Exhibit 7

Archaeologic Information

1. Report on Archaeological Investigations
2. Letter from Colorado Historical Society
3. Letter from Colorado Historical Society
4. Cultural Resource Study for PR-6 Area

REPORT ON ARCHAEOLOGICAL INVESTIGATIONS IN THE VICINITIES OF THE ALLEN AND MAXWELL MINES, CF&I STEEL CORPORATION, LAS ANIMAS COUNTY, COLORADO

By John Martin Campbell, Ph.D.

The following report provides information sufficient to satisfy the requirements of the new Federal Office of Surface Mining (Sec. 783.12), and State Mined Land Reclamation Board (Sec. 2.04.4) regulations at the CF&I Steel Corporation Allen and Maxwell Mines, which are situated near the Purgatoire River, and near Colorado State Highway Number 12, about 30 miles west of Trinidad, Colorado.

Investigations at the Allen Mine: As per your instructions I intensively examined twenty-two (22) acres which lie between the Purgatoire River and Colorado State Highway 12, just west of the Allen Mine Headquarters (see enclosed Maps 1 and 2). This locality lies at an elevation of about 7500 feet, above sea level, and slopes gently southward from the above noted highway to the Purgatoire River.

During my investigations in late fall and early winter 1980 the ground surfaces were rather extensively covered with herbs and forbs, and small copses of short "trees". Dominant plant species included Gambel's oak and coyote willow. Other, most notable species included sweet clover, goldenrod, mullein, sunflower, Wood's rose, winter fat, rag sumpweed, Palmer's snowberry, cockleburr, false terragon, sage, alder, Virginia chokecherry and horsetail.

The bird species observed were: red-tailed hawk, wild turkey, Lewis' woodpecker, dipper, robin and white-crowned sparrow.

Mammals included: racoon, coyote and mule deer. Note. specific Latin names of these plants and animals will be supplied on request.

On this plot of ground the archaeological materials observed were as follows:

(1) Three (3) widely scattered and widely separated quartzsite spalls which had not been retouched, and which were undiagnostic as regards former cultural origin or affiliation.

(2) Six (6) fragments of ungulate long bone which were found eroding from an arroyo bank near the easternmost margin of the locality in question (see Map 2). These fragments occurred two hundred and fifty (250) feet south of Colorado State Highway 12. They protruded from the east side of the arroyo bank, two (2) feet above the bottom of the arroyo, and seven (7) feet below the top of the bank. The bones are too fragmentary to be positively determined, but they may represent Bison, and I feel that this particular location should be further examined before it is covered with tailings or otherwise destroyed.

(3) A rectangular depression whose maximum horizontal dimensions measured five feet six inches (5'6") on an east-west axis, and ten feet six inches (10'6") on a north-south axis. Its average depth was twenty inches (20"), and it occurred sixty-three (63) feet south of Colorado State Highway 12, and six hundred and eighty-four (684) feet west of the tailings pile which lies just east of the easternmost margin of this locality (see Map 2).

This depression almost certainly represents a "cellar hole," and both within it, and in its immediate vicinity a number of ceramic and metal fragments were observed. The ceramic fragments, bottles, crockery, and linament and oil jars date to the period of A.D. 1900-1930, and most probably to A.D. 1910 to 1920. This depression should be excavated by trained archaeologists before it is covered or otherwise destroyed.

Mitigational statement. In my opinion all of the twenty-two (22) acres in question in the vicinity of the Allen Mine Headquarters (see Maps 1 and 2) are to be considered as archaeologically "cleared," except for the locae of the bone fragments, and of the cellar hole, as described above.

Investigations at the Maxwell Mine: As per your instructions I intensively examined twenty (20) acres which lie in the bottom, and on the west side of lowermost Ciruela Canyon adjacent to the Maxwell Mine Headquarters (see enclosed Maps 3 and 4). This locality lies at elevations of about 7110 to 7170 feet above sea level, and most of it slopes abruptly to the southeast.

During my investigations in late fall and early winter 1980 the ground surfaces were sparsely vegetated. The dominant plant was the scattered one-seed juniper. The cattail, Russian thistle and Canadian thistle occupied the narrow canyon bottom which was being watered artificially. Notable species on the above noted steep slope included prickly pear, hedgehog cactus, cory cactus, spanish bayonet, buckwheat, winged buckwheat, stickleaf, winter fat, skunkbush sumac, mullein, canescent aster, groundsel and goldenweed. Most all of these reflect the habitat provided by the sunny, southeast facing canyon side.

Bird species observed were Steller's jay, black-billed magpie and slate-colored junco.

Mammals were bobcat, coyote and American elk. Note. specific Latin names of the above plants and animals will be provided upon request.

On this plot of ground the archaeological materials observed were as follows:

(1) A one-handed milling stone, or mano, and seven (7) quite nondescript quartzite spalls which occurred as a lithic scatter near a sandstone outcrop at an elevation of 7140 to 7150 feet above sea level, and eight hundred and fifty (850) feet west-northwest of the mouth of Ciruela Canyon. The area containing these stones measured about thirty-five (35) feet in maximum horizontal dimension. (See Map 4.) Probably these materials reflect a so-called Archaic occupation, although this

assessment is highly tentative. If they are derived from Archaic cultures they should, in this area, date somewhere in the range of 3000 B.C. to about A.D. 400.

Mitigational Statement: In my opinion all of the above noted twenty (20) acre plot should be considered as archaeologically cleared except for the immediate locality containing the lithic materials mentioned. Further professional testing should be accomplished at this place before it is covered or otherwise destroyed.

CF&I Steel

Las Animas County
T 33S R67W & 68W Sec 29,23

COLORADO
HISTORICAL
SOCIETY

The Colorado Heritage Center 1300 Broadway Denver, Colorado 80203

Date Received 29 April 1980
Date Responded 13 April 1980

Dear Ms. Wehmanen:

At your request this office has conducted a search of the Colorado Archaeological Site Inventory and the Colorado Inventory of Historic Sites, as well as nominations pending or on the National Register of Historic Places.

The result of this file search is indicated below:

(X) There are no known (X Archaeological and/or (X) Historical/Architectural resources in the impact area of the proposed undertaking.

*( ) Information regarding previously documented resources in these areas is attached. These resources have not been evaluated for inclusion in the National Register. However, they must be considered to be Eligible for inclusion in the National Register until a formal determination has been completed.

*( ) Information regarding cultural resources pending nomination to or on the National Register of Historic Places in the proposed project area is attached.

Our files are incomplete in this area as the vast majority of Colorado has not been inventoried. There is always the possibility that as yet unidentified Cultural Resources exist within the proposed impact area.

Therefore, the federal agency is required to conduct a professional survey to Identify any Eligible Cultural Resources in the proposed project area.

We anticipate consultation with this office regarding the Effect of the proposed project on any Eligible resource in accordance with the Advisory Council Procedures for the Preservation and Protection of Historic and Cultural Resources (36 CFR 800).

Please provide this office with the results of the survey for our review of professional adequacy and compliance.

Arthur C. Townsend
State Historic Preservation Officer

Howard J. Pomerantz
Acting State Archaeologist

*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included for public distribution.

Form No. 011 rev 12/79
File Search Request


NATIONAL
FOREST
SANE
ISABEL
NORTH SPANISH PEAK
WEST SPANISH PEAK
SOUTH SPANISH PEAK
PALE MOUNTAIN
EGOTS PEAK
COSTILLA COUNTY
LAS ANIMAS COUNTY
MAXWELL
R68W
R67W
R66W

Invoice # 018429

CO	T	R	S
LA	33S	68W	14 & 23

COLORADO HISTORICAL SOCIETY

The Colorado Heritage Center 1300 Broadway Denver, Colorado 80203

Date Received 1/18/84

Date Responded 1/18/84

At your request this office has conducted a search of the Colorado Inventory of Cultural Resources.

The result of this file search is indicated below:

[XX] There are no documented cultural properties in the area of impact of the proposed undertaking.

[ ] Information* regarding previously documented resources in these areas is attached. These resources have not been evaluated for inclusion in the National Register. However, they must be considered to be Eligible for inclusion in the National Register until a formal determination has been completed.

[ ] Information* regarding cultural resources pending nomination to or on the National Register of Historic Places in the proposed project area is attached.

Our files contain incomplete information for this area as the vast majority of Colorado has not been inventoried. There is the possibility that as yet unidentified Cultural Resources exist within the proposed impact area.

Therefore, in the event that there is Federal involvement, we recommend that the federal agency conduct a professional survey to identify any Eligible Cultural Resources in the proposed project area.

We anticipate consultation with this office regarding the Effect of the proposed project on any Eligible resource in accordance with the Advisory Council Procedures for the Preservation and Protection of Historic and Cultural Resources (36 CFR 800).

Please provide this office with the results of the survey for our review of professional adequacy and compliance.

Barbara Sudler
State Historic Preservation Officer

*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included for public distribution.

GRAND RIVER INSTITUTE
Cultural Resources Management Consulting

October 7, 2011

J.E. Stover and Associates, Inc.
2352 North 7th Street, Unit B
Grand Junction, CO 81501

Attn: Jim Stover

Re: Class III Cultural Resources Inventory for the RDA #1 Expansion in Las Animas County, Colorado, for New Elk Coal Company LLC

Dear Jim:

An intensive (pedestrian) inventory was conducted for the 180 acres included in the project area on the 5th and 6th of September 2011. It was noted that about 30 acres of that area was previously disturbed by mine activities. One prehistoric site that is located on the southwest boundary of the project area was newly recorded during the inventory. It is GRI's understanding that the NECC plans to construct a road and excavate some test pits – activities that will occur in the ephemeral channel in the center of the RDA #1 Expansion area. Accordingly, the proposed project will not directly or adversely affect the prehistoric site. Please call me if you have any questions or comments.

Sincerely,

Carl E. Conner

Carl Conner
Director

FOR OFFICIAL USE ONLY: DISCLOSURE OF SITE LOCATIONS IS PROHIBITED (43 CFR 7.18)

CLASS III CULTURAL RESOURCE INVENTORY REPORT
FOR THE
REFUSE DISPOSAL AREA #1 EXPANSION
IN LAS ANIMAS COUNTY, COLORADO
FOR
NEW ELK COAL COMPANY, LLC

GRI Project No. 2011-90
November 29, 2011

Prepared by

Carl E. Conner and Curtis Martin
with contributions from
Hannah Mills, Barbara Davenport, and Nicole Darnell
Grand River Institute
P.O. Box 3543
Grand Junction, Colorado 81502
State of Colorado Archaeological Permit 2011-71
BLM Antiquities Permit No. C-52775

Submitted to

Colorado Historical Society
Office of Archaeology and Historic Preservation
1200 Broadway
Denver, Colorado 80203

Abstract

At the request of J. E. Stover & Associates, Inc. of Grand Junction, Colorado, Grand River Institute (GRI) was contracted by New Elk Coal Company, LLC (NECC) to complete a Class III cultural resources inventory of a block area of 180 acres for a proposed expansion of a Refuse Disposal Area (RDA) in Las Animas County, Colorado. The project area is situated within the Beaubien and Miranda (Maxwell) Land Grant. The Class III (pedestrian) field work was performed on the 5th and 6th of September 2011 by GRI archaeologist Lucas Piontkowski. Report preparation was conducted by Carl E. Conner (Principal Investigator), Curtis Martin, Hannah Mills, and Barbara Davenport of Grand River Institute under State of Colorado Archaeological Permit 2011-71 and BLM Antiquities Permit No. C-52775.

The purposes of this study were to identify cultural resources within previously unsurveyed areas likely to be affected by the proposed project, to relocate previously recorded sites (if any), to evaluate their eligibility to the National Register of Historic Places (NRHP), and to make recommendations for the sites found to be eligible. For federally funded or licensed projects, such studies are done to meet requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321), Executive Order 11593 (36 F.R. 8921), the Historical and Archaeological Data-Preservation Act (AHPA) of 1974 (16 U.S.C. 469), the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa et seq., as amended).

Literature reviews for known cultural resources in the project area were made through the Colorado Historical Society's Office of Archaeology and Historic Preservation. These indicated that no resources were previously recorded within the project's boundaries. As a result of the survey, one resource was identified and recorded: prehistoric open camp (5LA12859). The site may contain depth of cultural fill and therefore is field evaluated as need data. Site testing is recommended before a final determination of eligibility can be made.

With regard to the presently proposed project, the cultural resource (5LA12859) is located on the ridge to the west of the RDA #1 expansion area and the construction, as proposed, will not affect the site. No further work is recommended.

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Appendix A: Location Data and OAHP Site Form A.1

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Figure 1. Project area location map v

Figure A-1. Cultural resources location map A.2

Colorado Office of Archaeology and Historic Preservation
CULTURAL RESOURCE SURVEY MANAGEMENT INFORMATION

Please complete this form and attach a copy behind the Table of Contents of each survey report.

Project Class III Cultural Resource Inventory Report for the Refuse Disposal Area #1 Expansion in Las Animas County, Colorado for New Elk Coal Company, LLC. [GRI Project No. 2011-90, 11/29/2011].

Acres of Potential Effect/Project: < 150 **Class III Acres Surveyed**: 180 acres (BLM

Legal Location of Project (add additional pages if necessary)
Principal Meridian: 6th Quad map date(s): 1971 Quad Map(s) Names: Vigil
Township: 33 South Range: 68 West Section Un-sectioned

	Smithsonian Number	Resource Type: Prehistoric	Resource Type: Historical	Resource Type: Paleontologica	Resource Type: Unknown	Eligibility: Eligible	Eligibility: Not Eligible	Eligibility: Need Data	Eligibility: Contributes to National Register	Management: No Further Work	Management: Preserve	Management: Monitor	Management: Test	Management: Excavate	Management: Archival Research	Recommendation: Other (specify)
Sites	5LA12859	X						X					X			Avoided
	Total Sites	1						1					1			
Isolated Finds	None															

Principal Investigator Name: Carl E. Conner

Signature: Carl E. Conner Date: 11/29/2011

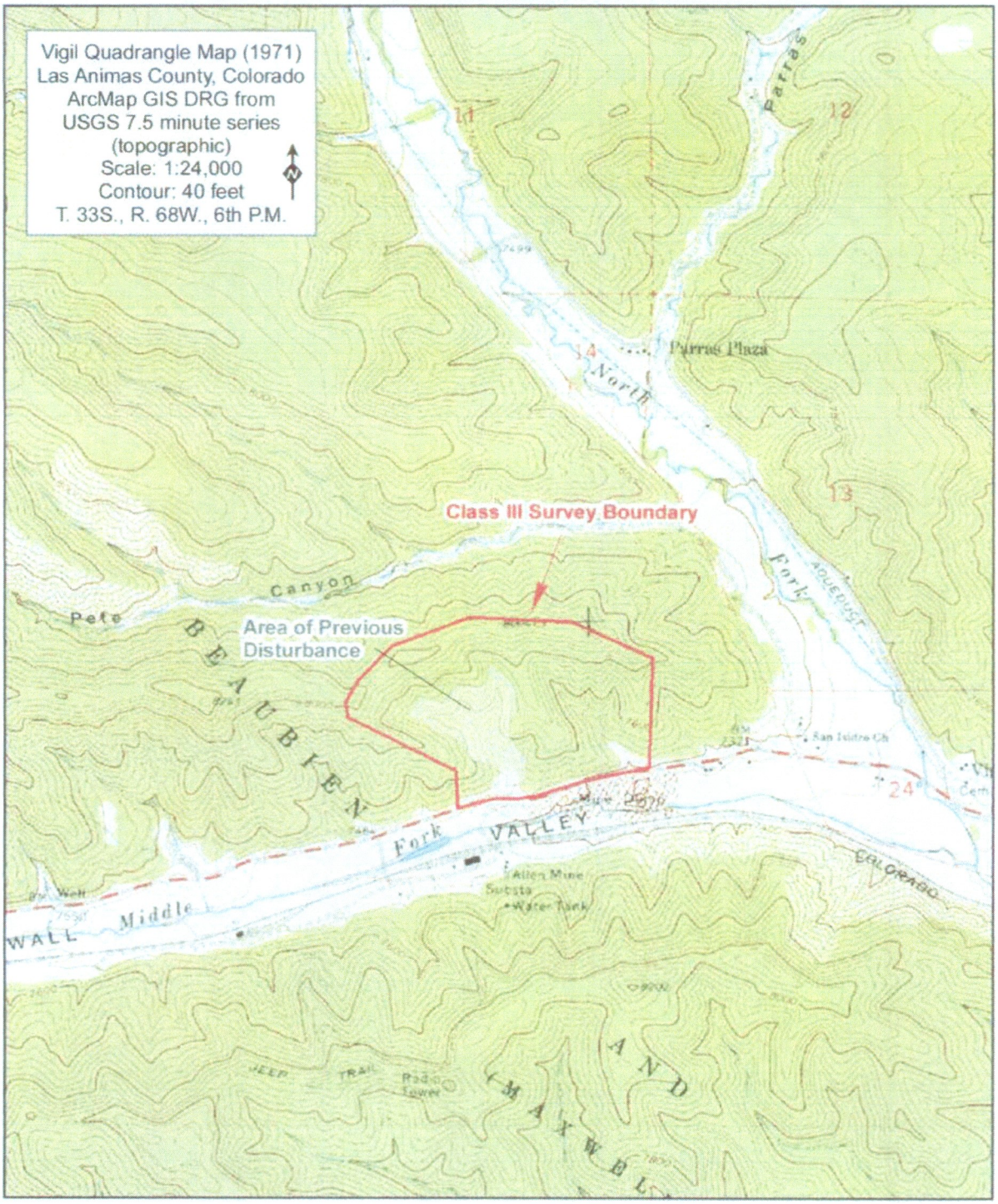

Figure 1. Project area location map for the Class III Cultural Resource Inventory for the RDA #1 Expansion in Las Animas County, Colorado for New Elk Coal Company LLC. Area surveyed is indicated. [GRI Project No. 2011-90, 10/7/2011].

