



STATE OF  
COLORADO

Simmons - DNR, Leigh <leigh.simmons@state.co.us>

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## TR-150 Adequacy Response

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**Poulos, Nicki** <npoulos@archrsc.com>

Thu, Feb 10, 2022 at 8:57 AM

To: "Simmons - DNR, Leigh" <leigh.simmons@state.co.us>

Cc: "Wilczek, Jessica" <jwilczek@archrsc.com>

Leigh,

Attached is TR-150 Initial Adequacy Letter response as well as supporting documentation.

Thank you,

**Nicki Poulos**

Environmental Engineer

Mountain Coal Co. LLC

West Elk Mine

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### 3 attachments



**TR-150 Adequacy Response.pdf**

107K



**Permit Page 2.05-121.pdf**

100K



**Cultural and Historic Resources Maps.pdf**

350K



February 10, 2022

Mr. Leigh D. Simmons  
Colorado Division of Reclamation, Mining and Safety  
Office of Mined Land Reclamation  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

**Re: West Elk Mine (Permit No. C-1980-007)  
Technical Revision No. 150, (TR-150)  
Initial Adequacy Review**

Dear Mr. Simmons,

Please find Mountain Coal Company's (MCC) response to your Initial Adequacy Review below.

*Rule 2.04.4 Cultural and Historic Resource Information*

*1. Rule 2.04.4(2) states that:*

*The Division may require the applicant, for good cause shown, to identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places through collection of additional information, conducting of field investigations, or other appropriate analyses.*

*Section 2.04.4 of the currently approved Permit Application Packet (PAP) states that:*

*There are no known cultural and historic resources within the West Elk Mine permit area listed or eligible for listing on the National Register of Historic Places. There are no known significant archaeological sites existing on any areas proposed or likely to be affected by coal mine development, extraction or subsidence over the life of the mine in this area.*

*The text goes on to summarize the investigations that have taken place to support the above statement, and refers to the Map 7 series and the Exhibit 10 series. The field investigations documented in the Exhibit 10 series do not appear to cover the area proposed to be affected by proposed longwall panels LWE15, -16 and -17.*

*Please respond to the SHPO recommendation that a cultural resource inventory be completed for the area to be affected by proposed longwall panels LWE-15, -16 and 17.*

MCC is not proposing any surface disturbance activities for the mining of Longwall panel LWE15-17. More so, there are no cultural or historic resources listed or eligible for listing within these areas that would be affected by planned or probable subsidence due to mining. Therefore, MCC does not believe further cultural resource surveys of the area are warranted.

As shown on the attached map and cultural resources study drawing from PR-14, a cultural resource study completed for previously planned longwall panel LWE9 included MVB pads. MVB pads are not planned for Longwall panels LWE15-17. The PR-14 cultural resources study drawing, for the previously planned LEW9 MVB pads, shows a good cross section of the new LWE15-17 panels and LWE9 to show that area has been studied. Similarly, full block cultural surveys were completed in the proposed B seam panels to the East (TR-147). The PR-14 and TR-147 cultural studies should be on file with the SHPO as they were both submitted to them through the U.S. Forest Service NEPA process.

*Rule 2.05.6 Mitigation of the Impacts of Mining Operations*

2. *The proposed revised text on Page 2.05-121 states that:  
Monument Dam and Minnesota Reservoir are located outside of the angle of mining influence of the eleven longwall panels (panel LWE1 through LWE17) within the South of Divide mining area...*

*Please rephrase the text to clarify exactly which panels are referred to in the statement*

See Attachment, "Permit Page 2.05-121" for revised language.

3. *Later in the same paragraph the text states that the angle from the northern edge of the LWE16 and LWE17 panels to the reservoir is 69°. This is the same as the angle previously stated for LWE9, which was projected to end ~1400' south of the projected boundary of LWE16/17.*

*Please recalculate the angle between the proposed longwall panels and Minnesota Reservoir and verify the assertion that it is much greater than the estimated angle of draw (19°).*

Please see same attachment as above, "Permit Page 2.05-121" for revised angle of draw from LWE17, which is the close area to Monument Dam.

