

**Midterm Permit Review (MT-05)
for
New Elk Coal Company, LLC**

**Lorencito Canyon Mine
Permit # C-1996-084**



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

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In Fulfillment of C.R.S. 34-33-115 and the following
Regulations of the Colorado Mined Land Reclamation Board for Coal Mining:
Rules 2.08.3, 2.06.2, 2.06.3, 2.06.5, 2.06.7 and 3.02.2

Introduction

This document presents the results of the Midterm Review of the Lorencito Canyon Mine permit, conducted by the Colorado Division of Reclamation, Mining and Safety (Division). The Lorencito Canyon Mine is owned and operated by New Elk Coal Company, LLC (NECC). This Midterm Review was conducted to fulfill the requirements of the Colorado Surface Coal Mining Reclamation Act (Act), and Rules 2.08.3, 2.06.2(9), 2.06.3(4), 2.06.5(3), 2.06.7(5), and 3.02.2(4) of the Rules and Regulations of the Colorado Mined Land Reclamation Board for Coal Mining (Rules), which were promulgated to implement the Act.

Rule 2.08.3 requires that the Division conduct a review of each permit issued not later than the middle of the permit term. Based on this review, for good cause shown, the Division may require reasonable revisions to, or modifications of, the permit provisions to ensure compliance with the Act and Regulations.

Rules 2.06.2, 2.06.3, 2.06.5, and 2.06.7 require that during the midterm review, where applicable, experimental practices, mountaintop removal variances, variances from approximate original contour (AOC), and variances from contemporaneous reclamation, respectively, be reviewed by the Division.

Rule 3.02.2(4) requires that the Division review the amount of performance bond liability and the terms of acceptance of the bond every 2½ years.

This Midterm Review consisted of a detailed review of the Lorencito Canyon permit application package (PAP) and previous Division findings of compliance to ensure that the proposed operation is in compliance with the Rules and Act. The Division also reviewed all subsequent revisions and stipulation responses to ensure that all permit commitments and conditions were being followed. Problems and observations from past Division inspection reports were also considered.

The document has seven sections.

- Section I contains a brief description of the mine history and the surrounding environment.
- Section II contains a summary of permit actions since the last Permit Renewal.
- Section III is a summary of the Division's review of the active stipulations attached to the permit.
- Section IV is a summary of the review of any previously approved experimental practices, mountaintop removal variances, variances from approximate original contour (AOC), and variances from contemporaneous reclamation.
- Section V summarizes any enforcement actions issued since the permit was last renewed, and the current status of any actions that were issued.
- Section VI is a summary of the review and a discussion of any problems identified as a result of this review that are required to be resolved.
- Section VII is a summary of the review of the reclamation cost estimate and the performance bond(s) held by the Division.

Section I - Mine History and the Environment

Mine Status and History

The Lorencito Canyon mine is a surface mine using mountain top removal methods to mine multiple coal seams of the Raton Formation. Mining operations commenced in September 2001 and continued until June 2002 when operations were ceased due to market conditions. Shortly after that time the mine began reclamation operations. The backfilling and grading of all pit areas has been completed. Topsoil replacement and seeding activities are nearly completed (a 1.8-acre topsoil borrow area remains). Operations continue with maintenance work as needed, including (but not limited to) weed control and rill/gully repair.

Description of the Environment (Location, Land Use, and Climate)

The mine is located on private lands within Las Animas County, Colorado, southeast of the town of Weston. A detailed legal description of the lands included within the permit area is described in Exhibit 2 of the PAP. The USGS 7.5 minute Quadrangle map "Little Pine Canyon" encompasses the majority of the permit area. The mine area can generally be described as lands south of the Purgatoire River, lands east of Cow Canyon, lands north of Puertecito Canyon, and lands west of Little Jeff Canyon, covering approximately 384 acres. (This area was reduced from 3,142 acres with TR-18 in 2014.)

Land use of the permit area is dominated by rangeland/wildlife habitat.