Introduction

At the request of J. E. Stover & Associates, Inc. of Grand Junction, Colorado, Grand River Institute (GRI) was contracted by New Elk Coal Company, LLC (NECC) to complete a Class III cultural resources inventory of a block area of 180 acres for a proposed expansion of a Refuse Disposal Area (RDA) in Las Animas County, Colorado. The project area is situated within the Beaubien and Miranda (Maxwell) Land Grant. The Class III (pedestrian) field work was performed on the 5th and 6th of September 2011 by GRI archaeologist Lucas Piontkowski. Report preparation was conducted by Carl E. Conner (Principal Investigator), Curtis Martin, Hannah Mills, and Barbara Davenport of Grand River Institute under State of Colorado Archaeological Permit 2011-71 and BLM Antiquities Permit No. C-52775.

The inventory was conducted to meet requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321), the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701), and the Archaeological Resources Protection Act of 1979 (U.S.C. 470aa et seq., as amended). These laws are concerned with the identification, evaluation, and protection of fragile, non-renewable evidences of human activity, occupation and endeavor reflected in districts, sites, structures, artifacts, objects, ruins, works of art, architecture, and natural features that were of importance in human events. Such resources tend to be localized and highly sensitive to disturbance.

Location of the Project Area

The project area is located within the steep slopes north of and adjacent to State Highway 12 which follows the Pugatoire River west of Trinidad, turns north outside of Stonewall and terminates just north of La Veta, Colorado at US Highway 160. The route was designated a Scenic Byway in1989. Specifically, the study area lies approximately 2.7 miles east of Stonewall, Colorado, within T. 33 S., R. 68 W., unsectioned (within the Beaubien and Miranda (Maxwell) Land Grant); 6th P.M. (Figure 1).

Environment

The proposed project is within the Raton Basin, a structural basin that is an asymmetric synclinal basin containing sedimentary rocks ranging in age from Devonian to Holocene. The Basin forms the foothills of the Rocky Mountains, immediately east of the Sangre de Cristo Range. The sedimentary rocks are intruded by igneous plugs, dikes, and sills of Eocene and Oligocene age (Johnson 1969). East Spanish Peak and West Spanish Peak are formed from two large granitic intrusives. Dikes trend east-northeast to west-southwest. Basaltic sills tend to intrude along coal beds. The Raton Basin was a coastal plain at the end of the Cretaceous and beginning of Tertiary time, and has a well preserved sequence of rocks spanning the Cretaceous-Tertiary boundary (Pillmore 1991).

The Raton Formation underlies the study area. It consists of arkosic sandstone, siltstone, and shale and contains major coal deposits of the Raton Basin. It was formed during the Upper Cretaceous and Paleocene age. Pillmore (1969) measured the formation thickness as 2000 feet, and divided the Raton Formation into three divisions. The lowest division is a basal sandstone conglomerate of quartzite, chert and gneiss pebbles and cobbles in a coarse-grained quartzose to arkosi sandstone matrix. The middle division is fine to coarse grained sandstone, with some siltstone, mudstone, and coal. The upper division is coal-bearing and contains sandstone, siltstone, mudstone, shale, and mineable coal (ibid).

The project area occurs within the Stonewall Valley, on the north talus of the Middle Fork Purgatoire River. The topography includes foothills, ridge tops, prominences, and steep-walled valleys. Elevation ranges from 7400 to 8000 feet, and exhibits vegetation communities that include pinyon-juniper forest with open areas of mountain grassland and areas of mountain shrubs such as currant and mountain mahogany. These communities support a variety of wildlife species that include mule deer, black bear, mountain lion, coyote, badger, cottontail rabbit, and rock squirrel. The Trinchera elk herd roams the area and is believed to be one of the largest herds of elk in the world (Axelson 2008:344). The area also supports a small number of raptors that include red tailed hawk, kestrel, and golden eagle.

A range of seasonal temperatures is characteristic of the area. Average temperatures reach lows of 15 degrees F during the winter and summer temperatures are as high as 85 degrees F; there is a maximum of 132 frost-free days and the annual precipitation is about 36 inches (Zier and Kalasz 1999:9).

Present day land use within the project boundaries is primarily energy development. Ground visibility ranged from 30-70% due to vegetative cover.

Summary of Files Search and Literature Overview

A files search for this project was made through the Office of Archaeology and Historic Preservation at the Colorado Historical Society. The BLM General Land Office records and maps were also reviewed. Two inventory projects have occurred within a mile of the study area: 1) "Report on Archaeological Investigations in the Vicinities of the Allen and Maxwell Mines, CF & I Steel Corporation," in Las Animas County, Colorado by John Campbell with the University of New Mexico on January 1, 1980 (LA.OSM.R1) and 2) "A Class III Cultural Resources Survey Report for State Highway 12 Road Widening in Las Animas County, Colorado for New Elk Coal Company, LLC" by Conner and Darnell in May of 2011.

The review of files indicated that no cultural resources were previously recorded within the project area, nor were any historic manifestations (roads, structures, trails, ditches

etc.) evident on the historic survey plats. Five sites have been previously recorded within about one mile of the project area: 5LA1101 (Allen Mine), 5LA1105 (chapel), 5LA5930 (historic habitation and water control feature), 5LA10828.2 (a segment of State Highway 12), and 5LA12804 (a historic trash scatter).

Cultural resource investigations in the region have yielded surface diagnostic artifacts and excavated cultural materials consistent with the regional cultural history. Evidence provided by chronometric diagnostic artifacts and radiocarbon analyses indicate regional occupation during the Paleoindian, Archaic, and Late Prehistoric Eras. An overview of the prehistory of the region is provided in the Colorado Council of Professional Archaeologists' publication entitled "Colorado Prehistory: A Context for the Arkansas River Basin" (Zier and Kalasz 1999).

The project area is located within the Beaubien and Miranda Land Grant (also known as the Maxwell Land Grant). Its size of 1.7 million acres made it the largest land grant in U.S. history. It encompasses a large tract of land in New Mexico and the southern portion of Las Animas County, Colorado. The Grant was originally issued to Charles Beaubien and Guadaloupe Miranda in 1841. Prior to the issuance of the Grant, the land was the territory of Apache, Ute, and Comanche Indians. The Governor of New Mexico, Manuel Armijo approved the Grant in the hopes that new settlers would utilize the area's resources and drive out the Indians (Legends of America 2003).

Charles Lucien B. Maxwell, who was married to one of Beaubien's daughters, was a trapper and guide. He is known for leading Colonel John C. Fremont to California in1846. Maxwell bought out Miranda and Beaubien's interest in the Grant by 1865 (Legends of America 2003). After this time, it came under English (1870) and Dutch control (1885) (Keleher 1942:168). Due to homesteaders, the Colorado portion of the Grant was especially fought over. On August 25, 1888, there was a violent incident at Stonewall, Colorado, in which several people were killed. The Maxwell Land Grant Company continued to sue homesteaders. In 1895, the US Supreme Court settled the Russell v. Maxwell Land Grant Company dispute, rejecting the homesteaders claims in favor of the company (Russell v. Maxwell Land Grant Co., 158 U. S. 253). John Rockefeller eventually bought out the Colorado portion of the Grant in 1901 through Colorado Fuel and Iron (Sangres.com 2009).

In 1862, 12 families moved north from New Mexico to settle the Purgatoire River Valley, west of Trinidad. Perhaps because of the troubles from the land grant, the area did not support much agriculture, even though it was believed to be well suited for cattle and sheep ranching and logging.

An overview of the history of the region can be found in "Colorado History: A Context for Historical Archaeology" (Church et al. 2007) as well as the "Colorado Southern Frontier Historic Context " (Carter and Mehls 1984).

Study Objectives

The purposes of the inventory were to conduct an intensive archaeological survey of areas subject to direct impact from road construction; to identify and accurately locate archaeological sites and/or districts and isolated finds; to evaluate these surface finds for inclusion on the National Register of Historic Places (NRHP); to determine the potential effect of the project on all NRHP-eligible resources; and to make recommendations for the mitigation of the adverse effects on those cultural resources. The presence of cultural resources was considered likely based on previously recorded sites and isolated finds in the vicinity.

Field Methods

A 100 percent, intensive (Class III) cultural resource survey of the 180 acre study area was carried out by a GRI archaeologist walking a series of transects spaced at 15m wide and working from USGS 7.5 minute series maps. Steep slopes were contoured. Approximately 30 acres within the project boundary has been previously disturbed.

Cultural resources were sought as surface exposures and were characterized as sites or isolated finds. A site is the locus of previous (50 year age minimum) human activity at which the preponderance of evidence suggests either one-time diagnostically interpretable use or repeated use over time, or multiple classes of activities. For example: a) isolated thermal features such as hearths, which due to the interpretable function of such utilization and the potential for chronometric and economic data recovery, are to be designated as sites, even though they may represent a single event; b) single element rock art panels, which are to be designated as sites due to the interpretable nature of such an event and the potential diagnostic value of the motif; c) isolated human burials; or d) loci exhibiting ground stone and flaked stone in association. An isolate refers to one or more culturally modified object(s) not found in the context of a site as defined above. Note that this definition makes no reference to an absolute quantitative standard for the site/isolate distinction. For example: a) a discrete concentration of flakes from the same material, regardless of the number of artifacts present, likely represents a single, random event and is properly designated as an isolate, or b) a ceramic pot bust, regardless of number of sherds that remain.

Environmental constraints which might be expected included previous ground disturbance that has modified the surface so extensively that the likelihood of finding cultural resources is negligible; human activity within the past 50 years that has created a new land surface such that all traces of cultural resources have been eradicated; natural environmental characteristics that are unfavorable to the presence of historic properties; slopes greater than 30% where no potential for rock shelter, rock art, or other cultural properties associated with rock faces or ledges exist; and areas with 100% vegetation coverage. All cultural resources that qualified as sites, such as prehistoric open camps, lithic scatters, occupied overhangs,

rockshelters, and evidence of historic occupation, were recorded as they were encountered according to standards set by the OAHP.

Sites were recorded using the following methods of mapping and note taking. The basic approach to the data collection was the continuous mapping of observed artifacts and features by recording UTM coordinates (NAD 83 Datum) using a Trimble Geo XT. Site maps were created using GPS data and ArcMap. Photographs were taken at each site and include general overviews and views of specific artifacts or features. Field notes for this project are on file at Grand River Institute, while the photographs are submitted to the OAHP. No artifacts were collected.

Results

A portion of the project area–approximately 30 acres–was disturbed by the previously existing RDA. Additionally, the survey was limited by steep slopes and heavy vegetation. Despite these limitations, a prehistoric camp (5LA12859) was newly recorded. This resource is described below and location data is provided in Appendix A on Figure A-1 and Table A-1. Figure A-1 is a 7.5' quadrangle map that shows the resource in relation to the proposed project and provides the UTM coordinates for the site. Additional detailed information is provided in the attached OAHP Resource Form, also in Appendix A (available at the OAHP).

Site Significance

The National Historic Preservation Act of 1966 (NHPA) directs federal agencies to ensure that federally-initiated or authorized actions do not inadvertently disturb or destroy significant cultural resource values. Significance is a quality of cultural resource properties that qualifies them for inclusion in the NRHP. The statements of significance included in this report are field assessments to support recommendations to the State Historic Preservation Officer (SHPO). The final determination of site significance is made by the controlling agencies in consultation with the SHPO and the Keeper of the Register.

The Code of Federal Regulations was used as a guide for the in-field site evaluations. Titles 36 CFR 60, 36 CFR 800, and 36 CFR 64 are concerned with the concepts of significance and (possible) historic value of cultural resources. Titles 36 CFR 65 and 36 CFR 66 provide standards for the conduct of scientific data recovery activities. Finally, Title 36 CFR 60.4 establishes the measure of significance that is critical to the determination of a site's NRHP eligibility, which is used to assess a site's research potential:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and **a)** that are associated with events that have made a

significant contribution to the broad patterns of history; or **b)** that are associated with the lives of persons significant in our past; or **c)** that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or **d)** that have yielded, or may be likely to yield, information important in prehistory or history.

Site Description

Site **5LA12859**, a prehistoric open camp, is located on a small bench situated on a talus slope overlooking Stonewall Valley (approximately 300 meters to the south) at an elevation of 7720 feet. On-site vegetation includes pinyon/juniper forest, Gamble oak, serviceberry, and sagebrush. Soils consist of shallow, rocky light brown loam.

The site, measuring approximately 30 x 15m, is characterized by a scatter of lithic debitage and flaked and ground stone tools. Chipped stone artifacts include a utilized flake, a chert scraper, a uniface and debitage. Sixteen flakes were noted on the site surface. All stages of cortical reduction were observed. Lithic materials consist predominately of locally available metaquartzite and siltstone (porcellanite), with some chert. The ground stone assemblage is comprised of one mano and an unidentifiable ground stone fragment. The mano is multi-faceted and has been ground and pecked. It measures approximately 11 x 8 x 4cm.

Some of the naturally occurring rock on the site surface has been reddened, apparently via thermal alteration or oxidation, however it is unclear as to whether this is due to past natural or cultural processes.

The site has been mildly affected by erosional processes, primarily sheet wash to the south and southeast, but not to a significant degree. Soils are of an unknown depth, but appear to be greater than 30cm. Overall, the site remains in good condition.

Evaluation and Management Recommendation

Although no thermal features were observed, the site may contain depth of cultural fill. Site testing is recommended before a final determination of eligibility can be made. Accordingly, the site is field evaluated as need data. With regard to the present project, the site is on the periphery of the project boundary and will be avoided by the proposed road and test pit construction, no further work is recommended.

Discussion

Although prehistoric culturally diagnostic materials were scant, this study has provided an opportunity to expand the present database concerning the prehistoric occupation

of the Purgatory drainage basin in particular, and the Raton Basin in general. Based on the recording of a prehistoric site, the study area was apparently used prehistorically for hunting and gathering, camping, and likely as a migration corridor. The ground stone artifacts, and possibly thermally-altered rock, suggest the likelihood of at least limited camping at the site.

