

A Cultural Resources Inventory of 243 Acres of
Abandoned Uranium Mine Areas in Haystack,
McKinley County, New Mexico

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Abstract

The report details the results of the cultural resources inventory conducted in conjunction with the project entitled “*A Cultural Resources Inventory of 243 Acres of Abandoned Uranium Mine Areas in Haystack, McKinley County, New Mexico, for Arcadis*”. The report will be submitted to the Navajo Nation Historic Preservation Department and the New Mexico State Historic Preservation Office to fulfill the Section 106 requirements for compliance outlined in the National Historic Preservation Act. The project areas are located in McKinley County, New Mexico, on Navajo Allotted lands, Private, and Bureau of Indian Affairs lands. The project areas are in Sections 13, 18, 24, and 19. Township 13 North, Range 11 West, and Range 10 West, and can be found on the Bluewater, N. Mex., Photorevised 1980 7.5-minute USGS quadrangle map. The total area surveyed in conjunction with this project is 243 acres (98.34 ha). In all, four (4) newly recorded archaeological sites and nineteen (19) isolated occurrences were identified during the inventory. Archaeological clearance is recommended for the proposed undertaking provided that all stipulations prescribed in the report are followed.

Contents

Abstract	i
List of Figures.....	iii
List of Tables.....	iii
Introduction	1
Description of Undertaking	1
Location.....	2
Existing Data Review	3
Field Methods.....	9
Archaeological Inventory	9
Cultural Resources Findings.....	10
Archaeological Sites.....	10
Site: NM-R-48-41/ LA187962 (Figure 6).....	10
Site: NM-R-48-42 (Figure 7).....	10
Site: LA187963 (Figure 8).....	11
Site: LA187964 (Figure 9).....	11
Site: OCA TOD: 210	12
Isolated Occurrences.....	17
Traditional Cultural Properties	17
Ethnographic Inquiry.....	18
Evaluation of Significance.....	20
Recommendations	23
References Cited.....	23

List of Figures

Figure 1: Map showing the project areas and identified cultural resources, (DCRM 2016-66).	4
Figure 2: Map showing the project areas and identified cultural resources, (DCRM 2016-66).	5
Figure 3: Map showing the project area and identified cultural resources, (DCRM 2016-66).....	6
Figure 4: Map showing the project areas and identified cultural resources, (DCRM 2016-66).	7
Figure 5: Overview of the project areas and identified archaeological sites, (DCRM 2016-66).	8
Figure 6: General site map of NM-R-48-41, (DCRM 2016-66).	13
Figure 7: General site map of NM-R-48-42, (DCRM 2016-66).	14
Figure 8: General site map of LA187963, (DCRM 2016-66).	15
Figure 9: General site map of LA187964, (DCRM 2016-66).	16

List of Tables

Table 1: Acreage of the nine project areas in McKinley Co, NM.	2
Table 2. UTM Coordinates, Legal Descriptions, and USGS Maps for the nine project areas in McKinley Co, NM....	2
Table 3. List of identified isolated occurrences within the nine project areas in McKinley Co, NM.	17
Table 4: NHPA, ARPA, AIRFA, and NAGPRA Evaluation of Identified Cultural Resources documented within the nine project areas in McKinley Co, NM.	21

Introduction

Between November 8th and 11th, 2016, Jeremy Begay, Matthew Martin, Jeffrey Begay, and Arlo Werito, archaeologists with Dinétahdóó Cultural Resources Management (DCRM), conducted an archaeological inventory of the Haystack Mines Site located in McKinley County, New Mexico (Site). The project encompasses Bureau of Indian Affairs (BIA) lands (Section 13), Indian Allotments (Sections 18 and 24), and privately-held lands (Section 19). The work was completed in the presence of the United States Environmental Protection Agency (USEPA) and Navajo Nation EPA and under the oversight of Arcadis.

Because the cultural resources inventory took place on privately-owned lands in Section 19, pre- and post-field consultation is standard practice. The cultural resources inventory was conducted with permission of land owners. Sections 13, 18, and 24 fall under Navajo Nation Historic Preservation Department (NNHPD), which does not require pre-field consultation. However, post-field coordination with the NNHPD and New Mexico State Historic Preservation Office (NMSHPO) was determined to be appropriate for the cultural resources inventory.

Four newly documented archaeological sites and 19 isolated occurrences (IOs) were identified and evaluated during the inventory. This cultural resources inventory was completed under the NNHPD permit number B16953 and State of New Mexico permit # NM-17-236-S.

Description of Undertaking

Per the Administrative Settlement Agreement and Order on Consent for Removal Action (AOC; Comprehensive Environmental Response, Compensation, and Liability Act Docket No. 09-2017-02 and Docket No. 06-02-17) executed between the USEPA and BNSF, Arcadis will perform radiation surveys of the mine areas, potentially excavate material from the areas of concern, and consolidate the excavated material (e.g., within the former reclaimed mine area on Section 19). The area of effect totals approximately 173.02 acres (70.02 ha). The area of effect can be described as the geographic area or areas within which an undertaking may or will cause actual ground disturbance. A breakdown of the acreage numbers and land status for each of the nine project areas (depicted on Figures 1 through 5) can be found below in Table 1.

Table 1: Acreage of the nine project areas in McKinley Co, NM.

Designation	Land Status	Area of Effect (acres)	Total Area Surveyed (acres)
Haystack	Bureau of Indian Affairs	13	18
Section 24	Indian Allotment	27	52
Bibo Trespass	Indian Allotment, Sec 18	1	42
	Bureau of Indian Affairs, Sec 13	22	
Haystack No.1	Indian Allotment, Sec 18	8	12
	Private, Sec 19	96	107
Western Drainage 1	Bureau of Indian Affairs	1	2
Western Drainage 2/ Road	Bureau of Indian Affairs	1	2
Residential	Indian Allotment	2	4
Northeast Drainage and road	Indian Allotment, Sec 18	0.02	1
	Private, Sec 19	1	2
Eastern Stockpile	Private	1	1
Totals		173.02	243

Location

The project areas are located in the Baca/Prewitt Chapter in McKinley County, New Mexico, on Navajo Allotted, Private, and Bureau of Indian Affairs lands (Figures 1 thru 5). Table 2 provides the UTM coordinates and legal descriptions of the project areas.

Table 2. UTM Coordinates, Legal Descriptions, and USGS Maps for the nine project areas in McKinley Co, NM.

Designation	UTM Coordinates: Zone 13 (NAD 83)		Legal Description (NMPM; Sections Projected)						7.5 min USGS Quad	
	Northing	Easting	¼	¼	¼	Sec	T	R		
Haystack										
Centerpoint	3915998	231695	NE	SW	SE	13	13N	11W	Bluewater, N. Mex., Photorevised 1980	
Section 24										
Centerpoint	3915501	232108	SE	NE	NE	24	13N	11W		
Bibo Trespass										
Centerpoint	3915827	232084	SE	SE	SE	13	13N	11W		
Haystack No.1										
Centerpoint	3915423	232443	SE	NW	NW	19	13N	10W		
Western Drainage 1										
Centerpoint	3915882	231709	SE	SW	SE	13	13N	11W		
Western Drainage 2/ Road										
Centerpoint	3915861	231861	SW	SE	SE	13	13N	11W		
Residential										
Centerpoint	3915709	232302	SW	SW	SW	18	13N	10W		
Northeast Drainage										
Centerpoint	3915611	232852	NE	NE	NW	19	13N	10W		
Eastern Stockpile										
Centerpoint	3915530	233021	NW	NW	NE	19	13N	10W		

Existing Data Review

Prior to the fieldwork, a records check was conducted at the NNHPD in Window Rock, Arizona, to determine the extent of previous cultural resources inventories. The review indicated that numerous previous projects have been conducted within 300 ft of the project areas and that one previously identified archaeological site was recorded within the project area. Previously identified archaeological site OCA TOD: 210 was observed to be in the northern sector of the project area, however, during the file search at NNHPD, DCRM archaeologists were unable to find any documentation of the site literature. In addition to the records search at NNHPD, DCRM archaeologists conducted a records search using the State of New Mexico NMCRIS online records system. The NMCRIS system did not have a recording of OCA TOD: 210 in their files. A thorough check of the site area during the field survey determined that OCA TOD: 210 has been destroyed and that no evidence of cultural remains is present at the location presented on the maps in NMCRIS.

