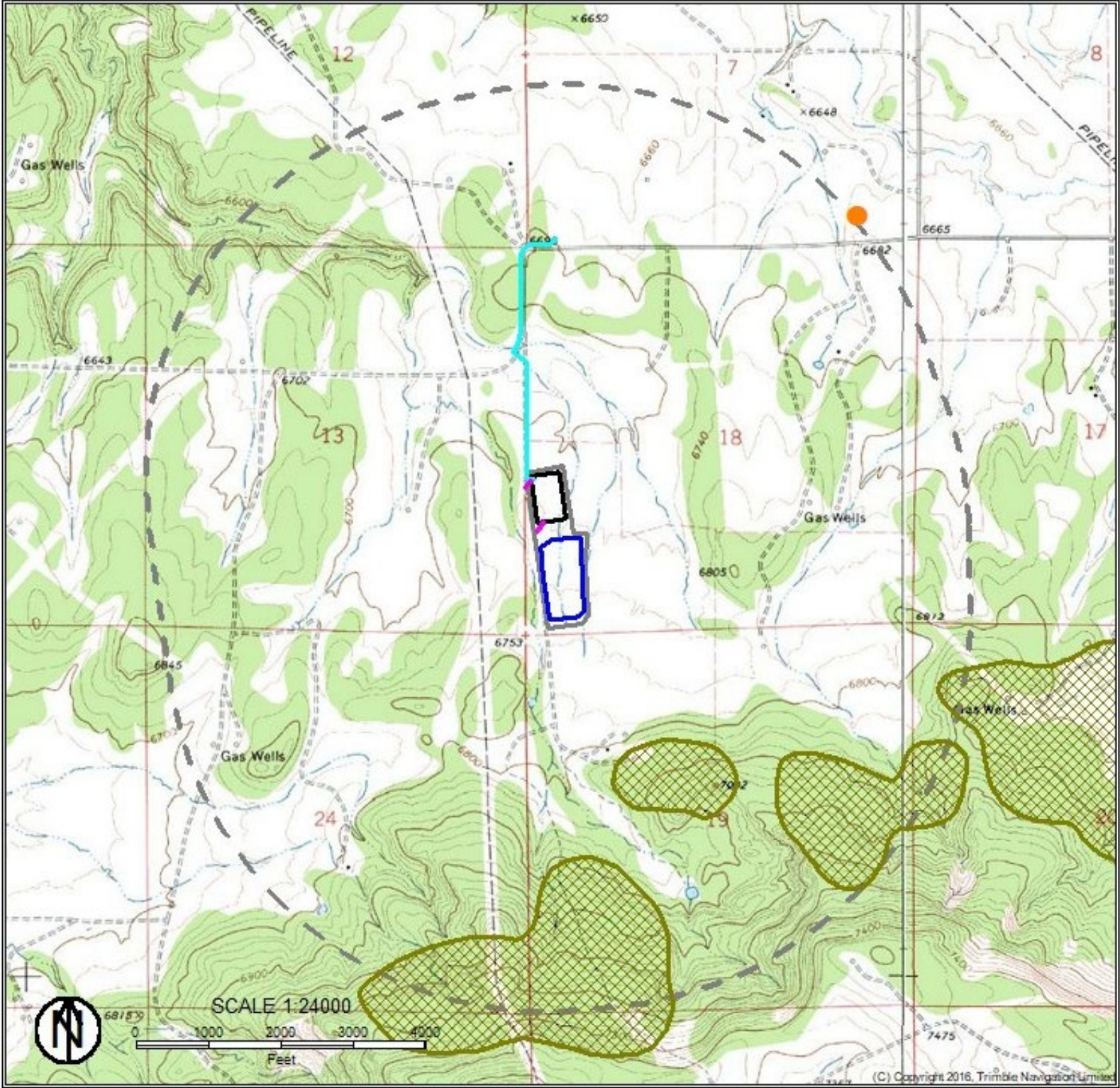


ARDOUREL 33081718 WELL PAD
GEOLOGIC HAZARDS MAP



SUMMARY OF GEOLOGIC HAZARDS:
(AS MEASURED FROM THE PROPOSED WORKING PAD SITE)