Management Recommendations

The National Historic Preservation Act of 1966 (NHPA) directs the government agencies to ensure that initiated or authorized actions do not inadvertently disturb or destroy significant cultural resource values. The eligibility determination and consultation process is guided by Section 106 of the NHPA (36 CFR 60, 63, and 800). CDOT actions cannot be authorized until the Section 106 process is completed (36 CFR 800.1). An inventory such as this is the first step in the Section 106 process.

Literature reviews for known cultural resources in the project area were made through the Colorado Historical Society's Office of Archaeology and Historic Preservation. These indicated that no resources were previously recorded within the project's boundaries. As a result of the survey, one resource was identified and recorded: a prehistoric open camp (5LA12859). The site may contain depth of cultural fill and therefore is field evaluated as need data. Site testing is recommended before a final determination of eligibility can be made.

With regard to the presently proposed project, the cultural resource (5LA12859) is located on the ridge to the west of the RDA#1 expansion area and the construction, as proposed, will not affect the site. No further work is recommended

References

Axelson, John

2008 Big Game Hunter's Guide to Colorado. Wilderness Adventures Press, Inc. Belgrade, Montana.

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Appendix A: Location Data and OAHP Site Form
(Available in SHPO copy only)

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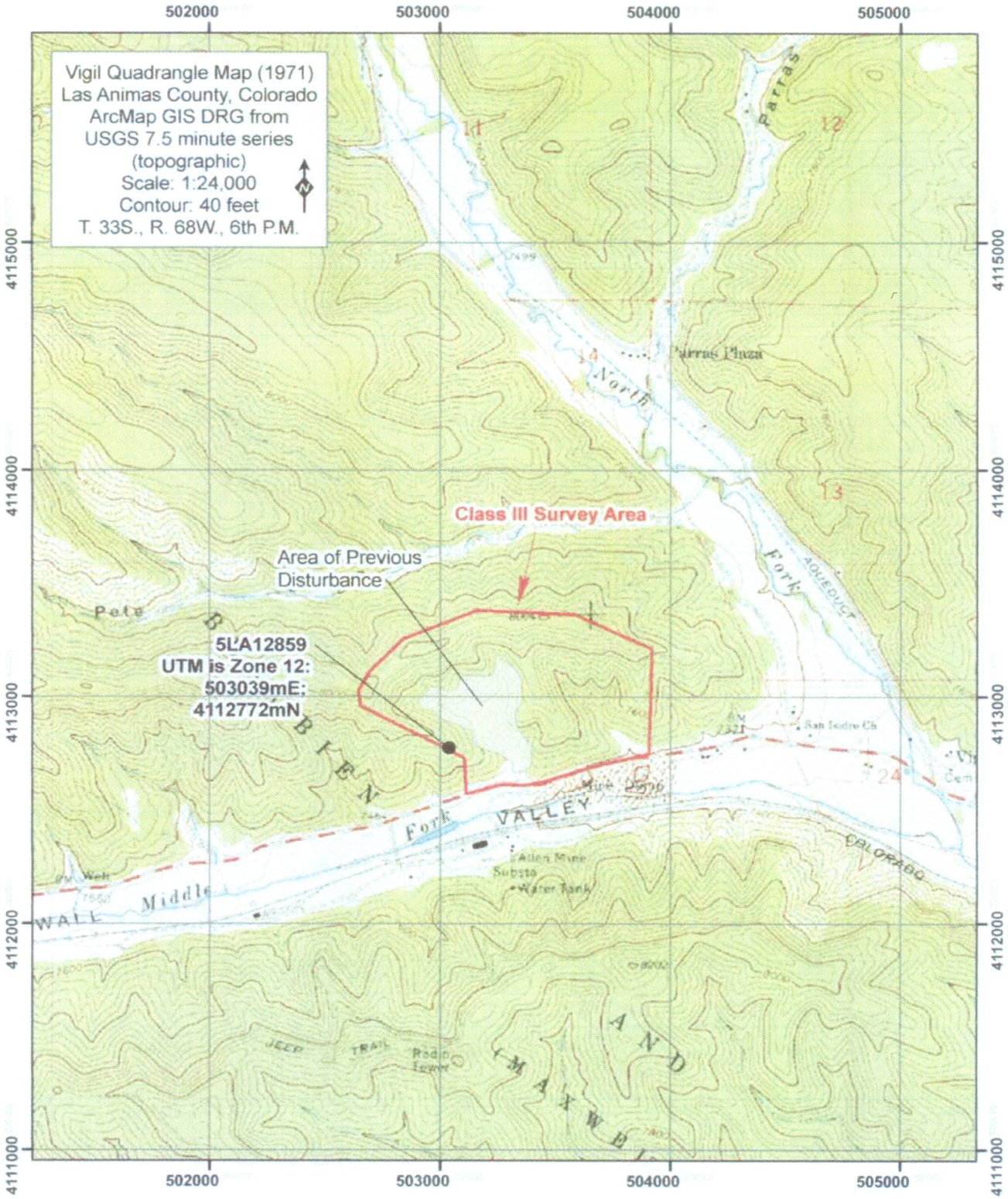

Figure A-1. Cultural resources location map for the Class III Cultural Resource Inventory for the RDA #1Expansion in Las Animas County, Colorado for New Elk Coal Company LLC. The cultural resource is indicated. [GRI Project No. 2011-90, 11/29/2011].

Contract Publication Series 22-367

AN INTENSIVE CULTURAL RESOURCE INVENTORY OF THE NEW ELK COAL COMPANY PR6 PERMIT EXPANSION PROJECT, BOSQUE DEL OSO STATE WILDLIFE AREA, LAS ANIMAS COUNTY, COLORADO

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)

by
Morgan H. Thurman, MA,
and Jason D. Weston, MA, RPA 15092

Prepared for

Colorado State Parks
and Wildlife

State of Colorado
Office of Archaeology
and Historic Preservation

Prepared by

cra
cultural resource analysts, inc

Kentucky | West Virginia | Wyoming
Indiana | Louisiana | Tennessee | Virginia

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I certify the information provided in this report is correct, accurate, and meets all applicable State standards.

_____
Jason D. Weston, MA, RPA 15092
Principal Investigator

September 14, 2022

OAHP Project Number LA.PW.R4
Colorado State OAHP Permit No.: 80924

ABSTRACT

Cultural Resource Analysts, Inc., was contracted by the New Elk Coal Company to conduct a file search and cultural resource inventory of the New Elk Coal Company PR6 Permit expansion project (OAHP project number LA.PW.R4). The block inventory area covers 858 acres on Colorado state land comprising a portion of the Bosque del Oso State Wildlife Area in the Ute Hills. This intensive inventory was conducted as required by the Colorado Division of Reclamation, Mining, and Safety for the permit expansion associated with the coal mine. Other regulatory state agencies include the Office of Archaeology and Historic Preservation, and the Office of the State Archaeologist.

This inventory resulted in the identification of one new isolated find (5LA.14543), one new archaeological site (5LA.14542), and one new segment of a linear resource (5LA.14542.1). The isolated find is recommended not eligible for inclusion in the National Register of Historic Places and no avoidance or further work is recommended. Site 5LA14542 is the historic Colorado & Wyoming Railway, Southern Division which is recommended as eligible for inclusion in the National Register of Historic Places under Criterion A. However, the segment within the inventory, 5LA.14542.1, lacks physical integrity and is considered to be non-supporting to the overall eligibility of the site. No avoidance of impacts or further work is recommended. Additionally, the proposed mine expansion will be entirely below ground with no surface disturbances proposed. As a result, no cultural resources will be impacted or affected and a determination of no historic properties affected is recommended for the proposed project.

On front cover:

Upper image: Project area overview of Apache Canyon, looking southwest. Photograph taken on August 25, 2022 by Jason Weston.

Lower image: Project area overview of the southern plateau, looking north. Photograph taken on August 26, 2022 by Jason Weston.

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History Colorado-Office of Archaeology and Historic Preservation

COLORADO CULTURAL RESOURCE SURVEY

Cultural Resource Survey Management Information Form

I. PROJECT SIZE

Total federal acres in project		Total federal acres surveyed	
Total state acres in project	858	Total state acres surveyed	858
Total private acres in project		Total private acres surveyed	
Total other acres in project		Total other acres surveyed	

II. PROJECT LOCATION

County: Las Animas

USGS Quad Map: Vigil, Tercio

Principal Meridian: 6th

Township	33S	Range	68W	Section	19	S	1/2	SW	1/4		1/4		1/4
Township	Unsectioned	Range		Section			1/2		1/4		1/4		1/4
Township		Range		Section			1/2		1/4		1/4		1/4
Township		Range		Section			½		1/4		1/4		1/4
Township		Range		Section			1/4		1/4		1/4		1/4

III. SITES

Smithsonian Number	Resource Type				Eligibility				Management Recommendations						
	Prehistoric	Historic	Paleontological	Unknown	Eligible	Not Eligible	Need Data	Contributes to a District	No Further Work	Preserve / Avoid	Monitor	Test	Excavate	Archival Research	Other
5LA.14542		X			X				X						
5LA.14542.1		X				X			X						

IV. ISOLATED FINDS

Smithsonian Number	Resource Type			
	Prehistoric	Historic	Paleontological	Unknown
5LA.14543	X			

Smithsonian Number	Resource Type			
	Prehistoric	Historic	Paleontological	Unknown

I INTRODUCTION

Cultural Resource Analysts, Inc. (CRA), was contracted by the New Elk Coal Company (New Elk Coal), to conduct a file search and cultural resource inventory of the proposed New Elk Coal PR6 Permit Expansion project (OAHP project number LA.PW.R4). This inventory was conducted prior to permit acceptance and initiation of subsurface disturbances associated with underground mining operations. The inventory is located entirely on state-administered lands within the Bosque del Osos State Wildlife Area (Bosque del Osos SWA) located west of Weston, Colorado in Las Animas County. The project area is in a portion of Colorado that was not surveyed by the General Land Office or assigned Township/Range designations. However, section 19 of Township 33 South, Range 67 West (T33S, R67W) has been surveyed. From this information, a public land survey system grid was extrapolated, and the project area is estimated to be within portions of what would be sections 19, 30 and 31 of T33S, R67W, and portions of section 6 of T34S, R67W (Table 1; Figure 1; Appendix A).

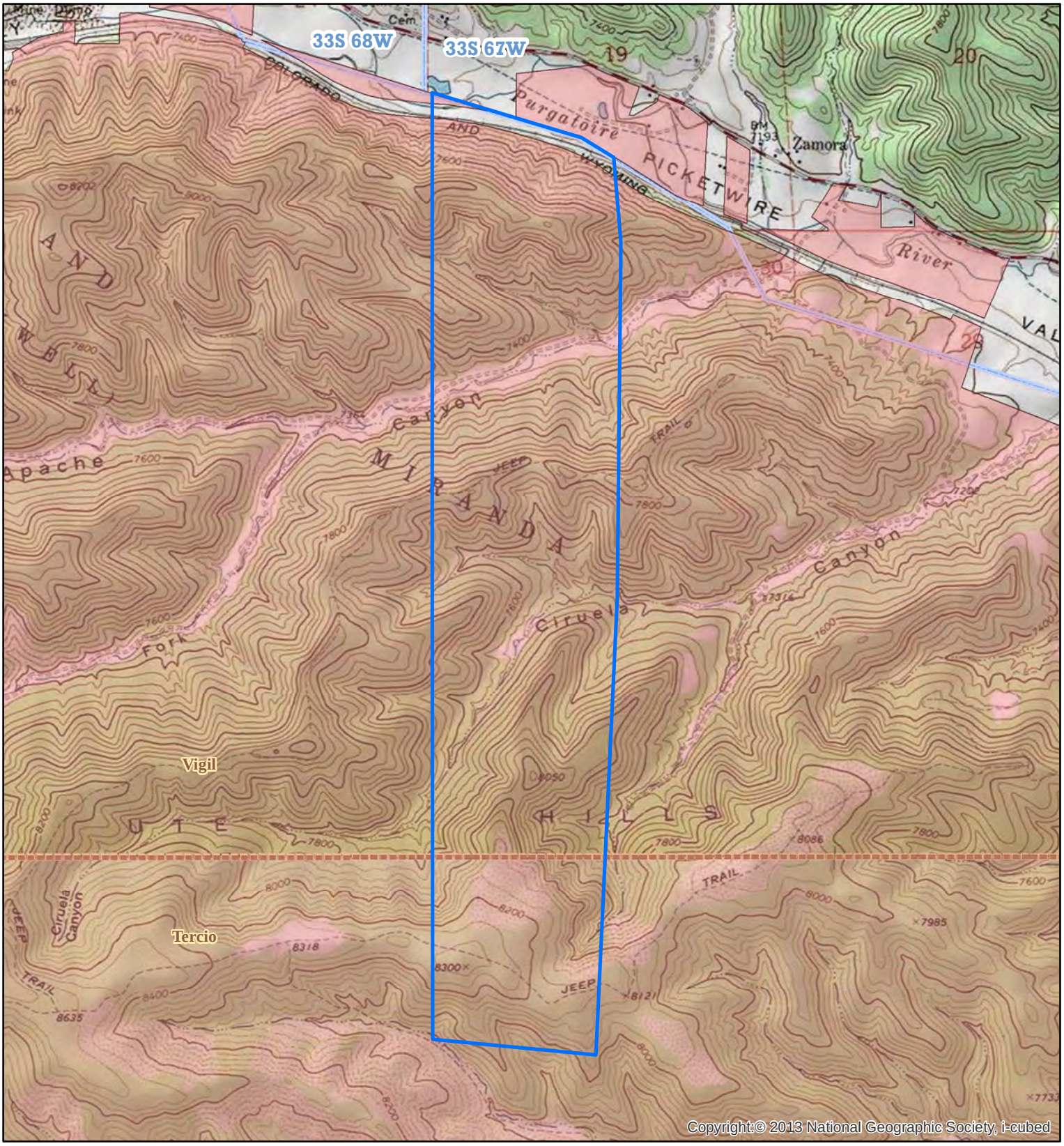
Currently, the project is not associated with a federal undertaking and was conducted per Colorado state requirements as ordered by the Colorado Division of Reclamation, Mining, and Safety. The objective of the inventory was to identify and evaluate the eligibility of cultural resources within the proposed permit expansion area for inclusion in the National Register of Historic Places (NRHP) in order to meet the state of Colorado'a mine expansion permitting requirements. The inventory was conducted under CRA's State of Colorado Archaeological Permit No. 80924.

Description of Undertaking

This proposed project will include expansion of a subterranean coal mine. No surface disturbances associated with this expansion are proposed within the current inventory area. For the purposes defining the parameters of the intensive inventory and the resource analysis area, the approximate 870-acre block that represents the surface footprint of the underground coal mine permit expansion area is defined as the direct area of potential effects (APE) (see Figure 1; see Appendix A). No indirect APE was identified by any regulatory agency for this project concerning the analysis of visual impacts to setting, feeling, and association. This report complies with the Office of Archaeology and Historic Preservation (OAHP) requirements and protocols for intensive cultural resource inventories.

II. ENVIRONMENT

The New Elk Coal PR6 Permit Expansion project is located near the western edge of the Raton Basin in southeastern Colorado. The northern edge of the inventory area borders the south side of the Purgatoire (Purgatory) River valley, near Weston, Colorado. Elevation in the inventory area ranges from 7,255 ft to 8,267 ft above mean sea level (AMSL). In general, the project area consists of three topographical elements: Apache Canyon valley with steep flanking ridges and deeply incised tributary drainages in the northern project area; the narrow Ciruela Canyon valley with steep flanking ridges and narrow deeply incised tributary drainages in the central project area; and a high, relatively flat plateau in the southern project area with broad, steep-sided ridges extending from the plateau. Ridge slopes within the inventory area range from 30 to 60 degrees, averaging 45 degrees with elevation changes of 200 to 400 ft between the top and bottom elevations (Figures 2–5).



