protect groundwater, including the groundwater cutoff walls and pump-back systems, the 5-Shaft dewatering pumps, and the water treatment plant are still in place and operational. A new final water treatment plant for the facility is now operational and in use.</p> <p>A possible groundwater to surface water seep(s) has been recently identified near the Storke yard collection area and characterization is currently underway by Climax. DRMS directed Climax to contact CDPHE regarding this feature during the last inspection in Oct. 2013.</p>	water treatment plant for the facility has been completed and is in use.
CRIPPLE CREEK & VICTOR GOLD MINING COMPANY CRESSON PROJECT (Permit No. M-1980-244) Teller County	CC&V continues to monitor ground water at the Cresson Project. The monitoring plan was most recently revised with the approval of permit amendment No. 10 on September 12, 2012. The plan requires quarterly monitoring of nine wells in the permit area, and two additional compliance wells in Grassy Valley.	The mine was in compliance with its monitoring plan during the reporting year, and there were no ground water exceedances. CC&V continues to pump Arequa Gulch groundwater back into the mine water circuit. The mine added new compliance wells downgradient in Arequa Gulch (a nested set of 4 wells) in 2013. The new Grassy Valley and Squaw Gulch wells were sampled beginning the 2nd beginning the 2nd Qtr of 2014.

Construction Materials Operations

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
CEMEX, INC. LYONS QUARRY (Permit No. M-1977-208)	Ground water monitoring is required at the Lyons Quarry to verify that the disposal of cement kiln dust (CKD) into the mined out limestone quarry (C-Pit) does not cause ground water degradation. Ground water	The 3 rd Quarter sample (2013) and 1 st Quarter sample (2014)

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>Boulder County</p>	<p>protection requirements include: backfilling the pit with overburden and shale from ongoing quarry operations for reducing ponded water in C Pit to less than one-half acre, and lining portions of the Boulder Feeder Canal near C-Pit to reduce seepage into the pit.</p> <p>The monitoring program requires continuous monitoring of water elevation in the C-pit and in an up gradient well, and quarterly monitoring of water elevation in a deep down gradient well. Water quality samples are collected quarterly from the C-Pit and from down gradient alluvial and bedrock wells.</p> <p>DRMS approved Technical Revision No. 12 (TR-12). TR-12 revised the numeric standards for chloride and sulfate. The previous numeric standards for chloride and sulfate were based on drinking water standards. The drinking water standards were not appropriate as the groundwater down-gradient from the operation is not used for drinking. A chemical analysis of chloride and sulfate was performed on the water in C-Pit using a stiff diagram. The average concentrations of chloride and sulfate in C-Pit were used to establish the revised numeric standards.</p>	<p>collected from the alluvial well (CEM-004) exceeded numeric standards for sulfate and chloride.</p> <p>In March 2014, the Operator requested a revision to the monitoring plan (TR-12), which DRMS approved, which demonstrated the exceedances of chloride and sulfate in CEM-004 could not be attributed to migration of water from C-Pit. The revised numeric standards for chloride and sulfate are:</p> <ol style="list-style-type: none"> 1) Chloride (mg/L): 1,053 Sulfate (mg/L): 2,641
<p>HOLCIM US, INC. PORTLAND LIMESTONE (Permit No. M-1977-344) Fremont County</p>	<p>Holcim monitors ground water to evaluate potential release of contaminants from cement kiln dust (CKD) stored on site. Holcim completed the collection of five quarters of baseline data and submitted their report on June 7, 2004. Three wells are designated as compliance and monitoring wells to be monitored for TDS, sulfate (SO4), potassium (K), sodium (Na), iron (Fe) and manganese (Mn).</p>	<p>Data are collected and submitted to DRMS annually. The required parameters and numeric protection levels for MW-7 and MW-13, respectively are:</p> <ol style="list-style-type: none"> 1) TDS (mg/L): 3918, 4026 2) SO4 (mg/L): 2080, 2200 3) K (mg/L): 17, 13 4) Na (mg/L): 226, 274 5) Fe (mg/L): 4.5, 0.13 6) Mn (mg/L): 0.88, 0.30 <p>The March 2014 results for MW-7 exceeded the NPL for Na.</p>
<p>HOLCIM, INC. BOETTCHER QUARRY (Permit No. M-1977-348)</p>	<p>The Boettcher Quarry and cement plant were permanently closed in 2002 and the cement plant was demolished in 2004. The site has been largely reclaimed, and the Cement Kiln Dust (CKD) disposal area has</p>	<p>DRMS is evaluating the ongoing monitoring results and will determine if additional enhanced</p>

Company-Mine Name-Permit #	Site Conditions	FY13-14 Activity
<p>Larimer County</p>	<p>been capped and revegetated. Groundwater monitoring to date indicates a very tight formation with deep groundwater and little groundwater movement. Additional groundwater monitoring is being conducted at this time to determine if the site can be considered for final closure. Three additional monitoring wells were installed in 2013 to help characterize current conditions. Additional monitoring data and site characterization information continue to be collected.</p>	<p>groundwater monitoring will be required, or if the site is eligible for final closure.</p>
<p>GCC RIO GRANDE, INC. PUEBLO CEMENT PLANT AND LIMESTONE QUARRY (Permit No. M-2001-004) Pueblo County</p>	<p>GCC conducts semi-annual monitoring of an upgradient well.</p>	<p>DRMS approved a permit revision in March 2013 that eliminated monitoring of four alluvial wells, based on a lack of hydrologic connection between them and the facility. DRMS is evaluating a location for a new downgradient monitoring well that would be within the groundwater flowpath downgradient from the facility.</p>
<p>AGGREGATE INDUSTRIES - WCR, INC. PLATTE VALLEY OPERATION (PERMIT NO. M-1989-120) Weld County</p>	<p>This sand and gravel mining operation has three open water basins. The operator allows importation of inert material to backfill into the pit excavations. CDPHE inspected the site and found Broda Inert Fill (Broda) had possibly imported unauthorized waste to the site without obtaining a Certificate of Designation. CDPHE required Broda to install three ground water monitoring wells at the site to test groundwater quality. These wells and a monitoring plan were incorporated into the DRMS mining and reclamation plan. These wells will be monitored on a quarterly basis and results sent to CDPHE and also reported to DRMS annually</p>	<p>On July 5, 2013, Aggregate Industries submitted the quarterly groundwater measurement data collected by Aggregate Industries as well as groundwater quality monitoring and measurement data collected at the site. This data was also submitted to the Colorado Department of Public Health and Environment as required under the recycling license held by Broda Inert Fill and in accordance with Technical Revision No. 03.</p>

Colorado Coal Mines – Activity Status

Bowie No. 2 Mine (Producing) – C-1996-083

Delta County

Company Name: Bowie Resources, LLC
Mine Name: Bowie No. 2
Mine Type/Status: Underground/Federal/Active
2014 Production: 1,439,360 tons through 6/30/2014
No. Miners: 375
Permit Acres: 9,196.50 (3,831.60 federal surface and 7,239.20 federal coal)
Affected Acres: 5,790.94
Disturbed Acres: 401.98
Bond Amount: Required \$11,321,591.00; Actual Held - \$11,339,730.57

The Bowie No. 2 Mine is an underground mine that produces coal using a longwall machine. Coal is shipped to the Tennessee Valley Authority and elsewhere by train. The Division approved a permit revision in April 2013 that modified the permit area by 896.0 acres to the north through the incorporation of two federal coal lease modifications. Bowie Resources, LLC (BRLLC) has submitted a lease by application (LBA) with the U.S. Forest Service and the BLM. The LBA (COC-75916), called Spruce Stomp, contains approximately 1,790 acres and is immediately adjacent to existing coal leases held by Bowie. The BLM approved the sale of the LBA to BRLLC on July 30, 2014. The Division is currently reviewing a permit revision application (PR-14) to incorporate the lease into the permit area; a proposed decision on PR-14 is due in October.