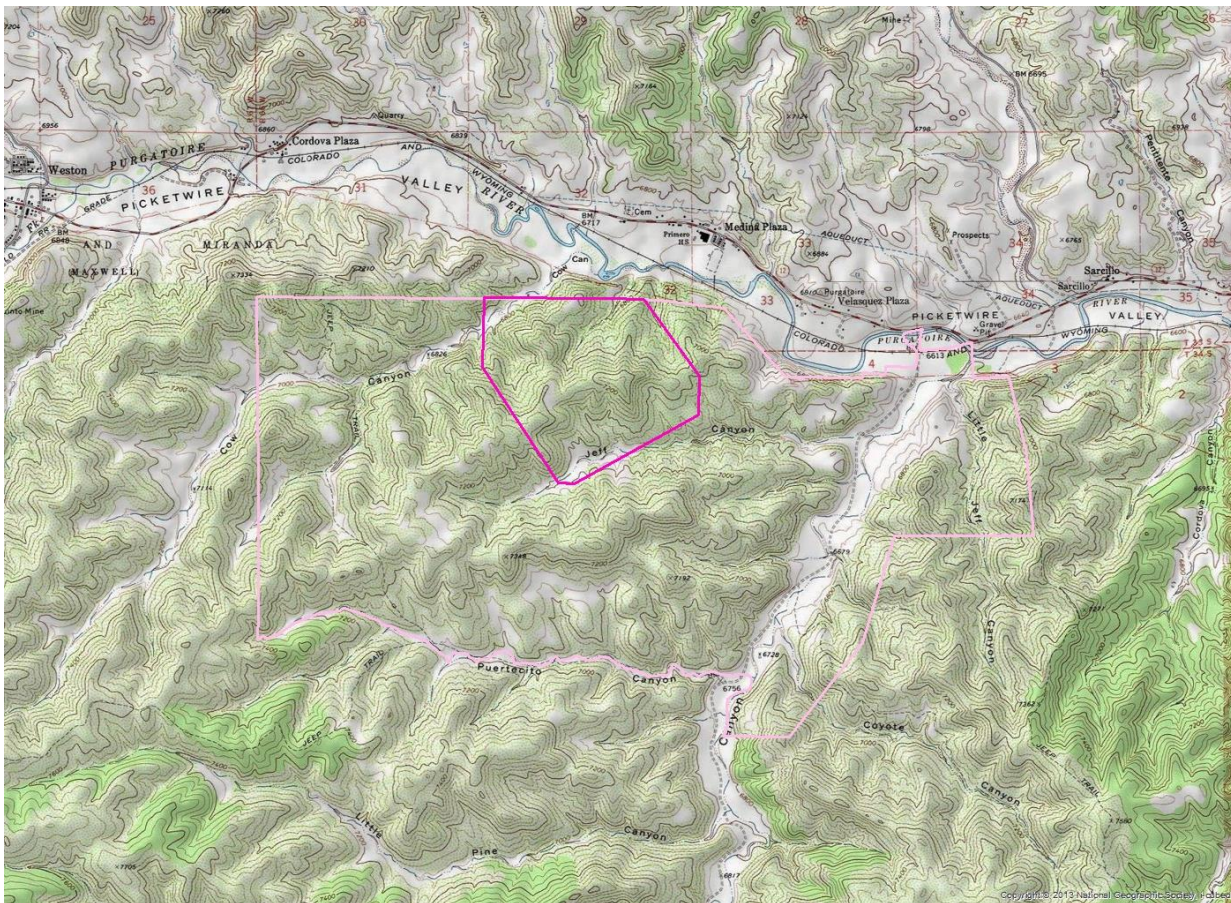
Climate in the area is semi-arid, with approximately 15 inches of precipitation annually. Forty-four percent of the total annual precipitation comes in the form of rainfall during the months of May, July and August; sixty-seven percent occurs between May and October.

Resource to be Mined

Coal mining has been conducted in the area since the 1850's, mostly in underground mines faced-up into coal seam outcrops in the valleys. Coal quality is generally very good, with low sulfur content and good coking qualities in many of the seams. Due to parting and splits in the seams, much of the coal mined in the region requires washing prior to loadout and shipment.