Inventory Area
State WIldlife Area
Private
Township Boundary
Quad Boundary

New Elk Coal Permit Extension

Figure 1: Project Location Map at 1:24,000 scale

0 4,400 Feet
0 1,400 Meters

N

1:24,000
1 inch = 2,000 feet
1 inch = 610 meters

cra
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248 West Brundage St., Sheridan, Wyoming 82801
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CONFIDENTIAL

Prepared By: MAT	Date: 9/8/2022
Project Number: Y220336	Project Name: New Elk Coal

Coordinate System:
UTM NAD 83 Zone13N

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Table 1. Inventory Area Legal Locations.

Township/Range	Section	Approximate Legal Location
33S/68W	19	S2/SW
33S/68W	30	W2
33S/68W	31	W2
34S/67W	6	N2/NW

Geology and Sediments

Underlying bedrock in the lower elevation valleys consists of Raton formations of sandstone, siltstone, and shale from the Early Tertiary and Late Cretaceous Periods. The higher elevation mountains and ridges to the south of the Purgatoire River consist of Poison Canyon formation Arkosic conglomerate, sandstone, and shale from the Paleocene period. The Cretaceous geological period is from 145 million to 66 million years ago (Colorado Geological Survey 2022). The Paleocene period lasted from 66 million to 58 million years ago (Chronic 1987:xii).

Based on the Web Soil Survey database (Natural Resources Conservation Service [NRCS] 2022) and observations in the field, sediments within the inventory area were primarily Saruche-Rombo-Rock outcrop complex alluvium and residuum derived from shale, and to a lesser degree Fuera-Dargol-Vamer complex alluvium, colluvium, and residuum derived from shale and siltstone. Other smaller deposits of similar soils were present, as well as a small area of Molinaro loam in the bottom of Apache Canyon. Molinaro loam consists of alluvium derived from sandstone and shale (NRCS 2022). The steep slopes, and eroding residual sediments indicate a low potential for buried cultural materials to be present. Deep sediments present within Apache Canyon suggested limited subsurface testing during inventory was merited.

Hydrology

The inventory area borders the southern edge of the Purgatoire River valley. The river valley descends from west to east. The main ephemeral drainages within the project area include Apache Canyon in the north and Ciruela Canyon in the south. Apache Canyon is moderately broad and open with a flat floodplain bottom, terraces, and meandering stream. Ciruela Canyon is narrow and deeply incised with steep slopes flanking the stream. Both of these drainages descend to the northeast and are tributaries of the Purgatoire River. The Purgatoire River is a tributary of the Arkansas River with which it confluences approximately 90 mi downstream near Las Animas, Colorado.

Vegetation

The primary vegetation community within the project area is pinyon pine and juniper woodlands. Ponderosa pine were also present on ridgetops in the higher elevation areas and in well-watered drainage bottoms. The forest understory consists of a mix of scrub oak and mountain mahogany, as well as grasses, barrel cacti, prickly pear cacti, and yucca. Invasive plants (weeds) were present in disturbed areas along access roads, and were especially abundant in the Apache Canyon valley. Surface visibility ranged from 20 percent within the floodplain of Apache Canyon to 70 percent on the ridges, with most of the project area averaging 50 percent bare ground.

Existing Built Environment

Existing developments in and around the project area include numerous electric oil pumps and associated pads containing engine generators, tanks, and small equipment structures (Figure 6). Gravel-improved roads used by oilfield workers to service the pumps were present throughout the inventory area along the valley bottoms and ridgetops (Figure 7). Rock rip-rap, water bars, and catch dams have been built along the access roads to control erosion (Figure 8).

Figure 2. Project area overview of Apache Canyon, looking southwest. Photograph taken on August 25, 2022 by Jason Weston.

Figure 3. Project area overview of typical ridge slope, looking west. Photograph taken on August 25, 2022 by Jason Weston.

Figure 4. Project area overview of the southern plateau, looking north. Photograph taken on August 26, 2022 by Jason Weston.

Figure 5. Project area overview, looking southeast across Ciruela Canyon from a relatively open ridgetop. Photograph taken on August 27, 2022 by Jason Weston.

Figure 6. Example of an oil pad, associated infrastructure, and access road. View to the west. Photograph taken on August 25, 2022 by Jason Weston.

Figure 7. Example of an oil field access road in Ciruela Canyon. View to the east. Photograph taken on August 25, 2022 by Jason Weston.

Figure 8. Example of a rock rip-rap placed to control erosion along a realigned stream bank in Apache Canyon. View to the east. Photograph taken on August 25, 2022 by Jason Weston.

A historic railroad grade (Site 5LA.14542.1) crosses the northern edge of the inventory area, and a modern fence line runs parallel to the grade. The existing disturbances associated with the active oil field have impacted most of the level ground on the ridgetops and valley bottoms. This pervasive amount of intensive surface disturbance reduces the potential to encounter intact prehistoric and historic cultural resources within the project area.

III. CULTURAL HISTORY

This section provides a brief overview of the cultural-historic chronology of the region and establishes the context for the cultural resources which may be present within the project area. The Purgatoire River valley is within the Arkansas River Basin which has been occupied by humans for at least 11,500 years (Zier and Kalasz 1999). The scholarly understanding of prehistoric cultural resources in this portion of Colorado has been divided into several temporal units defined by changes in subsistence, technology, and artifact morphology. The cultural historic chronology of the Arkansas River valley (Table 2) has been summarized in *Colorado Prehistory: A Context for the Arkansas River Basin* by Zier and Kalasz (1999), but also has patterns that overlap with the plains as summarized by Greubel et al. (2017).

Paleoindian Stage

The Paleoindian stage represents the earliest known occupation of the Americas and spans the time frame from 11,500 to 7,800 years BP (Zier arid Kalasz 1999). The Pre-Clovis period represents the initial occupation of the western hemisphere. The evidence for a Pre-Clovis period in Southeast Colorado consists of a few pre-11,500-year radiocarbon dates and possible artifacts. More data is available for the subsequent Clovis, Folsom, and Plano periods which are summarized in this section.

Table 2. Prehistoric Chronological Sequence for the Arkansas River Basin in Colorado.

Stage	Period	Phase	Temporal Range
PaleoIndian Stage			>11,500–7800 BP
	Pre-Clovis period		>11,500 BP
	Clovis period		11,500–10,950 BP
	Folsom period		10,950–10,2500 BP
	Plao period		10,250–7800 BP
Archaic Stage			7800–1850 BP
	Early Archaic period		7800–5000 BP
	Middle Archaic period		5000–3000 BP
	Late Archaic period		3000–1850 BP
Late Prehistoric Stage			1850–225 BP (AD 100–1725)
	Developmental period		1850–900 BP (AD 100–1050)
	Diversification period		900–500 BP (AD 1050–1450
		Apishapa Phase	900–500 BP (AD 1050–1450
		Sopris Phase	900–750 BP (AD 1050–1200)
	Protohistoric period		500–225 BP (AD 1450–1725)

Clovis Period

The earliest undisputed documented culture in the Americas is the Clovis period occupation (11,500–10,950 BP). Clovis peoples utilized large fluted spear points to hunt Pleistocene megafauna such as the mammoth. No known Clovis sites have been found in the project area, but sites of this period are known in the region. For example, the Hahn site is a Clovis and Late Paleoindian occupation in El Paso County (Zier and Kalasz 1999). Clovis sites, often identified by the distinctive Clovis projectile point, include faunal remains, such as mammoth, bison (*Bison latifrons*), and horse bones. More recent research has indicated that Clovis sites may be more common and more widely distributed in Colorado than previously thought (Greubel et al. 2017). Clovis points have been found at high elevations, suggesting that populations during this period were utilizing mountain landscapes and resources. These finds may represent short-term, logistical forays during the warm season to acquire specific resources (Greubel et al. 2017).

Folsom Period

During the Folsom period (10,950–10,250 BP) big game hunting remained the focal point of subsistence, but by this time the Pleistocene megafauna had become extinct and a new species of bison (*Bison antiquus*) was being hunted. Folsom points are finely-made, fluted lanceolate projectile points that differ in form from the earlier Clovis points. Populations at this time established a bison hunting subsistence pattern that is most commonly found on the plains, but also demonstrates use of the foothill/mountain zones. Folsom sites are far more common in Colorado than Clovis sites, and include finds within the Arkansas River Basin, but it is unclear if this is the result of population expansion or increased site preservation (Greubel et al. 2017).

Plano Period

During the Plano period (10,250–7,800 BP) populations still targeted bison, but Plano peoples hunted the modern bison (*Bison bison*) that replaced *Bison antiquus* sometime between 9,000 and 11,000 years ago (Kornfeld et al. 2010:155–160). During this time period, there is evidence that populations began to diversify subsistence practices to include a wider variety of plant and animal species (Greubel et al. 2017; Zier and Kalasz 1999). Two distinct variants of Plano period sites manifest depending on geographic location. Sites on the plains primarily consist of bison kill and butchering sites with artifact assemblages suggesting a tool kit suited to high levels of mobility, whereas sites in foothill/mountain regions demonstrate an increase in semi-sedentism with subsistence strategies incorporating a wider variety of resources. The current project area in the foothills, with access to the east down the Purgatoire River valley to the plains, has the potential to reflect both patterns. There is

also a marked increase in evidence for communal hunting practices during the Plano period compared to previous periods.

Plano sites exhibit a diversification in lanceolate projectile point styles, including Agate Basin, Cody, Firstview, Hell Gap, Kersey, and Foothill/Mountain points. The Plano toolkit includes a wide variety of formal and expedient tools that were often made from high quality lithic material from distant sources. Ground stone is also found more frequently at Plano sites than previous cultural periods, suggesting there may have been an increase in reliance on plant resources. (Greubel et al. 2017; Zier and Kalasz 1999). However, it is also possible that this apparent increase, like the increase in overall site numbers, could be the result of improved site preservation over previous periods.

Archaic Stage

The Archaic stage (7,800–1,850 BP), which is divided into Early, Middle, and Late periods, is differentiated from the Paleoindian in terms of technology and subsistence practices. The initial change from the Paleoindian to Archaic is believed to be related to a shift to a hotter and drier climate. This climatic change, known as the Altithermal (Antevs 1955), is the subject of great debate on the severity, timing, duration, and effect on human and animal populations. It appears that the climate became hotter and wetter in the summer and cooler and drier in the winter (Huckell 1996). This resulted in vegetation zones shifting upward in altitude and many areas of the plains grasslands becoming more desert-like. Bison populations were diminished, and prehistoric occupation of the mountains increased (Benedict 1979; Zier and Kalasz 1999).

Early Archaic Period

Subsistence patterns during this period shifted from bison to a variety of smaller game animals. Ground stone implements (manos and metates), which are present in low numbers in Paleoindian sites, become more common in the Early Archaic and exhibit increasing use of plant resources. Projectile point forms changed to smaller, stemmed, lanceolate, side-notched, and corner-notched dart points. The great diversity of projectile points during the Archaic in general suggests the development of regionalized groups, a process that may have begun in the Plano period (Pitblado 2003). Early Archaic sites contain small basin houses thought to represent brush or skin shelters. These features are common in the Early Archaic from New Mexico through Wyoming, but have also been found in Middle and Late Archaic contexts (Shields 1998).

Middle Archaic Period

The Middle Archaic period is distinguished from the Early Archaic by an increased number of sites. This expansion was accompanied by increased diversity in tool forms and a return to focusing on bison hunting, as well as deer, elk, and big-horned sheep (but not to the exclusion of plant resources). In the Middle Archaic, seasonal rounds for the collection of resources became common, and evidence of inter-regional trade began to appear (Carrillo et al. 2011:10).

Late Archaic Period

The Late Archaic saw continued climactic improvement and further expansion of human populations into the Plains regions. This period saw a general broadening in subsistence resources indicated by an increased frequency of ground stone implements, as well as small mammals such as rabbits and prairie dogs, in site assemblages. Larger game such as bison, deer, and elk were still hunted, but a significantly wider variety of resources were being exploited. This pattern has also been connected to increased sedentism suggested by more frequent appearances of pit-house sites (Carrillo et al. 2011:10; Kornfeld et al. 2010).

Late Prehistoric Stage

The Late Prehistoric stage (1,850–225 BP) is distinguished from the Archaic by the addition of arrow points, ceramic technology in the form of cordmarked and plain pottery, cultigens (maize and beans) to the hunting-gathering subsistence pattern, unique burial practices, use of the bow and arrow, and presence of substantial domestic dwellings (Zier and Kalasz 1999). Native populations during the early portion of this stage increased, as evidenced by the sharp increase in radiocarbon dates from this stage. The Late Prehistoric stage is divided into three periods: Developmental (1850–990 BP), Diversification (900– 500 BP), and Protohistoric (500–225 BP).

Developmental Period

The Developmental period is characterized by artifact assemblages containing small corner-notched projectile points and cordmarked ceramics. Architectural remains consist of semi-subterranean pit structures and circular stone enclosures. Subsistence remains from Developmental period sites indicate a substantial reliance on wild plant resources and the initial cultivation of beans and corn (Greubel et al. 2017; Zier and Kalasz 1999).

Diversification Period

The Diversification period is divided into the Apishapa phase (900–500 BP) and Sopris phase (900–750 BP). The Apishapa phase is likely related to the Plains Village cultures to the east (Lintz 1984). Site types include open camps, villages, and rockshelters (Carrillo et al. 2011:11). Apishapa sites are generally located along the Arkansas River and its tributaries, including the Purgatoire River. The Sopris phase is related to the Ancestral Puebloan cultures in the northern Rio Grande Valley (Mitchell 1997). Sopris sites are found on the Raton Mesa near Trinidad and could easily extend up the Purgatoire River valley. Diversification period sites contain a wider variety of ceramic wares than earlier Developmental period sites, including imported wares from the plains and southwest. Projectile points shift from corner-notched forms to side-notched and flanged forms. Apishapa architecture is dominated by curved rock walls that incorporate vertical slabs. Sopris architecture consists of rectilinear structures of adobe or jacal construction. Subsistence practices are similar to the earlier Developmental period, but evidence of an increase in the use of cultigens is seen at a number of sites. Apishapa phase occupations appear to evidence more bison utilization than is seen at Sopris phase occupations. The Sopris occupations evidence greater mule deer exploitation (Zier and Kalasz 1999). In this portion of Colorado, many of the ceramic sites with cordmarked pottery are on the high bluffs overlooking waterways and have been attributed to the Apishapa or Upper Republican complexes (Olson et al. 1968; Withers and Huffman 1966). One site was excavated and found to have seven circular house features and cordmarked pottery (Olson et al. 1968; Brant et al. 2010). A Santa Fe Black-on-white sherd was also found at this site. Two house features have also been found at sites in the region (Olson et al. 1968).

Protohistoric Period

The Protohistoric period overlaps with the Historic stage and Euro-American settlement of Colorado. This period is characterized by a fundamental shift in Native-American technology and subsistence practices and extensive demographic fluctuations. Historically known tribes can be distinguished, and the entrance of Europeans to the North American continent changed many aspects of Native-American lifeways. Technologies shifted as horses, metal implements, glass implements, and firearms were introduced. The acquisition of the horse changed subsistence patterns, enabling tribes to follow bison herds over vast distances and increased the competition for resources. Dramatic population reductions also occurred during this period due to the introduction of new diseases to North America (West 1998). The Protohistoric period also marks the first appearance of the Athabaskan Apache and the Navajo into the region, although the timing of the Athabaskan entry is still unclear in the archaeological record. Following the Athabaskan groups, the Comanche, Ute, and Arapaho were all

known to have visited or occupied the Arkansas River valley in the Protohistoric period (Crum 1996; Gilmore and Larmore 2012; Wilshusen 2010). Spain claimed this region by the time of the Coronado Expedition to the south of Colorado in AD 1540; however, permanent European presence was not established until the mid-1700s (Carrillo et al. 2011:12). A Spanish expedition along the Purgatoire River in 1700 identified the valley as Apache lands, but by 1706 they were being pushed by the Comanche, and by 1750 they had moved into portions of New Mexico, Texas and northern Mexico (Carrillo et al. 2011:17).