The Sacred Places files located at NNHPD's Traditional Culture Program, which contains records of sacred places throughout the reservation, was researched to determine if any previously identified sacred places are located within 1 mile (1.609 km) of the project area. The records check indicated that three recorded sacred places are located within one mile of the project area including Dzil lichii (Red Mountain/Haystack Mesa), Yei'Tsoh Bidil (Big Yei's Mesa), and Naa'Aghani (Killing Eyes). Consultations with the NNHPD Traditional Cultural Program personnel determined that the previously identified traditional cultural properties will not be impacted by the proposed activities and that the undertaking can proceed as planned.

Figure 1: Map showing the project areas and identified cultural resources, (DCRM 2016-66).

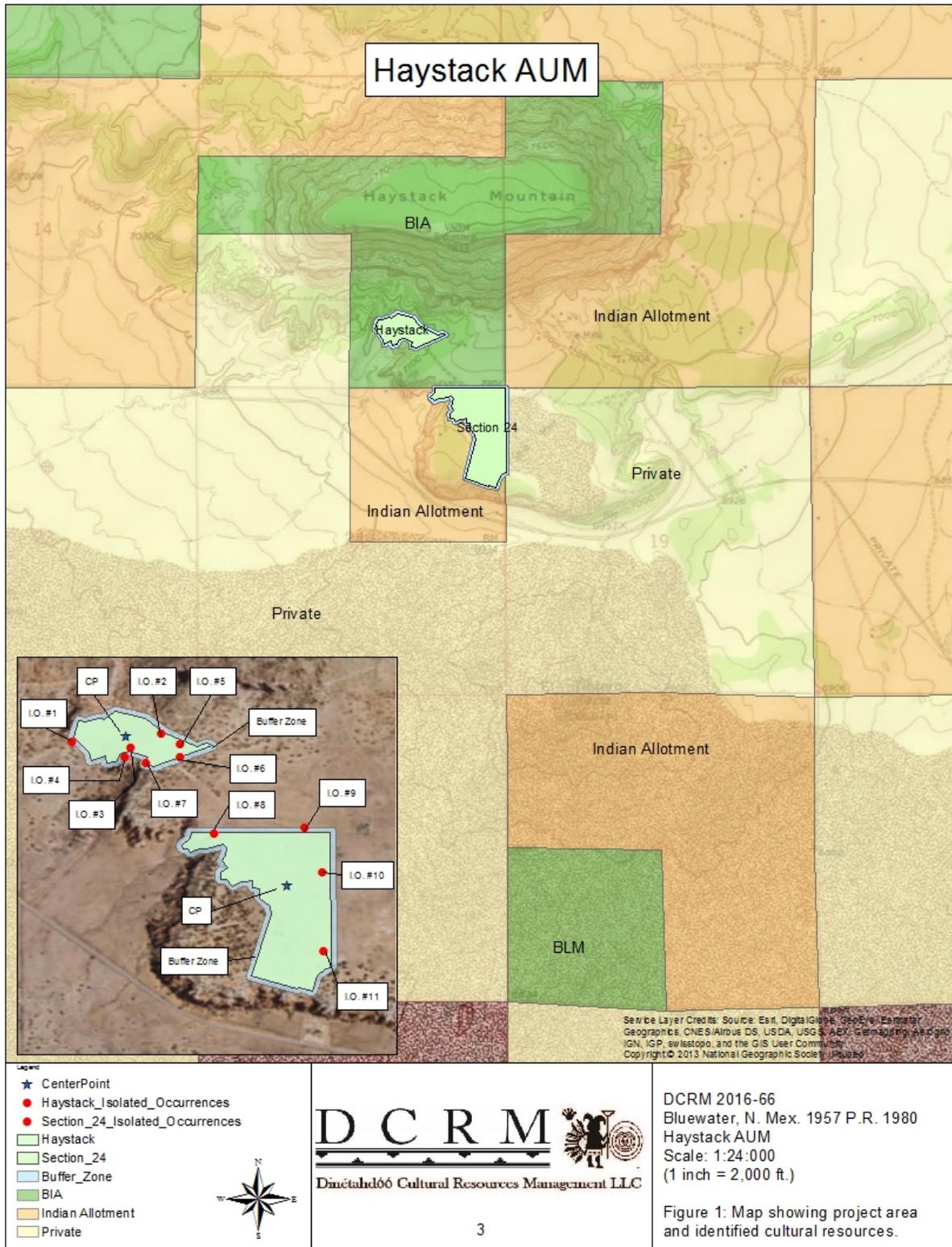


Figure 2: Map showing the project areas and identified cultural resources, (DCRM 2016-66).

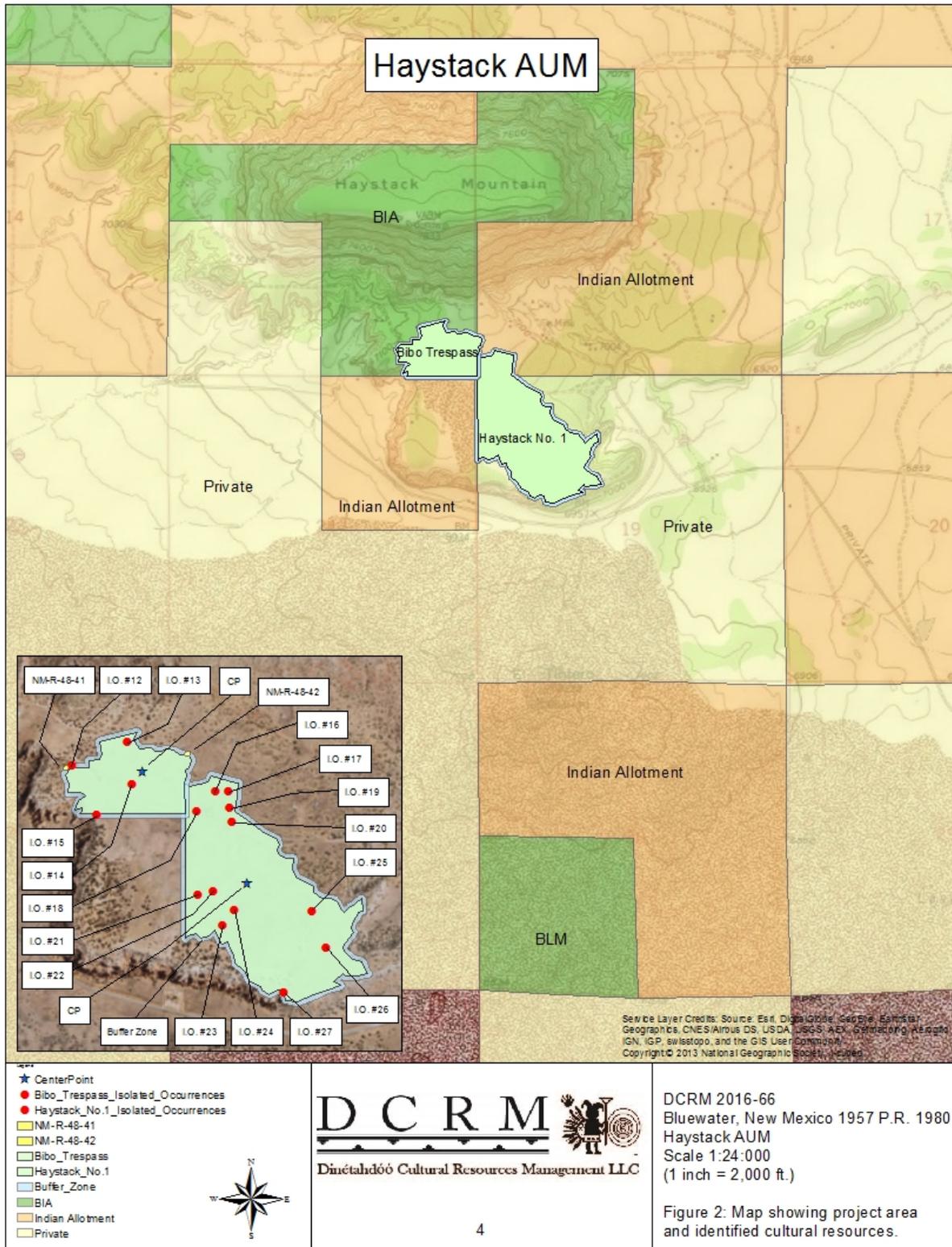


Figure 3: Map showing the project area and identified cultural resources, (DCRM 2016-66).