There are two categories of coal in the mining plan. The Ciruela coal (consisting of the "R" seam) is the uppermost mineable seam in the permit area; thickness varies from one to six feet, and depths range from approximately 100 to 500 feet. The Primero coal is located in the Lower Raton Formation; thickness varies from zero to nine feet, and depths range from approximately 200 to 800 feet.

Map



The current Lorencito Canyon permit boundary is in bright pink. The pale pink polygon is the old permit boundary prior to TR-18.

Geology, Soils, and Topography

The major structural feature in the region of the mine area is the Raton Basin, a broad, asymmetric synclinal basin with its axis trending north-south. Rock units deposited during the Cretaceous period of the Mesozoic Era and during the Paleocene period of the Cenozoic Era are exposed throughout the basin due to uplift and subsequent erosion. Coal seams in the Vermejo Formation and the Raton Formation are exposed at various locations throughout the basin.

Soils in the permit area are thin, and in places, non-existent. The exception is the valley bottoms, where soils are moderately well developed. Clay loam, with a low infiltration rate, describes the majority of soils in the area. Much of the area soil has been disturbed by previous coal mining operations that took place before the state of Colorado had any laws in place.

Elevations within the permit area range from approximately 6,750 feet above mean sea level in the northeast part of the permit area to approximately 7,250 feet in portions of the southwestern permit area. Steep slopes and rugged canyons generally describe the topography of the permit area. V-shaped drainages are rimmed by steep, rocky outcrops, and watersheds are divided by narrow, sharp ridges.

Surface Water, Groundwater, Water Usage, and Water Rights

The Purgatoire River flows through the region of the mine area and is the major stream that drains the region. Its headwaters are in the Sangre de Cristo mountain range to the west and the Spanish Peaks to the northwest. The North Fork of the Purgatoire drains the area west of the Spanish Peaks, the Middle Fork drains the area west of Stonewall, Colorado, and the South Fork of the Purgatoire drains the areas south of Colorado Highway 12 into New Mexico to the south. The Purgatoire River drains 404 square miles above its confluence with Lorencito Canyon. The United States Geological Survey (USGS) has operated two stream gauging stations in the vicinity: site 07124050 at Stonewall, Colorado and site 07124200 at Madrid, Colorado. The Stonewall site drains 57 square miles, and the Madrid site, above Trinidad Reservoir, drains 505 square miles. Numerous perennial, intermittent, and ephemeral streams drain to the Purgatoire between these two sites.

In addition to the two main drainages near the permit area, Lorencito and Cow creeks, numerous other drainages exist within the permit and adjacent area. Chimney, Jeff, Puertecito, Little Pine, Bonita, Alamosa, and Little Alamosa creeks all drain areas within the permit and adjacent area. Only Lorencito Creek demonstrated perennial flows during the baseline collection period; minimum flows at all other sites were recorded as zero at least once during the baseline period. Large flows occur in ephemeral drainages in response to intense precipitation events, typically during the months of July, August, and September. Snowmelt contributes only a small percentage of total runoff, as infiltration, evaporation, and sublimation likely account for most of available snowmelt waters.

Surface water is characterized as a calcium/sodium bicarbonate water, neutral to slightly alkaline, with low hardness. pH ranges from 6.15 to 8.8 and Total Dissolved Solids (TDS) ranges from 50-650 mg/l.

Groundwater occurrence in the region can best be described as limited. Consolidated bedrock aquifers generally have a low hydraulic conductivity and a low storativity, rendering bedrock aquifers unusable for sources of economic water. Alluvial groundwater is present in the major alluvial valleys of the region and is used for domestic purposes associated with ranching activities.

Groundwater quality is variable, but can generally be described as fair quality. Alluvial water is suitable for most uses where TDS levels are not elevated. Bedrock water quality is fair from shallow aquifers, but degrades with depth and would not generally be suitable for domestic use.

In the past, based on projected water needs for the operation, NECC planned to rely on the water rights decreed to four irrigation ditches that have historically irrigated portions of the Lorencito tract.

Vegetation and Wildlife

Vegetation in the permit area is dominated by an oak brush/pinon community. Most of the land in the permit area, with the exception of the canyon bottoms and a few small grassland meadows, would be rated poor for suitability as rangeland.

