

Research Design for the Mitigation of Adverse Effects to
Certain Cultural Resources in Gate Canyon,
Duchesne County Utah

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Bureau of Land Management
Vernal Field Office

State of Utah
School & Institutional Trust Lands Administration
and
Utah's Public Lands Policy Coordinating Office

Prepared Under Contract With:

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INTRODUCTION

The Duchesne County government proposes to pave the only remaining unpaved portion of Wells Draw Road, which is located in Gate Canyon between the Nine Mile Road and the Pipeline Road in the southeastern corner of the county. In four separate cultural resource inventories conducted between April 2011 and July 2014, archaeologists from Montgomery Archaeological Consultants, Inc. (MOAC) inventoried most of the bottom of Gate Canyon as part of the Gate Canyon Road Improvement Project (Montgomery 2012; Nash and Patterson 2013; Patterson 2014; Patterson and Montgomery 2012). The four inventories identified 48 archaeological sites, mostly historic axle-grease inscriptions, historic trash scatters, and historic roads. Because of the narrowness of the canyon and the contemporary safety and engineering standards required to improve the road, it will be impossible to avoid all the sites during construction. Two alternatives are currently under consideration, each of which has slightly different impacts to sites within the canyon as well as the setting and integrity of the canyon itself. In consultation with the Bureau of Land Management, Vernal Field Office (BLM), the Utah Schools and Institutional Trust Lands Administration (SITLA), Duchesne County, and the Utah State Historic Preservation Office (SHPO), it was determined that it would be necessary to mitigate the adverse effects to the historic properties that will result from the proposed undertaking regardless of which alternative is chosen.

The project consists of two alternatives (Figure 1). Alternative 1 includes remaining in the canyon bottom closely following the existing road corridor throughout most of the length of the canyon. Some of the sharper turns will be broadened to increase visibility and safety. In other areas, the road will be shifted within the canyon bottom due to drainage issues. Alternative 2 consists of straightening the road by creating substantial road cuts through the ridges, outcrops, and pediments that occur throughout the length of Gate Canyon. The proposed second alternative will shorten the overall length of the road by 0.75 of a mile, eliminate many dangerous curves, and allow for a wider road in many places. Each alternative has slightly different impacts to individual sites in the canyon, but the second alternative will likely have a greater effect on the overall historical integrity and setting of the canyon.

This document serves as the mitigation plan for the adverse effects for the project. A general mitigation strategy was discussed during a meeting held at the Vernal BLM office on November 28, 2012. Participants in the meeting included the BLM, SITLA, Duchesne County, Jones and DeMille Engineering, and MOAC. Subsequent meetings were held in 2013 and 2014; these meetings resulted in minor changes to the mitigation strategy. With the addition of a second alternative alignment, it is necessary to address a second set of direct and indirect impacts to cultural resources in the canyon. Finally, given input from local user groups and other concerned parties, additional mitigation strategies are being considered by the project's proponent. This document describes each alternative and the anticipated impacts for each site that will be directly or indirectly affected by the proposed undertaking. Although each alternative affects a different set of sites, the mitigation strategy will essentially be the same in each case. The mitigation of the adverse effects resulting from the proposed improvements will include high resolution photographic documentation of select panels of historic inscriptions, detailed documentation and photography of historic road features, historic research of those people who left their names on the walls of Gate Canyon, and potentially, one or two interpretative trails that highlight the importance of Gate Canyon in the early settlement and economic development of Duchesne County and the Uinta Basin.

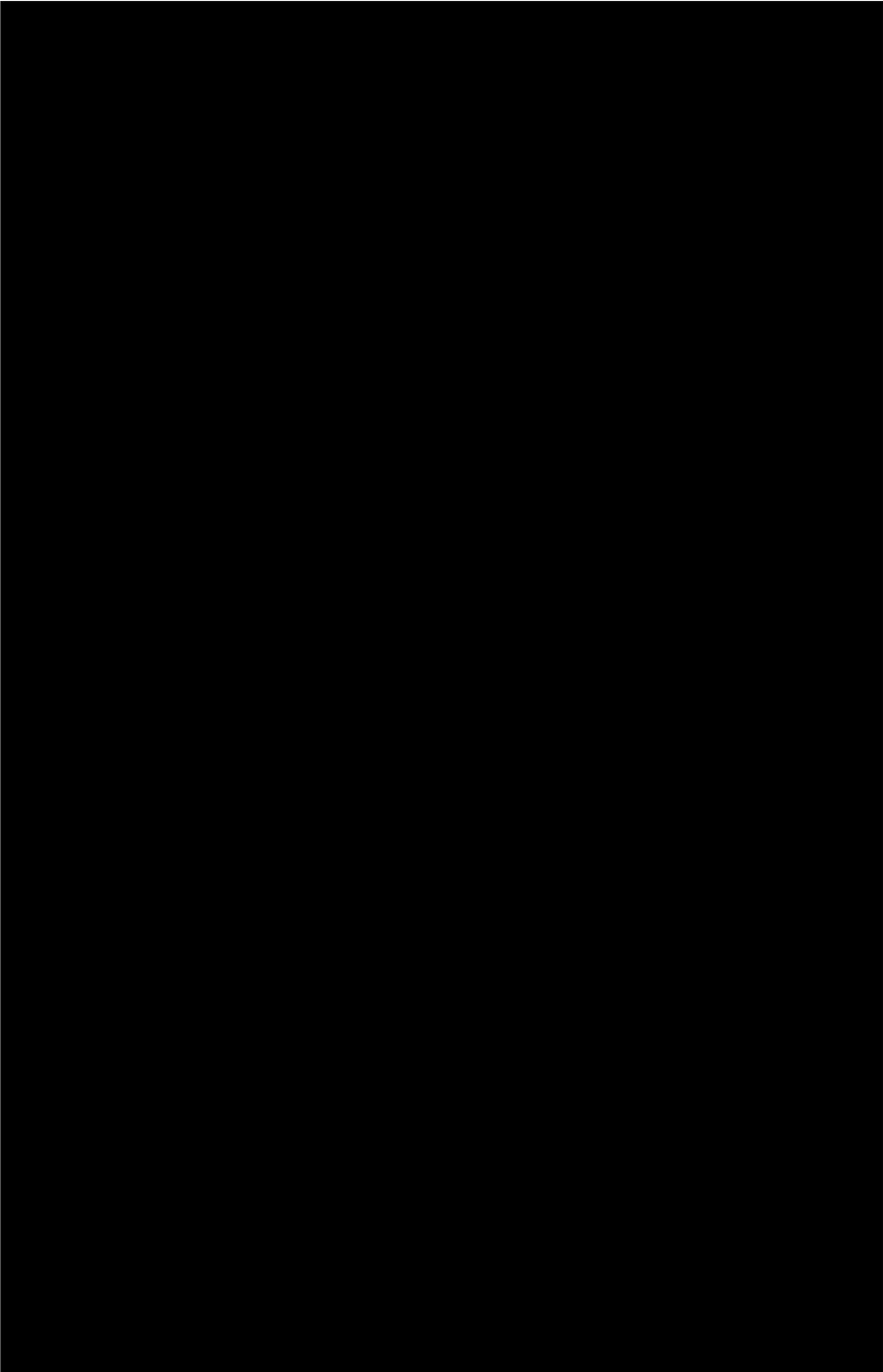


Figure 1. Map of the Gate Canyon Road Improvement Project Showing the Location of Identified Cultural Resources Relative to the Two Proposed Alternatives.

Environmental Setting

Situated within the Book Cliff-Roan Plateau physiographic subdivision of the Colorado Plateau, the area consists of exposed stratigraphic escarpments that extend and dip northward. The Book Cliffs are carved from Cretaceous-age Mesa Verde Group sandstones, while the Roan Cliffs are comprised of river and floodplain deposits from the Paleocene and Eocene ages (Stokes 1986). The project area is located along the bottom of Gate Canyon between Nine Mile Canyon and the southern end of Wells Draw. Geologically, the project area is composed of the Eocene-age Green River Formation, a lacustrine deposit containing claystone, sandstone, and carbonate beds in a variety of colors (Stokes 1986:154). The nearest permanent water source is Nine Mile Creek. The elevation of the project area ranges from 6,100 feet to 7,300 feet asl.