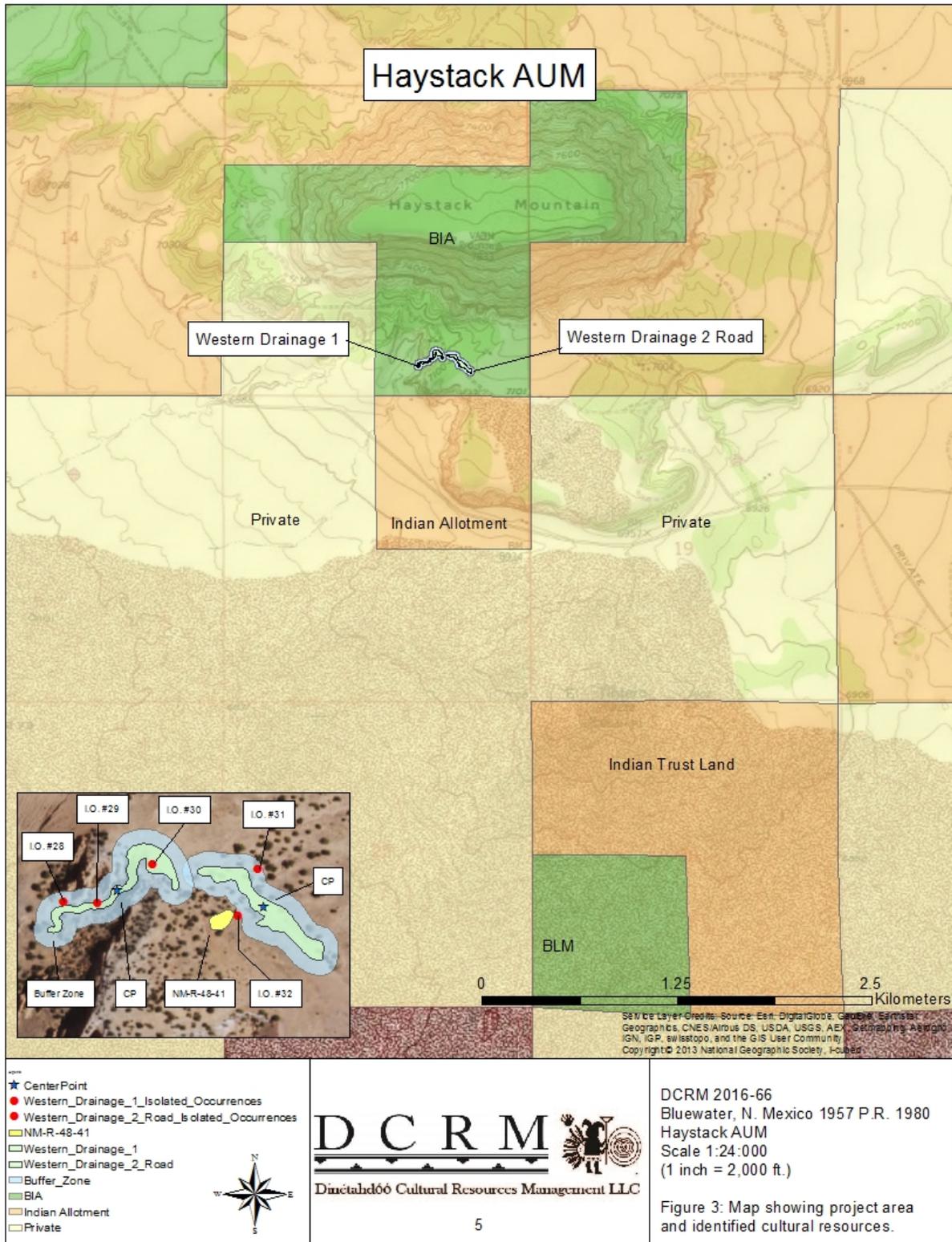


Figure 4: Map showing the project areas and identified cultural resources, (DCRM 2016-66).

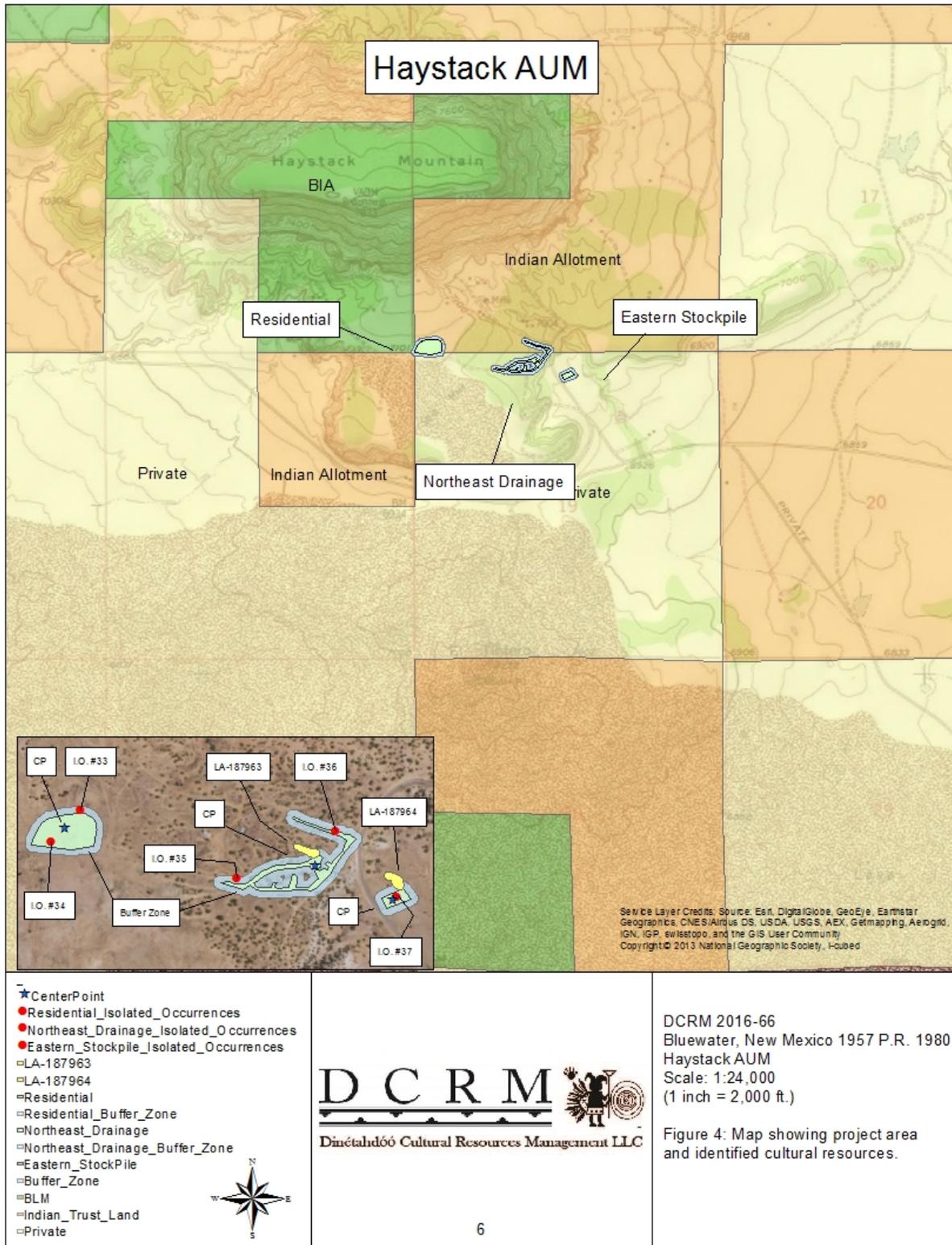
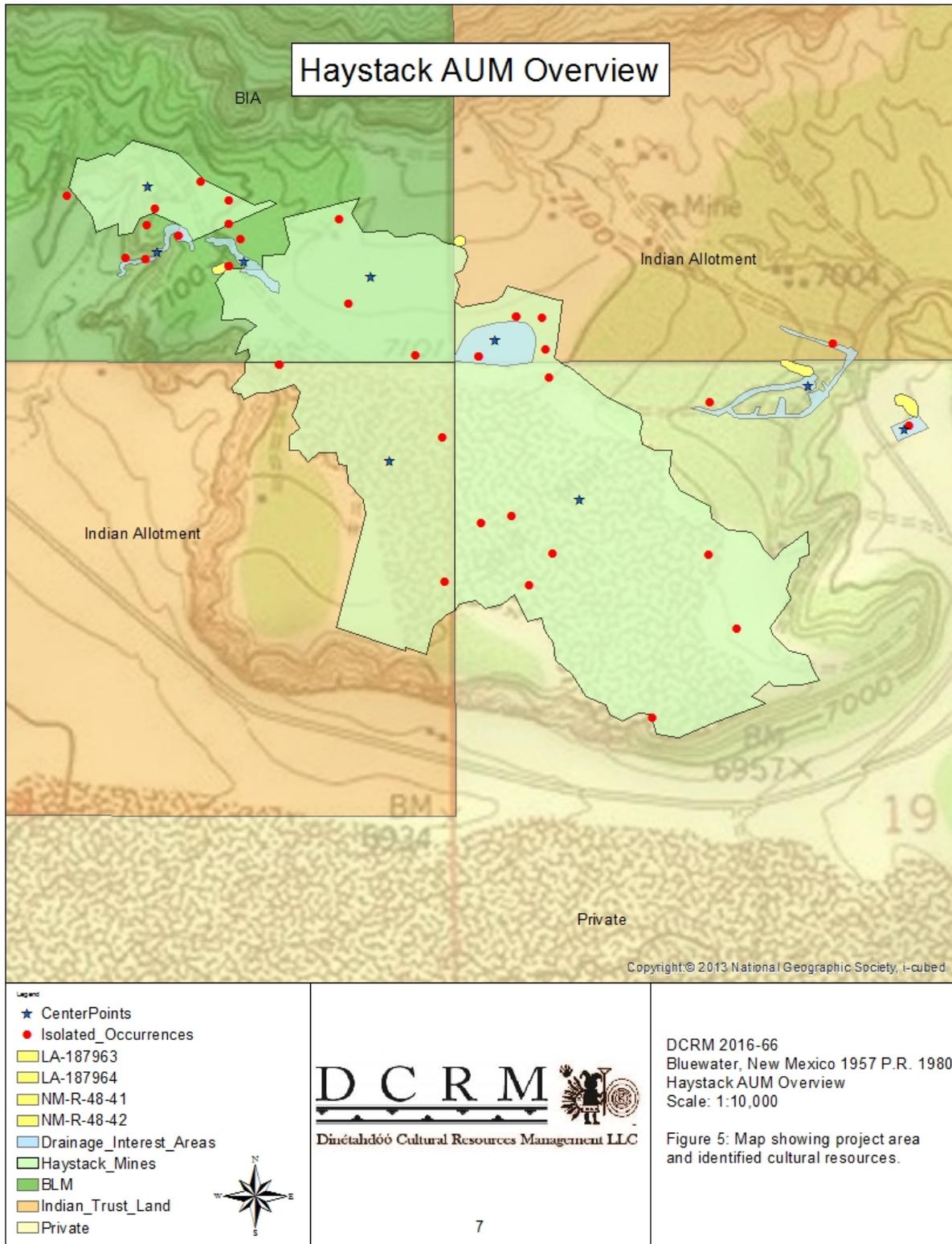