Historic Period

Spanish Exploration

The Historic period begins with the arrival of Spaniards in the Southwest in the early 1500s. The first Spanish expedition into what is today Colorado probably occurred in 1664 by Juan de Archuleta. Archuleta was sent by the Spanish governor to capture a group of Picuris Indians who had fled to El Quartelejo, possibly near present-day La Junta or farther east in Kansas (Gunnerson 1987; Scheiber 2006) from their pueblo near Santa Fe. The Pueblo Revolt of 1680 (Knaut 1995) temporarily halted any further Spanish incursions into Colorado. Following the Reconquista of the Pueblos in 1694, Diego de Vargas explored the San Luis Valley and, in 1706, Juan de Ulibarri returned to El Quartelejo to recapture fleeing Pueblo Indians. The Spanish began patrolling the Arkansas River area in 1719. The patrol by Antonio Valverde and another expedition to the South Platte River by Pedro de Villasur in 1720 were spurred by rumors of the French selling guns to the Indians. In 1763, the French ceded their lands west of the Mississippi to the Spanish. However, the Spanish were prevented from settling the area by the Comanche, whose territory included southeastern Colorado. In 1779, the Spanish launched an expedition to rid the area of the Comanche. Juan Bautista de Anza led a large Spanish force that chased the Comanche through the San Luis Valley to the Pikes Peak region. The Spanish finally defeated the Comanche in a battle at Greenhorn Mountain near present-day Pueblo (Lecompte 1978). By 1786 the Comanche and the Spanish in New Mexico had negotiated peace, allowing trade networks to be established which remained operational for approximately 100 years, even as control switched from Spain to France in 1800, and to the United States in 1803 through the Louisiana Purchase (Carrillo et al 2011:12–16).

Euro-American Exploration

Following the Louisiana Purchase, the United States began sponsoring scientific and military expeditions to the new territory. In 1806, Zebulon Pike led an official U.S. government expedition to explore the portions of the Louisiana Purchase that bordered Spanish territory. After following the Arkansas River, Pike attempted to climb "Grand Peak," which is now known as Pike's Peak. After failing this attempt, he continued along the Arkansas until he reached the mouth of the Arkansas River Canyon. He found the canyon to be impassable, so he turned northwestward into the modern South Park area. Pike then turned west, where he once again came upon the Arkansas and mistakenly believed it to be the Red River, which marked the boundary of Spanish Territory. He realized his mistake after finding his camp at the mouth of the canyon. After this he crossed the Sangre de Cristo Mountains and went into the San Luis Valley, where he was captured by the Spanish in 1807 (Greubel et al. 2017:100).

Several other exploratory expeditions were sent into the region, including the Stephen H. Long Expedition on 1820, which entered the Purgatoire River valley near the mouth of Bent Canyon and followed Chacuaco Creek into New Mexico. Between 1842 and 1848, John C. Frémont would explore what would later become Colorado on four separate occasions. In the course of this expedition, Frémont would explore the Platte River in 1842, the Cache la Poudre River canyon in 1843, and the headwaters of the Arkansas River in 1844 before crossing the Continental Divide. Later, in 1848, Frémont returned to Colorado as a private citizen as part of a survey expedition for a railroad, crossing the Sangre de Cristo Mountains into the San Luis Valley (Greubel et al. 2017:101).

Settlement and Industry

Despite early exploration, non-indigenous settlement of the Arkansas and Purgatoire River valleys did not happen in earnest until after Mexican Independence in 1821. After the overthrow of the Spanish government, the new Republic of Mexico sought to establish trade routes with the United States, primarily in the form of the Santa Fe Trail. The Mexican government used large land grants to encourage its citizens to migrate northward and develop the trade routes between New Mexico and Kansas/Missouri (Carrillo et al. 2011:33)

Euro-American settlement in the region was sporadic until the 1860s. During the fur trade boom in the 1820s and early 1830s, fur traders entered the Central Rocky Mountains to exploit the lucrative trade opportunities. Business partners John Gantt and Jefferson Blackwell were the first to establish themselves along the Arkansas River. Already established fur traders in northern Colorado, they moved to the Arkansas and built a small trading post in the winter of 1831–1832 near the confluence of the Arkansas and Purgatoire Rivers. In 1834 they built a more substantial post and named it Fort Cass (Greubel et al. 2017:124-125).

Other individuals seeking economic opportunity on the Arkansas who would leave their mark on the region include Charles, George, and William Bent and Ceran St. Vrain, who would form an influential trading partnership known as the Bent, St. Vrain & Company. The Bent, St. Vrain & Company dominated among the wave of western traders seeking to take advantage of trade on the Santa Fe Trail. The Bent brothers and St. Vrain established Bents Fort on the Arkansas 12 mi upstream of the confluence with the Purgatoire River. This position allowed the Company to tap into the trade coming along the Santa Fe Trail, as well as trade with Native Americans. The Company later established several other trading posts, including Fort St. Vrain on the South Platte River in 1837 (Greubel et al. 2017:125). Other settlements founded by Euro-Americans in the first half of the nineteenth century in the region would follow a similar pattern and were also motivated by opportunities for trade with Native Americans and the Santa Fe Trail; however, Euro-American settlements would remain sparse until the second half of the century (Carillo et al. 2011:34).

After 1860 settlement of the Purgatoire River valley began in earnest, but was largely carried out by Hispanic populations moving up from New Mexico. These families founded the first permanent settlements on the Purgatoire. Felipe Baca, a trader from near Mora, helped establish Trinidad while moving goods from Mora to Denver to sell at the markets serving the mining camps. Some of the Hispanic settlers came with Baca, and others followed soon after. The settlers moving into this region were acquiring land through the Vigil St. Vrain Land Grant, which encouraged group settlement by requiring the grantees to recruit settlers. This led to the establishment of small village-like settlements known as “plazas” (a term that can be found in many place-names in the region today). These plazas were organized in large square complexes for greater defensibility from Native American attacks, and consisted of a series of smaller adobe houses grouped around a larger adobe structure which served as the dwelling of the primary land owner. These communities subsisted on communal farming and herding, raising sheep, melons, beans, pumpkins, and chilies (Carillo et al. 2011:33–34).

The sheep and cattle industries also played a significant role in settlement in the region. Sheep raising in New Mexico dates to the sixteenth century, after herders (pastores) brought sheep from Mexico. Sheep operations were large, with herders handling 2000–3000 head at a time. The pastores established base camps consisting of dwellings and corrals constructed of native stone when it was available (Carillo et al. 2011:34). Sheep and cattle operations were both established on the Arkansas and Purgatoire Rivers by the 1840s; however, both would dramatically increase in importance with the onset of the 1859 Pike’s Peak Gold Rush. Demand for meat to feed the incoming miners was at a high, and both industries saw massive numbers of animals being brought into the region, such as cattle from Texas and sheep from New Mexico (Carillo et al. 2011:34; Greubel et al. 2017:117-121).

By the mid-1860s the forced removal of Native Americans from the Plains, along with the conclusion of the Civil War, increased accessibility to the region. The Pike's Peak Gold Rush had already brought thousands of new settlers to Colorado, which in turn increased the demand for the industries already mentioned. The end of the war allowed railroads to be built in Colorado, which further increased development and opportunity for mining. Numerous mining districts sprung into existence in places such as Boulder, Cripple Creek, Leadville, and Central City. These operations largely targeted placer gold mining, though in the 1870s silver mining became more profitable due to technological advances, and silver mines were opened at Hardscrabble, Solver Cliff, Westcliffe, and Querida (Greubel et al. 2017:127-133).

While precious metal mining is enormously influential in the historical development of much of Colorado, it was coal mining that played the lead role in the industrial and economic development in Las Animas County, which comprised a portion of the Southern Coalfield. One of three major coalfields in Colorado (the others being the Northern and Central Coalfields) coal mining in the region began as early as 1880, and most operations were owned and executed by railroads. Between 1880 and 1890 Colorado saw a significant increase in industrialization, notably in the city of Pueblo, increasing the demand for coal dramatically. The Colorado Coal and Iron Company (CC&I) was founded by William J. Palmer to provide iron rails for the Denver & Rio Grande Railroad, another of Palmer's ventures. CC&I would eventually start buying up mining operations focused primarily around the foothills of the Sangre de Cristo Mountains. After building an iron mill at Bessemer, south of Pueblo, CC&I built coke ovens near Trinidad to produce coke, which was then shipped to smelters in Leadville, Denver, and numerous other locales, as well as the steel mills around Pueblo. In 1892, CC&I was consolidated with the Colorado Fuel Company to form the CF&I. The CF&I steel mill was fed coal from the Huerfano River country and ore from the San Luis Valley. At the time of the merger, the company was producing 75 percent of Colorado's coal, much of it coming from the region west of Trinidad, near the current project area (Greubel et al 2017:135-136).

As through much of the American West, settlement and industrial development in Colorado was heavily driven by the building of railroads and the ensuing land grants they acquired (Carillo et al. 2011:62-63). By 1872, the railroad entered Pueblo, and outlying areas shortly thereafter, which greatly facilitated growth and development of the area. Numerous, often intensely competitive, railways were constructed throughout the state, often to service the mines, which in turn increased the demand for coal and steel. Trinidad would become a hub for several railroads, including the Denver and Rio Grande Western (D&RGW), the Colorado and Southern (C&S), the Atchison Topeka & Santa Fe Railway (AT&SF), and the Colorado and Wyoming (C&W).

The C&W railway was started in 1899 and was used to haul coal, ore, and steel products to and from the coal mines owned by CF&I in the upper Purgatoire River valley in the foothills of the Sangre de Cristos (Mckenzie 1982). The C&W operated a short spur line that crosses the current project area and ran from the main line at Trinidad. The line ran up the Purgatoire River, and then turned southwest at Weston to haul coal from the mining camps at Primero, Segundo, and Tercio, to the coking ovens near present day Cokedale. The coke would then be transported to Trinidad, where it was then taken by other railways (like the D&RGW) to the steel mills in Pueblo and smelters elsewhere for use in the steel production process (McKenzie 1982). This line was in use from 1900 until sometime between 1988 and 2010, according to depictions of the line on United States Geological Survey (USGS) topographic maps (USGS 1988, 2010). In the intervening period, the rails and ties were pulled up and removed. The C&W is still in operation today, exclusively operating a self-contained 5 mi rail-line within a steel mill in Pueblo.

IV. FILE SEARCH INFORMATION

A file search was conducted using the Compass Online Cultural Resource Database (OAHP 2022a), and the official file search results (No. 24862) were received from OAHP on August 17, 2022 (OAHP 2022b). These file search results were used to identify all cultural resources and inventories located within, and within 1 mi of, the inventory area. These results identified no previously documented sites within the inventory area. No previous surveys were located within the file search area.

In addition to the file search, the background research for this project included the examination of the 1877 General Land Office (GLO) plat maps (Bureau of Land Management [BLM] 2022a). The plat maps illustrate the city of Trinidad and the Purgatoire River; however, the maps label the river as the Las Animas River. Similarly, in the general vicinity of the current project area, a stream labeled as Rock River is illustrated draining northeast into the main river valley. This name does not match any stream names in current use, but it may be illustrating Apache Canyon, or the South Fork Purgatoire River.

A search of the GLO online patent records was conducted to identify the original patentees within or near the project area (BLM 2022b). The GLO Land Patent Records revealed 12 land patents dating between 1879 and 1914 (Table 3). Ten patents were issued under the 1862 Homestead Act. The 1862 Homestead Act specified that a patent on 160 acres of land was to be improved upon and occupied for five years (Cassity 2007:23). One patent was issued under the 1820 Sales Cash Act. The 1820 Sales Cash Act required settlers to pay in cash at the time of land purchase, but it lowered the number of required acres to purchase from 160 to 80 and the price per acre was set at $1.25 (Clark 2011:376). The final patent was issued under the authority of the Surveyor General of New Mexico, established in 1854 to ascertain "the origin, nature, character, and extend to all claims to lands under the laws, usages, and customs of Spain and Mexico," for those territories gained by the United States after the Treaty of Guadalupe Hidalgo (Archives.gov).

Based on the results of the background research and common regional site type information, it was expected that prehistoric sites would consist of open camps, lithic scatters, and possible occupation, and architectural sites associated with the Apishapa and Sopris phases. Historic sites were expected to consist of railroads, homesteads, and artifact scatters. Overall site density was expected to be moderate due to the proximity of the Purgatoire River. Known cultural resources are too few in number to predict the presence of a prehistoric or historic district or landscape.

Table 3. General Land Office Land Patent Records within or Near the Project Area.

Township/Range	Section	Patentee	Date	Accession Number	Authority
32S/69W	19	Beaubien, Charles. Miranda, Guadalupe	5/19/1879	COCOAA 058628	1854 Private Land Claim
32S/69W	19	Chacon, Ignacio	4/15/1884	CO1280.059	1862 Homestead Act
32S/69W	19	Chacon, Ignacio	4/15/1884	COCOAA 069686	1862 Homestead Act
32S/69W	19	Chavez, Francisquita G.	3/17/1914	393191	1862 Homestead Act
32S/69W	19	Dominiguez, Jose Ramon	4/15/1884	CO1280.054	1862 Homestead Act
32S/69W	19	Dominiguez, Jose Ramon	4/15/1884	COCOAA 073089	1862 Homestead Act
32S/69W	19	Dominiguez, Ramon	3/15/1882	CO1270.086	1862 Homestead Act
32S/69W	19	Dominiguez, Ramon	3/15/1882	COCOAA 073088	1862 Homestead Act
32S/69W	19	Mondragon, Juana G.	3/18/1913	319091	1820 Sale-Cash Act
32S/69W	19	Santiesteran, Pedro	4/15/1884	CO1280.055	1862 Homestead Act
32S/69W	19	Santiesteran, Pedro	4/15/1884	COCOAA 073090	1862 Homestead Act
32S/69W	30	Agapito, Abeyta	5/5/1904	COCOAA 073137	1862 Homestead Act
32S/69W	30	Beaubien, Charles/Miranda, Guadalupe	5/19/1879	COCOAA 058628	1854 Private Land Claim
32S/69W	31	Beaubien, Charles/Miranda, Guadalupe	5/19/1879	COCOAA 058628	1854 Private Land Claim
34S/67W	6	Beaubien, Charles/Miranda, Guadalupe	5/19/1879	COCOAA 058628	1854 Private Land Claim

V. METHODS

The guidelines set forth by the OAHP were followed to ensure that all applicable state standards for cultural resource investigations were met. The project design was tailored to meet the requirements of the mine expansion permit as determined by the Colorado Division of Reclamation, Mines, and Safety as well as the specific requirements dictated by the field conditions and cultural resources in the project area.

Fieldwork for this intensive cultural resource inventory was undertaken from August 24 to 30, 2022. Jason Weston served as the principal investigator, with fieldwork conducted by himself and Morgan Thurman. This inventory consists of 870 acres within a single block area located on state land within a portion of the Bosque del Oso SWA. Topographic maps, aerial maps, and a Trimble GPS unit loaded with shapefiles of the proposed project inventory area were used for navigation. The inventory consisted of pedestrian transects spaced not more than 20 m apart. The field personnel closely examined subsurface exposures, such as cut banks, road cuts, ant mounds, animal burrows, trails, and other disturbances, for signs of buried cultural materials. Weather during fieldwork was warm and sunny with occasional clouds. Weather conditions did not inhibit the identification of cultural resources or affect the inventory results. Ground visibility throughout the inventory areas averaged 50 percent.

The following OAHP site and isolated find definitions were adhered to:

- A site is the locus of previous (50-year age minimum) human activity at which the preponderance of evidence suggests repeated and patterned use over time, or multiple classes of activities. Certain cultural resources that represent single activity use may be considered eligible for the NRHP and will be defined as sites.
- An isolated find refers to one or more culturally modified and transportable objects representing a single activity and not found in the context of a site as defined above.