BRLLC has been generating higher volumes of refuse than anticipated due to difficult mining conditions. Due to the limited approved area for waste disposal BRLLC has had difficulty managing the coal refuse. The Division is currently reviewing revisions to the refuse handling plan in existing refuse disposal areas, and BRLLC is considering possible locations for a new refuse disposal area.

In September of 2014, a fire occurred at the unit train load-out associated with Oxbow Mining LLC's Elk Creek Mine, shutting that load-out down temporarily. Coal stockpiled at the Elk Creek Mine is being purchased by Bowie Resources, LLC, and being transported by truck to the Bowie No. 2 Mine, where it is being washed and sold.

Colowyo Mine (Producing) – C-1981-019

Moffat and Rio Blanco Counties

Company Name: Colowyo Coal Company L.P.
Mine Name: Colowyo Coal Mine
Mine Type/Status: Surface/Federal/Active
2014 Production: 1,079,630 tons through 6/30/14
No. Miners: 182
Permit Acres: 29,075.74 (4,815.37 federal surface and 24,332.97 federal coal)
Affected Acres: 5886.40
Disturbed Acres: 5876.50
Bond Amount: Required -\$340,830,381.79; Actual Held - \$80,517,829.00*

Mining operations began in 1976 with the East Pit, a multi-seam coal operation with eight coal seams. Extraction of coal from the East Pit was terminated in 2006, and currently the only ongoing operation in the East Pit is reclamation of the final cut, including backfilling and grading of the pit and highwall reduction. Coal extraction from the multi-seam West Pit is estimated to occur until 2015, including

highwall mining. In 2006, Colowyo expanded the permit boundary by approximately 6,000 acres to the west and south into the South Taylor/Lower Wilson area. Mining, including highwall mining, and reclamation in the South Taylor Pit will continue until 2017. Permit Revision PR-03 for the "Collom Area", which increased the mine's permit area acreage by almost 17,000 acres and the mine's approved disturbed acreage by over 2,000 acres, received final Division Approval on May 29, 2013. The mine's total permit area is now just over 29,000 acres, with the mine's approved disturbed acreage now almost 5,900 acres.

Bond Release Application SL-05, regarding the release of \$692,320.04 of Phase III liability on 979.52 acres, received final Division Approval on 8/28/12. In 2013, the company received a CMA/DRMS reclamation award for this accomplishment. Bond Release Application SL-06, regarding the release of \$2,465,660.00 of Phase I liability on 692.37 acres, received final Division Approval on 6/14/13. Bond Release Application SL-07, regarding the release of \$727,269.00 of Phase I liability on 125.2 acres, received final Division Approval on 10/03/13.

*The disparity between the amount of bond required and the amount of bond held is due in large part to the recent approval of Permit Revision PR3. Although this Permit revision increased Colowyo's bond liability by more than \$260,000, this large expansion plan has not been approved by the Office of surface Mining.

Deserado Mine (Producing) – C-1981-018

Moffat and Rio Blanco Counties

Company Name:	Blue Mountain Energy, Inc.
Mine Name:	Deserado Mine
Mine Type/Status:	Underground/Federal/Active
2014 Production:	787,747 tons through 6/30/14
No. Miners	154
Permit Acres:	13,645.01 (13,325.01 federal surface and 13,645.01 federal coal)
Affected Acres:	8,095.46
Disturbed Acres:	467.27
Bond Amount:	Required - \$5,574,545.45; Actual Held - \$5,711,474.96

The Deserado Mine is an underground longwall mine that is currently mining in the B-Seam. All coal mined from Deserado Mine is shipped by train directly to the Bonanza Power Plant located near Bonanza, Utah. The Deserado Mine continually drills down to their current longwall workings to allow nitrogen to be pumped into the mine as a fire preventative measure. Permit Revision PR-8, which increased the mine's permit area acreage by 1,656.30 acres and the mine's affected area acreage by 1,483.47 acres, received final Division Approval on August 5, 2013. Permit Revision PR-8 expanded for the first time the mine's permit area and affected area from Rio Blanco County into Moffat County. A Permit Renewal (RN-06) application was received on January 22, 2014, and the renewal approval public comment period is pending in October 2014.

Elk Creek Mine (Producing) – C-1981-022

Gunnison County

Company Name:	Oxbow Mining, LLC
Mine Name:	Elk Creek Mine
Mine Type/Status:	Underground/Federal/Active
2014 Production:	0 tons through 6/30/14
No. Miners	12
Permit Acres:	15,676.51 acres (10,125.51 federal surface and 12,430.51 federal coal)
Affected Acres:	6,659.17

Disturbed Acres: 218.48
Bond Amount: Required - \$4,290,332.74; Actual Held - \$4,500,000.00

The Elk Creek Mine is presently not producing coal, due to a coal combustion event that shut down the North Mining Area in January 2013. The longwall miner was lost in this event, and a replacement has not been purchased. Gateroads have been developed using conventional room-and-pillar methods for longwall panels in the East Lease Area; however, longwall mining of the East Lease Area has not occurred. The gob vent boreholes for the East Lease Area have been approved but not yet constructed. Gob vent boreholes in the North Mining Area have been drilled and partially reclaimed but not released from bond. Elk Creek is currently working to acquire two new coal leases from the BLM.

In September of 2014, a fire occurred Elk Creek's unit train load-out, shutting the load-out down temporarily. Coal stockpiled at the Elk Creek Mine is being purchased by Bowie Resources LLC and being transported by truck to the Bowie No. 2 Mine, where it is being washed and sold.

Foidel Creek Mine (Producing) – C-1982-056

Routt County

Company Name: Twentymile Coal, LLC
Mine Name: Foidel Creek Mine
Mine Type/Status: Underground/Federal/Active
2014 Production: 3,689,123 tons through 6/30/14
No. Miners: 360
Permit Acres: 20,100.00 (6,069.60 federal surface and 7,196.00 federal coal)
Affected Acres: 19,833.85
Disturbed Acres: 730.22
Bond Amount: Required - \$9,869,754.19; Actual Held - \$10,056,089.00

The Foidel Creek Mine is an underground longwall mine located near Oak Creek, Colorado. The longwall is currently operating in the Wadge Seam in the Western Mining District. Extraction of coal from the Wadge Seam is predicted by the permittee to end in 2016. The permittee is exploring the feasibility of ramping down approximately 150' to the Wolf Creek Seam. Minor Revisions (MR) 269, 271, 272, 275, 276, 277, 278, 279, 280, and 281, approved from December 2013 through September 2014, are associated with the development corehole drilling into the Wolf Creek Seam. Technical Revision TR-83, requesting the approval to ramp down from the Wadge Seam to the Wolf Creek Seam, was submitted on 1/28/2014 and is under review.