HAZARD TYPE	DISTANCE (N/A IF >5280')	SOURCE
RADIOACTIVITY	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS
SEISMIC	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS
GROUND SUBSIDENCE	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS
LANDSLIDES	±4997' SSE, ±3630' SSE, ±4843' SE, ±5970' SE	COGCC GIS, CO GEOLOGIC SURVEY MAPS, USGS U.S. LANDSLIDE INVENTORY
AVALANCHE	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS
ROCKFALL	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS
FLOOD	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS, COLORADO WATER CONSERVATION BOARD, FEMA GIS DATA
MUDFLOW AND DEBRIS FANS	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS, COLORADO WATER CONSERVATION BOARD
EXPANSIVE SOILS AND ROCK	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS, NRCS GIS DATA
UNSTABLE SLOPES	N/A	COGCC GIS, CO GEOLOGIC SURVEY MAPS
MINE EXTENT	±5750' NE	COGCC GIS; CO GEOLOGIC SURVEY MAPS; COLORADO DIVISION OF RECLAMATION, MINING, AND SAFETY

The landslide areas identified hereon have been determined to pose minimal to no risk to the proposed Oil and Gas location.

I certify that I am a Professional Geologist, having met the educational requirements and professional work experience required by C.R.S. § 23-41-208(b). I have reviewed information pertaining to this Oil and Gas Location and the surrounding area, and have identified no Geologic Hazards within one-mile radius.

Jessica Davey
Professional Geologist
AIPG MEM-3242
4585 Zuni Street
Denver, CO 80211

SIGNATURE

8/30/2022
DATE

THE FOLLOWING SOURCES HAVE BEEN CONSULTED TO DETERMINE IF ANY HAZARDS EXIST AND TO ASCERTAIN THE BOUNDARIES OF ANY IDENTIFIED HAZARDS:

COGCC GIS: https://cogccmap.state.co.us/cogcc_gis_online/

Colorado Geological Survey: <https://coloradogeologicalsurvey.org/gis-data-map-portal/>

Colorado Water Conservation Board: <https://coloradohazardmapping.com/>

FEMA Floodplain GIS Data: <https://www.fema.gov/flood-maps/national-flood-hazard-layer>

CLIENT-PROVIDED DATA MAY ALSO BE UTILIZED BEYOND THESE SOURCES

MAP DATA SOURCE:
COGCC GIS

LEGEND:

- = Working Pad Surface
— = Tank Pad Surface
— = Pad Access Roads
— = Section Line
— = Proposed Flowline Pipeline Corridor
— = Township Line
--- = 5280' Radius from Well Pad
= Colorado Geological Survey Landslide Inventory Areas
= CO DRMS Mine Locations

SITE NAME:
ARDOUREL 33081718
WELL PAD

SURFACE LOCATION:
N/W 1/4 OF S/W 1/4 SECTION 18, TOWNSHIP 33 NORTH,
RANGE 8 WEST, LA PLATA COUNTY, COLORADO

GEOLOGIC HAZARDS REPORT FOR THE ARDOUREL 33081718 WELL PAD

INTRODUCTION

This report was prepared to address the requirements of Sections 304.b.(7).I. and 304.c.(21), of the Colorado Oil and Gas Conservation Commissions rules, effective January 15, 2021. NueVida Resources is proposing the Ardourel 33081718 well pad.

COGCC Rule 304.b.(7).I. requires the Operator to submit a map identifying any geologic hazards within a 1-mile radius of the proposed working pad surface. For any identified geologic hazard that extends beyond the 1-mile radius, a second map scaled to show the extent of that hazard in relation to the proposed oil and gas location shall be submitted. If the Operator identifies any Geologic Hazards pursuant to Rule 304.b.(7).I, the Operator will submit a Geologic Hazard plan per Rule 304.c.(21) describing proposed mitigation measures.

LOCATION OVERVIEW

The Ardourel 33081718 well pad is located in the NW ¼ of the SW ¼ of section 18, Township 33 North, Range 8 West, La Plata County, Colorado.