4. *In the fourth paragraph on Page 2.05-12 (both the currently approved and the revised text), the commitment is made to adhere to recommendations made in Exhibit 60E regarding minimum depth of cover; specifically, that no longwall mining will occur where the depth of overburden is less than 250'. Figure 1 shows a section of the proposed revised Map 51 (E-seam mine plan) overlain with the currently approved Map 19 (E-seam overburden). The figure shows that the 200' contour of E-seam overburden intersects with the proposed development workings of panel LWE16 and that the north-west corner of that panel is projected to have between 200' and 400' of overburden. The same is true of parts of the western end of panel LWE15.*

*The Division understands that the E-seam overburden depth data shown on Map 19 is relatively coarse, and that more accurate data will be available as the mine workings are developed and surveyed. The final sentence of the fourth paragraph states that: MCC will continue to survey actual roof elevations in the mine as each longwall panel is developed and adjust the panel length as necessary to ensure that no longwall mining occurs where actual overburden depths are less than 250'*

*Given that the development of panels LWE16 and 17 will establish their northern boundary first, is it technically feasible for MCC to conform to the 250' commitment, for example by reducing the width of LWE17, if the survey data indicates cover will be shallower than 250'? Please discuss.*

MCC's mine plan is to continually survey while mining. This will provide MCC with more accurate data regarding the depth of cover. If the depth were to lessen to below permit limits, MCC would then adjust Longwall mining to shorten the length of LWE15 and LWE17.

#### *Rule 2.08.4 Revisions to a Permit*

6. *On the application form submitted with TR-150 no change in affected area was noted. Since TR-150 proposes a change to the acreage of land to be undermined the actual number of affected acres must be different to the 15,937.85 currently approved.*

*Please calculate the affected area proposed with TR-150, based on the definition given in 1.04(7), and consistent with the mine plan shown on Maps 50, 51 and 52.*

E Seam Panels 15, 16 & 17 have a difference in acreage from previously permitted LWE9 of 149.27 acres. Affected area acres will be adjusted when submitting this response on the E-permitting website.

Sincerely,

*Nicki Poulos*

**Nicki Poulos**  
**Environmental Engineer**

**Anticipated Effects – 2.05.6 (6)(f)(iii)(A)**

Long-term impacts on the surface are predicted to be minimal above the mined longwall panels. The few surface cracks over the mining panels that may occur are expected to close once the longwall face moves past the surface area of influence. Surface cracks present above the chain or barrier pillars or mine boundaries may remain open where permanent tensile strains remain after mining is completed. However, at least several hundred feet of unfractured rock will typically exist between any mine-induced surface fractures and the upper part of any mine-induced fractures above the caved zone in the mining panels. Therefore, from a practical standpoint, no interconnection between the surface fractures and the mine workings is anticipated. Again, under a worst case scenario, if a surface fracture were to occur concurrently within an area controlled by faults or bedrock lineaments, there could be interconnection between adjacent sandstones. However, even under these conditions, the fractures would most likely not extend through the claystones and shales present in the overburden.

Monument Dam and Minnesota Reservoir are located outside of the angle of mining influence of the eleven longwall panels (panels LWE1-8, SST1-4, LWE10-12 and LWE15-17) within the South of Divide mining area (see Map 51). The northern portions of panels LWE16 and LWE17, which are nearest to the reservoir, are located several hundred feet away. The angle of draw to this nearest area of mining is 79°. The angle is much greater than the maximum of 19° projected for the SOD mining area. This means that Minnesota Reservoir will not be affected by longwall mining in projected panels LWE16 and LWE17.