King II Mine (Producing) – C-1981-035

La Plata County

Company Name: GCC Energy, LLC
Mine Name: King II Mine
Mine Type/Status: Underground/Federal/Active
2014 Production: 467,048 tons through 6/30/14
No. Miners: 135
Permit Acres: 2658.00 (88.00 federal surface and 1296.00 federal coal)
Affected Acres: 2,840.65
Disturbed Acres: 34.26
Bond Amount: Required - \$ 854,416.85; Actual Held - \$ 855,161.05

The King II Mine is an underground mine located 13 miles west of Durango in La Plata County. Mining at the original mine (King I) was completed in 2009 and those portals have been sealed. The King II surface facilities were constructed in 2008. Coal is mined from the "A" seam of the Menefee Formation using

conventional room-and-pillar methods. The Coal is hauled from the site by truck, to a rail head located in Gallup, NM. Much of the King II coal is located on land where the surface owner is the Ute Mountain Tribe. All of the King II surface facilities fall under the jurisdiction of the Division, but OSM is the permitting agency for the Ute lands.

A proposed modification to Lease No. COC-62920 would incorporate BLM-managed coal from an additional 952 acres: 320 acres of private surface into the DRMS permit, and 632 acres of Tribally-owned surface onto the OSM permit. The BLM is presently working on a Draft EA for the lease modification. The operator is also pursuing a Lease By Acquisition (LBA) for additional acreage on land immediately north of the current lease area and owned by the Ute Mountain Tribe, but has not yet submitted an application for the LBA to the BLM. In May of 2014, the operator applied to the BLM for an Exploration License for the area associated with the LBA. The BLM is working on a draft EA for the Exploration License as well.

New Elk Mine (Temporary Cessation) – C-1981-012

Las Animas County

Company Name:	New Elk Coal Company, LLC
Mine Name:	New Elk Mine
Mine Type/Status:	Underground/Private/TC
2014 Production:	4,545 tons through 6/30/14
No. Miners:	20
Permit Acres:	4,198.90 (0 federal surface and 0 federal coal)
Affected Acres:	2,899.21
Disturbed Acres:	222.60
Bond Amount:	Required - \$4,183,216.08; Actual Held - \$4,133,137.02*

The New Elk Coal Company (NECC) is a wholly owned US subsidiary of Cline Mining Corporation of Toronto, Ontario, Canada (Cline). The New Elk mine is an underground room and pillar mine, with workings in the Allen, Apache, Blue and Maxwell seams that provide the mine with the potential to produce both metallurgical grade and bituminous coal. Cline completed the acquisition of the mine in July, 2008, and has invested heavily since then to rehabilitate it. Production was resumed in December, 2010, and was planned to reach the plant design capacity of 3 million tons per year by 2012/13.

During 2012, NECC acquired additional leases (14,387 acres from the Department of Wildlife, and 1,346 from the Secora Ranch) to extend its total lease area to 29,940 acres. In July 2012, NECC announced that it was temporarily suspending production, and the mine went into temporary cessation for an initial period of 60 days. This temporary cessation was extended indefinitely on September 17, 2012, "pending improved market conditions".

On May 13, 2014, the permit status was changed to active. Since then coal has been mined and a small amount has been shipped by truck to a potential customer for a test burn. The wash plant has been used to wash raw coal, and has generated some solid waste. No process water was discharged.

The Division is reviewing Technical Revision TR-68, which is a response to the Division Mid-Term review, and Technical Revision 70 which proposes revised haul road designs. A Permit Renewal (RN-6) is received and pending review. Three drainage control – related enforcement actions were issued during 2013. The enforcement actions are resolved.

*The disparity between the bond amount required and the amount held is due to the approval of Technical Revisions 65 and 66 in August of 2012, which allow for the construction of a new development waste pile and a haul road, but for which the permittee has yet to submit bond due to those approved activities being put on hold pending the securing of a new coal contract. The bonding discrepancy will be resolved with the pending Technical revision 68.

New Horizon Mine (Active; Reclamation) – C-1981-008**Montrose County**

Company Name: Western Fuels-Colorado, LLC
 Mine Name: New Horizon Mine
 Mine Type/Status: Surface/Private/Active
 2014 Production: 0 tons through 6/30/2014
 No. Miners: 0
 Permit Acres: 926.06 (0 federal surface and 0 federal coal)
 Affected Acres: 859.44
 Disturbed Acres: 859.44
 Bond Amount: Required - \$ 5,191,919.02; Actual Held - \$ 5,300,000.00

The New Horizon Mine is a surface mine located near the town of Nucla, in western Montrose County. Coal was mined from the Dakota formation using truck-and-shovel methods, and then transported by truck to Tri-State's nearby Nucla Generating Station. Extraction of the coal resource was completed during August 2013.

The mine is currently being reclaimed. Bond Release Application SL-13 was approved in December 2013 releasing 100 acres of Phase I bond and 7 acres of Phase III bond. Permit Revision PR-8 was approved in March 2014 which revised some prime farmland reclamation practices. Technical revision TR-63 was approved in June 2014 which address a trench drain design to intercept spoil spring water.

Peabody Sage Creek Mine (Active; Presently Not Producing) – C-2009-087**Routt County**

Company Name: Peabody Sage Creek Mining, LLC
 Mine Name: Peabody Sage Creek Mine
 Mine Type/Status: Underground/Federal/Active
 2014 Production: 0 tons through 6/30/14
 No. Miners: 0
 Permit Acres: 10,164.00 (80.00 federal surface and 3,989.00 federal coal)
 Affected Acres: 2,569.52
 Disturbed Acres: 1,844.02
 Bond Amount: Required - \$3,636,389.73; Actual Held - \$4,420,284.46

The Peabody Sage Creek Mine is an underground room-and-pillar mine located near Hayden, Colorado. The mine was permitted in 2010, with coal being first extracted in May of 2012. As of September of 2012, coal is no longer being extracted at the site, although maintenance and permitting activities continue. Permit Revision PR-1 was submitted 3/4/2014, which proposes a modification to the currently approved mine plan that includes the implementation of longwall mining methods for coal extraction. The development of panels for longwall mining proposed will require an expansion to the existing approved permit area boundary and will overlay the existing Foidel Creek Mine permit boundary by approximately 400 acres. Permit Revision PR-1 is currently under review. Bond Release Application SL-02, regarding release of \$285,484 of Phase I/II/III liability on 68.8 acres, received Final Division Approval on 3/17/2014. Bond Release Application SL-03, requesting release of Phase III liability of 1,028 acres, was submitted to the Division on 7/9/2014 and is currently under review.

Trapper Mine (Producing) – C-1981-010**Moffat County**

Company Name: Trapper Mining, Inc.
Mine Name: Trapper Mine
Mine Type/Status: Surface/Federal/Active
2014 Production: 926,098 tons through 6/30/14
No. Miners: 147
Permit Acres: 10,382.30 (0.00 federal surface and 4998.30 federal coal)
Affected Acres: 3,136.20
Disturbed Acres: 3,136.20
Bond Amount: Required - \$27,401,821.54; Actual Held - \$30,173,724.00

The Trapper Mine is a surface mining operation located just south of Craig. Three draglines, and several excavators, loaders and trucks, are used to mine the coal resources. The coal extracted is trucked directly to the Craig Power Plant located adjacent to the mine site.