Figure 1, below, shows the location of the existing well pad and proposed well site.

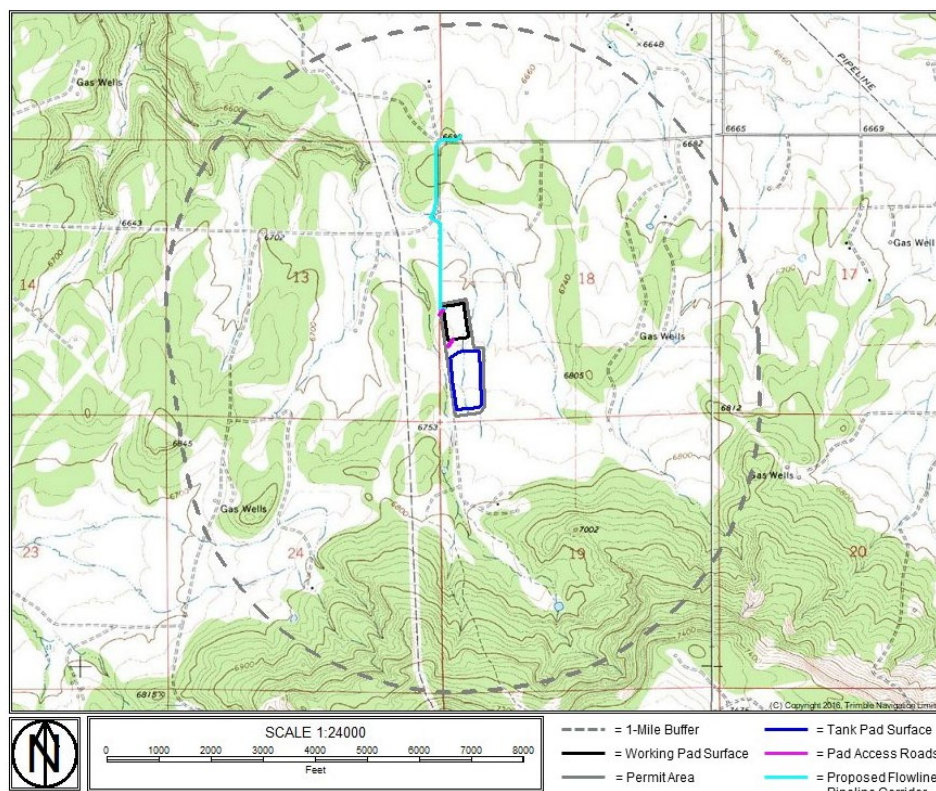


Figure 1: Ardourel 33081718 well pad location in La Plata County, Colorado

GEOLOGY

Appendix A contains a Geologic Map of the Ardourel 33081718 well pad site. There are two primary geologic units within the 1-mile radius of the site:

- Tsbt, San Jose Formation, Tertiary aged siltstone, shale, and sandstone
- TKna, Nacimiento Formation, Tertiary aged shale and sandstone

The Ardourel 33081718 well pad site sits on the San Jose Formation, which covers approximately 11% of the surface in La Plata County.

GEOLOGIC HAZARDS

GEOLOGIC HAZARD is defined in § 24-65.1-103(8), C.R.S.: “Geologic Hazard means a geologic phenomenon which is so adverse to past, current, or foreseeable construction or land use as to constitute a significant Hazard to public health, safety, or to property. The term includes, but is not limited to: avalanches, landslides, rockfalls, mudflows, and unstable or potentially unstable slopes; seismic effects; radioactivity; and ground subsidence.”

A General Regional Geohazards Map, Appendix B, from the COGCC GIS Online database, shows the following geohazards as not affecting the Ardourel 33081718 well pad site:

Seismic

The Ardourel 33081718 well pad site is not within a one-mile radius of any recorded seismic events.

Mine Extent

According to both the Colorado Division of Reclamation, Mining, and Safety (DRMS) and the Colorado Geological Survey (CGS), there is one mine from the DRMS database that sits at the 1-mile radius from the Ardourel 33081718 well pad. The mine site in question is labeled as “inactive coal exploration” per the DRMS database (Colorado Department of Natural Resources, 2022).