**Reduction Measures (Underground) - 2.05.6 (6)(f)(iii)(B)(I-III)**

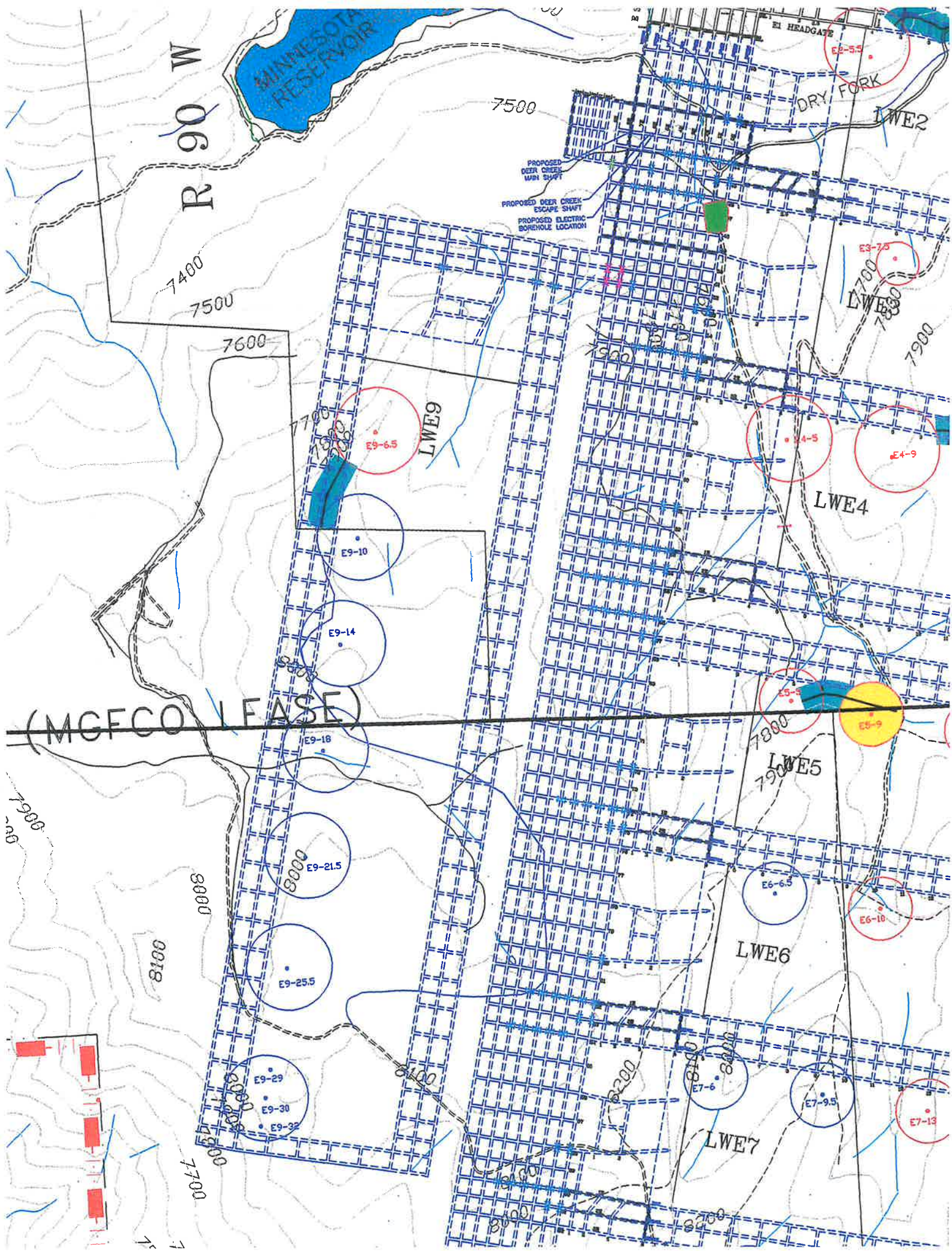
Underground measures that may be taken to reduce surface strains above the chain pillars could include, but are not limited to; (1) Designing the pillars to yield and crush after mining (thus minimizing humps in the subsidence profile), and/or (2) Planning a rapid and uniform mining rate. Any plans in order to reduce chain pillar dimensions to reduce subsidence impacts must, of course, be balanced with health and safety conditions in the mine. Plans for a rapid and uniform mining rate are affected by market demands (or lack thereof) for constant, high volumes of coal. MCC will notify CDRMS if plans that may affect the subsidence profile are implemented.

As discussed in previously in section 2.05.6, Wright Water Engineers has completed detailed subsidence modelling and evaluations from longwall mining in the SOD, Southern Panels, Apache Rocks West, Dry Fork and Sunset Trail mining areas and provided recommendations for longwall mining heights and cover depths. MCC will adhere those recommendations as detailed in Exhibit 60E, including not longwall mining where actual overburden depths are less than 250'. E seam overburden depths are shown on Map 19 and were based on surface topographic surveys compared to top of seam elevations derived from nearby drillhole data. MCC will continue to survey actual roof elevations in the mine as each longwall panel is developed and adjust the panel length as necessary to ensure that no longwall mining occurs where actual overburden depths are less than 250'.

