

documented prehistoric sites resulted in a change in designation from “field eligible” to not eligible. A historic road was identified in the records, but no evidence of the road remains. Survey results are presented in the Confidential Appendix, in Exhibits 6P and 6S, Western Mining District (PR09-08, PR12-09) Cultural Resource Information, dated February 2009 and May and August 2012.

18-Left Ventilation Shaft Installation and 16-Right Stabilization Boreholes (TR09-66 and MR11-253) - TC contracted with Metcalf Archaeological Consultants, Inc. to complete an intensive Class III cultural resources survey of the proposed 18-Left Ventilation Shaft Installation, in conjunction with the work previously discussed. A separate survey addressed planned disturbance for the 16-Right Mine Stabilization Boreholes. The surveys covered lands located in Sections 22 and 23, T5N, R87W. No previously recorded sites, isolated finds, or buried cultural materials were found within the surveyed area. Survey results are presented in the Confidential Appendix, in Exhibit 6S.

Sage Creek/Twentymile Overland Conveyor (MR11-254) – TC contracted with Metcalf Archaeological Consultants to complete an intensive Class III cultural resources survey of a corridor for a proposed overland conveyor, linking the Sage Creek Mine with the Twentymile Coal Handling Facilities. The survey covered portions of Section 13, T5N, R87W, and Sections 18, 19, 20, 21, 28, 29, and 32, T5N, R86W, and incorporated a number of areas that had been previously surveyed. The survey resulted in recordation of one historic road segment, five previously recorded sites were revisited, and three isolated finds were documented. The historic road segment is recommended as “non-eligible”, due to historic alteration. One previously recorded site was reevaluated, and the portion within the surveyed corridor is recommended as “non-contributing”. Construction limits or testing are recommended for a second previously recorded site. Survey results are presented in the Confidential Appendix, in Exhibit 6T, Overland Conveyor (MR11-254) Cultural Resource Information, dated June 2011.

15-Left Rock-Dust Installation, 16-Left Utility Borehole, and 5MN Borehole and Pipelines (TR11-77, TR11-78, MR14-283, MR15-288) - TC contracted with Metcalf Archaeological Consultants, Inc. to complete intensive Class III cultural resources surveys of the proposed 15LT Ventilation Installation, 16LT Utility Borehole and 5MN Borehole and pipelines. The surveys covered lands located in Section 17, T5N, R86W, and Sections 23, 24, 25, 26 and 27, T5N, R87W. No previously recorded sites, isolated finds, or buried cultural materials were found within the surveyed areas. Survey results are presented in the Confidential Appendix, in Exhibit 6T.

2011-2012 WMD Exploration Program (MR11-256) - TC contracted with Metcalf Archaeological Consultants, Inc. to complete intensive Class III cultural resources surveys of the 7 potential exploration drillholes to be completed in the WMD. The surveys covered the planned drill-pads located in Sections 26, 27, 34, and 35, T5N, R87W. Some of the sites had been covered by previous cultural resource surveys. No previously recorded sites, isolated finds, or buried cultural materials were found within the surveyed areas. Survey results are presented in the Confidential Appendix, in Exhibit 6L.

2012 WMD Exploration Program (MR12-261) - TC contracted with Metcalf Archaeological Consultants, Inc. to complete intensive Class III cultural resources surveys of the 5 potential exploration drillholes to be completed in the WMD. The surveys covered the planned drill-pads located in Section 36, T5N, R87W. No previously recorded sites, isolated finds, or buried cultural materials were found within the surveyed areas. Survey results are presented in the Confidential Appendix, in Exhibit 6L.

EMD Water Monitoring Wells (MR13-267) - TC contracted with Metcalf Archaeological Consultants, Inc. to complete intensive Class III cultural resources surveys of 2 water monitoring well sites and the associated drill-pads and to be completed in the EMD. The surveys covered the planned drill-pads and access from existing ranch roads located in Section 9, T5N, R86W. No previously recorded sites, isolated finds, or buried cultural materials were found within the surveyed areas. Survey results are presented in the Confidential Appendix, in Exhibit 6L.