Situated within the Upper Sonoran life zone, the project area supports desert shrub and riparian plant communities. Plant species observed includes greasewood, shadscale, prickly pear cactus, snakeweed, blue grama grass, Indian ricegrass, Mormon tea, and claret cup cactus. Along Nine Mile Creek, the riparian community supports willows, cottonwoods, tamarisk, and kochia. Animal species reported in the Nine Mile Canyon area include mule deer, mountain lion, coyote, blacktail jackrabbit, cottontail rabbit, porcupine, ground squirrel, pack rat, elk, marmots, and various birds and reptiles. Most fauna found in the area today are assumed to have been present in prehistoric times, although many species were extirpated in the historic era (e.g., wolf, bison, brown bear). Modern disturbances within the project area include roads, farming and ranching, livestock grazing, and recreation.

HISTORICAL CONTEXT

The Nine Mile Road

Roads, along with trails, paths, and other transportation corridors, are not well studied or understood from most anthropological perspectives (Snead et al. 2009). Archaeological and anthropological examinations of roads are particularly uncommon in the United States, though this is slowly beginning to change. Where historians and geographers have long understood the fundamental structure that roads have in society, it was not until landscape approaches in archaeology were developed that these linear resources could be adequately addressed in a comprehensive manner. While many prehistoric and historical archaeologists have identified, recorded, and studied roads and trails, there has been little purposive examination of them in larger contexts (see various authors in Trombold 1991).

The common analogy of roads and arteries is an apt one. Just as arteries transport oxygen, nutrients, and antibodies, roads are corridors making the transport of commodities and people across regions timely and efficient. Often roads are taken for granted and rarely given a second's thought, unless one is stuck in a construction zone or transit is somehow restricted. The vital importance of roads in the growth of local and regional economies is often overlooked in the modern era where cars and trucks safely whisk travelers and goods at respectable speeds across great distances. However, in the not so distant past, roads were part of the collective consciousness of rural communities and small towns, where roads were few, conditions were poor, and people's economic and social livelihood were no less dependent on them than we are today.

The Nine Mile Road, sometimes referred to as the Price to Fort Duchesne Freight road or the Vernal Stage Line, is a road whose history is explicitly tied to the communities in the northern portion of Castle Valley and the major settlements of the Uinta Basin. From a historical perspective, it is also one of the most studied roads in the region (Alexander and Arrington 1964; Geary 1981a, 1981b; Jenson 1993a, 1993b, 2010; Richardson 1947; Weicks 2011). From an archaeological perspective it is understudied, especially compared with the nearby Carter Military Road (Loosle 2011); however, identification and documentation efforts have increased in the last few years (Montgomery 2012; Nash 2012; Spangler 2009; Stavish 2011a, 2011b, 2011c). The historical and archaeological studies of the Nine Mile Road combine to offer a tantalizing glimpse of the significance of the road in the socioeconomic development of northeastern Utah in general, and Nine Mile Canyon specifically.

After the establishment of Fort Duchesne in the Uinta Basin in 1886, shipping supplies over the Carter Military Road, which was originally built to supply the short-lived Fort Thornburgh (Alexander and Arrington 1964), proved difficult given the condition of the road, the great distance required to traverse it, and the inability to use the high elevation route for several months each winter because of deep snow. Price, Utah, and the newly constructed Denver and Santa Fe Western railroad that passed through it, offered a viable transportation alternative (Geary 1981b).

The US Army's Sixth Infantry B and G companies were hard at work on the Nine Mile Road in the fall of 1886. It remains unclear just how much of the road the US Army actually constructed and how much they upgraded to allow for adequate passage of heavily burdened wagons. There is some evidence of early homesteads on the West Tavaputs Plateau prior to construction of the Nine Mile Road, which would suggest that at least an ephemeral trail passable by small wagons existed along portions of the route (Weicks 2011). However, some route finding and survey were necessary to complete the road and local scouts were used to locate acceptable passage (Geary 1981a). It is likely that a trail or route existed linking Nine Mile Canyon to both the Castle Valley and Uinta Basin, but that appreciable upgrades and reroutes were necessary to make it useful to the military. It is possible that Trail Canyon served as an old route up to the Bad Land Cliffs and beyond prior to the establishment of Gate Canyon as the primary route (Jenson 2010; Spangler and Spangler 2013). The rapidity with which the initial work was completed suggests that substantial portions of the route existed prior to the military road construction project (Spangler and Spangler 2013).

According to an article in the Salt Lake Tribune on September 18, 1886, road work by the Army troops consisted of road leveling two bad grades, widening dugways, and rounding out sharp curves (Spangler and Spangler 2013; Weicks 2011:). An earlier reconnaissance of a route by Lieutenant J. C. Parker, out of Fort Duchesne, identified the necessary requirements for making the road passable for large freight wagons (Weicks 2011). A second Salt Lake Tribune report notes the Sixth Infantry's return to Fort Douglas on October 8, 1886, almost 3 weeks to the day from when the order was issued (Geary 1981a). Though the road was passable after completion of the work, the post commander of Fort Duchesne ordered additional reconnaissance of its condition in November 1886; Captain Stephan Jocelyn carried out the order.

Ongoing maintenance of the road, and the telegraph line that was constructed the following year, fell on shoulders of the already burdened Fort Duchesne, which was suffering from supply shortages, harsh living conditions, and a rarely sober commanding officer, Colonel Frederick Benteen. Though the highest pass on the Nine Mile Road was a couple thousand

feet lower than the one on the Carter Military Road, inundation by snow in Whitmore Park continued to seasonally plague the route, requiring detachments from Fort Duchesne be sent to clear the drifts from the road (Geary 1981a). Splitting major maintenance tasks, soldiers from Fort Douglas worked the southern half of the route while detachments from Fort Duchesne maintained the northern stretch (Weicks 2011). Common maintenance projects included clearing rocks and sediments from flash floods and debris flows, filling erosional channels and ruts, and possibly altering the alignment or building bypasses in various places. An archaeological inventory (Nash 2012) in Nine Mile Canyon identified several segments of old wagon roads that leave the canyon floor and transverse the steep colluvial slopes of the lower canyon in areas prone to flooding. Based on the presence of dated historic inscriptions associated with the segments, these portions of the road were either in use or constructed in 1885 or shortly thereafter.

The large number of wagons traversing the route certainly did not make maintenance any easier. Nine Mile Road historians provide numerous accounts of how busy the road was with freight and stagecoach traffic (see Geary 1981a, 1981b; Jenson 1993b; Spangler and Spangler 2013; Weicks 2011). For example, freight hauled from Price to Fort Duchesne in 1891 alone would have required more than 100 trips. While freighters hauled supplies for the fort and Indian agency north, they returned with their wagons loaded with resources from the basin such as wool and Gilsonite. Spangler and Spangler (2013) speculate that Gilsonite might have been the driving force behind the road and that Gilsonite entrepreneurs Sam Gilson and Bert Seiboldt unofficially petitioned the military to improve the Nine Mile route and access to the Denver and Santa Fe railroad, of which Seiboldt was invested. An 1885 inscription bearing the names Gilson and Seiboldt attest to their knowledge of the route before the military began improvements.