**Preventive Measures (Surface) - 2.05.6 (6)(f)(iii)(C)(I-V)**

Surface measures that may be taken to reduce or prevent damage to applicable structures or water resources could include, but are not limited to; (1) Engineering, design, and construction of







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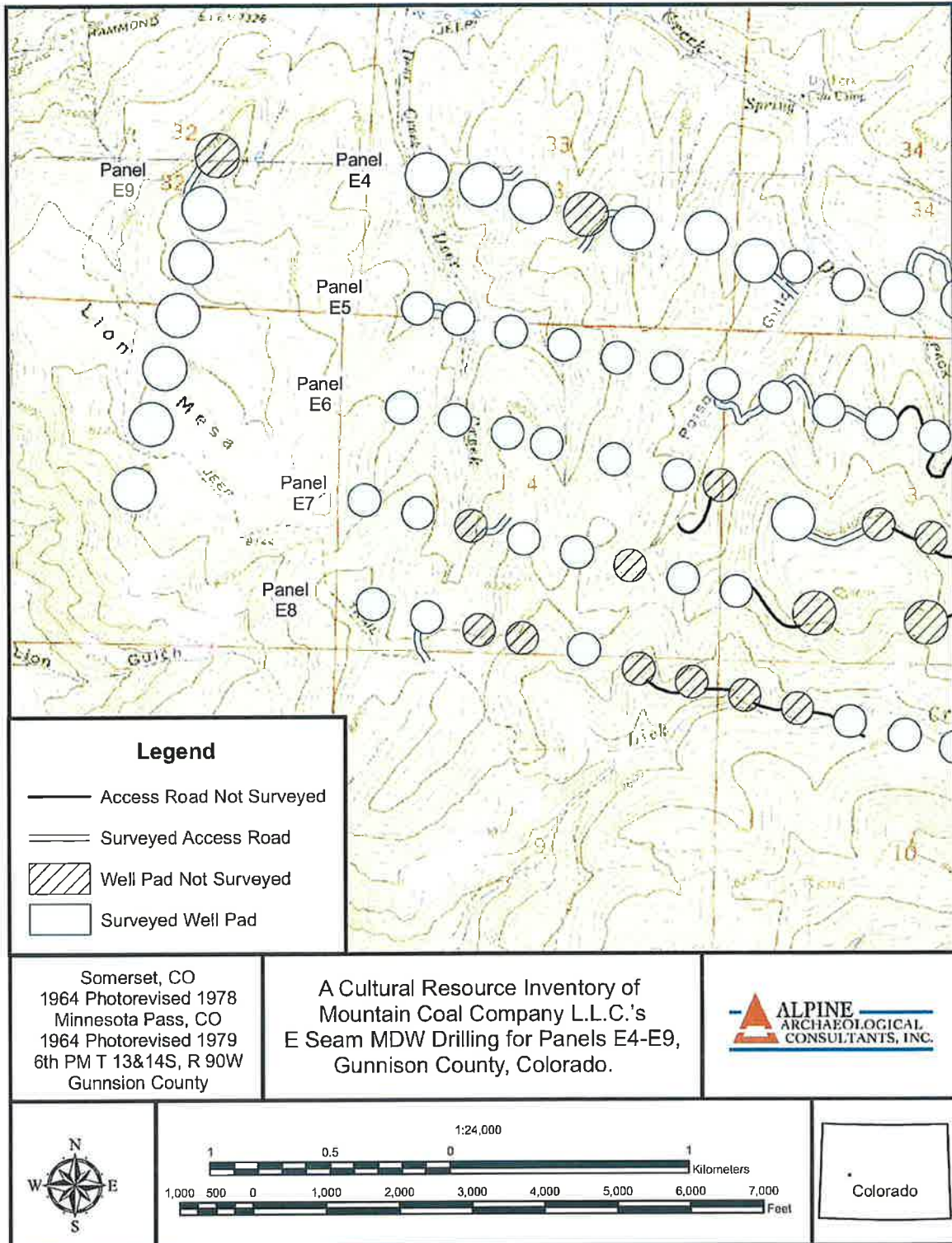


Figure 2. West end of project area.