Numerous wildlife species occur through the permit and adjacent area. The permit area is important year-round habitat for elk, deer, bear and turkeys. A variety of small mammals and reptiles are also found in the permit area. Fish are generally limited to perennial sections of streams, and game fish are entirely limited to the Purgatoire River. Raptors utilize the permit and adjacent area and 39 species of other birds were noted during bird surveys.

Description of the Operation and Reclamation Plan

Prior to other operational disturbances, topsoil was removed from the site with two exceptions: areas where steep slopes preclude this activity, and areas where there were negligible amounts of topsoil. In the mine area the typical depth was 1.6 feet. At the loadout the typical depth was 4 feet.

Sediment control structures were constructed in advance of the disturbance in each small, ephemeral watershed. Ponds 5, 6A, 7A, 8, 9, and 9A were constructed and still exist at the time of RN-04. Pond 10A was released under Surety Release No. 2 (SL-02) as part of the coal loadout.

Haul roads originally constructed include the Lorencito Canyon haul road and the Jeff Canyon haul road. A raw coal loadout was approved at the mouth of Lorencito Canyon. The office area was located at the

mouth of Jeff Canyon. As a result of an industrial land use bond release (SL-02), all haul roads, access roads, the coal loadout, and the office area have been fully bond released.

Surface mining commenced at the eastern side of the ridge between Jeff Canyon and the Purgatoire River. Mining progressed to the west, with development of a highwall and fill construction in the small side drainages. Fills 7, 8, and 9 were constructed as a result of mining operations. Overburden material was moved using a combination of dozers, trucks, and loaders. Overburden material was regraded to a modified ridgeline prior to re-application of subsoil and/or topsoil material.

The following production rates can be found in Division records:

- In the year 2001, the Lorencito Canyon mine produced 13,098 tons of coal.
- In the year 2002, the Lorencito Canyon mine produced 154,824 tons of coal.

As previously noted, these were the only years of production at Lorencito Canyon.

During the brief period of operation, coal was transported from the pit area by haul trucks and stockpiled at the coal loadout at the mouth of Lorencito Canyon. Coal was then loaded onto a 15-car shuttle train and railed to the New Elk Mine site (Permit No. C-1981-012) located approximately eight miles to the west. Coal was unloaded and stored at New Elk in existing silos for subsequent loading onto unit trains for transportation to market. There was no coal processing waste material produced on site.

The surface mine was reclaimed as mining activities were completed. Reclamation activities were completed in approximately five months in 2003 and 2004 and included salvaging and removal of structures, backfilling and grading, top soiling, and seeding.

The revegetation plan has three main objectives. The first is to assist in controlling excessive erosion and sedimentation. The second is to establish a vegetative cover that is ecologically comparable to the native area by comparing revegetated areas to unmined reference area communities. The final objective is to restore wildlife, grazing, watershed, and aesthetic values to meet the post-mining land use. Revegetated areas will be grazed for at least two years and Phase III bond release will not be submitted till the tenth growing season. Vegetation success will depend on production, cover, species diversity, wood density and utility.

NECC has seeded the mine site disturbed areas with both native and introduced plant species. The seed mix includes a mixture of seasonally adapted species along with introduced species that are both desirable and have a good chance of success.

Section II - Revisions to the Permit

Since the last permit renewal (RN-04, approved on February 16, 2018, Expires on November 7, 2022)

one technical revision has been approved. Technical Revision number 20 (TR-20), revised the revegetation success criteria. TR-20 was approved on March 4, 2019 and issued on March 30, 2019.

No minor revisions, permit revisions or bond release applications were submitted or approved since RN4 was issued.

Section III - Status of Stipulations

The stipulation history for the Lorencito Canyon Mine was reviewed as part of the midterm review. No stipulations have been imposed since the last permit renewal, nor have any responses to existing stipulations been received since then. Only one stipulation associated with this permit has not been complied with or terminated: Stipulation No. 20. Due to the uncertain future of active coal mining operations at this site, Stipulation No. 20 is necessary to ensure that any future coal operations and disturbances are approved and bonded prior to additional disturbance at the site.