WCR Coal Coreholes (MR13-269, MR13-272, MR14-275, MR14-276, MR14-277, MR14-278, MR14-280, MR14-281, MR15-287, MR15-289, MR23-323) - TC contracted with Metcalf Archaeological Consultants, Inc. to complete intensive Class III cultural resources surveys of 57 potential coreholes and offset drilling zones to be completed in the EMD and NMD. The surveys covered the planned drill-pads and associated access located in Sections 8, 10,

- a. ATV or snow machine
 - b. Snow-cat or similar equipment, as needed for snow plowing
2. Crew Size:
 - a. 10-hour day
 - b. Approximately 10 crew members
3. The proposed survey consists of 5 seismic lines totaling approximately 37,600 feet in length
4. A group of 4 geophones (2-inch square plastic molded sensor with a 3-inch long metal spike protruding from the bottom) spaced approximately 18 feet apart is placed every 82 feet along the receiver lines and connected by cables
5. The source truck moves along the survey line, and “thumps” every 82 feet, about 4 – 6 times per location
6. At a location proximate to the survey line, the recording trailer is parked and the data recorded on and displayed by a computer when the weight-drop source truck is activated
7. After the seismic survey activities are completed and recorded, a crew recovers the geophones, cables, and any flag markers

Maps and additional details for the seismic survey project are provided in Exhibit 52.

WCR Coal Coreholes (MR13-269, MR13-272, MR14-275, MR14-276, MR14-277, MR14-278, MR14-279, MR14-280, MR14-281, MR23-323)

TC proposes to develop access, construct drill-pads, and drill and log up to 57 coreholes in the Eastern Mining District (EMD) and Northern Mining District (NMD). The purpose of the corehole program is to more accurately define the extent, configuration, and quality of the Wolf Creek Reserve (WCR) and associated geology and partings, and to assess overburden and coal physical and chemical characteristics, for planning and implementation of possible future mining operations in this area. The proposed activities will occur on lands, and will affect surface and minerals owned or controlled by TC, and will be conducted during the fall through summer of 2013 through 2015. Further exploration will be conducted in 2023 to better define the northern coal boundary. Figures EX52-F1, EX52-F2, EX52-F3, EX52-F4, EX52-F5, EX52-F6, EX52-F7 & EX52-F8, WCR Coal Coreholes, show the corehole locations. Environmental baseline studies, including cultural resource surveys and wildlife consultation with Colorado Parks and Wildlife, have been completed for the proposed drill-sites, and are documented by cultural resource survey reports (Exhibit 6L), and wildlife consultation letters.

Drill-sites have been selected and located to facilitate access from existing County, mine, and ranch roads, and to avoid stream buffer zones and any cultural resource exclusion areas. Minor maintenance may be required for portions of the existing roads, including grading to address rills or washouts and placement of suitable road-base materials or rock/gravel, to assure good access during any wet conditions and minimize any road damage. Where direct access from existing roads is not feasible, drilling equipment and supplies may travel overland short distances during periods when ground conditions are favorable to access the drill sites, or short temporary connecting roads will be constructed. Where road maintenance or construction involves any significant new disturbance, soil materials will be recovered and stockpiled for later use in reclamation, as appropriate. The maximum anticipated road maintenance/construction disturbance requirements would be approximately 46,000 feet (26.4 acres with a 25 ft. maximum road disturbance width).

Drill pads will range from approximately 75 x 75 feet (0.15 acres) to 250 x 250 feet (1.43 acres) depending on drilling conditions, with soil material stripping limited to an area around the drillhole collar, and the area surrounding any mud pits necessary to support drilling operations, in order to minimize disturbance and facilitate site reclamation. If additional site work is required to establish a level pad, any affected areas will be stripped and the soil material stockpiled for use in reclaiming the site. Wattles, sediment fence, and/or berms will be used to control site drainage and prevent off-site sediment transport, with drainage and sediment control for the associated disturbance being address as Small Area, Exemptions (SAE's). Nominal 4.805-inch to 10.750-inch drillholes will be completed using rotary drilling methods and drilling mud as the circulation medium, to depths ranging from 800 to 1,900 feet. Any drilling fluids will be fully contained on site using either mud pits or temporary porta-pits. Core samples will be recovered from all drillholes, and all drillholes will be geophysically logged.