Freighting outfits commonly consisted of two wagons pulled in tandem by a team of six horses; this arrangement could haul 3 to 4 tons of freight and was manageable by a group of two to four men (Geary 1981b). As reported in the Salt Lake Tribune in 1887, trips hauling such loads commonly took 12 to 15 days, barring any unforeseen problems; other estimates include a 5 day, one-way trip (Geary 1981a). Both Geary (1981b) and Richardson (1947) provide the names of some of the teamsters from the Price and Vernal areas, respectfully; both readily admit the lists are not complete catalogs of all the people engaged in the trade (Table 1). In fact, many local ranchers and farmers would haul freight in off seasons or when their primary responsibilities allowed (Geary 1981b).

Freight was probably the most regular, predictable traffic on the road, but many also used the road for personal transportation between the two regions. A stage line started operations along the route soon after the improvements made by the US Army. Twice a week after 1888, and then daily by 1889, stage coaches left Vernal and Price, met in Gramma Grass Canyon (now known as Wells Draw), swapped passengers, and then returned from whence they came, making transit time between the two stations about 24 hours (Jenson 1993a). After 1905, when the Uintah Ouray Reservation was opened up to homesteading, the road witnessed a surge in traffic with nearly 15,000 people entering the Uinta Basin, many via the Nine Mile Road (Jenson 1993a, 1993b). Given the minimum time one could expect to be on the road was one day, and sometimes upwards of a week or more, entrepreneurial individuals began providing services for travelers along the route.

Early on, the military established several semi-permanent camps along the length of the road, about every 20 miles (Weicks 2011; Geary 1981a, 1981b). Camp locations included one in Soldier Canyon (called Soldier Station), one in the upper stretch of Nine Mile Canyon, one near the mouth of Gate Canyon, another at Halfway Hollow, Smiths Wells, and a last camp called Bridge, which is the location of the modern town of Myton, Utah. The camp locations in the upper portion of Nine Mile Canyon varied through time, but were commonly near established ranches just as those owned by the Johnson, Lee, Harmon, and Alger families (Geary 1981b). Many weary travelers and teamsters likely patronized the hotel and saloon at the Brock ranch, also known as Brocks Place and later the Nutter Ranch, near the bottom of Gate Canyon. One of the more established stops along the road, Brocks Place included a telegraph relay station, a saloon, a twenty room hotel, a post office, and the last good water between Nine Mile Creek and the Duchesne River.

Smith Wells is undeniably the most substantial stop along the route; it was created and maintained solely to cater to fatigued travelers and their horses. Located at the north end of Wells Draw 23 miles north of Brocks Place, the station provided the first water for thirsty livestock headed out of Nine Mile through the steep and often treacherous Gate Canyon. Jenson (1993a) details the history of the station, which was established in 1891 when Owen Smith dug a 180-foot-deep well, finding a saline water source suitable for animal consumption. The Smith family built a small house, water tank, and a few outbuildings and set to providing services for people traveling the road; fresh water for human consumption was hauled in from the Duchesne River. Over time, the complex grew in size, changed hands, and increased the services offered. The station served as a contracted stop for the stage line, provided water to livestock (sheep and cattle), provided sleeping quarters, a limited amount of dry goods, and hot meals; at one point a school teacher also lived and worked at the station. The sheer number of customers attests to the station's success. Jenson (1993a) notes at times 50 outfits would be stopped at Smith Wells and travelers would pass other travelers at least every quarter mile.

One of the most formidable challenges for teamsters was the ascension of Gate Canyon (Richardson 1947; Weicks 2011). The 7 mile stretch through the narrow canyon was steep, often requiring teams of horses to be doubled up to haul the heavy loads up the rugged grade. As Richardson (1947:261) points out, the unwritten rule of the road for the teamsters was "You help me and I'll help you," suggesting camaraderie developed among the teamsters who regularly hauled freight. Besides the steepness and length of the Gate Canyon portion of the road, its narrowness and grade often lead to severe flash floods when the weather took turns for the worst. Although the canyon lacks a permanent stream, even light rains above the canyon could have devastating consequences in the canyon. In a travelogue published in the Salt Lake Tribune on April 13, 1891, a Mr. O.J.H., who traveled the stage line en route to examine Gilsonite mines in the basin, described Gate canyon as "7 miles to head, divide 7500 feet high by aneroid; cañon dry except after rain, road rough, winds amongst and often under ledges of fantastic shaped rocks."

With so many people traveling the road and the number of established camps along the route, one could easily surmise that the archaeological record from these activities should be relatively evident along the road, particularly at the various camps. However, besides a few road segments and associated features and hundreds of historic inscriptions, some carved in the stone but most made with axle grease, very little remains of the original road and the way stations. Much of the original road likely followed the current route throughout most of the byway, however, archaeological inventories have identified original segments of the road in

Whitmore Park, Nine Mile Canyon, and Gate Canyon (Montgomery 2012, Nash 2012, Nash and Patterson 2013, Stavish 2011a, 2011b, 2011c). Several road features have also been identified; these include bridge abutments, retaining walls, culverts, and wooden bridge remnants. Many of these features likely postdate the original road and were upgrades made as more and more wagon traffic, and eventually automobile traffic, used the route. No documentation of these specific road upgrades and modification have yet been identified. Historic inscriptions are common throughout Nine Mile Canyon and Gate Canyon.

Table 1. Incomplete List of Teamster Names from Vernal and Price Areas

Bunce	Joseph	Price Area	Geary 1981b
Burch	Joe	Price Area	Geary 1981b
Curtis	Will	Price Area	Geary 1981b
Farnsworth	Dave	Price Area	Geary 1981b
Geary	Edward	Price Area	Geary 1981b
Gurr	E.	Price Area	Geary 1981b
Harrison	Joe	Price Area	Geary 1981b
Johnson	Don	Price Area	Geary 1981b
Lang	Frank	Price Area	Geary 1981b
Lee	Jessen	Price Area	Geary 1981b
Mangum	Joe	Price Area	Geary 1981b
McMullin	Albert	Price Area	Geary 1981b
Neilson	"Nosey Joe"	Price Area	Geary 1981b
Pace	Joe	Price Area	Geary 1981b
Truman	Mike	Price Area	Geary 1981b
Abplanalp	Joseph	Uinta Basin	Richardson 1947
Alfred	Martin	Uinta Basin	Richardson 1947
Bateman	Joseph	Uinta Basin	Richardson 1947
Chivers	John	Uinta Basin	Richardson 1947
Davis	William	Uinta Basin	Richardson 1947
DeFreze	E. G.	Uinta Basin	Richardson 1947
Eaton	Orlando H.	Uinta Basin	Richardson 1947
Eaton	Ernest	Uinta Basin	Richardson 1947
Green	Henry L.	Uinta Basin	Richardson 1947
Green	George	Uinta Basin	Richardson 1947
Haws	Oliver	Uinta Basin	Richardson 1947
Haws	Alonzo	Uinta Basin	Richardson 1947
Herbert	Harvey	Uinta Basin	Richardson 1947
Holmes	Charles	Uinta Basin	Richardson 1947
Hunting	Nathan C.	Uinta Basin	Richardson 1947
Mecham	Maroni	Uinta Basin	Richardson 1947
Odekirk	John	Uinta Basin	Richardson 1947
Odekirk	Frank	Uinta Basin	Richardson 1947
Parker	James	Uinta Basin	Richardson 1947
Pearson	Lewis	Uinta Basin	Richardson 1947
Pope	Robert	Uinta Basin	Richardson 1947
Pope	Charles H.	Uinta Basin	Richardson 1947
Powell	Alfred	Uinta Basin	Richardson 1947
Rasmessen	Al	Uinta Basin	Richardson 1947
Sabey	Thomas	Uinta Basin	Richardson 1947

Within Gate Canyon proper, several segments of the historic road have been identified along with several associated features such as culverts and retaining walls. Two distinct segments of the old road can still be found in the canyon; large portions of the original road were likely destroyed when the current road was built up the canyon in the late 1950s. One section, located in the southern end of the canyon just before the grade begins to climb, consists of a 334-foot-long earthen road that averages 19 feet wide. A small ditch parallels portions of the segment. Near the north end of the segment is a low wooden bridge (Figure 2) that crosses one of the many braided channels cut through the alluvium. The bridge, constructed from 11 deteriorated hewed and axe-cut logs, measures 8 feet 8 inches long x 9 feet 6 inches wide. The decking logs are approximately 8 feet (long) by 7 inches (wide). The west ends of the decking logs are notched and are embedded with large wire nails. The drainage has eroded substantially, resulting in the collapse of a portion of the bridge.