Figure 5: Overview of the project areas and identified archaeological sites, (DCRM 2016-66).



Environmental and Cultural Setting

The project area is located in the Zuni Uplift geological region, a large, sedimentary landmass that was uplifted during the onset of the Laramide Orogeny during the Cretaceous-Tertiary transition. A considerable amount of tectonic activity exposed numerous geologic facies ranging in age from the Neogene to the Precambrian. Erosion of the numerous facies has produced a multitude of geographic features and geologic structures, such as the Hogback, Fenced Up Horse Canyon, Zuni Mountains, Oso Ridge, and the Malpais badlands. Within the uplift, strata representing marine transgressive and nonmarine regressive cycles have been exposed as well as Precambrian basement rock, producing redeposited packages of fine- to coarse-grained alluvial, fluvial, colluvial, residual, and aeolian sand, silt, clay, and multi-lithic sand. Outcrops of sedimentary, metamorphic, and igneous bedrock as well as pebble- to boulder-sized clasts derived from these outcrops are scattered throughout the region. Situated in the mixed conifer environ, the Zuni Uplift supports such flora as ponderosa and pinyon pine, juniper, gambel oak, aspen, green ephedra, sagebrush, Indian ricegrass, ring muhly, blazing star, and alkali sacaton.

The Navajo name for Baca/Prewitt is Kinligaii, which, when translated, means White House. The chapter includes the communities of Prewitt, Haystack, South Chavez, and Blue Water. It is in the outer most area of the Eastern Navajo Agency extending to the southeast. Brothers Bob and Harold Baca set up a trading post in 1916, which is why the Navajo people referred to the community as Baca (LSR Innovations: 2004).

Field Methods

Between November 8th and 11th, 2016, Jeremy Begay, Matthew Martin, Jeffrey Begay, and Arlo Werito, archaeologists with DCRM, conducted the cultural resources inventory. The archaeologists were accompanied by Arcadis Radiological Technicians, who guided the archaeologists through the project areas.

Archaeological Inventory

The project areas were inventoried by walking parallel transects with archaeologists spaced no more than 10 m (approximately 33 ft.) apart. A 50-ft. buffer zone was added to the boundaries of the project areas. Approximately 243 acres (98.34 ha) in total was inventoried in conjunction with the project.

The four archaeological sites were recorded after the completion of the survey. The sites were recorded using a metric tape measure, protractor, ruler, and a compass, and sufficient notes were taken to complete Navajo Nation and Laboratory of Anthropology Site Survey and Management Forms in the office. Locations of the cultural resources identified during the inventory were recorded using a hand-held Global Positioning Satellite (GPS) unit. The site forms were filled out in-house once fieldwork was completed.

Isolated occurrences were recorded upon discovery once they had been determined not to be associated with an archaeological site. The locations of all isolated occurrences identified during the inventory were recorded using a hand-held GPS unit.

Cultural Resources Findings

Four (4) newly documented archaeological sites, one (1) previously identified archaeological site, and nineteen (19) isolated occurrences were identified or reassessed during the survey. The archaeological information is combined with the interview data in the following site descriptions.

Archaeological Sites

Site: NM-R-48-41/ LA187962 (Figure 6)

USGS Map Reference: Bluewater, N. Mex., P.R. 1980

Legal Location: SW $\frac{1}{4}$, SE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec 13, T13N, R11W

UTM (NAD83): Zone 13, N 3915856, E 0231823

Land Status: Bureau of Indian Affairs

State: New Mexico County: McKinley

Site Type: Historic Anglo Artifact Scatter

Site Size: 18 x 18m

Site Setting: NM-R-48-41 is located on the south side of a west oriented drainage.

Site Description: NM-R-48-41 is an Anglo artifact scatter with no identified or recorded features that may be related to historic mining activities. The site is composed entirely of a concentration of artifacts with several additional artifacts located in close relation to the concentration. The artifact concentration is composed of 30+ clear and brown glass fragments, 17 crushed metal side seam solder top cans, 1 metal screw on cap, and 1 perforated metal exhaust pipe. No other artifacts were observed in the site area. An in-field, non-intrusive assessment determined that NM-R-48-41 does not contain any subsurface cultural remains.

Site: NM-R-48-42 (Figure 7)

USGS Map Reference: Bluewater, N. Mex., P.R. 1980

Legal Location: SW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec 18, T13N, R10W

UTM (NAD83): Zone 13, N 3915878, E 0232249

Land Status: Navajo Allotment

State: New Mexico County: McKinley Chapter: Baca/Prewitt

Site Type: Historic Navajo Corral

Site Size: 23 x 21m

Site Setting: NM-R-48-42 is located on a broad slope on the south side of Haystack Mesa.

Site Description: NM-R-48-42 is a historic Navajo corral with two identified features. Feature 1 is a limestone structure that measures 4 x 3m. Feature 1 is constructed of 11 large limestone blocks in a square pattern. The blocks are dry-laid of simple construction, two courses high. Feature 2 is a fence line measuring 8m in length composed of ax cut pinyon pine poles connected with two strands barbed wire. Feature 2 was laying on the ground at the time of recording. No other features or artifacts were observed during the inventory. DCRM archaeologists observed a difference in vegetation in the southern sector of the site which may be a result of accumulated livestock waste residues. An in-field, non-intrusive assessment determined that NM-R-48-42 does not contain any subsurface materials.

Site: LA187963 (Figure 8)

USGS Map Reference: Bluewater, N. Mex., P.R. 1980

Legal Location: NE ¼, NE ¼, NW ¼, Sec 19, T13N, R10W

UTM (NAD83): Zone 13, N 3915693, E 0232837

Land Status: Private

State: New Mexico County: McKinley

Site Type: Archaic En Medio Temporary Camp

Site Size: 22 x 63m

Site Setting: LA187963 is located within an east oriented drainage on the south side of Haystack Mesa.