A Trimble Geo XT GPS unit with sub-meter accuracy was utilized for the mapping of cultural resource locations. All locations were provided in the North American Datum of 1983 (NAD83). All cultural resources encountered were recorded and photographed in accordance with OAHP guidelines. The photographs in this report have not been modified unless otherwise noted. Site plan view maps illustrate site boundaries, datum locations, feature locations, artifact concentrations, shovel tests (STs), and pertinent physiographic features. Artifacts are shown on site maps if they are temporally or functionally diagnostic. The proposed infrastructure, inventory areas, existing access roads, existing disturbances, and other developments are also illustrated on site maps. All encountered cultural resources were evaluated for NRHP eligibility based on their current conditions. No temporally diagnostic artifacts were encountered; therefore, no artifacts were collected during this project.

Linear sites were inventoried to a minimum of 100 ft either side of the inventory area if landowner permission was allowed. If the linear site was first identified during this project, the entire length of the resource was identified digitally and given a recommendation of eligibility. The identification of a linear resource along its entire length was conducted using historic maps and written records.

Newly recorded cultural resources were documented and photographed in accordance with OAHP guidelines. The photographs in this report have not been modified unless otherwise noted. All original photographs and field notes are on file at the CRA office in Sheridan, Wyoming.

Prehistoric and historic artifacts were identified using common local chronologies and references standard for use in Colorado, and Andrefsky (2005) was consulted during prehistoric artifact analysis. Lithic debitage was measured in the field using a template with maximum length size ranges of 1–5 cm based on 1 cm length increments. These size ranges were reported as less than or equal to 1.00 cm, 1.01–2.00 cm, 2.01–3.00 cm, 3.01–4.00 cm, 4.01–5.00 cm, and larger than 5.00 cm. Debitage cortex

was noted in terms of primary, secondary, and tertiary. Historic and modern artifacts or features were measured using inches and feet.

Subsurface testing involved the excavation of shovel tests 40 cm (16 inches) in diameter. The testing strategy placed subsurface tests in areas where sediments appeared likely to be intact, specifically two terraces along the right-descending bank of the drainages within Apache Canyon. Shovel tests were excavated in stratigraphic levels and screened through 0.64-cm (0.25-inch) hardware cloth. Sediment examination during shovel testing followed an abbreviated soil analysis as outlined in the United States Department of Agriculture's (USDA) Soil Survey Manual (Soil Science Division Staff 2017). The recorded data included the moist soil color, as established by Munsell Soil Color Charts (2000), and soil texture, as defined by the Soil Survey Manual (Soil Science Division Staff 2017:120–125). Soil texture was determined by the standard wet test of sediment for ribbon development, which indicates clay, sand, and silt proportions. Presence/absence of gravels was noted, as was the presence/absence of bedrock. The rock clast sizes used in this study are defined by the Soil Science Division Staff (2017:134) as gravels (a mix of rock ranging in size from 2 mm to 76 mm), cobbles (76–250 mm), stones (250–600 mm), and boulders (larger than 600 mm).

During the field inventory, the weather was mild with cloudy skies and did not impede CRA's ability to complete the survey. A light snow did cover the project area the day after the inventory and fieldwork, when the last of the diagnostic artifact photographs were taken. Ground visibility throughout the inventory area averaged 50 percent.

VI. RESULTS

This intensive inventory resulted in the identification of one prehistoric isolated find and one historic linear site: the historic Colorado & Wyoming Railway Southern Division spur. Additionally, there was one other find: a noted, but not recorded, steel rod of undetermined age which was set vertically into the ground.

Archaeological Sites

5LA.14542

Site Type: Historic Railroad Grade, Colorado & Wyoming Railway Southern Division
Record Type: First Recording
Temporal Association: 1900–unknown end date
Land Owner: Private
NRHP Recommendation: Eligible, Criteria A

This historic railroad grade is located within the Purgatoire River valley passing east-west along the base of the north-facing slope of a high, steep-sided ridge bounding the valley on the south side. Sediments are alluvial loam to clay loam. Vegetation consists of grasses and forbs along the railroad grade right-of-way (ROW), affording 50 percent surface visibility. Impacts to the site include erosion and removal of the railroad tracks and ties, as well as continued use as an improved access road. The site consists of 9.5 mi of an unrecorded spur of the Colorado & Wyoming Railway (Site 5LA.7112) that branches from the main line at Weston, Colorado and trends west, ending near Stonewall, Colorado.

The historic C&W Railway, Southern Division (site 5LA.7112) connecting Trinidad, Colorado in the east to Tercio, Colorado in the southwest was one of three railway segments operated by C&W in Colorado, and was established in 1899 by the CF&I to transport coal from mines to coking camps, and the coke to its steel production plants. By 1900, construction had begun on the Southern Division of the C&W Railway which would branch from the rail hub in Trinidad, Colorado and head west along

the Purgatoire River (McKenzie 1982:14, 16). In 1901, the tracks reached the Primero Mine approximately 2 mi north of Segundo, Colorado. This mine produced 3,000 to 4,000 tons of coal per day, with 800 coke ovens in Segundo processing approximately half of the coal (McKenzie 1982:33–35). The rest of the coal was hauled out via the railroad. Tracks were laid to Weston, Colorado immediately east of the current project area by the end of 1901. By April 1902, the tracks extended to the Tercio Coal Mine located approximately 3 mi southwest of the project area, accessed by an estimated 12 mi of railroad tracks laid westwards along the Purgatoire River valley and southwards into the South Purgatoire River valley (McKenzie 1982:37). McKenzie (1982) does not mention the spur line (5LA14542) that branched off to the west from Weston, nor do any of the maps in his book illustrate the line. Listings in the local business telephone directories of 1901, 1902–1903, and 1904 list the railway as headquartered at 502 Bank Building in Trinidad with their freight operations utilizing the AT&SF Railway's depot (R.L. Polk & Co. 1901, 1902–1903, 1904). The tracks between Trinidad and Segundo were realigned in 1978 when Trinidad Lake and Dam were constructed to control the seasonal flooding of the Purgatoire River (McKenzie 1982). Based on depictions of the rail line on USGS topographic maps, the C&W Southern Division was in operation until sometime between 1988, the most recent map depicting the railroad as extant, and 2010, which does not depict the line. The rails and ties were removed from the railroad grade, and the surface was converted into local automobile access roads and driveways in the intervening period (Figures 10 and 11) (USGS 1988, 2010).

The C&W Railway Southern Division is recommended as eligible for inclusion in the NRHP. This site retains integrity of location within the segment recorded, but, with the exception of the earthen grade, all railroad infrastructure has been removed. The grade has been impacted by modifications to support an improved access road. As a result of these impacts, this site does not retain integrity of design, materials, or workmanship. Additionally, the removal of railroad infrastructure and overlay by a gravel road have also impacted the integrity of setting, feeling, and association. However, construction of this historic railway was important locally and regionally for the economic contributions made by the railway in transporting large amounts of coal from area mines to fuel the steel industry and railroads throughout the twentieth century. As a result, this site is associated with events that have made a significant contribution to the broad patterns of our history (Criterion A). Records associated with the C&W Railway do not demonstrate association with the lives of significant persons in our past (Criterion B). No structures or buildings are associated with the recorded segment of this railway; therefore, it does not contain architecture that may embody the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction (Criterion C), and this site has not yielded and is not likely to yield information important in prehistory or history (Criterion D).

5LA.14542.1

Site Type: Historic Railroad Grade, Colorado & Wyoming Railway Southern Division
Record Type: First Recording
Temporal Association: 1900–unknown end date
Land Owner: Private
Project Effects/Recommendations: No avoidance

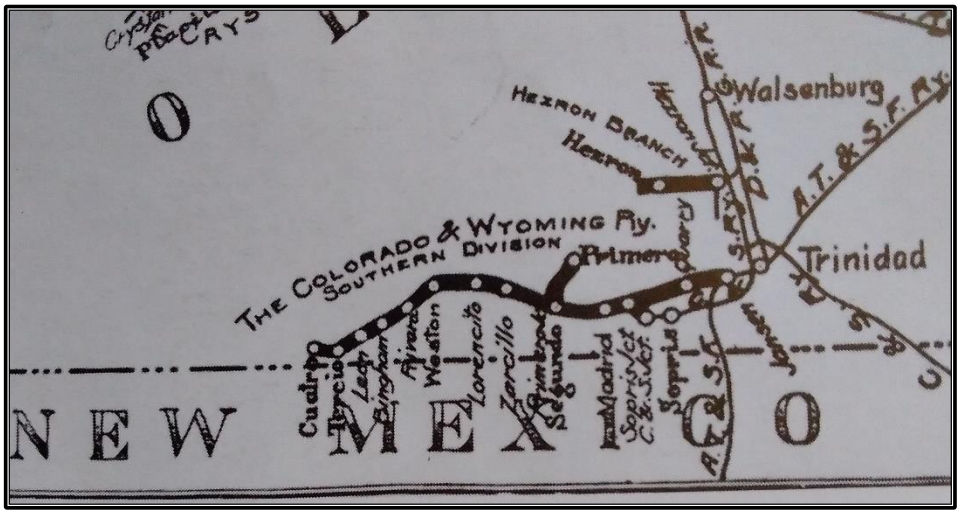

Figure 9. 5LA.7112, Historic map depicting the overall extent of the Colorado & Wyoming Railway, Southern Division route, reproduced from McKenzie (1982:12). Spur that comprises 5LA.14542 is not depicted.

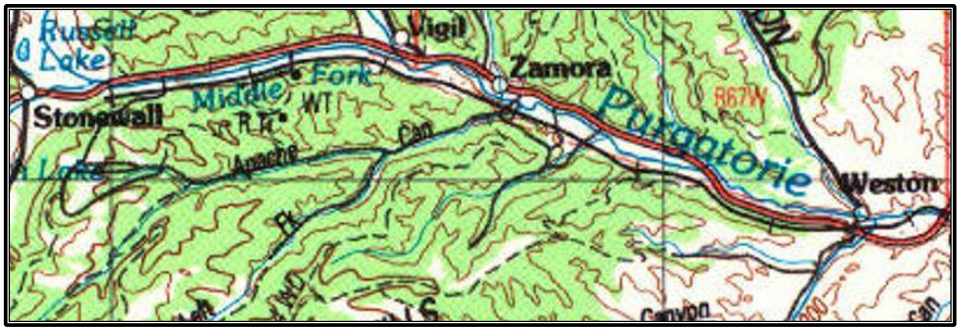

Figure 10. Adapted from USGS 1988 topographic map depicting 5LA14542.

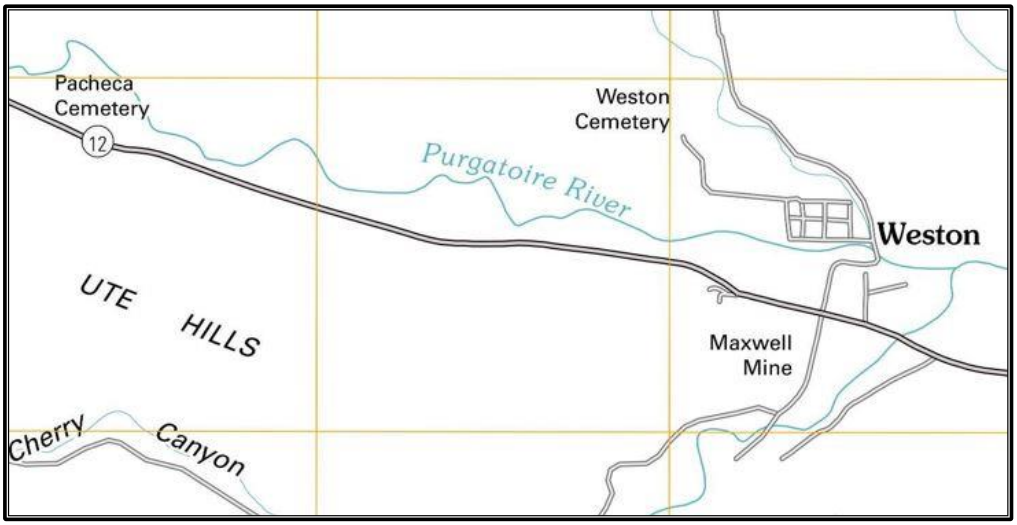

Figure 11. Adapted from USGS 2010 map. 5LA14542 is not depicted.

Segment 5LA.14542.1 consists of an earthen railroad grade located within the Purgatoire River valley passing east-west along the base of the north-facing slope of a high, steep-sided ridge bounding the valley on the south side. Sediments are alluvial loam to clay loam. Vegetation consists of grasses and forbs along the railroad grade ROW, affording 50 percent surface visibility. Impacts to the site include erosion and removal of the railroad tracks and ties, as well as continued use as an improved access road. The segment measures approximately 0.75 mi (1.2 km) long and 30 ft wide (9 m) covering 2.73 acres (11037 sq m) on a strip of privately owned land that is the width of the ROW, and passes through the northern end of the inventory area. The grade averages 30 ft (9 m) wide at the bottom and 10 to 12 ft (3.0–3.6 m) at the top, and is built up approximately 3 to 10 ft high (1.0 to 3.0 m). The railroad tracks and ties have been removed, and there are occasional piles of decomposing wood ties along the south side of the grade. The ballast has been replaced or augmented by road gravel and the surface is used as an improved access road leading to private homes and pastures along the abandoned grade. This segment does not include any bridge structures, culverts, or other historic built railway elements, or infrastructure. No access was available to this private land, so the site was recorded from the ROW fence on property managed by the Colorado Parks and Wildlife (Figures 12–15).

The C&W Railway (site 5LA.14542) is recommended as eligible for inclusion in the NRHP under Criterion A. However, segment 5LA.14542.1 does not retain physical integrity and is considered to be a non-supporting element to the overall eligibility of the site. No avoidance or further work is recommended for the segment within the current inventory area. If the railway is physically impacted by the proposed mine expansion, a determination of no adverse effect is recommended.

Figure 12. 5LA.14542.1, Site overview of the C&W Railway, Southern Division route within the inventory area, looking northeast. Photograph taken on August 29, 2022 by Jason Weston.

Figure 13. 5LA.14542.1, Site overview of the C&W Railway, Southern Division route within the inventory area, looking west. Photograph taken on August 29, 2022 by Jason Weston.

Figure 14. 5LA.14542.1, Site overview of the C&W Railway, Southern Division route within the inventory area, looking northwest. Photograph taken on August 29, 2022 by Jason Weston.

Figure 15. 5LA.14542.1, example of discarded railroad ties within the abandoned ROW. Photograph taken on August 29, 2022 by Jason Weston.

Isolated Finds

5LA.14543

Site Type: Prehistoric isolated flake
Record Type: First Recording
Temporal Association: Unknown prehistoric
Land Owner: State of Colorado
NRHP Recommendation: Not eligible
Project Effects/Recommendations: No avoidance

This prehistoric isolated find is located on flat ground on a small bench situated on the mid-slope of a steep, 30 degree, south-facing ridge slope. Sediments are residual loams with ample regolith and bedrock exposures. Erosion is the primary impact to this resource, having disturbed approximately 70 percent of the area around the isolated find. Vegetation is primarily pinyon-juniper woodlands with understory of grass, mountain mahogany, yucca, prickly pear cacti, and barrel cacti with 50 percent bare ground.

This isolated find consists of one gray chert tertiary flake measuring within size range 1.01–2.00 cm (Figures 16 and 17). No other artifacts or features are present, and this flake dates to an unknown prehistoric period.

The subsurface exposures along the ridge slope below, above, and to the sides of the bench, and the bedrock and regolith on the surface, indicate a residual depositional setting and a negligible potential for buried cultural materials to be present.

This single artifact isolated find has not yielded and is not likely to yield information important in history or prehistory. It is recommended as not eligible for inclusion in the NRHP and no avoidance or further work is recommended.