Farther north in the canyon, another segment begins on a terrace above a drainage near the current road and extends northeast into a side canyon. The road is above the drainage on the slopes of the canyon, which required the placement of retaining walls in places (Figure 3). The flat, earthen road bed is between 15 and 20 feet wide. The segment is 1,800 feet long, but an examination of aerial photographs shows the segment continues north for over a mile before reuniting with the modern Nine Mile Road at the south end of Wells Draw. Associated features include a double dry-laid sandstone culvert (Feature E; Figure 4) and upright slabs (Features F and G). Another minor segment branches off of the main road where the road exits the side canyon; it extends south along drainage terraces to terminate near the modern road. Midway in the segment is a 200-foot washed-out area where drainages merge. The south half of the road segment (below the washed-out area) is a dirt two-track averaging 15 feet wide. The north half (above washed-out area) of the segment is a flat earthen road bed averaging 20 feet wide. The overall segment length is 1,200 feet. The final identified segment of the historic road just east side of the modern road about midway up Gate Canyon. The road base consists of a level, earthen roadbed averaging 15 feet wide. The overall segment length is 860 feet. No artifacts were documented in association with these road segments.



Figure 2. Collapsed wooden bridge in Gate Canyon.



Figure 3. Road segment with retaining wall



Figure 4. Double stone culvert along a portion of the historic Nine Mile Road.

ADVERSELY EFFECTED SITES

Site No.: 42Dc2144
Site Type: Stock Driveway Sign
Alternative: 2
Impact Type: Possible Inadvertent Damage

Description: 42Dc2144 represents a stock driveway sign consisting of a metal post with two metal signs nailed to cut wooden boards for support. Overall, the sign is 4 feet 10 inches tall. The upper sign is 7 inches long by 10 inches wide. Its wood board backing has the same dimensions, except it is 3/4 inch thick. The sign is rusted but is still legible, and reads "NOTICE/ The Area Behind This Point/ CLOSED TO/ SHEEP GRAZING/ Do Not Trespass." In the lower right corner of this upper sign is the outline of a badge emblem, likely for the Department of the Interior, though the interior of the badge is faded. In the upper right corner is an incised inscription appearing to be "DE 020-02." The lower sign is 10 inches long by 7 inches wide. Its wood backing has fallen to the ground, but is the same thickness as the upper sign backing (3/4 inch) and matches the dimensions of the lower sign. The lower sign is also rusted, but mostly legible. It reads "CE____/ STOCK/ DRIVEWAY." It is assumed, based on other signs in the canyon, that the top word is "CENTER", so the sign would read "CENTER STOCK DRIVEWAY" in completion. The signs are attached to the post with two bolts each. Additionally, there are several bullet holes through each sign.

Site No.: 42Dc2854
Site Type: Historic Inscription
Alternative: 1 & 2
Impact Type: 1) Elimination; 2) Setting and Integrity, Possible Inadvertent Damage

Description: These inscriptions of European American cultural affiliation are associated with the historic Nine Mile Canyon freight road. The site is located in a slight alcove of a cliff face above a talus slope. Sediments below the inscriptions are sandstone boulders, cobbles, and gravel. Surrounding vegetation is dominated by pinyon pine. Panel 1 consists of an axle-grease inscription on an inaccessible, southwest facing cliff. The inscription includes a name with a date that reads "L.H.L/Leonard/Oct. 12/1886." The inscription is underlined with crescent shapes and dots over the initials. To the right of the inscription is scratched "TIM." Bullet holes, spelling out illegible letters, are above, and have caused damage to the axle-grease inscription below. Panel 2 is located to the south of Panel 1. It consists of an etched inscription measuring 16 by 24 inches that reads "LASH (underlined with dots above the L)/222."

Site No.: 42Dc2855
Site Type: Historic Inscription
Alternative: 2
Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: This historic inscription of European-American cultural affiliation is located in Gate Canyon on a cliff face a few feet above the ground surface. Sediment below the site consists of gravel and pebbles in a drainage bed. Vegetation includes low sagebrush and rabbitbrush. Panel 1 is a small, very weathered, axle-grease inscription measuring 10 by 4 inches. It is located 57 inches above the modern ground surface. The inscription reads "ARD." Most of the grease has weathered away, leaving a stain on the rock. No other features or artifacts were observed.

Site No: 42Dc2856
Site Type: Historic Inscription
Alternative: 1 & 2
Impact Type: 1) Elimination; 2) Elimination

Description: This site was originally recorded by MOAC in 2011 and has since been impacted by Duchesne County while realigning the road from one side of the Gate canyon drainage to the other between March 20 and November 8, 2012). Panel 1 consisted of a heavily weathered axle-grease inscription: "WC" and the date "1887(?)." It measured 12 by 10 inches and was entirely destroyed by construction activities. Panel 2 was described in the original site form as "additional marking", however, during the recent inspection of the site the axle-grease initials "CA" were discernible. This second panel was not impacted by the county road realignment, but will likely be by the current project.

Site No: 42Dc2858
Site Type: Historic Inscription
Alternative: 1 & 2

Impact Type: 1) Elimination; 2) Setting and Integrity, Possible Inadvertent Damage

Description: This site is a set of two historic inscriptions located on a south-facing cliff face on the west side of Gate Canyon. Sediment below the site consists of grayish tan sand with sandstone boulders and cobbles. Vegetation includes greasewood and snakeweed. Panel 1 consists of four axle-grease inscriptions. Barely legible inscriptions read "R.S.," "L," and, possibly, "ARLS." Panel 2 displays seven axle-grease and/or incised inscriptions. Inscriptions on this panel read "FRANN Mc. Sep. 1900," "J.C. 06," "M.E. Pierce," "D....H.," "Elton P," and "ME Pierce (possibly) MAR 23." The seventh inscription has been scratched into patinated sandstone and reads "Tonking."

Site No: 42Dc2859
Site Type: Historic Inscriptions
Alternative: 1
Impact Type: Elimination

Description: Site 42Dc2859 consists of two small panels of historic European-American inscriptions located on a cliff face below a talus slope in Gate Canyon. Panel 1 is rendered in light orange clay and includes "CLE** B(r)*(K)(l)**/CLYDE/NE(L)SEN." There are no associated dates. Panel 2 consists of two axle-grease inscriptions. Inscription 1 reads "R.S./Dec 14,/1908." The axle grease of this inscription has worn off and left a brown stain on the date "1908." Inscription 2, just below and intersecting with Inscription 1, displays the name "W. Burgess."

Site No.: 42Dc2863
Site Type: Historic Inscription
Alternative: 2
Impact Type: Possible Inadvertent Damage

Description: These historic inscriptions are of European-American cultural affiliation and are located on a cliff face above a talus on the east side of Gate Canyon. The sediments consist of large sandstone boulders, cobbles, and gravel atop sandstone bedrock. The surrounding vegetation includes sagebrush. The site consists of two panels of axle-grease inscriptions. Panel 1 consists of three axle-grease inscriptions on three adjoining sandstone faces. Inscription 1 reads "ALFORD YOUNG/APR 21/19??." Inscription 2 reads "Gear??? (smit?)." Inscription 3 reads "EDDIE/YOUNG/1908." Inscription 1 shows the largest amount of weathering, with an illegible date and smeared first name. Panel 2 consists of one axle-grease

and etched inscription that reads "LOT POWELL 18(8? 2?)." The "...WELL 18(8? 2?)" is etched into the sandstone cliff face.