Mining is currently taking place in K, L, and M Pits. Contemporaneous reclamation continues at the Trapper Mine, and lands are reclaimed to rangeland and wildlife habitat. At the end of 2013, Trapper mine reported to have disturbed 6,569.5 acres of land for the entire life of the mine. Of that acreage, 3,243.1 acres have been granted final Phase III bond release. In May of 2013, Trapper submitted a revision to their Permit Revision PR-7 to add an additional 774.8 acres to their permit area and to update their mining plan for the current permit term ending in 2017. A major component of the permit revision is an updated drainage reconstruction plan for the drainages to be re-established during the current permit term. The permit revision is still under review. In January of 2014, Trapper received approval for a Phase I Bond Release Application SL-14 for 417.8 acres, and in February of 2014, Trapper received approval for another Phase I Bond Release Application SL-15 for 120.4 acres.

In February of 2013, Trapper received approval of Technical Revision TR-14 to their permit which updated the surface water sampling and monitoring plan in accordance with their renewed NPDES permit CO-0032115. NPDES discharge sites 005 (Coyote Gulch), 013 (West Pyeatt Gulch), 014 (Far East Buzzard Gulch), 015 (Grouse Gulch), and 016 (Sage Gulch) have been deemed to comply with Subpart H, Western Alkaline Mine Coal Mining (40 CFR Part 434.82) and no longer have effluent limitations or monitoring frequencies applied to them. They now have to meet BMP's for sediment control for those 5 outfalls. Outfall 012 (Deer Gulch) was removed entirely from the NPDES permit, as it is a small watershed receiving flow from disturbed areas that have received Phase II and III bond release. The monitoring frequencies for all the remaining outfalls at the site were reduced and WET testing requirements have also been reduced for the applicable outfalls.

West Elk Mine (Producing) – C-1980-007

Delta and Gunnison Counties

Company Name: Mountain Coal Company, LLC
Mine Name: West Elk Mine
Mine Type/Status: Underground/Federal/Active
2014 Production: 2,703,839 tons through 6/30/14
No. Miners: 332
Permit Acres: 17,154.90 (11,758.40 federal surface and 13,795.00 federal coal)
Affected Acres: 14,632.10
Disturbed Acres: 589.35
Bond Amount: Required - \$14,244,472.30; Actual Held - \$15,000,000.00

The West Elk Mine is an underground longwall mine that is currently mining in the E-Seam. They are currently mining in their fourth longwall panel in their new southern mining area. They are working on a permit revision that will add approximately 2,600 acres to the southern portion of the permit area. They

recently built a coal wash plant and a new refuse pile (the Refuse Pile East Expansion, or RPEE) that should allow for enough capacity for the remaining life of mine. The West Elk Mine is continually drilling and reclaiming methane drainage wells and their associated drill pads and light-use roads. Bond Release Application SL-03, regarding the release of \$470,488 of Phase I liability on 47.65 acres, received final Division Approval on 9/21/12. Bond Release Application SL-04, regarding the release of \$196,037 of Phase II liability on 67.60 acres, received preliminary Division Approval on 7/8/2013. Bond Release Application SL-05, requesting release of Phase I liability on 13.85 acres, was approved on 2/11/14. Bond Release application SL-06, requesting release of Phase III liability on 24.2 acres was received on 12/3/13, and is under review. Bond Release application SL-07, requesting Phase I release of exploration and methane drainage well pads and roads in the West Flatiron and Dry Fork of Minnesota Creek areas was received on 4/30/13 and is under review.

New Horizon North Mine (Active; Development) – C-2010-089
County

Montrose

Company Name: Western Fuels Association, Inc.
 Mine Name: New Horizon North
 Mine Type/Status: Surface/Private/Active
 2014 Production: 145,332 tons through 6/30/14
 No. Miners: 20
 Permit Acres: 328.70 (0.00 federal surface and 0.00 federal coal)
 Affected Acres: 288.70
 Disturbed Acres: 288.70
 Bond Amount: Required - \$4,862,742.88; Actual Held - \$4,952,980.00

The New Horizon North Mine is a newly permitted operation, directly north of the New Horizon Mine in western Montrose County. The mine started supplying coal by truck to the nearby Nucla Generating Station in October 2013. Technical Revision TR-3 was approved in September 2014 which incorporated 4.7 acres for a pond outlet ditch and access for, and placement of, a pump.

Bear Mine (Revoked Permit) – C-1981-033

Gunnison County

Company Name: Bear Coal Company, Inc.
 Mine Name: Bear Mine
 Mine Type/Status: Underground/Federal/Revoked
 2014 Production: 0
 No. Miners: 0
 Permit Acres: 1,108.40 (28.80 federal surface and 1,108.40 federal coal)
 Affected Acres: 584.50
 Disturbed Acres: 9.00
 Bond Amount: Required - \$146,617.66; Actual Held – \$0.00 Bond Forfeited

The Mined Land Reclamation Board revoked the Bear Coal Mine permit and forfeited the reclamation bond for the Bear mine site. Proceeds from the forfeited bond were collected in July 2013 and a reclamation account has been established. Final reclamation of the mine site will be coordinated with the Colorado Abandoned Mine Land program staff, and is tentatively scheduled for fall of 2015.

Colorado Coal Mines			
(October 1, 2014)			
Permit #	Mine	Total Permitted Acreage	Inspections Required
Producing			
C-1980-007	West Elk Mine	17,154.90	12
C-1981-010	Trapper Mine	10,382.30	12
C-1981-012	New Elk Mine	4,198.90	12
C-1981-018	Deserado Mine	13,645.01	12
C-1981-019	Colowyo Mine	29,075.74	12
C-1981-022	Elk Creek Mine	15,676.51	12
C-1981-035	King Coal Mine	2,658.00	12
C-1982-056	Foidel Creek	20,100.00	12
C-1983-059	Terror Creek Load Out	20.00	12
C-1996-083	Bowie No. 2	9,196.50	12
C-2010-089	New Horizon North Mine	328.70	12
		122,436.56	132
Reclamation and Cessation			
C-1980-004	McClane Canyon Mine (temporary cessation)	2,560.50	4
C-1980-005	Seneca II Mine (Phase II released)	386.50	4
C-1981-008	New Horizon Mine	926.06	12
C-1981-013	Golden Eagle Mine	1.20	12
C-1981-014	Southfield Mine	2,743.40	12
C-1981-020	Munger Canyon Mine	1,028.00	12
C-1981-025	North Thompson Mine (Phase II released)	1,086.00	4
C-1981-028	Keenesburg Mine	555.40	12
C-1981-038	Bowie No. 1	5,431.00	12
C-1981-041	Roadside Portals	2,786.00	12
C-1981-044	Williams Fork Mines (temporary cessation)	6,363.00	4
C-1982-057	Seneca IIW Mine	3,878.50	12
C-1984-065	Coal Ridge No. 1 Mine (Phase II released)	2,484.30	4
C-1992-080	Carbon Junction (Phase II released)	164.34	4
C-1992-081	H-G Loadout	391.20	12
C-1994-082	Yoast Mine	2,318.30	12
C-1996-084	Lorencito Canyon Mine	3,142.00	12
C-2009-087	Peabody Sage Creek Mine	10,164.00	12
C-2010-088	Fruita Loadout (temporary cessation)	208.60	4
		46,618.30	172
Revoked			
C-1980-002	O.C. Mine No. 2	88.50	2
C-1981-015	Fruita No. 1 & 2	16.00	4
C-1981-016	Hawk's Nest	2,050.00	4
C-1981-033	Bear Mine	1,108.40	12
C-1981-037	GEC Strip Mine	890.00	2
C-1981-046	Sunlight Mine	180.00	4
		4,332.90	28
New			
C-2006-085	Northfield Mine (pending bond)	1,157.00	0
		1,157.00	0
	Total	174,544.76	332