Other Finds

OF-01

This other find consists of a steel rod or pole supported in a vertical position by a small pile of rocks stacked around the base (Figures 18 and 19). Paint traces on the steel pole indicate is was painted in alternating bands of red and white. The pole stands approximately 10 ft high. This area was never surveyed historically by the GLO, nor in more recent history by the USGS, but the pole has two wires and a band of black electrical tape around the top, suggesting it may once have held a flag. This raises the possibility it was a reference point for private surveys conducted by the builders of the oil field within the inventory area. This feature cannot be demonstrated to be modern or historic in age; therefore, its location has been noted on the project map (Appendix A), but this find has not been formally recorded.

Subsurface Testing Results

Due to the ample depth of alluvial sediments within Apache Canyon, shovel testing was conducted on two terraces that did not appear to have been impacted by construction of the access road, erosion control measures, or the installation of buried feeder pipelines. Seven shovel tests were excavated at 40 m intervals within the areas of intact deep alluvial sediment (Table 4). The sediments encountered were typically sandy clay loam to loam soils ranging from black to dark brown in color from the surface down to 42 to 75 cm below surface (cmbs). Clay loam soils were encountered between 26 and 46 cmbs when present. Subsoils were contacted in ST-5 and ST-6 at 42 cmbs and 66 cmbs, respectively, and dense gravels ended excavation in ST-1, ST-2, and ST-3 at 70 cmbs and 72 cmbs. No charcoal, soil stains, fire-altered rock, or artifacts were recovered from any shovel test.

Figure 16. 5LA.14543, isolated find overview with crew member at isolate point, looking southeast. Photograph taken on August 25, 2022 by Morgan Thurman.

Figure 17. 5LA.14543, gray chert flake, dorsal surface. Scale as shown. Photograph taken on August 25, 2022 by Morgan Thurman.

Figure 18. OF-01 steel pole and rock pile of unknown modern or historic age. View to the south. Tape measure is extended to 3 ft long. Photograph taken on August 27, 2022 by Jason Weston.

Figure 19. OF-01 steel pole, close up of red and white paint remnants. Scale as shown. Photograph taken on August 27, 2022 by Jason Weston.

Table 4. Inventory Subsurface Testing Results.

Subsurface Test Type and No.	Stratigraphic or Arbitrary Levels?	Depth (cm bs)	Munsell No. and Soil Color	Soil Texture	Inclusions	Contact with Bedrock or Regolith?	Test Terminated Due To:	Results
ST-1	Stratigraphic	0-26	10YR 2/1 black	sandy clay loam	no gravel, high organic content and many fine roots	no		No cultural materials
ST-1	Stratigraphic	26-72	10YR 2/1 black	sandy clay loam	Moderate roots, 20 percent angular/tabular gravels	no	Contact with gravel layer at 72 cmbs	No cultural materials
ST-2	Stratigraphic	0-71	10YR 2/2, very dark brown	sandy loam	Moderate roots, 1 percent channery gravels	no		No cultural materials
	Stratigraphic	71-73	10YR 2/2, very dark brown	sandy loam	Few roots, 20 percent channery gravels	no	Contact with gravel layer at 72 cmbs	No cultural materials
ST-3	Stratigraphic	0- 70	10 YR 2/2 very dark brown	sandy loam	Moderate roots, 2 percent gravels	no	Contact with gravel layer at 70 cmbs	No cultural materials
ST-4	Stratigraphic	0-25	10YR 3/3 dark brown	sandy loam	Many roots, no gravels	no		No cultural materials
	Stratigraphic	25-75	10YR 4/4 dark yellowish brown	sandy loam	Few roots, 5 percent gravels	no	Sterile results, maximum depth of controlled shovel testing	No cultural materials
ST-5	Stratigraphic	0-42	10YR 2/2, very dark brown	loam	Few roots, 1 percent gravels	no		No cultural materials
	Stratigraphic	42-70	10YR 4/3, brown	clay loam	Few roots, 2 percent gravels	no	Contact with subsoil at 42 cmbs and terminated at 70 cmbs in sterile colluvial sediments	No cultural materials
ST-6	Stratigraphic	0-46	10YR 2/2, very dark brown	loam	Few roots, 1 percent gravels	no		No cultural materials
	Stratigraphic	46-66	10YR 4/3, brown	clay loam	Few roots, 2 percent gravels	no	Contact with subsoil at 42 cmbs and terminated at 66 cmbs in sterile colluvial sediments	No cultural materials
ST-7	Stratigraphic	0-18	10YR 3/3 dark brown	sandy loam	Many roots, no gravels	no		No cultural materials
	Stratigraphic	18-75	10YR 2/2, very dark brown	sandy loam	Few roots, 5 percent gravels	no	Sterile results, maximum depth of controlled shovel testing	No cultural materials

Subsurface Test
Inventory Area
State WIldlife Area
Private
Township Boundary
Quad Boundary

New Elk Coal Permit Extension

Figure 20: Subsurface Testing Location Map

0 1,960 Feet
0 560 Meters

N

1:10,000
1 inch = 833 feet
1 inch = 254 meters

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VII. MANAGEMENT CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the background research and common regional site type information, it was expected that prehistoric sites would consist of open camps and lithic scatters, as well as possible occupation and architectural sites associated with the Apishapa and Sopris phases. Historic sites were expected to consist of railroads, homesteads, and artifact scatters. Overall site density was expected to be moderate due to the proximity of the Purgatoire River. The historic C&W Railway grade was identified as anticipated, but the results of the inventory yielded a much lower cultural resource density than anticipated. There are a number of reasons for lower than anticipated site density in the area. The first is the vertical distance much of the project area is from perennial water. The Purgatoire River is within 0.25 to 2 mi from the project area horizontally, but the steep 200–400 ft ridges within the project area are a barrier to water access. Additionally, the prehistoric habitation may be limited by the lack of viable lithic material within the project area, and farmers such as the Apishapa and Sopris would have preferred the wide valley of the Purgatoire River where rich alluvial soils were present. Historically, this limited water access and poor ground for agriculture or livestock grazing would also have limited interest and development. Finally, the extensive oil field development may have disturbed the flat valleys and ridgetops where habitation would be more likely to occur.

The weather was good during fieldwork and ground visibility throughout the inventory areas averaged 50 percent, with shovel testing augmenting inventory within the areas of low surface visibility in Apache Canyon. The majority of the inventory area is in an eroding environment with little to no sediment accretion, indicating a generally low potential for intact buried cultural materials to be present.

Recommendations

During the course of this cultural resources inventory, CRA identified one new isolated find (5LA.14543), one new archaeological site (5LA.14542), and one new segment of a linear resource (5LA.14542.1). The isolated find is recommended not eligible for inclusion in the NRHP and no avoidance or further work is recommended.

Site 5LA14542, the historic C&W Railway, Southern Division, is recommended as eligible for inclusion in the NRHP under Criterion A. The segment within the current inventory (5LA.14542.1), however, lacks physical integrity and is considered to be non-supporting to the overall eligibility of the site. No avoidance of impacts to the site is recommended. Additionally, the proposed mine expansion will be entirely below ground with no surface disturbances proposed. As a result, no cultural resource will be impacted or effected and a determination of no historic properties affected is recommended for the proposed project.

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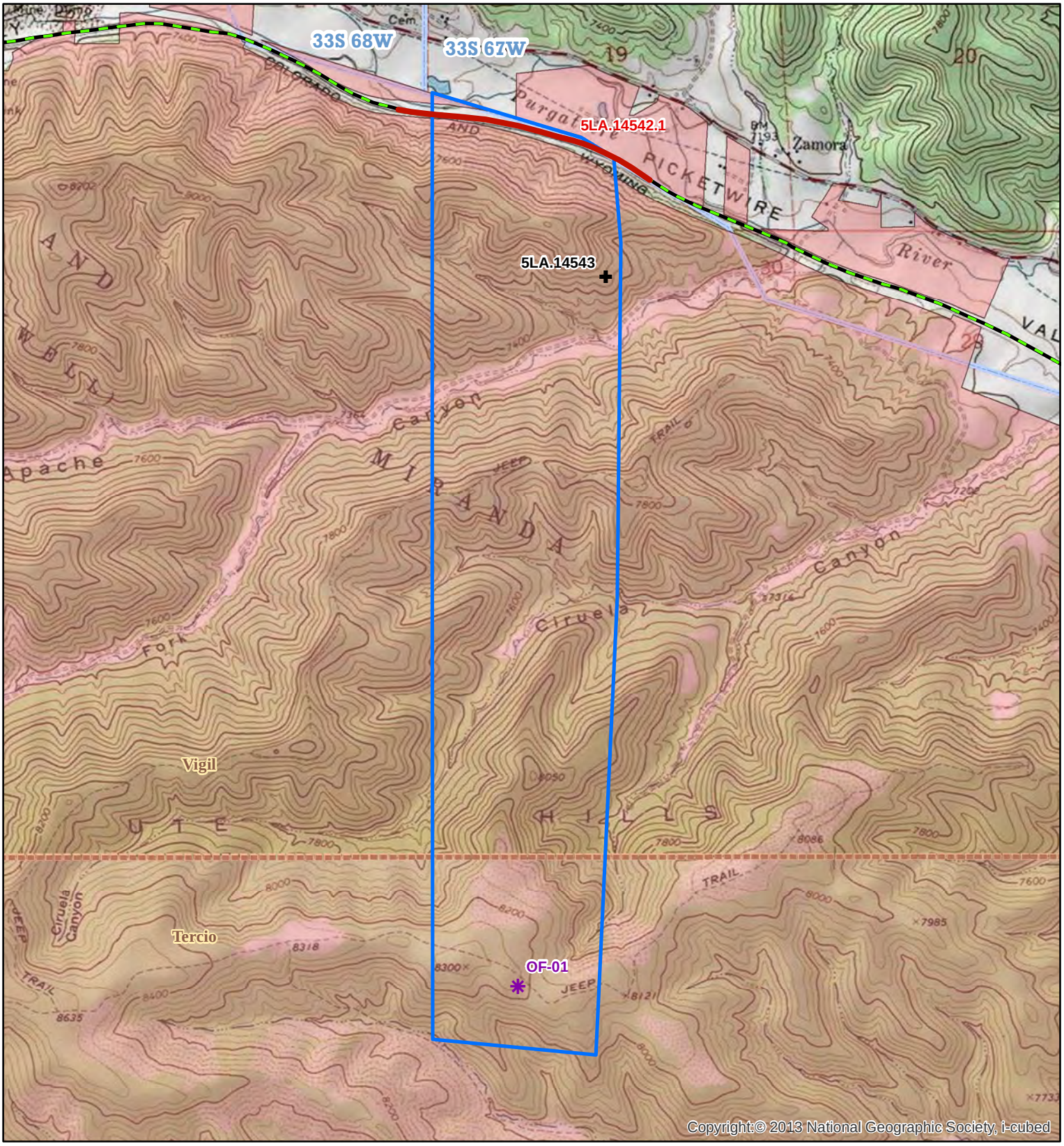
APPENDIX A: SITE AND ISOLATED FIND LOCATION MAPS

Disclosure of site locations prohibited (43CFR 7.18).



- 5LA.14542.1
- 5LA.14542 (Digitized)
- Isolated Find
- Other Find
- Inventory Area
- State WIldlife Area
- Private
- Township Boundary
- Quad Boundary

New Elk Coal Permit Extension

Figure A-1: Site and Isolated Find Location Map

0 4,400 Feet

0 1,400 Meters

N

1:24,000

1 inch = 2,000 feet

1 inch = 610 meters

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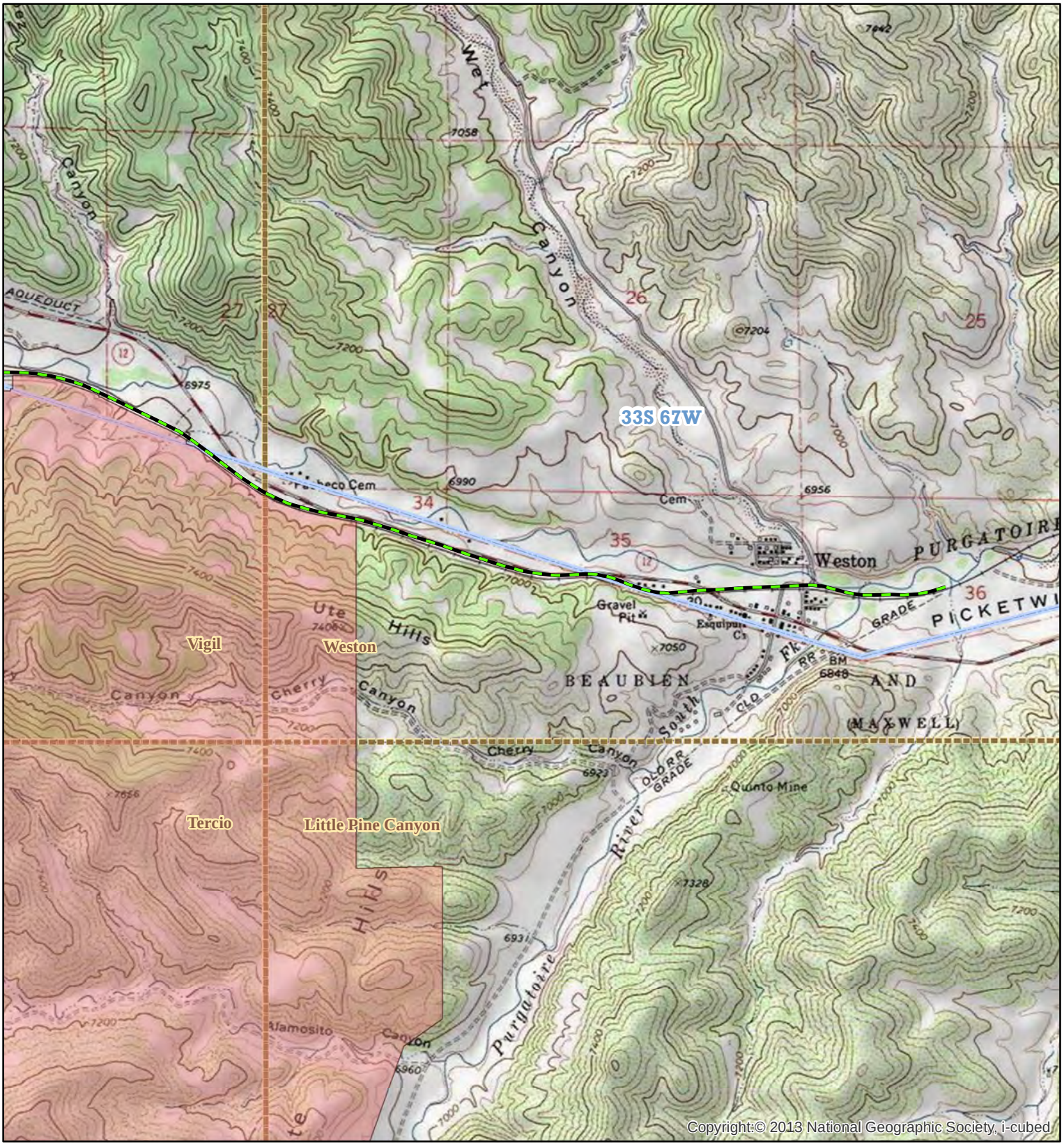

5LA.14542 (Digitized)
State WIldlife Area
Private
Township Boundary
Quad Boundary