Site No: 42Dc2864

Site Type: Wagon Road

Alternative: 1 & 2

Impact Type: 1) Partial Elimination; 2) Partial Elimination, Elimination of Features A and B.

Description: Site 42Dc2864 is a segment of the Price to Myton freight road. Four segments of the road, and several associated features, have been identified throughout Gate Canyon. It consists of an earthen wagon road bed and a wooden bridge. The southernmost segment extends approximately 334 feet NE-SW along the edge of a heavily vegetated terrace that parallels a wide intermittent drainage. The roadbed occurs slightly above the wash, below the first terrace. It averages 19 feet wide and a shallow ditch is evident along portions of the segment. The road is covered by native vegetation. On the north side of the road segment is a collapsed log bridge.

Another major segment is near the north end of the canyon. Where the road enters the side canyon and gains elevation, retaining walls were constructed (Features A-D). In three places are small, washed out areas. Perhaps there were once crossings at these locations that have since washed away or have been removed. The road bed appears as a flat, earthen level area averaging 15 to 20 feet wide. Overall, the segment is 1,800 feet long. The road is sparsely covered with vegetation. Associated features include four retaining walls (Features A-D), a culvert (Feature E), and upright slabs (Features F and G).

A secondary alignment juts off of the previous segment at its northernmost extent where the segment makes its start into the side canyon. It then extends south downslope along drainage terraces to terminate near the modern road. Midway in the segment is a 200-foot washed-out area where drainages merge. The south half of the road segment (below the washed-out area) is a dirt two-track averaging 15 feet wide. The north half (above the washed-out area) of the segment is a flat earthen road bed averaging 20 feet wide. The overall segment length is 1,200 feet. Its entirety is covered with sparse vegetation. This segment could represent another route of crossing the terraces to the side canyon. No features are associated with this segment.

The final recorded segment of the road is situated on the east side of the modern road on a terrace along the east side of a large wash. It contains no features and consists of a level earthen roadbed averaging 15 feet wide. The overall segment length is 860 feet. Sagebrush and sparse pinyon are growing on the road. Near the northernmost extent is a 50-foot gap in the road caused by the wash. The portion of road north of the washed-out area is very degraded, consisting of a roughly 10-foot-wide mounded area, terminating just below the modern road. The southern (and largest) portion picks up on the other side of the wash and terminates farther down the wash. Overall, Segment 2 is in fair condition.

Site No.: 42Dc2865

Site Type: Historic Inscriptions

Alternative: 2

Impact Type: Possible Inadvertent Damage

Description: This site consists of historic inscriptions of European/American cultural affiliation located on a sandstone rock outcrop on a slope on the west side of Gate Canyon. Below the rocky outcrop is colluvial deposition consisting of light yellowish brown, sandy silt mixed with

many sandstone gravels, cobbles, and boulders. Vegetation below the outcrop includes low sagebrush, Indian ricegrass, and galleta grass. The site consists of three panels of historic inscriptions. Panels 1-3 are located on the vertical exposure of a sandstone outcrop approximately 15 feet up the colluvial slope from the canyon floor. The panels are adjacent to each other, all facing southeast, with Panel 1 farthest south, Panel 2 in the middle, and Panel 3 farthest north. Panel 1 is 46 inches wide by 31 inches high and contains a pecked inscription of the initials "K. P" or "R. P." The initials measure 5 inches wide by 5 inches tall, it is difficult to discern the letters because they are heavily repatinated. Panel 2, which is 69 inches wide by 44 inches tall, contains a pecked inscription of the initials and date "R. A 3. 67.," with "ED" and "EB" lightly scratched in above. To the right of the inscription is a thin, scratched-line stick figure of a person. The initials, with date, measure 20 inches wide and 4 inches tall. Panel 3 measures 26 inches wide and 10 inches tall and contains the stipple-pecked initials "D W." The initials measure 9 inches wide and 4 inches tall and are lightly repatinated.

Site No.: 42Dc3156

Site Type: Historic Inscriptions

Alternative: 1 & 2

Impact Type: 1) Elimination; 2) Setting and Integrity, Possible Inadvertent Damage

Description: The site consists of three axle-grease inscriptions of European American cultural affiliation associated with the historic Nine Mile Canyon freight road. Vegetation in the area consists of big sagebrush and Mormon tea, surrounded by pinyon and juniper. The inscriptions are situated at the back of a wide alcove along the northern side of Gate Canyon Road. They are rendered 13 feet above the ground on a somewhat smooth sandstone face above a leached lower portion of the alcove. There are three inscriptions applied with black axle grease: "E.D. INGLE" "MAY 24 1906" adjacent to "HEW/RW." In another area are the initials "OM-B."

Site No.: 42Dc3157

Site Type: Historic Inscriptions

Alternative: 2

Impact Type: Eliminated

Description: The site consists of three axle-grease inscriptions of European American cultural affiliation associated with the historic Nine Mile Canyon freight road. Surrounding vegetation includes sagebrush, Mormon tea, pinyon, and juniper. The inscriptions are rendered on the flat surfaces of a sandstone cliff face, along the southern side of Gate Canyon. An ephemeral wash runs along the base of the cliff containing dark brown silty sand covered with cobbles and fragmented sandstone. The cliff face has been subjected to wind and water erosion, which has caused some spalling. The inscriptions are located on one panel, which is oriented to the northeast. The panel is 10 feet above the ground surface and measures 17 feet long by 4 feet high. The first inscription is a single black axle-grease name, which reads "OTT/ HALL." The second inscription is a black axle-grease date with the legible portion "JAN -" as the top line with a row of illegible writing below. The third inscription appears to be the remnants of a black axle-grease name or date, but is now illegible. No artifacts were observed in association with the inscriptions.

Site No.: 42Dc3158

Site Type: Historic Inscriptions

Alternative: 1 & 2

Impact Type: 1) Elimination; 2) Setting and Integrity, Possible Inadvertent Damage

Description: Site 42Dc3158 consists of an incised inscription and a black axle-grease inscription associated with the historic Nine Mile Canyon freight road. The inscriptions are

rendered on the flat face of a sandstone rock outcrop, along the west side of Gate Canyon. The inscriptions are located on one panel oriented to the south, 4 feet above the ground surface; it is 5 feet long by 1 foot high. Inscription 1 consists of an incised name with a date "R BURGE 88." Inscription 2 consists of a black axle-grease "O -."

Site No.: 42Dc3161

Site Type: Historic Inscriptions

Alternative: 2

Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: The site consists of five European American axle-grease inscriptions associated with the historic Nine Mile Canyon freight road. The inscriptions are rendered on the flat, vertical cliff face on the south side of Gate Canyon. The cliff face has been subjected to wind and water erosion, mineral deposits, and bullet holes. Along the base of the cliff face runs an ephemeral wash containing silty sand with fragmented sandstone. The inscriptions are distributed on two panels, which both face north. All five inscriptions were applied with black axle grease. Panel 1 is 5 feet 6 inches above the ground surface and measures 11 feet long by 6 feet high. It displays four inscriptions. Inscription 1 is a name, date, and possibly a location "BLANCH Sydd. ALL. WIL ***DALL./ MONRE AUG 3" (* = illegible letter). Inscription 1 consists of possible initials, a partial date, and a name "EL/ *** 1918/ ELMER/ Powell." Inscription 3 is rather faded, but what is discernible reads "FRANCE -nilow FRANCE." Inscription 4 is a single name. "B. ROBERTS." Panel 2 is 14 feet above the ground surface and measures 1 foot long by 1 foot high. It contains Inscription 5 which is a single set of initials "W.A." No artifacts were observed in association with the inscriptions.