**COLORADO ABANDONED MINE LAND PROGRAM
NONPOINT SOURCE AND WATER QUALITY IMPROVEMENT PROJECTS
October 2nd, 2014**

SAN JUAN RIVER WATERSHED

Project	Status	Budget
<p><u>Red and Bonita Mine Investigation-Cement Creek-San Juan County</u></p> <p>The Red and Bonita Mine site is located in upper Cement Creek, approximately 10 miles north of the town of Silverton, Colorado. EPA contractors de-watered and ventilated the mine workings in summer 2013. EPA requested DRMS technical assistance in conducting an underground assessment of the condition of the workings and the geology and structural attributes of the mine workings for potential bulkhead feasibility. Underground mapping and inspection of approximately 2,500 of mine workings last entered in 1905 was performed in August. Based on the mine mapping, locations of groundwater inflows, and preliminary geologic evaluations, planning for the next phase of a bulkhead design project in 2015 is underway.</p>	Ongoing	EPA funding CDRMS in kind technical assistance.
<p><u>Bullion King Mine Waste Reclamation</u></p> <p>The Bullion King Mine site is located at the headwaters of Porphyry Gulch, a tributary to Mineral Creek. The site contains a large waste rock pile that continually leaches heavy metals into the gulch during spring runoff. The Bullion King Mine project is designed to reduce erosion and leaching of metals from the mine site into Porphyry Gulch by consolidating, capping and revegetating the waste rock pile and installing run on and run off controls. The waste repository will be approximately one half acre in area. The entire area to be reclaimed, including the repository, water diversion channels, and removal areas is approximately 1 acre. The project site is owned by a private landowner. Landowner consent has been obtained from the owner of the patented claims and an environmental covenant has been executed by the landowner of the repository.</p>	Initial investigation	\$250,000

LOWER COLORADO RIVER WATERSHED

Project	Status	Budget
<p><u>Palmetto Gulch Projects-Hinsdale County-Hough Mine 319 Funds/severance s:</u></p> <p>The Hough Mine at the headwaters of Palmetto Gulch is the largest source of Cd and Zn in the watershed. Site work at the Hough Mine during the 2008 field season included characterization of the upper and lower mine waste dumps including a volumetric assessment using geophysics, and chemical testing of soil samples. The Hough Mine Remediation Feasibility Report was completed by DRMS, and the Engineering Specifications for Reclamation were completed by Shannon and Wilson, under contract to DRMS. Construction contracts were bid out and reclamation work got underway in Summer 2013.</p> <p>Reclamation of the Hough Mine involved consolidating the upper and lower waste rock piles and capping the waste piles with locally obtained rock. The reclamation also included the construction of run-on and run-off control channels, constructed in a natural manner, to blend with the existing landscape. The waste repository is approximately 1-2 acres in area, and is located where the lower waste pile is currently situated. The entire area, including the repository, water diversion channels, and removal areas is approximately 5 acres.</p> <p>The project was bid out and construction proceeded in summer 2013. The earthwork and the final installation of geo-synthetic liners was completed this summer.</p>	<p>Phase 1 Completed</p>	<p>Total Project Cost - \$90,752; DRMS Sev funds - \$26,276; BLM Task Order \$55,870; CDPHE 319 NPS - \$8,606</p>
<p>Uncompahgre Watershed Partnership NPS 319 grant</p> <p>The Uncompahgre Watershed Partnership (UWP) is a 501 c(3) organization located in Ridgway, Colorado whose mission is to focus on the Upper Uncompahgre watershed. The UWP has been in existence since 2007 and is headed by watershed coordinator Agnieszka Przeszowska and a Board of Directors. The UWP was awarded a NPS 319 grant in 2014 for projects located on 3 separate 303(d) listed waters. The WQCD has assisted in water quality sampling to characterize water quality impacts.</p> <p>The Atlas Mill site is located on Sneffels Creek 8 miles from Ouray on Camp Bird Road and consists of legacy tailings located in the floodplain and on the banks of Sneffels Creek. The project is working toward re-mining of the tailings from the active Revenue Mine located directly downstream. The Revenue recently changed ownership and discussions are ongoing as well as issues on complying with mining and milling permit requirements related to the tailings removal. The project also would rechannel an existing stream channel braid that is going through the tailings causing active erosion of the tailings material. Costs \$202,590.00 (DRMS \$15,000.00)</p> <p>The Michael Breen site is located on the Uncompahgre River on Engineer Pass Rd approximately two miles above the confluence with Red Mountain Creek. A draining adit seeps through the existing waste rock and small tailings area and</p>	<p>Phase 2 Completed</p>	<p>Design Cost-\$33,000 CDPHE 319 NPS: \$20,000 Match:\$13,000 Total Construction Cost - \$416,230; DRMS Sev funds, WQIF,Other Match CDPHE 319 NPS</p>
<p>Uncompahgre Watershed Partnership NPS 319 grant</p> <p>The Uncompahgre Watershed Partnership (UWP) is a 501 c(3) organization located in Ridgway, Colorado whose mission is to focus on the Upper Uncompahgre watershed. The UWP has been in existence since 2007 and is headed by watershed coordinator Agnieszka Przeszowska and a Board of Directors. The UWP was awarded a NPS 319 grant in 2014 for projects located on 3 separate 303(d) listed waters. The WQCD has assisted in water quality sampling to characterize water quality impacts.</p> <p>The Atlas Mill site is located on Sneffels Creek 8 miles from Ouray on Camp Bird Road and consists of legacy tailings located in the floodplain and on the banks of Sneffels Creek. The project is working toward re-mining of the tailings from the active Revenue Mine located directly downstream. The Revenue recently changed ownership and discussions are ongoing as well as issues on complying with mining and milling permit requirements related to the tailings removal. The project also would rechannel an existing stream channel braid that is going through the tailings causing active erosion of the tailings material. Costs \$202,590.00 (DRMS \$15,000.00)</p> <p>The Michael Breen site is located on the Uncompahgre River on Engineer Pass Rd approximately two miles above the confluence with Red Mountain Creek. A draining adit seeps through the existing waste rock and small tailings area and</p>	<p>Underway</p>	<p>Revenue-\$202,590,DRMS (\$15,000); Michael Breen \$56,490.00 (DRMS 25,000.00) Vernon Mine-\$51,700.00 (DRMS \$30,000.00)</p>