Site Description: LA187963 is an Archaic En Medio temporary camp with two identified features and a scattering of artifacts. Feature 1 is an ash stain measuring 1m in diameter located in the western sector of the site area. Feature 1 has been exposed in a drainage area with fire cracked rock fragments associated with the feature located east in the drainage area. A sandstone mano fragment was also located near the feature area. Feature 2 is a slab lined hearth measuring 1m in diameter consisting of 1 upright sandstone slab and two additional slabs located on the south side of the feature. The oxidized sandstone slabs enclose a concentration of ash stained soil. Materials from F2 are being redeposited down gradient to the north by natural erosional processes. DCRM archaeologists observed several artifacts scattered throughout the site area consisting of 17 flaked lithic artifacts to include; flakes of all stages of reduction, radial cores, an En Medio petrified wood projectile point, 1 one handed sandstone mano fragment, 3 sandstone slab metate fragments, and 20+ oxidized sandstone fragments. No other features or artifacts were observed within the site boundaries. An in-field, non-intrusive assessment determined that LA187963 may contain subsurface cultural materials possibly up to 0.5m in depth.

Site: LA187964 (Figure 9)

USGS Map Reference: Bluewater, N. Mex., P.R. 1980

Legal Location: NW ¼, NW ¼, NE ¼, Sec 19, T13N, R10W

UTM (NAD83): Zone 13, N 3915574, E 0233027

Land Status: Private

State: New Mexico County: McKinley

Site Type: Anasazi PI-P II Habitation

Site Size: 64 x 26m

Site Setting: LA187964 is located on a south oriented alluvial fan.

Site Description: LA187964 is a prehistoric Anasazi PI-P II habitation consisting of 5 features. Feature 1 is a rubble mound measuring 3 x 2m constructed of unshaped limestone blocks and slabs. No wall alignments were visible as the structure has collapsed. Several ceramic sherds and lithic artifacts were observed in and around the feature area. Feature 2 is an ash stain measuring 1m in diameter consisting of a concentration of ash stained soil. No fire cracked rock was observed in or around the feature area. Feature 3 is a rubble mound measuring 7m in diameter located adjacent to F2 on the south side. Feature 3 is composed mostly of unshaped limestone blocks and slabs with no visible wall alignments or wall fall. It is unknown how many rooms may be buried beneath the detritus. As with feature 2, several ceramic sherds and lithic artifacts were observed in and around the feature area. Feature 4 is a midden measuring 3m in diameter

consisting of 800+ ceramic sherds to include; Kiatuthlanna, Red Mesa, Gallup, Escavada, and Puerco Black on white, Chaco and indented Corrugated, and numerous other unidentified grey and white ware sherds. 100+ lithic artifacts to include; flakes of all stages of reduction, tested and exhausted cores, and a biface tool of obsidian, grey and white chert, petrified wood, and grey and brown quartz, 1 basalt metate fragment, and 50+ sandstone fire cracked rock fragments in an ashy soil matrix. Materials from Feature 4 are being redeposited down gradient to the south and east by natural erosional processes. Feature 5 is a northeast to southwest oriented rubble mound measuring 8 x 4m adjacent to Feature 4 on the south side. Feature 5 contains five upright sandstone slabs forming a wall alignment on the southeast side of the feature although it is unknown how many rooms are present underneath the detritus. No other features or artifacts were observed or recorded. An in-field, non-intrusive assessment determined that LA187964 may contain subsurface deposits possibly up to 1m in depth.

Site: OCA TOD: 210

USGS Map Reference: Bluewater, N. Mex., P.R. 1980

Legal Location: NW ¼, SE ¼, SE ¼, Sec 13, T13N, R11W

UTM (NAD83): Zone 13, N 3916034, E 0231972

Land Status: Navajo Allotment

State: New Mexico

County: McKinley

Chapter: Baca/Prewitt

Site Type: Unknown

Site Size: NA

Site Setting: OCA TOD: 210 was located in a west oriented drainage.

Site Description: Previously recorded archaeological site OCA TOD: 210 was identified on the NNHPD records maps in Window Rock, AZ. No literature was found in the records at NNHPD or in the State of New Mexico NMCRIS online system, therefore, DCRM archaeologists did not know what materials or structures were present in the site area. A thorough field check of the area during the survey determined that no cultural materials are present and that OCA TOD: 210 has been destroyed by past mine reclamation activities. An in-field, non-intrusive assessment determined that no subsurface materials are present in the area.

Figure 6: General site map of NM-R-48-41, (DCRM 2016-66).

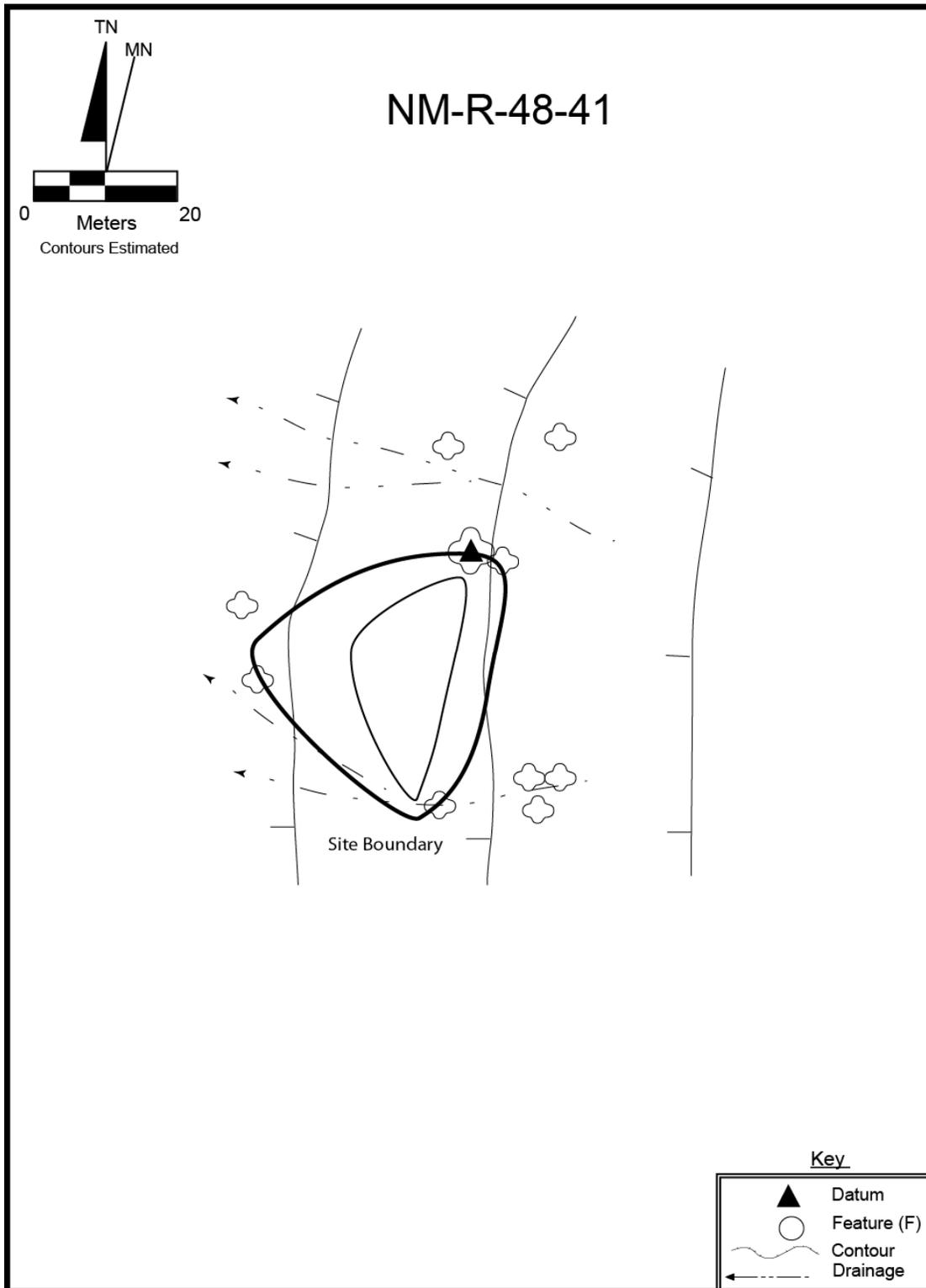


Figure 7: General site map of NM-R-48-42, (DCRM 2016-66).