Site No.: 42Dc3163

Site Type: Historic Inscriptions

Alternative: 1

Impact Type: Elimination

Description: This is a single axle-grease inscription of European American cultural affiliation associated with the historic Nine Mile Canyon freight road. The inscription is located on a flat vertical sandstone cliff face, along the western side of Gate Canyon. The cliff face is located above a sandstone outcrop covered with sediments and rocks. Due to its location, the cliff is subjected to wind and water erosion. The inscription (Panel 1) consists of a single black axle-grease name "E.A. BRAD LEYED." It is 4 feet above the ground and measures 2 feet 6 inches long by 9 inches high. Underneath the inscription is one line of faint illegible writing. No artifacts were observed in association with the inscription.

Site No.: 42Dc3167

Site Type: Historic Inscription

Alternative: 2

Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: This is a single axle-grease inscription of European American cultural affiliation associated with the historic Nine Mile Canyon freight road. The inscription is located on a lower northeast oriented cliff face on the western side of Gate Canyon. The sediments below the panel consist of light brown sandy silt with cobbles and sandstone fragments. The panel is located on the vertical face of a sandstone cliff or outcrop with a natural background. Natural and modern destructive agents have affected the inscription, mostly through exposure to wind and rain; some surface spalling and dust accumulation is also evident. Panel 1 measures 2 feet 2 inches long and 1 foot 6 inches tall and exhibits a black axle-grease inscription 3 feet 7 inches

above the ground. The inscription measures 2 feet 2 inches by 1 foot 6 inches and reads "BELL / BLACK."

Site No.: 42Dc3168

Site Type: Historic Inscriptions

Alternative: 2

Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: The site consists of a single panel with one black axle-grease inscription of European American cultural affiliation located on a lower cliff face on the west side of Gate Canyon. The IMACS form was updated because the original description had two panels, which is incorrect. Ground sediments consist of light tan sandy silt and small sandstone fragments eroding in place. Low sagebrush and bunch grasses grow near the site with pinyon and juniper on the higher benches. The inscription reads "SARAH,PRETTYMAN / R*S****" and measures 5 feet 1 inch by 1 foot.

Site No.: 42Dc3169

Site Type: Historic Inscriptions

Alternative: 1 & 2

Impact Type: 1) Elimination; 2) Possible Inadvertent Damage

Description: Site 42Dc3169 includes two panels with four black axle-grease inscriptions spread over a distance of 6 meters on a lower cliff face along the east side of Gate Canyon. Wind and water erosion, as well as dust from the adjacent road, have affected the panels. Panel 1 is 9 feet long by 3 feet tall, and contains two black axle-grease inscriptions, one 2 feet 11 inches above the ground and the other 4 feet 2 inches. Inscription 1 measures 3 feet 4 inches by 9 inches and reads "D.H. Karren / * / h*bA***A****." Inscription 2 on the same panel is 1 foot 7 inches by 8 inches and reads "****M** / ***1*." Panel 2 is 2 feet 6 inches long and 2 feet 4 inches tall and contains two black axle-grease inscriptions, both of which are 4 feet above the ground. Inscription 3 measures 1 foot 9 inches by 11 inches and reads "M**** / 7-1*-1913." The fourth inscription is "RO* AL, *UNC, 1911."

Site No.: 42Dc3171

Site Type: Historic Inscriptions

Alternative: 2

Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: The site consists of three panels with nine axle-grease inscriptions of European American cultural affiliation associated with the historic Nine Mile Canyon freight road. The inscriptions are located on a lower cliff face on the western side of Gate Canyon. Sediments below the panels consist of light tan silty soil with sandstone fragments. Surrounding vegetation includes shadscale and bunch grasses with a pinyon and juniper woodland on the higher benches. Fine to heavy concentrations of light tan dust, generated from road use, have collected on the sandstone faces. Panel 1 measures 1 foot long and 6 inches tall and contains a single black axle-grease inscription 10 inches above the ground. Inscription 1 measures 1 foot by 5 inches and reads "SAM." Panel 2 measures 18 feet 7 inches long and 4 feet 9 inches tall and contains six black axle-grease inscriptions; the lowest is 3 feet 7 inches above the ground, and the highest is 6 feet 3 inches. Inscription 2 measures 21 inches by 13 inches and reads "HER*E BELL" with an anthropomorph figure with a top hat drawn into the center. Inscription 3 measures 33 inches by 10 inches and reads "FRANK. T * NELL/TAYLOR. HAM." Inscription 4 measures 9 inches by 5 inches and reads "C*/MP." Inscription 5 measures 13 inches by 17 inches and reads "T.L.A / APRIL / 1/16." Inscription 6 measures 3 feet 3 inches by 1 foot 10 inches and reads "LAM / 1909 / **RK. SMITH. / MERVIN. *MiTH. JAN 30 / 1909 /

(drawing of dog) / Topsy." Inscription 7 measures 2 feet 7 inches by 1 foot 1 inch and reads "DELPHIA MILLER / JAN.29,1916." Panel 3 measures 6 feet 6 inches long and 2 feet tall and contains two black axle-grease inscriptions; the lowest is 5 feet above the ground and the highest is 5 feet 6 inches. Inscription 8 measures 1 foot. 10 inches by 5 inches and reads "Frank F****." Inscription 9 measures 2 feet 4 inches by 1 foot 4 inches and reads "HOLDO / M. B Willson / mar / 10 1917."

Site No: 42Dc3172

Site Type: Historic Inscriptions

Alternative: 1 & 2

Impact Type: 1) Elimination; 2) Setting and Integrity, Possible Inadvertent Damage

Description: Site 42Dc3172 runs along the west side of Gate Canyon for about 100 feet and consists of four panels with 22 European American axle-grease inscriptions. Fine to heavy concentrations of light tan dust, generated from road use, have collected on the sandstone faces. Panel 1 measures 17 feet long and 3 feet tall and contains four black axle-grease inscriptions; the lowest inscription is 4 feet 9 inches above the ground and the highest is 6 feet 3 inches above the ground. Inscription 1 measures 6 by 10 inches and reads "FE*D," Inscription 2 measures 1 foot 9 inches by 1 foot 4 inches and reads "UB/A*HR**M/RUM," Inscription 3 measures 6 inches by 1 foot 1 inch and is illegible, and Inscription 4 measures 7 inches by 1 foot 2 inches and is mostly illegible reading "*****M." Panel 2 measures 7 feet long and 1 foot 8 inches tall and contains one large black axle-grease inscription of the same dimensions that is 10 feet above the ground. Inscription 5 reads "VON. L. Cowley/C/AWCH*WE W***." Panel 3 measures 18 feet long and 1 foot 1 inch tall; it contains four black axle-grease inscriptions. Inscription 6 measures 2 feet 5 inches by 10 inches and reads "TOM BLACK***/AUG. 8 18**." Inscription 7 measures 3 by 5 inches and reads "H." Inscription 8 measures 1 foot 1 inch by 1 foot and reads "F. M. ***/0 99/*." Inscription 9 measures 2 feet 2 inches by 4 inches and reads "M^oINTIRE BILL." Panel 4 measures 22 feet long and 5 feet 9 inches tall and contains one incised and 12 black axle-grease inscriptions. Inscription 10 is illegible. Inscription 11 measures 2 feet 3 inches by 1 foot 8 inches and reads "LOREN/A ***LEN/**." Inscription 12 measures 2 feet 6 inches by 4 inches and reads "DED. HOR* *PRIN." Inscription 13 measures 1 foot 9 inches by 4 inches and reads "F.ANSCOMB." Inscription 14 is the only incised inscription and measures 1 foot 6 inches by 5 inches and reads "W. Lit.ey." Inscription 15 measures 3 feet 2 inches by 5 inches and reads "R. H**LRED. OCT. 30 1906." Inscription 16 measures 3 feet 5 inches by 5 inches and reads "CHARLEY ALRED 1897. OCT **." Inscription 17 measures 2 feet 1 inch by 1 foot 4 inches and is mostly illegible, but reads "* ***** 1895/*****/**." Inscription 18 measures 1 foot 11 inches by 11 inches and is completely illegible. Inscription 19 measures 1 foot 11 inches by 5 inches and reads "C. M ALLRED." Inscription 20 measures 1 foot 5 inches by 6 inches and reads "**WI*ANE." Inscription 21 measures 2 feet by 10 inches and is mostly illegible, but reads "*****AL/**WAD." Inscription 22 measures 1 foot 5 inches by 5 inches and is entirely illegible "*****." Artifacts include a single chert tertiary flake and one aqua glass fragment of an insulator. The latter is the only indication identified of the telegraph line that paralleled the wagon road through Gate Canyon.