Project	Status	Budget
<p>discharges into the Uncompahgre River. The adit water will be diverted away from the waste rock pile to a natural drainage way. The draining adit water also pools underneath an existing loadout structure and is causing structural instability. The road is directly adjacent to the popular Alpine Loop which sees over one million four wheel drive vehicles annually. The loadout will be stabilized and further preserved by removing the water from the foundation. Costs \$56,490.00 (DRMS 25,000.00)</p> <p>The Vernon Mine is located near the headwaters of Gray Copper Gulch, tributary to Red Mountain Creek. There is a draining adit seeping through waste rock and two large waste rock piles located directly in the channel of Gray Copper. The waste rock piles will be removed from the channel and from the adit discharge. In addition, a mine safety closure project will coincide on the private claim. Costs \$51,700.00 (DRMS \$30,000.00)</p>		
<p><u>Carbonero Mine, Howard's Fork/San Miguel River Watershed-</u></p> <p>DRMS staff is assisting the local watershed group, USFS, CDHPE and EPA with investigating metals loading to the Howard Fork of the San Miguel River in SW Colorado. Work in this watershed has been ongoing over the past 10 years by the CDPHE, CDRMS, the USEPA and the USFS. Results indicate that one of the most significant sources of metals is the Carbonero mine drainage. Successful remediation of the metals load from the Carbonero adit drainage is complicated by: (a) the complex hydrogeologic setting that controls the rates and a long term sustainability of the inflow of ground water into the mine.</p> <p>In summer 2011 DRMS's drilling contractor completed installation of the second test well in close proximity to the flooded mine workings. The USGS conducted geophysical and hydraulic logging in one of these holes in 2012, and a bore-hole camera survey of the boring closest to the crosscut was performed. Based on the results of drilling, the crosscut appears free-flowing and is not impounding water above the crown, however the structural-quality of rock in the vicinity of the test borings is less than optimal. Construction will begin in the summer of 2015</p> <p><u>Bulkhead Feasibility Investigation/Implementation</u></p> <p>The primary objective of the next project phase is to rehabilitate the Carbonero Mine portal to allow an underground assessment of the crosscut section of the mine workings in order to determine the feasibility of installing a structural bulkhead to reduce mine discharge. The bulkhead would serve to prevent blow-out events which have reportedly occurred in the past, and could provide a sound</p>	<p>Investigation Completed</p>	<p>Total Project Budget- EPA/CDPHE \$95K; DRMS - \$22,500, plus in-kind technical assistance for flume installation, Carribeau Mine investigation, and handling the contracted drilling project.</p> <p>\$15,298 for 2013 maintenance work. PA NPS funding</p> <p>Estimated Cost of Portal Rehabilitation and Bulkhead Feasibility Investigation- Power and Water Development</p>

Project	Status	Budget
<p>structure for penstock water intake to any future micro-hydropower installation. If the micro-hydropower option is not pursued, the bulkhead could be permanently sealed, eliminating an estimated 75 to 80% of the metals load currently discharging from the Carbonero portal. Investigation of the mine workings will facilitate a more comprehensive bulkhead feasibility assessment. This work will be completed in the summer of 2015.</p> <p><u>Cost Estimate/Funding</u> The Carbonero Mine was reportedly last entered in the 1980s; the crosscut section was in good condition at that time. The primary variable relative to the cost of this project is the type and extent of ground control measures needed to safely conduct the investigation. DRMS estimates that the work will cost approximately \$500,000 depending on the conditions encountered underground.</p>		Authority Funding - \$300,000
<p><u>Rico Argentine District, St. Louis Tunnel, Dolores River Watershed</u></p> <p>DRMS staff provided technical assistance to EPA and CDPHE staff and the mine owners for underground source controls investigations at the St. Louis Tunnel mine discharge in Rico. The project includes an underground and surface tracer study to develop an understanding of inflow pathways to the underground workings so that the potential to limit inflows can be assessed and incorporated into the final remediation plan. The Mine owners are cooperating with EPA and CDPHE in the ongoing project.</p> <p>DRMS assisted with rehabilitation of the Blaine and Argentine portals in 2012, working under a joint EPA-ARCO cooperative funding arrangement. Additional underground water source investigation work was completed to further define the water inflow and contaminate source pathways to the underground workings. Underground stabilization work on two other areas of the mine continued in the summer of 2013 and investigation work was completed in 2014.</p>	<p>Dye tracer study complete</p> <p>Ongoing</p>	<p>N/A in-kind DRMS technical assistance</p> <p>ARCO funding construction activities via Trust account; EPA funding DRMS personal Svcs assistance via grant-agreement - \$180,000 in 2012. \$200,000 in 2013. \$10,000 epa</p>

**UPPER COLORADO RIVER
SNAKE RIVER WATERSHED**

Project	Status	Budget
<p><u>Pennsylvania Mine Project- Summit County-Blue River Watershed Restoration Group, Trout Unlimited, USEPA, USFS, DRMS technical assistance:</u></p> <p>DRMS continues to provide in-kind technical assistance to the various agencies and groups investigating ways to develop a treatment alternative for the Pennsylvania (Penn) Mine on Peru Creek. Because of the perpetual cost concerns related to active water treatment alternatives, DRMS, state and county efforts have been focused on developing other alternative approaches to addressing the mine discharge. In 2013 DRMS conducted extensive underground mine rehabilitation work to allow equipment access for the next phase of bulkhead feasibility planning. The work completed in 2013 includes additional stabilization and support of mixed-face ground at the portal-rock interface, cleanout of sludge and debris with treatment of the outflows during construction, and ground support work in the cross cut and vein intersection areas. This work completed in 2013 and the underground bulkhead seal was installed in the summer of 2014.</p> <p>A crosscut heading beyond the main vein intersection was found where, based on visual estimates, 75% of the flow was entering the back 100' of the crosscut along joints and fractures in the rock. It appears that only about 25% of the flow is coming from the main drift along the Penn Mine's main vein. Therefore, most of the water discharging from the portal is not moving through the mined vein, but is instead coming from a background-source water course intersected by the crosscut well beyond the vein. This finding increases the potential feasibility of installing a bulkhead seal to mitigate a majority of the water discharge problems related to the mine.</p> <p>The bulkhead seal was installed in 2014.</p>	<p>Investigation / Bulkhead completed</p> <p>Portal Rehab Complete</p> <p>Bulkhead Seal Installed</p>	<p>Total Project Budget: \$100,000 EPA/CDPHE (Drilling '10), approx. \$1.0 million combined EPA and USFS funds.</p> <p>Funding: CDPHE NPS 319 \$260,000 EPA\$; Severance Tax \$193,000. WQIF \$10,000 Private, NPS 319, USFS, Severance Tax, Power and Water Development Authority;</p> <p>2013 DRMS Underground Construction costs: \$ 529,310</p> <p>Sources of Funding: Private, NPS 319, USFS, Severance Tax, Power and Water Development Authority; Total cost \$300,000</p>