NM-R-48-42

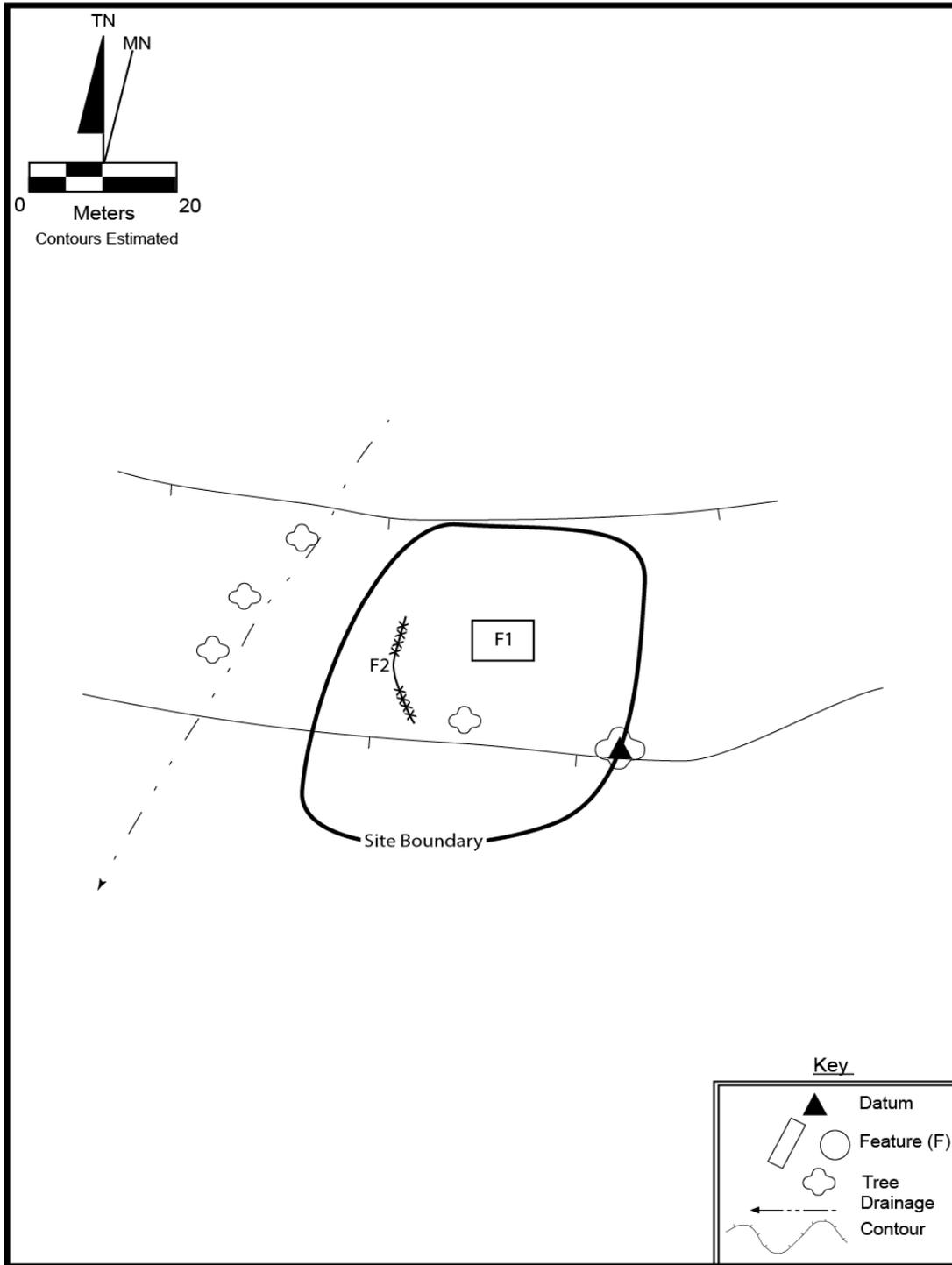


Figure 8: General site map of LA187963, (DCRM 2016-66).

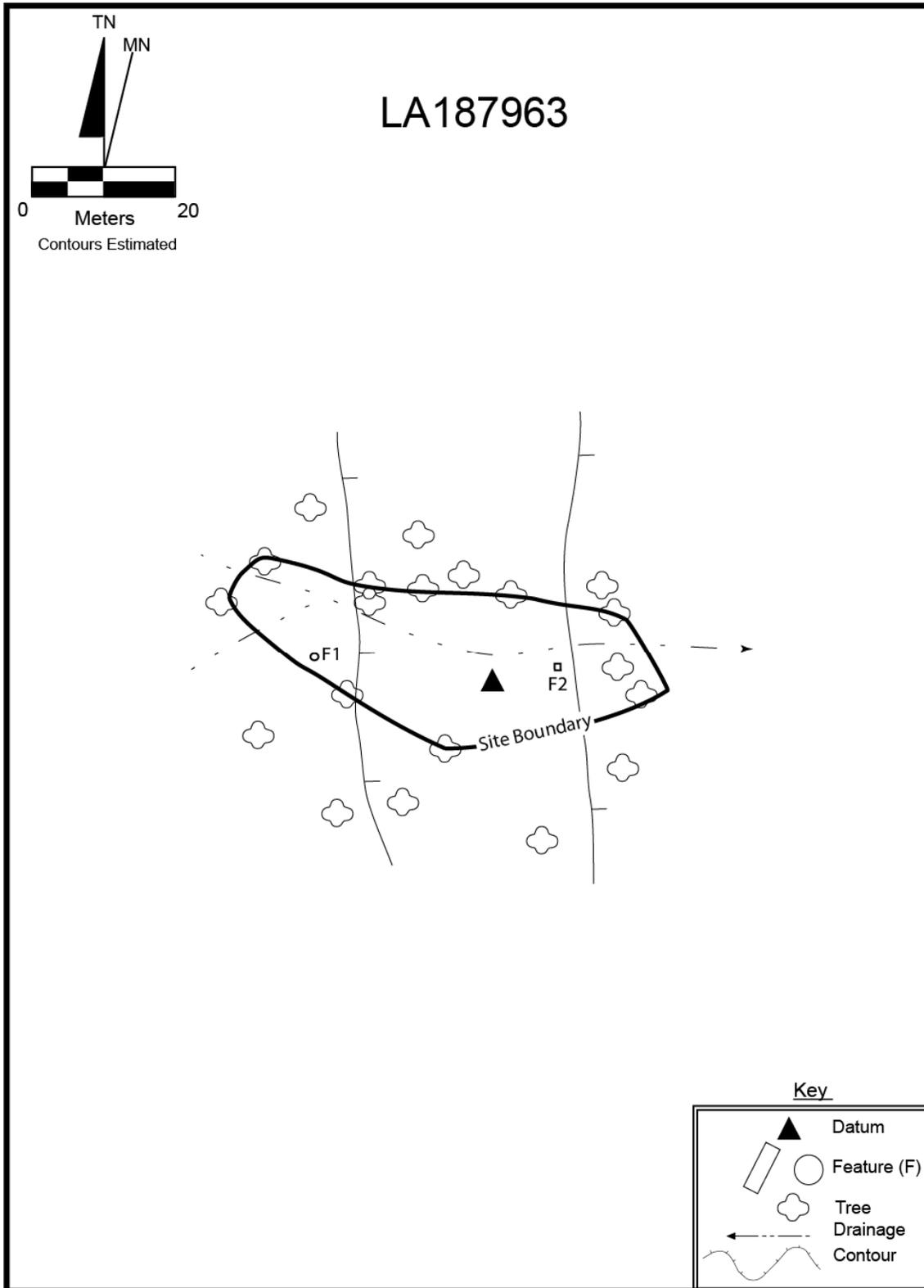
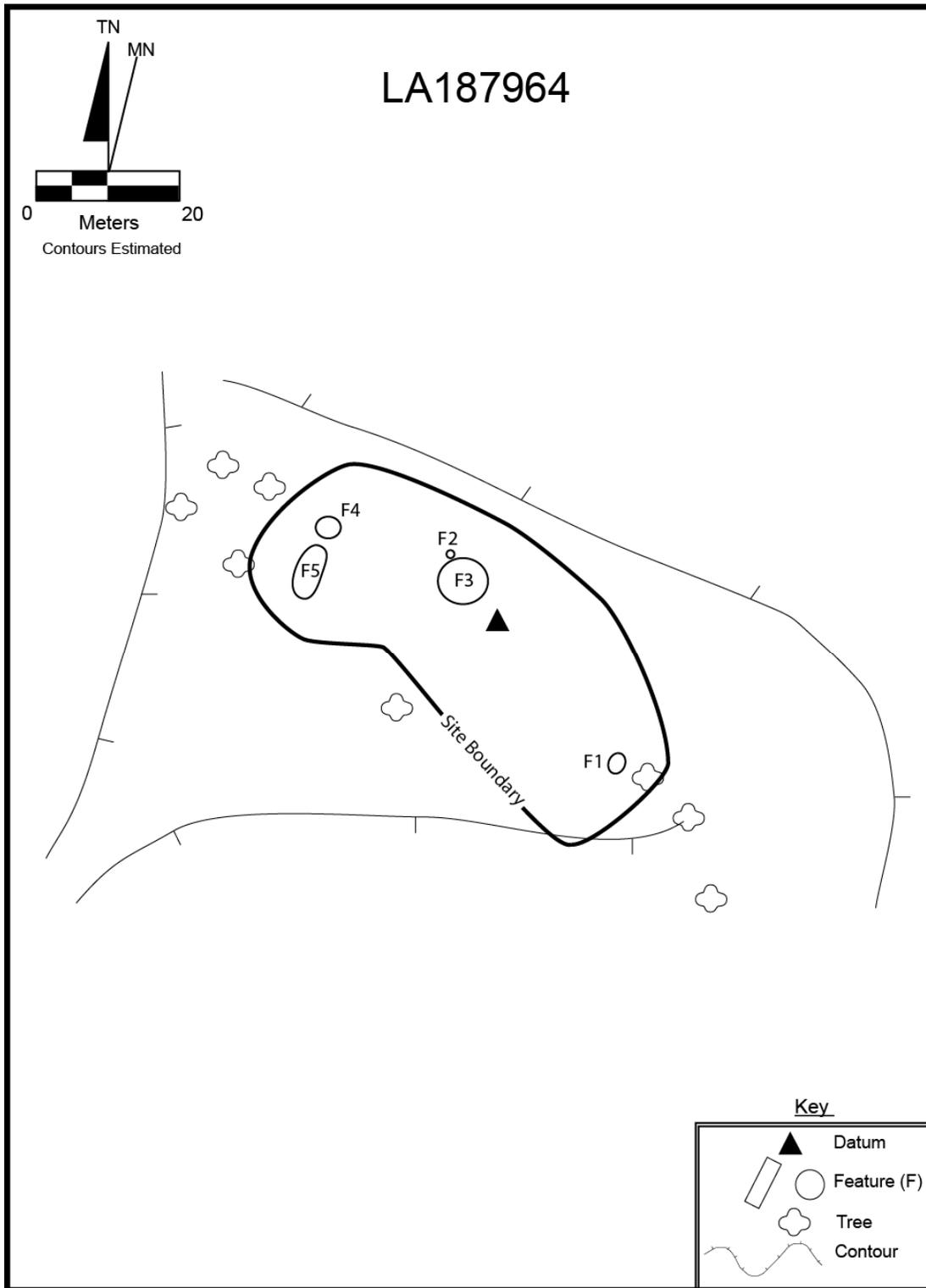