New Elk Coal Permit Extension

Figure A-2: 5LA.14542 Site Sketch Map
Map 1 of 4

0 4,400 Feet
0 1,400 Meters

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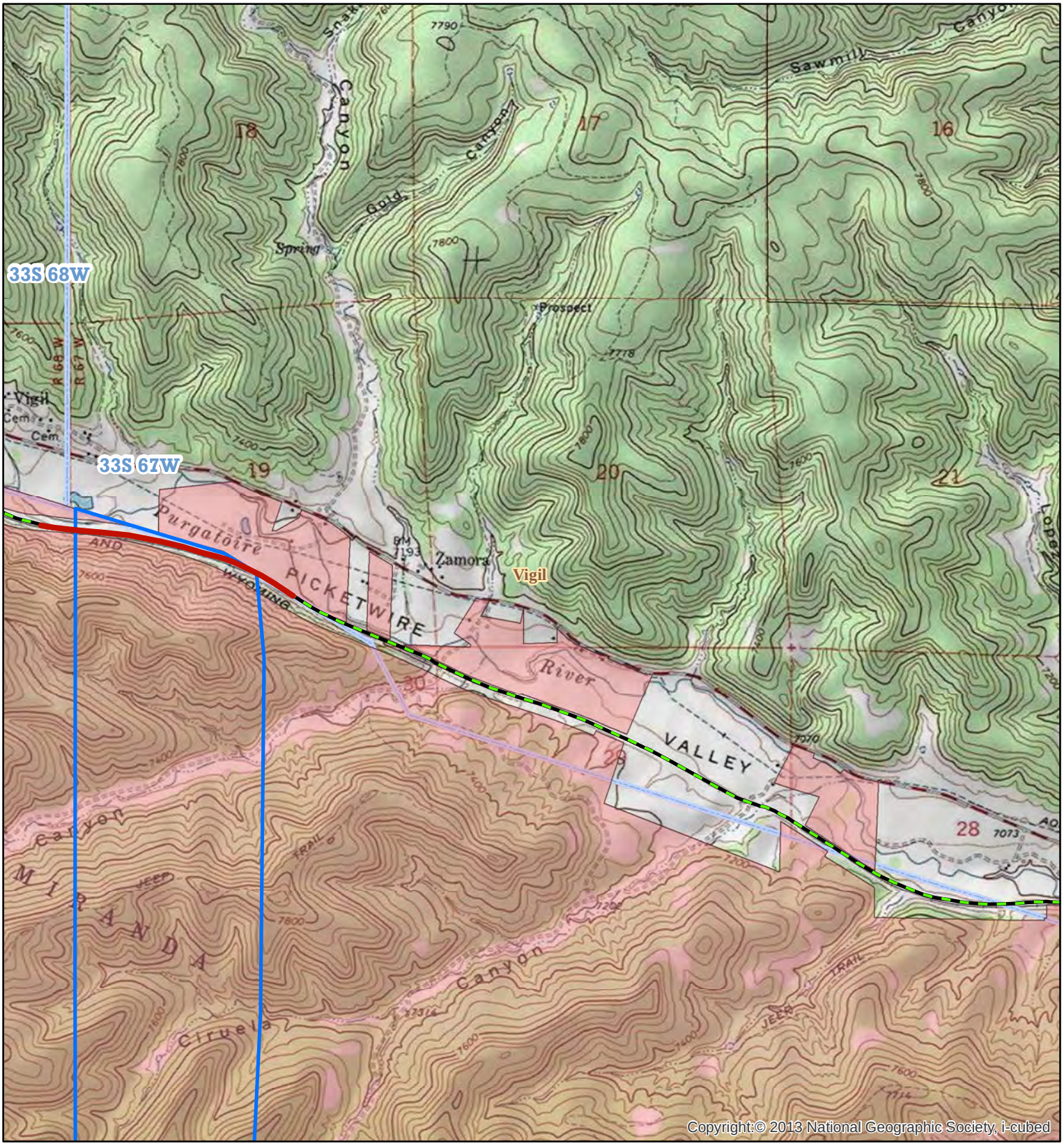

5LA.14542 (Digitized)
5LA.14542.1
Inventory Area
State WIldlife Area
Private
Township Boundary
Quad Boundary

New Elk Coal Permit Extension

Figure A-3: 5LA.14542 Site Sketch Map
Map 2 of 4

0 4,400 Feet
0 1,400 Meters

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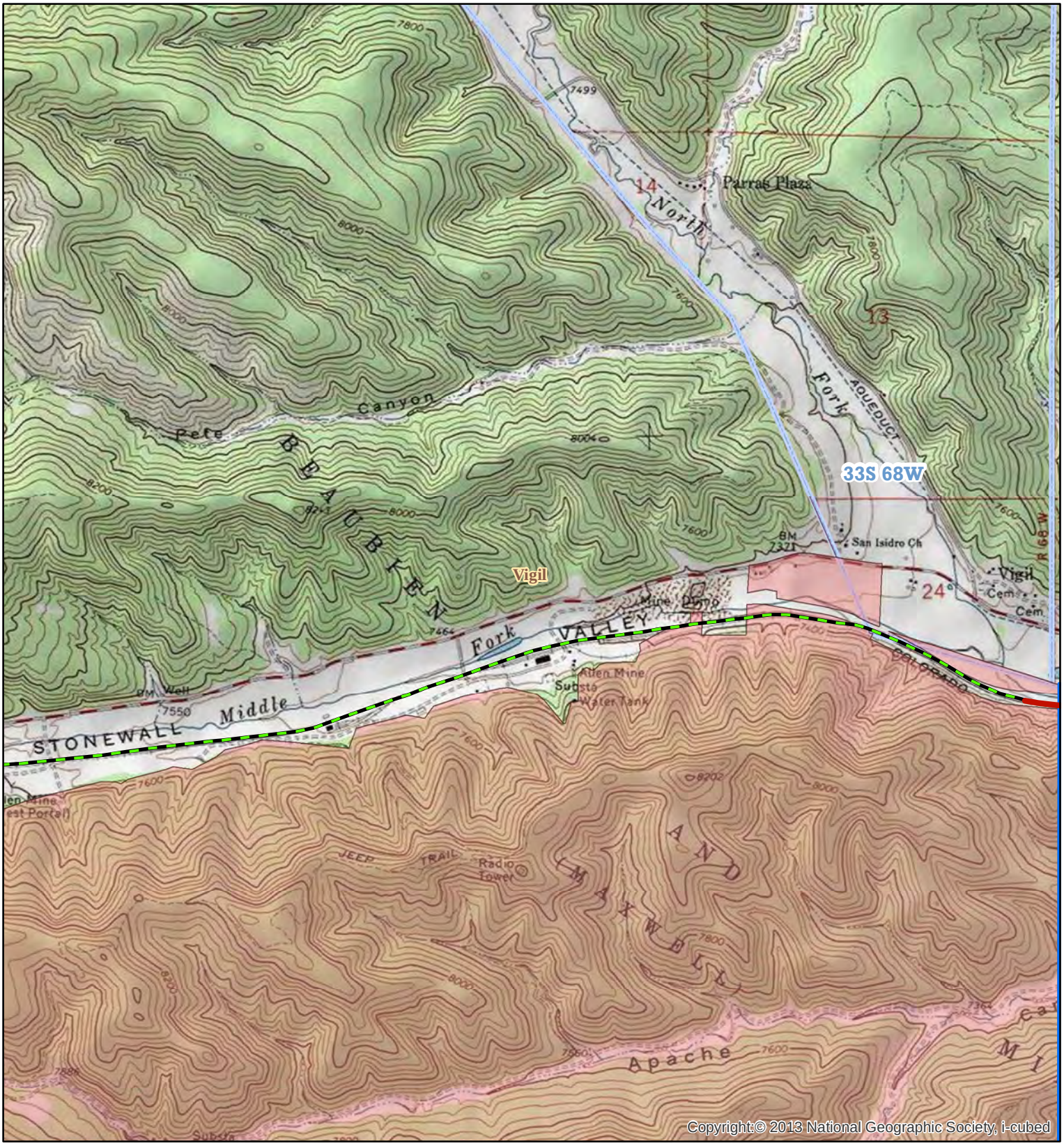

5LA.14542 (Digitized)

5LA.14542.1

Inventory Area

State WIldlife Area

Private

Township Boundary

Quad Boundary

New Elk Coal Permit Extension

Figure A-4: 5LA.14542 Site Sketch Map
Map 3 of 4

0 4,400 Feet
0 1,400 Meters

N

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1 inch = 610 meters

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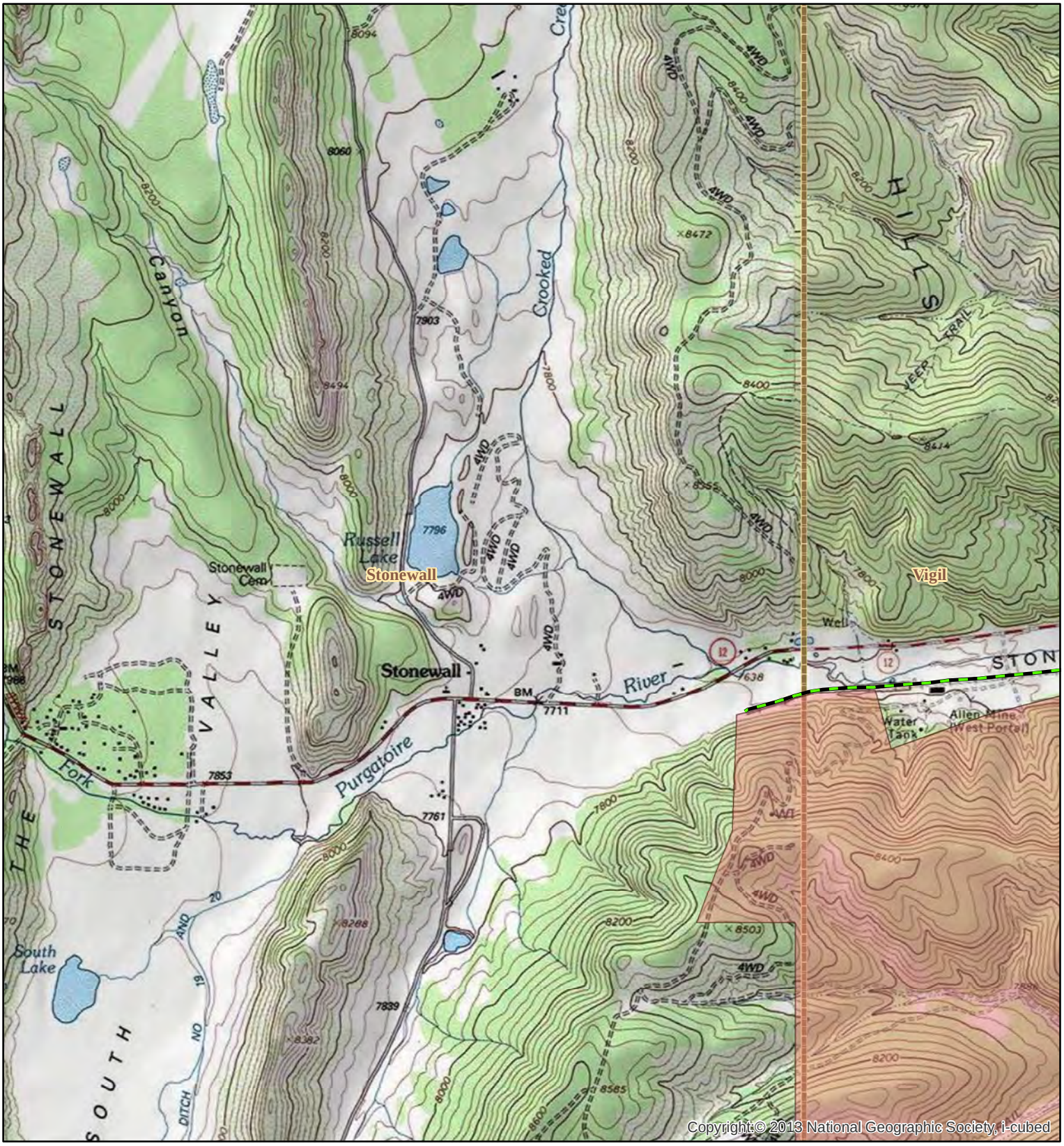

5LA.14542 (Digitized)

State WIldlife Area

Private

Quad Boundary

New Elk Coal Permit Extension

Figure A-5: 5LA.14542 Site Sketch Map
Map 4 of 4

0 4,400 Feet
0 1,400 Meters

N

1:24,000
1 inch = 2,000 feet
1 inch = 610 meters

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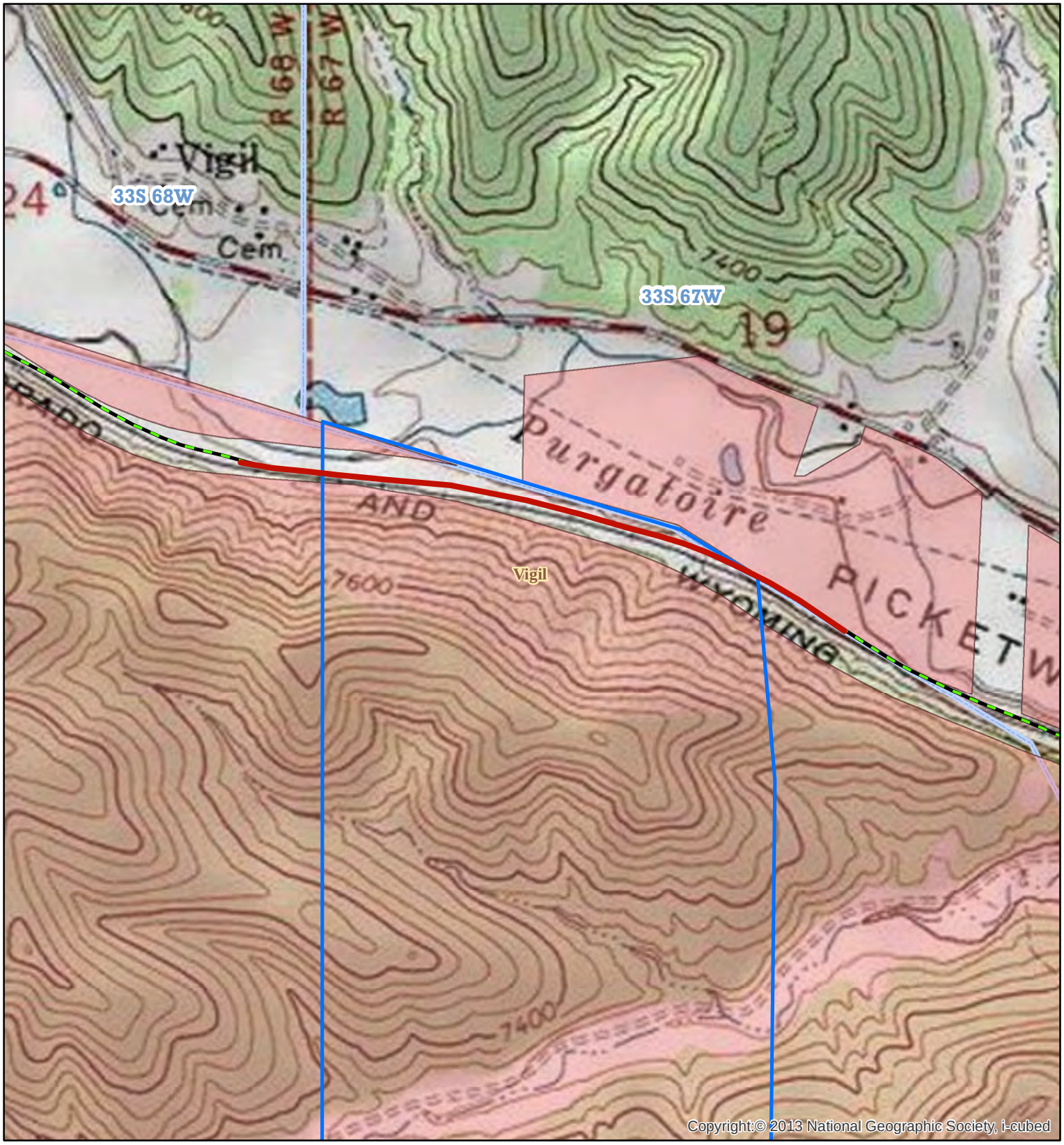

5LA.14542 (Digitized)

5LA.14542.1

Inventory Area

State WIldlife Area

Private

Township Boundary

Quad Boundary

New Elk Coal Permit Extension

Figure A-6: 5LA.14542.1 Site Sketch Map

0 1,960 Feet

0 560 Meters

N

1:10,000

1 inch = 833 feet

1 inch = 254 meters

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