SOUTH PLATTE RIVER WATERSHED

Project	Status	Budget
<p><u>Rattler Tunnel Project</u></p> <p>The Rattler Tunnel site is located in Boomerang Gulch approximately ¼ mile above the confluence with Virginia Canyon above Idaho Springs in Clear Creek County. This mine site is also known as the Idaho Tunnel and the Idaho-Bride Tunnel. There are two distinct waste rock piles at the site, separated by a county road running through the site. The estimated volume of waste rock at these sites was 25,000 cubic yards. The ultimate goal of this work is to reduce metals loading to Clear Creek from Virginia Canyon by reclaiming the mining sites contributing the largest metal load.</p> <p><u>Engineering and Design/Implementation</u></p> <p>The Rattler Tunnel reclamation project is completed. The project included partial removal and consolidation of the pile into a repository. The loadout structure is supported by the waste rock pile. Because of the historic nature of onsite structures, the portion of the waste pile holding up the loadout has remained, however the eastern side of the pile was removed to allow free flow down Boomerang Gulch without eroding into the waste pile. Although the waste rock at this site does exhibit better chemical characteristics than the main pile, this material was also removed or partially removed to construct a stream channel around the remaining portion of the pile.</p>	<p>Completed</p>	<p>The 2013 construction cost for this project was \$314,000. This includes using contributed funding from Freeport-McMoRan.</p>
<p><u>London Mine Tailings Reclamation</u></p> <p>The historic London Mine is located in the headwaters of South Mosquito Creek and encompasses approximately 40 acres. The stream is on the 303(d) list as impaired for not meeting the applicable standards for zinc, iron, manganese and cadmium. The site contains three tailings piles and a number of waste rock piles that are immediately adjacent to South Mosquito Creek. The stream is perennial and the tailings continually leach acidic metal-laden water into it. In the spring, the creek significantly erodes the tailings piles and contributes metal-laden sediment to the creek. Funding was obtained in 2011-12 to characterize the site and complete engineering and design activities.</p> <p>In June of 2011 and 2012, twelve "high flow" water samples, including springs and seeps emanating from the tailings, were collected. Also, representative samples from all of the tailings piles were collected for analysis in order to assist in bracketing the pollutant sources.</p>	<p>Phase 1- Completed in Fall 2013</p> <p>Phase 2- Completed in Fall of 2014</p>	<p>Power Authority Funding-\$374,000; Freeport-McMoRan funding-\$940,000; State Sev Tax funding, Bond Forfeiture program-\$62,000 Total Project cost-\$1,376,000</p>

Project	Status	Budget
<p><u>Engineering, Design/Implementation</u> Site investigations indicate that the preferred reclamation alternative for the London mine site includes consolidation of the tailings from all three locations into engineered repositories. In the fall of 2012, test holes were drilled into the tailings piles to determine their depth and physical characteristics. This information was used to ascertain the volume of materials and properly design the tailings repositories. Field and geologic surveying were performed to identify the appropriate location for the repositories. In addition, the composition of the tailings were analyzed to determine if any amendments were required to neutralize the acid generating potential prior to depositing the tailings in the repositories.</p> <p>The tailings reclamation project was bid out in early summer and construction work on phase 1 was completed in the fall of 2013. Phase 2, the London Butte tailings, will be completed in the fall of 2014.</p> <p>There are multiple sources of funding for this project including funds from the Bond Forfeiture Severance Tax program and Freeport-McMoRan Copper and Gold donations.</p>		
<p><u>London Butte Tailings</u> The London Butte mine is located directly adjacent to South Mosquito Creek in Park County, Colorado. The 2014 project work at the London Butte involved demolition and removal of structures and debris, removing tailings material adjacent to South Mosquito Creek and placement of the tailings into a consolidation area. The tailings material was capped with dolomite material excavated from historic dump piles placed along the creek. Cover material was excavated from designated borrow locations and used to cover the dolomite and tailings consolidation areas. Donated biosolids were transported from the Climax Mine and spread over the reclaimed area. The 5-acre area was seeded, fertilized, and mulched.</p>	complete	\$530,000
<p><u>Gamble Gulch- Perigo/ Mine Drainage Investigation</u> The Perigo/Tip Top Mine is located in Gamble Gulch, in Gilpin County. Gamble Gulch is a tributary to Boulder Creek. Boulder Creek (Segment COSPBO4a Gamble Gulch) has been on the State's 303(d) list of water quality impaired waterbodies for non-attainment of water quality standards for pH, dissolved copper and dissolved zinc since 2006.</p> <p>Sampling activities conducted for the TMDL indicated that the background copper concentration was twelve percent (12%) of the observed concentration. The remaining eighty-eight percent is attributed to mining influence. The background zinc concentration was one percent (1%) of the observed concentration. The remaining ninety-nine percent is attributed to mining influence.</p>	Investigation Underway	\$100,000 PDA funds

Project	Status	Budget
<p>Again, the major source contributing to the elevated level of metals in Gamble Gulch is the Perigo/Tip Top Mine and non-permitted discharge from the mine property. Additional water sampling of Gamble Gulch was conducted in the fall of 2011 and 2013 and the spring of 2012 and 2014. These data confirm that the major source of heavy metals in Gamble Gulch is the Perigo/Tip Top Mine and non-permitted discharge from the mine property.</p> <p><u>Bulkhead Feasibility Investigation</u> Initial investigation of the mine indicates that it may be possible to control the release of contaminated water from the adit by installing a bulkhead seal. However, the adit is presently inaccessible. The DRMS is using funding from the Power Development Authority to conduct drilling activities into the collapsed portal. Drilling activities outlined water inflow locations and subsequent determination of water quality and quantity associated with those inflows, and general geologic mapping of all accessible workings. This information will better characterize the site and help design and implement a bulkhead seal. The funds requested from the PA to complete the drilling activities were \$100,000. The funds requested to complete the bulkhead seal are \$500,000.</p>		

ARKANSAS RIVER WATERSHED

Project	Status	Budget
<p><u>Gertrude-Venture Mine Complex, Lake Fork, Lake County Colorado</u></p> <p>The Gertrude-Venture Mine Complex, located approximately ¼-mile southwest of the Tiger Tunnel, is another significant source of metals loading in the Lake Fork Watershed. Colorado Mountain College has been investigating the Gertrude-Venture and is currently revising the Engineering Evaluation and Cost Analysis (EECA) for BLM approval. Plans to relocate the Gertrude-Venture waste piles are moving forward.</p>	Underway	Funding: BLM; NRDS: Power and Water Development Authority \$25,000 design
<p><u>Chalk Creek/ Mary Murphy Mine, Golf Tunnel Hydrologic-Bulkhead, Chaffee County-CDPHE, EPA, USFS, DRMS:</u></p>	Completed	Bulkhead Investigation

Project	Status	Budget
<p>DRMS coordinated with the USFS and EPA to conduct feasibility investigations and develop plans and specifications for a bulkhead seal in the lowest crosscut, the Golf Tunnel Level of the Mary Murphy Mine. Based on past investigations, the mile-long mill-level haulage tunnel was determined to be an ideal candidate for a hydraulic bulkhead seal. In 2011, the EPA elected to proceed forward with full scale rehabilitation and bulkhead installation. The design documents were finalized and construction of the bulkhead was completed in 2014.</p> <p>In addition to construction of the bulkhead, maintenance and revegetation is scheduled for the existing mill-tailings repository. This repository was constructed in the early 1990's when funding was limited. DRMS provided technical assistance and project management in this effort.</p>		<p>and Design EPA joint repository funding. \$725,965</p>