Site No: 42Dc3173

Site Type: Historic Inscriptions

Alternative: 1 & 2

Impact Type: 1) Elimination; 2) Elimination

Description: The site consists of two black axle-grease inscriptions associated with the historic Nine Mile Road. The inscriptions are rendered on the flat surface of an east facing sandstone rock outcrop. The two inscriptions occur on one panel (Panel 1). Panel 1 is 3 feet 5 inches

above the ground surface and is 4 feet 2 inches long by 9 inches high. Inscription 1 consists of one set of black axle-grease initials and date, which reads "EMAJ/ 5/17/15." Inscription 2 consists of one set of black axle-grease initials and date, which reads "D. POPE/ '97."

Site No.: 42Dc3174
Site Type: Historic Inscriptions
Alternative: 2
Impact Type: Elimination

Description: The site consists of two black axle-grease inscriptions of European American cultural affiliation associated with the historic Nine Mile Canyon freight road. Vegetation in the area includes low sagebrush, bunch grasses, Mormon tea, and pinyon. The inscriptions are rendered on a vertical sandstone cliff face, along the western side of Gate Canyon. Around the cliff face is off-white silty sand covered with fragmented sandstone. The cliff face has been subjected to wind, rain, dirt, and mineral deposits which has caused some surface spalling. The inscriptions occur on one panel (Panel 1). Panel 1 is 4 feet 6 inches above the ground surface and measures 5 feet 8 inches long by 1 foot 1 inch high. Inscription 1 consists of two black axle-grease names, and reads "DELTA/ LEVENIA HOLT/ GLEN HOLT." Inscription 2 is located to the west of Inscription 1, and consists of a single set of black axle-grease initials, which reads "A*H." No artifacts were observed in association with these inscriptions.

Site No.: 42Dc3453
Site Type: Historic Inscriptions
Alternative: 2
Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: This site consists of two panels containing axle-grease inscriptions of European-American cultural affiliation. The panels are located on two separate boulders situated on either side of Gate Canyon Wash west of the modern Gate Canyon Road (42Dc2881) and the historic wagon road (42Dc2864). Sediments on the site consist of silty sand with sandstone boulders, cobbles and gravel over sandstone bedrock, which is exposed along the edge of the wash. Vegetation includes pinyon, juniper, sagebrush, rabbitbrush, and bunch grasses. Panel 1 is on the southwest side of a sandstone boulder situated on the west side of Gate Canyon Wash. The panel measures 1 foot by 1 foot 8 inches and is 4 feet 5 inches above the modern ground surface. Panel 1 contains two inscriptions. The first inscription reads "CR.B." and runs vertically above the second inscription, which runs horizontally and reads "L13SE." Panel 2 is on the southwest side of a sandstone boulder situated on the east side of Gate Canyon Wash and on the west edge of the Historic Wagon Road (42Dc2864). The panel measures 1 foot 4 inches by 1 foot 8 inches and is 6 feet 5 inches above the modern ground surface. Panel 2 contains two inscriptions. The first inscription reads "J E" with a backwards "R" in front of the "J." The second inscription is below the first and appears to be the letter "V." Weathering of this second panel has made the inscriptions difficult to discern.

Site No.: 42Dc3475
Site Type: Historic Inscription
Alternative: 2
Impact Type: Setting and Integrity, Possible Inadvertent Damage

Description: This is a single cattle brand inscription located on a level terrace in the Gate Canyon, which serves as one of the few camping areas present in the canyon. The inscription is under a slight boulder overhang situated along the terrace. The inscription consists of a single brand with no additional dates or initials. The brand inscription is 7 inches tall and 4

inches wide. The brand is “Yoke- Double Bar-L.” The brand could not be found in the “Record of Marks and Brands for the State of Utah” for 1901, suggesting the brand postdates the first few years of the twentieth century. A modern, plastic gas can is cached under some boulders next to the inscription.

RESEARCH DESIGN

The research design for the mitigation of adverse impacts resulting from the proposed Gate Canyon road improvements consists of three parts: high resolution photographic documentation of the directly impacted panels, historical research to identify those people who left their signatures in the canyon that highlight the importance of Gate Canyon in the early settlement and economic development of Duchesne County and the Uinta Basin.

RESEARCH QUESTIONS

Given the socioeconomic importance of the Nine Mile Road and the thousands of people who traveled its dusty length for reasons both personal and business-related, scholars only know the very basics about the road and the people who used it. The stories of those people whose livelihoods depended on the road are not part of the historic record, but the hundreds of inscriptions in Gate Canyon hint at hundreds of individual stories, which collectively tell an important part of the early European-American history of northeastern Utah. Beyond identifying and collecting baseline information on people who transited Gate Canyon and left mention of their doing so to other passersby, we aim to gain a general understanding of the demographic profile of those who used the road. As such, using a combination of ethnohistoric, historic, and archaeological data and methods, we will attempt to answer the following questions pertaining to those who used the road.

- 1) Who tended to leave their signatures on the canyon walls most? Those who regularly traveled the road, such as teamsters, or those passing through, such as stagecoach passengers?
- 2) Does the distribution of dated inscriptions reflect the general historical trends in road usage (slight increase from 1886 to 1905, then substantial increase after the Ute Reservation was opened to homesteading, and sharp decrease after 1915 when other transportation routes, such as Indian Canyon, were open)?
- 3) There is some archaeological evidence that certain inscriptions have been visited and revisited over the years by family members. What is the purpose of these revisits??
- 4) Do inscriptions of a single individual occur multiple times throughout the canyon or are the inscriptions unique?

METHODS

Fieldwork

At the sites that will be directly impacted by construction of the proposed Gate Canyon road improvements, additional photographic documentation will be completed prior to the start of construction. This includes those sites that will be eliminated by either alternative and those sites within 20 meters of the disturbance zone of the second alternative. Photographic

documentation will consist of photographing inscriptions or panels of inscriptions using a large format camera. Single Lens reflex cameras will be used to capture the overall setting of the panels. Infrared photographs, following the procedures outlined in Fredlund and Sundstrom (2007), will be taken of panels where inscriptions are worn, eroded, or otherwise illegible. It is hoped that the digital infrared photographs may aid in identifying portions of the inscriptions not readily apparent in the visible light range.

Large format photographs will be taken using a Toyo 4x5 Field Camera using Kodak or Illfeld 4x5 Black and White film. All the negatives and contact sheets will be processed for archival storage. Digital Infrared photographs will be taken using a Canon EOS Digital 35mm SLR camera, fitted with a 50mm wide angle lens fixed with a B+W 52mm IR Dk. Red #0952M Filter. The RAW digital images will be stored on the MOAC server and on archival grade gold compact disks.

Finally, samples of the axle grease from impacted inscriptions will be collected for archival purposes. Currently, little is known about how to properly conserve axle-grease inscriptions. Archived samples of the material may assist land management agencies and conservators to develop methods to preserve the existing signatures along the Nine Mile Road or in other areas where the practice of axle-grease inscriptions was common. If site 42Dc3167 will be impacted by construction, an attempt will be made to relocate the boulder on which the inscriptions occur, outside of the construction zone. If warranted, the boulder may be relocated and used for interpretative purposes elsewhere in the canyon. Regardless of whether or not it is physically possible to relocate the boulder, the documentation and enhanced photography will be completed at the site. If the boulder cannot be moved without irreparable damage to the inscriptions or because of safety concerns, the lead agency will be consulted for approval to proceed without relocation.