Figure 9: General site map of LA187964, (DCRM 2016-66).



Isolated Occurrences

Nineteen IOs were identified within the project area. Their locations and descriptions are listed in Table 3.

Table 3. List of identified isolated occurrences within the nine project areas in McKinley Co, NM.

Isolated Occurrence #	UTM Zone 13		Description
	Northing	Easting	
IO#1	3915870	0231688	(1) metal pipe
IO#2	3915929	0231691	(1) Narbona Pass chert Bajada projectile point
IO#3	3915909	0231747	(1) side seam church key can
IO#4	3915900	0231856	(1) Kiatuthlanna Black on white sherd
IO#5	3915749	0232339	(1) gray ware sherd
IO#6	3915689	0232389	(1) one-handed sandstone mano fragment
IO#7	3915680	0232271	(1) grey chert bi-face
IO#8	3915685	0232898	(1) Puerco Black on white sherd and (1) sandstone mano fragment
IO#9	3915639	0232395	(1) sandstone mano fragment and (1) white ware sherd
IO#10	3915330	0232392	(1) Puerco Black on white sherd and (1) gray ware sherd
IO#11	3915484	0231950	(1) white chert bi-face fragment and (1) petrified wood primary flake
IO#12	3915687	0232160	(1) steel cable
IO#13	3915762	0232439	(2) white ware sherds and (1) corrugated sherd
IO#14	39155927	0231836	(1) black on white sherd
IO#15	3915968	0231837	(6) steel wires and tubes
IO#16	3916004	0231789	(1) metal drill bit, (1) steel cable, (1) carburetor, and the letters "BR" incised onto a rock face
IO#17	3915958	0231706	(1) green chert radial core
IO#18	3915985	0231551	(9) gray ware sherds, (1) gray chert primary flake, (1) gray chert core
IO#19	3915276	0232349	(4) gray ware sherds, (1) primary flake, (1) quartzite flake, (1) obsidian secondary flake, (2) white chert secondary flakes, and (2) green chert tertiary flakes

Traditional Cultural Properties

During the field inventory, the project archaeologists interviewed nearby residents concerning any sacred places, burials, or traditional cultural places that might be affected by the proposed undertaking. No traditional cultural properties were identified in the project areas.

Ethnographic Inquiry

Ethnographic fieldwork took place between February 7 and 10, 2017 and March 3, 2017 by Rena Martin and Patricia Moone, the DCRM ethnographers were accompanied by Arcadis and the Navajo Nation EPA. Before the interviews were initiated Martin and Moone took a tour of the project area to gain a visual understanding of the project area and landscape to estimate the number of homes located within sight of the project area. Often times, traditional cultural properties are described by their environmental settings.

Prior to the interviews, the Prewitt/Baca Chapter was consulted on nature of the proposed undertaking with the Chapter Office Assistant, Shana Nez. Once these initial steps were completed Martin and Moone began conducting interviews with the family members living in the project area. Upon completing the first visit it was determined that the mines associated with this project were partially located on allotted lands that belonged to the late Brown Vandever. T.V., a son of Brown, is currently living on the edge of the project area. Because the mines were located on the Vandever land, the Navajo miners who worked in the mines associated with these mines were all family members of the Vandever family. Fifteen individuals were contacted regarding the mine; one of these persons is a Chapter official.

The protocol for interviews adhered to the procedures outlined in the Navajo Nation guidelines for ethnographic study. Precise questions were asked of each interviewee, although it was common for speakers to offer suggestions beyond the scope of the protocol. The interviewees were asked open ended questions related to the former uranium mines, traditional cultural properties and possible unmarked graves including in the project areas,

- a. Did you or a family member work at the Haystack Mines?
- b. What was the name of the mine(s)?
- c. How long was the mine(s) in operation?
- d. When did you work there? Which mine area?
- e. How many employees worked there? Navajos, Hispanic and/or Anglo workers?
- f. Were there any Navajo Supervisors?
- g. Was the mine you worked in underground or open-pit?
- h. Did the local Navajo families have preference in employment?
- i. Did you benefit from the work at the mine?
- j. What types of buildings were on the mine locations? (ie buildings, offices, warehouses?)
- k. What were some of the duties of the miners?
- l. How was the ore taken out of the mines?
- m. Where was the uranium ore taken?
- n. When the mine closed down, did the company dismantle the structures and take them?
- o. Do you know if there are any sacred places near the mine areas?
- p. Do you know if there are any unmarked graves neat the mine areas?
- q. Do you remember anything eventful occurrence at the mine?
- r. Who else do you recommend we interview? Other miners living nearby?

All interviews were conducted in person by Martin and Moone in the presence of an Arcadis and/or Navajo Nation EPA staff representatives. Interviews were conducted in the Navajo and English languages, and notes were taken in both English and Navajo. Lastly, DCRM compensated consultants who provided significant cultural and historic information at the time of the interview.

Some of the interview data gathered during the ethnographic inventory related to the surrounding area with some interviewees providing information related directly to the Haystack AUM. Interviews with nearby residents revealed information regarding the history and operation of the mine when it was in operation. The information provided below provides a glimpse of historical practices in and the near the mine area. Interviewees are referred to by their initials.

TV was interviewed at their home and is a lifelong resident of the Haystack area. TV's father Brown Vandever passed away December 6, 2016. Brown Vandever was an Allotted Land owner who leased his land for the Haystack #1 Uranium Mine. TV worked in the mine with his late father and brothers. His late uncle and his late son also worked with them. They worked from 1970 through 1975, the mine closed in 1980s. TV thinks there were three separate owners of the Haystack mine. One of the bosses was Jack Cox, who possibly lives in Arizona now. There is a tunnel just underneath their trailer home. The mine operators had many trailer homes for offices, showers, even garages with concrete foundations. He said the Haystack Mountain has two layers of mining shafts with roads large enough for 18 wheelers to haul out uranium ore. They were hauled to the San Mateo Mill in Grants, New Mexico. There are several branches of tunnels on both levels and two metal stairways from either end that inclines down into the mine. TV said the mine was nearly left as-is by the operators in 1980. TV remembers helping bore for air shafts. One hole is about the size of his hands that was later covered up. There are roads that go up the Haystack Mountain from the north side that lead into both levels of the mine and to the top, where there is an airstrip for landing airplanes.