Stipulation No. 20:

PERMIT RENEWAL NO. 4 (RN-04) IS A RENEWAL OF THE PERMIT AS A RECLAMATION ONLY PERMIT. IN THE EVENT THAT THE LORENCITO CANYON OPERATION IS PLANNED TO REOPEN FOR COAL MINING AND REMOVAL, THE OPERATOR SHALL SUBMIT A PERMIT REVISION, RECEIVE APPROVAL FOR, AND SUBMIT ANY INCREASE IN RECLAMATION BOND, PRIOR TO ANY ADDITIONAL DISTURBANCE OF LANDS WITHIN THE PERMIT AREA.

Section IV – Permit Variances and Specific Approvals

Rule 2.06.2(10) – Experimental Practices Mining Operations This is not applicable to the Lorencito Canyon site, as no experimental practices were performed.

2.06.3(4) - Mountaintop Removal Mining Original approvals granted mining defined as mountaintop removal at this site. However, no mining was approved or authorized under Permit Renewal No. 4 (RN4) and the permit was approved for reclamation only, therefore no specific approvals were/are currently granted under this section.

2.06.5(3) – Variances from AOC for Steep Slope Mining No mining was approved or authorized under RN4, and the permit was approved for reclamation only, therefore no specific approvals were/are currently granted under this section.

2.06.7(5) – Variances for Contemporaneous Reclamation for Combined Surface and Underground Operations This is not applicable to the Lorencito Canyon site, as no underground mining was performed, and the permit is approved for reclamation only at this time._

In addition to the variances listed above, the following variances have been approved by the Division for the Lorencito Canyon Mine.

A stream buffer zone variance was granted for the areas located along Lorencito Creek, where the haul road access road or topsoil piles are adjacent to the Lorencito stream channel. This approval is no longer granted, as the areas requiring protection have been bond released under SL-02. The topography of the area required a stream buffer zone variance for ponds 05, 06, and 07a so that they may be located within 100 feet of a stream.

The Division approved a variance from topsoil removal, in accordance with Rule 4.06.2(2)(a), for those areas of the surface mine where the slopes exceeded 50 percent. Since topsoil removal activities at the site are complete, this variance is not relevant to current conditions and is no longer granted.

The applicant had originally requested additional time for backfilling and grading following coal removal in a contour strip mine. A detailed written analysis in the PAP demonstrated that additional time was necessary, and the Division approved the additional time for this area. Since backfill and grading activities at the site are complete, this variance is not relevant to current conditions and no longer granted.

Section V - Enforcement Actions

No enforcement actions are currently pending at this site, and the mine is in compliance with the Rules and Regulations. No violations have been issued since Permit Renewal No 4.

Section VI - Identified Issues and Required Revisions

The Division has identified the following to be addressed by NECC.

- The current Annual Reclamation Report (ARR) map, submitted February 18, 2020, does not include all of the disturbed area. The disturbed area is any area that has been affected by the mining operation to include ponds, roads, ditches, and culverts. When submitting annual reports please ensure that all of the disturbed area is included.
- Pond 006 recently had a large pile of rocks removed at the request of the land owner. NECC needs to submit the letter from the land owner requesting the pile of rocks be removed and/or a technical revision expanding the pond size and capacity in the PAP.
- As necessary, please update the list of owners and controllers in the PAP in accordance with Rule 2.03.4(3).

Section VII – Reclamation Liability and Performance Bonding

The current required surety amount approved for the site is **\$877,328.06**. The Division estimates the reclamation liability for the site to be **\$908,358.00**, this is **\$31,029.94** more than currently required. The Division currently holds a cash bond in the amount of **\$927,121.00** for the Lorencito Canyon Mine. Given this, no increase in bond is required from the operator at this time. However, the Division will issue a notice of a required bond adjustment in accordance with Rule 3.02.2(4) to reflect the increase in the required surety amount. The Division's cost estimate is enclosed for your review. The Division requests the Operator review the cost estimate and provide any comments or questions about the new estimated liability amount to the Division by June 3, 2020.

This concludes the 2020 Midterm Review [MT5] of the Lorencito Canyon Mine. Please submit any required revision applications responding to the issues outlined in Section VI on or before June 2, 2020.