Archival and Historical Research

An Access database containing all the identifiable names recorded in Gate Canyon will be compiled and correlated with a second database containing the names of prominent individuals mentioned in historic documents and written histories of Carbon, Duchesne, and Uintah Counties concerning the Nine Mile Road, gilsonite mining, Fort Duchesne, ranching, and other historical themes of northeastern Utah that could have some connection to the Nine Mile Road. The cross-correlation of the databases should allow for creating a broader picture of how the road served the greater region rather than the military and industry emphasis focused on by the regional historians.

Archival resources will be examined to further elucidate the lives of the people who left their mark on the walls of Gate Canyon. It is expected that, at a minimum, historic and archival resources that will be consulted include Uintah County Library's Regions History Center, the Utah State History Research Library, the Uintah County Western Heritage Museum, and the Western Mining & Railroad Museum in Helper, Utah. Online archive resources will also be consulted; these will likely include the Utah Digital Newspaper archive, the Mountain West Digital Library, and various online genealogy resources.

If an individual's name appearing in a historic inscription of Gate Canyon can be traced to families still residing in the Castle Valley or Uinta Basin regions, questionnaires will be sent to the families soliciting information concerning their ancestor and family history. While general

information concerning family histories will be collected, information concerning the use of the Nine Mile Road will be the focus. If there is considerable interest by a family, and that family has considerable information they are willing to share, researchers will conduct interviews and collect life histories of those with a connection to Nine Mile Road.

Interpretative Trails

Duchense County, in consultation with the BLM, SITLA, and SHPO, proposes to explore the potential for developing one or two interpretative trails in Gate Canyon area for educational and recreational purposes (Figure 5). The public educational opportunities can provide an effective means to mitigate the project's adverse effects to the canyon's cultural resources by increasing awareness of the canyon's history and the importance of cultural and historical resources. Each of the potential trails highlights different aspects of the historic Nine Mile Road. The first potential trail follows one on the more pristine sections of the historic road, the northernmost segment of site 42Cb2864. This section of road has several features, such as rock retaining walls and stone culverts that are immediately accessible to hikers. The interpretative potential of this trail centers on historic road construction techniques and engineering. In addition, the segment is located in a small draw away from the main road and other development, which would allow the visitor to contextually experience what the road was like over 100 years ago. The trail would begin about a quarter-mile north of the Wrinkles Road, follow the existing road segment north for approximately one mile where the segment intersects with the Pipeline Road. To limit erosion and other impacts, the trail would be only accessible to foot traffic.

The second proposed interpretative trail would be near the middle of the canyon, approximately 2.16 miles north of the Nine Mile Road and 2.4 miles south of the Wrinkles Road, where a large level area already provides unimproved camping. The area contains easy access to several sites including a section of the historic road (42Dc2864), several inscription panels (42Dc3453-42Dc3457 and 42Dc3473), and a stone wall (42Dc3474). The interpretive potential of this trail would focus on the use of the road by freight haulers, settlers, and cowboys conducting cattle drives from the Nutter Ranch. The variety of cultural resources in the area and the ability to provide parking and recreational facilities (picnic tables, latrines, etc.) makes this an ideal location for interpretation.

DISSEMINATION

The results of the investigations will be submitted in a technical report format to the federal, state, and local government agencies. A copy of the report will also be submitted to the BLM Price Field Office so the information may be used in interpretative planning related to the West Tavaputs Plateau (WTP) Programmatic Agreement. Copies of the report will also be sent to any informants interviewed during the course of the project. Field notes, photographs, and samples of the axle grease will be curated at the USU-CEU Prehistoric Museum. In addition to the technical report, a brochure and/or small booklet detailing the findings of the study and providing historical interpretation of Gate Canyon will be produced. Physical copies will be provided to the Vernal BLM and digital copies will be made available online. In addition, information gathered as part of this project will be made available to the Price Field Office for possible inclusion in the WTP interpretative plan, as detailed in the WTP Programmatic Agreement.

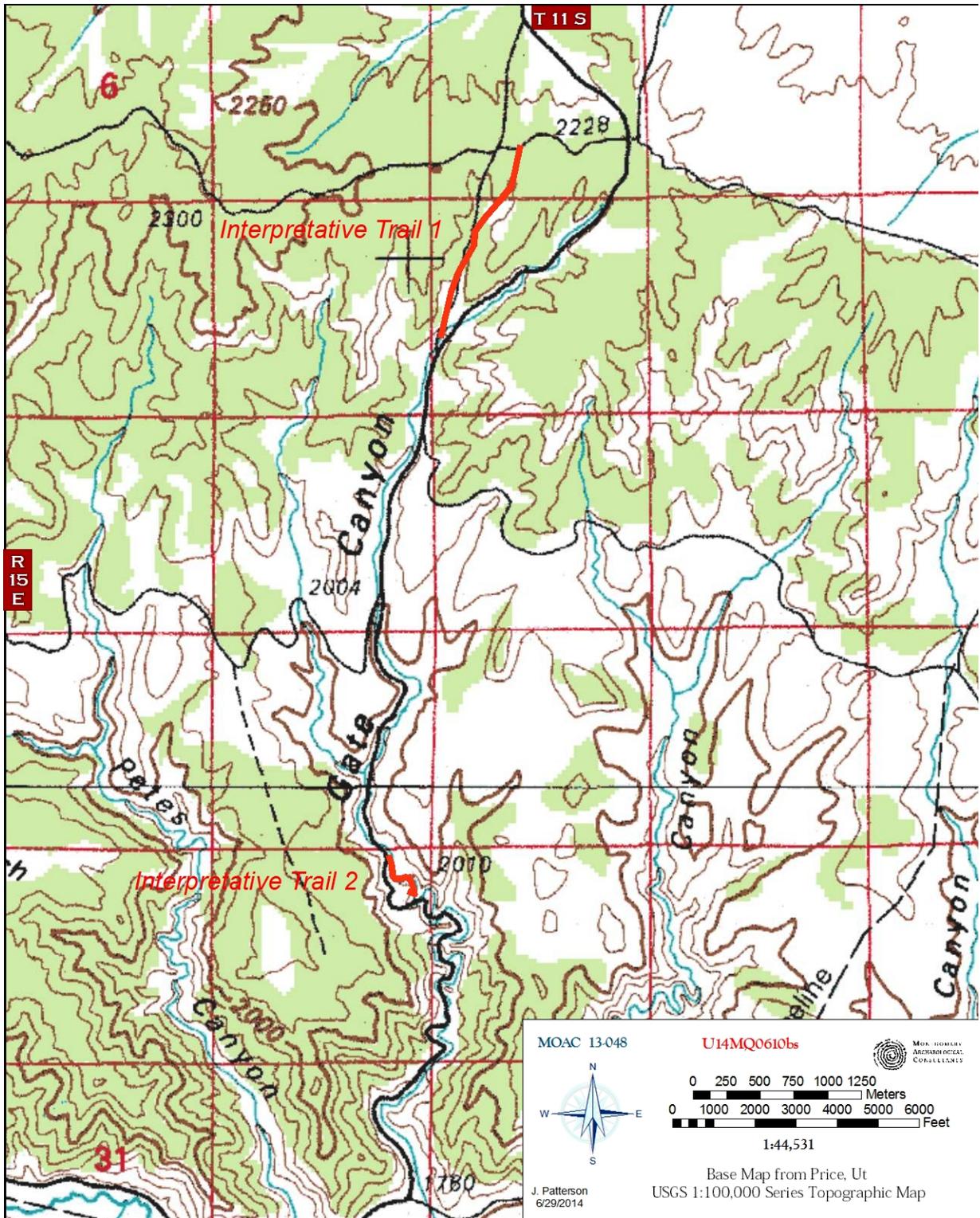


Figure 5. Map of the Two Proposed Interpretative Trails in Gate Canyon.

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