RIO GRANDE RIVER WATERSHED

Project	Status	Budget
<p><u>Nelson Tunnel Source Controls Remedial Investigation and Feasibility Study (RIFS), West Willow Creek- CDPHE, EPA, DRMS:</u></p> <p>The EPA, CDPHE and DRMS are currently investigating the feasibility of implementing source control measures at the Nelson Tunnel, Creede, Colorado. Drainage from the tunnel is laden with various heavy metals detrimental to fish populations in Willow Creek and the Rio Grande River. RIFS investigations currently include monitoring hydrologic conditions of various pools within the Commodore Mine. RIFS investigations in 2009 included isotopic analysis of mine inflows. The current tasks for DRMS have been the completion of cost analysis for full scale dewatering of the Nelson Tunnel and installation of deep pumping and sampling wells. Future tasks for DRMS will involve facilitation of additional underground investigations, review and analysis of existing data, development of additional cost analysis for installation of multiple bulkheads, facilitation and cooperation with potential sampling well installations, and development of potential source control remedies. This project has been on standby while the adjacent Bulldog Mine drawdown and reactivation scenario is evaluated as a potential long term solution for the Nelson tunnel discharge. The mine re-opening was cancelled in late fall 2013, so this investigation project may become active once again.</p>	<p>Underway</p>	<p>Funding: EPA; CDPHE and DRMS in-kind technical assistance.</p>

Project	Status	Budget
<p><u>Lower Willow Creek Stream Channel</u> <u>Lower Empierious Tailings- Willow Creek- Mineral County</u></p> <p>The Willow Creek Reclamation Committee (WCRC) and the City of Creede are currently completing a reclamation project on the Empierious Tailings at the edge of town. The project is funded with NPS 319 funds and DRMS is providing matching funds and technical assistance for the project. In summer 2013, phase 1 of a stream channel restoration project was completed using state sev tax funding for NPS match. Multiple phases of the project are on-going.</p>	Underway in multiple phases	\$35,000 sev tax

STATEWIDE MINING NPS INITIATIVES

Project	Status	Budget
<p><u>TMDL Priority Watershed Improvement Project- Statewide-DRMS/ Clean Waters State Revolving Fund</u></p> <p>In 2011 DRMS received a grant from CDPHE to develop projects to abate historic mining related water quality problems in high priority watersheds in Colorado. The grant provides funding for characterization and best practice design for priority AML sites to bring projects to a "shovel ready" state for construction with future funding. The Power and Water Development Authority recently approved additional funding for construction of the preferred reclamation alternative at the London Mine in Park County and the Rattler Tunnel in Clear Creek County. In addition, the PWDA approved funding for investigation of the Carbornero Adit for the potential of installing a bulkhead seal as we as sampling/ characterization activities for six watersheds in the State.</p> <p>All of the selected mine sites are in stream segments which are currently included in WQCC Regulation #93 (CCR 1002-93) Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List.</p> <p>Dissolved metals and acidity (pH) from legacy mining (AML-Abandoned Mine Lands) and background sources comprise 89% of the total number of impaired stream segments in Colorado. These impairments are considered "Non Point Sources" (NPS) because they are related to run-off and drainage from AML sites for which there is no remaining financially viable "responsible</p>	Ongoing	\$1,359, 605

party”.

Some of the mine sites in this project and their related stream segments have already been evaluated and monitored by watershed groups, state, or federal agencies. In these cases, there is water quality data to locate the source of the impairment and target the abandoned mined land (AML) source. On other stream segments, there is water quality sampling data to indicate that water quality standards are not attained, but the loading sources have not been clearly identified or adequately characterized to determine the best reclamation alternative.

Funding for this project was received in July of 2011. Since the grant was received, water quality sampling activities have been completed at:

- Waldorf Mine, Clear Creek Co.-Characterization-Adit Drainage Diversion -complete
- Daisy Mine/Redwell Basin, Gunnison Co.- Phase 1 drillhole plugging complete
- London Mine, Park Co. , Construction completed in 2013. Phase 2 completed in 2014
- Sts. John Mine, Summit Co.-Removal of tailings from wetlands, revegetation- Completed in 2013
- Champion Mine, Lake Co.-Characterization- Complete
- Tributaries to Kerber Creek. Characterization- Complete
- Venture Mine-Engineering and Design- Underway, Construction set for 2014
- Rattler Tunnel- Construction completed in 2013
- Carbonero- Investigation set for 2015
- Penn Mine-Construction of bulkhead seal completed
- Gamble Gulch/Perigo Mine-Initial Investigation Completed

Since the initiation of this grant other government agencies, such as EPA, USFS, USGS and the CDPHE Measurable Results Program, have devoted resources to these priority areas. These agencies have collaborated in sampling events and are cooperatively working towards implementing remediation projects to address mining related problems in the prioritized watersheds.

Future Funding and Project Implementation Work

The DRMS has recently requested an additional \$1,700,000 from the Power and Water Development Authority (PDA) for work on several projects on the western slope as well as the Perigo and Penn mines.

Ongoing

Funding-\$1,700,000

Technical Assistance - TMDL Project Implementation Grant -Statewide, DRMS EPA 319 Funds/severance

The Technical Assistance Grant has provided funding for the DRMS to assist numerous watershed groups, individuals and government agencies in the State seeking to improve water quality in areas that are impacted by historic mining activities. The DRMS provides assistance in all aspects of watershed restoration including watershed planning, site characterization, project planning, project implementation, 319 proposal review, and financial assistance. Division personnel have attended watershed meetings, participated in sampling events, conducted reconnaissance activities, and provided project management and technical assistance to numerous watershed groups, VISTA volunteers and various government agencies.

In addition, the grant has provided funding for DRMS to work with the CDPHE and other government entities to outline a list of mining impaired "priority watersheds" in the State and assist with the updating of the management plan.

Specifically, the grant has provided funding for DRMS personnel to assist watershed groups and other partners in meeting four important objectives related to mining related nonpoint source problems resulting from mining in Colorado. These are:

Objective 1: Provide technical assistance to watershed groups, government agencies and private individuals in developing and implementing TMDLs and/or watershed plans using best management practices.

Objective 2: Provide technical assistance to assist in developing watershed plans to assess and characterize mining-related NPS Problems and to identify future threats to water quality.

Objective 3: Build long-term partnerships to enhance cooperation between industry, environmental groups, and government in restoration of AMLs and to provide a sustainable funding source for water quality restoration projects.

Objective 4: Disseminate information on problems/solutions/ technological advances in reducing NPS pollution.

List of Vista Volunteers/ watersheds supported by the Technical Assistance Grant:
Coal Creek Watershed Coalition

Ongoing

Total Project Budget -
\$1,392,000. EPA 319 Grant
\$835,000; DRMS Severance
funds/ other match -
\$557,000

Coalition for the Upper South Platte
 Kerber Creek Restoration Project
 Lake Fork Valley Conservancy
 North Fork River Improvement Association
 Upper South Platte Watershed Association
 Mountain Studies Institute
 Grand County Water Information Network
 Uncompahgre Watershed Partnership
 Eagle River Watershed Council
 Colorado Foundation for Water Education
 Blue River Watershed Group
 Victor/Cripple Creek Group
 Ridgway Ouray Community Coalition
 Upper Arkansas River
 OSM/VISTA Leader WHWT Colorado OSM/VISTA Leader

List of Watershed Groups to which DRMS provides technical assistance with funds from the Technical Assistance Grant:

Willow Creek Stakeholders
 Snake River Watershed Group
 Animas River Stakeholders
 Clear Creek Watershed Association/Foundation
 Coal Creek Coalition
 Lake Fork of the Arkansas
 Lake fork of the Gunnison
 Uncompahgre Watershed
 Blue River Watershed
 Coalition of the Upper South Platte
 San Miguel Watershed Group
 Lefthand Watershed Group
 James Creek Watershed Group
 Uncompahgre Watershed Group