MC was interviewed at their home along with several siblings. MC said Haystack #1 was an open-pit uranium mine in operation from the 1960s to the 1980s. There were mine office trailers just to the south side of TV's present home. All the sewer pipes and tanks are still in the ground. WV being 65 said at age 5 or 6 in 1956, he and his brother EV built dynamite for the mines. There were two storage shacks with boxes of dynamite near the mine. They were asked by the mine bosses to assemble dynamite each evening. He and his brother used sharp-tipped pliers to cut wires for each dynamite sticks and put blasting caps on the tips. Every morning the miners took the ready-made dynamite for the day. They were not paid to assemble dynamite. Our father instructed us not to play with the dynamite said the siblings. A loud horn was sounded three times before each blast in the mine. Then a large mushroom of sand and rock debris fell through the air high above the mine and homes. After the uranium mines closed there was still storage of boxed dynamite and one uncle used dynamite to blast tree stumps for fire wood. The siblings recall three beautiful natural ponds for their livestock to the west of the home that got covered up by the mine. The mine had its own pond and a dumping/holding area east of the home. There is still an exposed open-pit mine with water in it to the east of the home. After the rains the natural ponds nearby would be a swimming hole for the miners' children and the local children.

Evaluation of Significance

All cultural resources identified and recorded are evaluated for significance under certain federal statutes for the preservation and management of these resources. This process is intended to ensure that cultural resources are not inadvertently destroyed by the proposed undertaking, and to ensure that local communities are involved in the decision-making process.

The National Historic Preservation Act

Under the Section 106 process of the National Historic Preservation Act (NHPA; 36 CFR 60.4), cultural resources may be eligible for nomination to the National Register of Historic Places if they are more than 50 years old and “possess integrity of location, design, setting, material, workmanship, feeling, and association.” One or more of the following criteria (a-d) must be applicable:

- a. associated with events that have made a significant contribution to the broad patterns of our history; or
- b. associated with the lives of a person significant in our past; or
- c. 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. has yielded, or may be likely to yield, information important in prehistory or history.

As defined in 36 CFR 60.4, cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historical buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years are not ordinarily considered eligible for the National Register. However, such properties may qualify if they are integral parts of districts that do meet the eligibility criteria.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 (ARPA; 43 CFR Part 7) has two fundamental purposes:

- to protect irreplaceable archaeological resources on public lands and Indian lands from unauthorized excavation, removal, damage, alteration, or defacement; and
- to increase communication and exchange of information among governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained prior to enactment of the Act.

In order for a resource to be considered an archaeological resource and thus merit protection, it must be both more than 100 years old and of archaeological interest.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA [P.L. 95-341]) affirms that American Indians have the right to believe, express, and exercise their traditional religions and have access to sites, use and possession of sacred objects, and freedom of worship through ceremonies and

rites. Any site or place (prehistoric or historic) that has religious, ceremonial, or sacred aspects or components needs to be dealt with in light of this law. Anasazi sites related to Navajo cultural traditions qualify for protection, as do all Navajo ceremonial sites, unmarked traditional places, and residential structures whose owners/users want them protected for religious and cultural reasons.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA [P.L. 101-601]) provides protection of Native American graves; establishes procedures and legal standards for the repatriation of human remains, funeral objects, sacred objects, and objects of cultural patrimony, including those from archaeological contexts; and provides the United States district courts jurisdiction over any action brought by any person alleging a violation of the Act. The Act also recognizes certain tribal, Native Hawaiian, and individual rights in regard to burial sites located on federal and Indian lands, and it sets forth procedures for the intentional excavation and inadvertent discoveries of these items.

Navajo Nation law and policy also protects cultural resources on lands under Navajo Nation government jurisdiction. The Navajo Nation Cultural Resources Protection Act of 1988 (NTC CMY-19-88) is modeled on the federal laws which require consideration of the effects of an undertaking on significant cultural resources. It also authorizes the NNHPD to create and maintain a “Navajo Nation Register of Cultural Properties and Cultural Landmarks.” The Register is to include “buildings, districts, objects, places, sites, and structures significant in Navajo Nation history, architecture, archaeology, engineering, and culture” on Navajo lands. The Register and its criteria for eligibility have yet to be established.

The Navajo Nation Policy for the Protection of Jishcháá’ covers all human remains, associated funerary items, and unassociated funerary items on land under Navajo Nation jurisdiction. It emphasizes non-disturbance as the required treatment of these items unless disturbance is unavoidable. It sets forth procedures for intentional excavation and inadvertent discovery of these items.

Table 4: NHPA, ARPA, AIRFA, and NAGPRA Evaluation of Identified Cultural Resources documented within the nine project areas in McKinley Co, NM.

Cultural Resource No.	Description	Evaluation	
NM-R-48-41 (Sec 13, BIA Lands)	Historic Anglo Artifact Scatter	NRHP	Not Eligible 1. 50-year guideline met 2. Retains integrity of materials 3. Does not meet criteria a-d
		ARPA	Is Eligible? No 1. 100-year guideline met? No 2. Is of archaeological interest? No
		AIRFA	Does not merit consideration
		NAGPRA	Does not merit consideration

Cultural Resource No.	Description	Evaluation	
NM-R-48-42 (Sec 18, Indian Allotment)	Historic Navajo Corral	NRHP	Not Eligible 1. 50-year guideline not met 2. Retains integrity of materials. 3. Does meet criteria d
		ARPA	Is Eligible? No 1. 100-year guideline met? No 2. Is of archaeological interest? No
		AIRFA	Does not merit consideration
		NAGPRA	Does not merit consideration
LA187963 (Sec 19, Private lands)	Prehistoric Archaic En Medio Temporary Camp	NRHP	Is Eligible 1. 50-year guideline met 2. Retains integrity of location, setting, materials, workmanship, and association. 3. Does meet criteria d
		ARPA	Is Eligible? Yes 1. 100-year guideline met? Yes 2. Is of archaeological interest? Yes
		AIRFA	Does not merit consideration
		NAGPRA	Does not merit consideration
LA187964 (Sec 19, Private lands)	Prehistoric Anasazi PI-PII Habitation	NRHP	Is Eligible 1. 50-year guideline met 2. Retains integrity of location, setting, materials, workmanship, and association. 3. Does meet criteria d
		ARPA	Is Eligible? Yes 1. 100-year guideline met? Yes 2. Is of archaeological interest? Yes
		AIRFA	Does not merit consideration
		NAGPRA	May merit consideration
OCA TOD: 210 (Sec 13, BIA Lands)	Unknown	NRHP	Not Eligible 1. 50-year guideline not met 2. Does not retain any integrity 3. Does not meet criteria a-d
		ARPA	Is Eligible? No 1. 100-year guideline met? No 2. Is of archaeological interest? No
		AIRFA	Does not merit consideration
		NAGPRA	Does not merit consideration
Isolated Occurrences	IO#1-19 (see table 3 for descriptions)	NRHP	Not Eligible 1. 50-year guideline met 2. Lacks integrity 3. Does not meet criterion a-d
		ARPA	Is Eligible? No 1. 100-year guideline met? Yes 2. Is of archaeological interest? No
		AIRFA	Do not merit consideration
		NAGPRA	Do not merit consideration

Recommendations

Archaeological clearance is recommended for the proposed undertaking with the following stipulations: (1) proposed construction activities shall be confined to the nine project areas and (2) new discoveries of cultural resources shall be reported immediately to the State of New Mexico Historic Preservation Department and the NNHPD.

This report will be submitted to the NNHPD and the NMSHPO to fulfill the Section 106 requirements for compliance outlined in the National Historic Preservation Act. Subsequently, the project team will coordinate with NNHPD and/or NMSHPO to discuss potential effects and mitigation. Tribal consultations will occur thereafter.

LA187963 (Prehistoric Archaic En Medio Temporary Camp) and LA187964 (Prehistoric Anasazi PI-PII Habitation): 1) be avoided during all construction activities, 2) the site boundaries be reflagged prior to any construction activities, 3) a qualified archaeologist should monitor all construction activities within 50 ft of the established site boundaries

NM-R-48-41 (Historic Anglo Artifact Scatter), NM-R-48-42 (Historic Navajo Corral), and OCA TOD: 210 (Unknown): No further treatments are recommended since the sites are not eligible for protection as they are not likely able to contribute information on prehistory or history and since OCA TOD is has been completely destroyed.

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