Flood

The Ardourel 33081718 well pad site is not within a one-mile radius of a 100-year flood zone.

This General Regional Geohazards Map is a zoomed-out regional view created using the COGCC GIS Database to illustrate there are no recorded instances of the above-mentioned potential geologic hazards affecting the 1-mile radius around Ardourel 33081718 well pad site.

Radioactivity

Definition from CDPHE: Radon is a naturally occurring radioactive gas that comes from the breakdown of uranium in the soil.

Per the EPA, much of Colorado is in the Zone 1 category, meaning the average house will exceed the EPA's action level for indoor radon. However, since there are no permanent dwellings at the pad site, the potential presence of radon at the Ardourel 33081718 well pad site is not expected to represent a geologic or health hazard that would affect the design or operations of the site.

Ground Subsidence

Definition from CGS: H.B. 1041, 106-7-103(10): Ground subsidence means a process characterized by downward displacement of surface material caused by natural phenomena such as removal of underground fluids, natural consolidation, or dissolution of underground minerals, or by man-made phenomena such as underground mining.

The Ground Subsidence Map, Appendix C, shows no known instances of ground subsidence within the area surrounding the Ardourel 33081718 well pad site. The nearest occurrence is a record of collapsible soil, which is well over 10 miles from the site and poses no risk.

Landslides, Unstable Slopes, Avalanche, and Rockfall

Definition from CGS: A landslide is a sudden mass movement of soil, artificial fill, and/or rock down a slope. Landslides include many different kinds of mass movements, including falls, topples, slides, spreads, flows, or a combination of one or more of these movements. Slopes of almost any angle, from slight hills to steep mountains, can fail in a sudden landslide. Landslides can be small or very large, up to thousands of cubic feet, can travel incredibly quickly (faster than a person can run), and may recur multiple times in virtually the same location.

The Landslide Map, Appendix D, does show four recorded landslides, south-southeast to southeast of the well pad, within the 1-mile radius from the well pad. One landslide is fully enclosed within the 1-mile radius while the toes of the other three landslides intersect with the radius. While these landslides are within the 1-mile radius, none poses a direct threat to the site. The movement of the documented landslides most likely occurred when the climate was wetter during the last glacial period, early to mid-Pleistocene, and future movement is unlikely in the current dry Continental Subarctic climate (Rocky Mountain Section Geological Society of America, 1984), (Yeend, 1969).

The landslides identified within the 1-mile buffer are all ranked as “possible landslide in the area” per the USGS, which is the lowest of the ranking systems used in their database (U.S. Department of the Interior, 2022).

According to the Colorado Avalanche Information Center, the Ardourel 33081718 well pad site is not located within a known avalanche region.

Mudflow and Debris Fans

The Colorado Geological Survey has not targeted this region of the state as a current high-risk area for mudflows and debris fans. Mudflows typically occur in burn scar areas after major wildfire activity, and there has not been such an occurrence in this area for the CGS to initiate a study.

Expansive Soils and Rock

Definition from CGS: H.B. 1041, 106-7-106 (6): “Expansive soil and rock” means soil and rock which contains clay, and which expands to a significant degree upon wetting and shrinks upon drying.

The NRCS classifies the soil within the Ardourel 33081718 well pad Falga clay loam. This soil type in this region is described as approximately 80 percent Falga and similar soils and 20 percent minor components, consisting of Cortas, Aquents, and other soils. Wetopa parent material is

interbedded colluvium derived from calcareous loess and is described as “not prime farmland” soils by the USDA. The frequency of flooding and ponding for Falfa clay loam soil types is “none.”

Table 1 below lists the soil types, drainage class, hydrologic soil group, and hydric ratings for each soil type found within the 1-mile radius from the well pad. The codes listed in the left column are referenced on the Soils Map, Appendix E.

Table 1: Types and characteristics of soils found within a 1-mile radius of the well pad.

Code	Soil Name	Drainage Class	Hydrologic Soil Group	Land Capability (non-irrigated)	Potential for Frost Action	Hydric Rating
5	Arboles clay, 3 to 12 percent slopes	Well-drained	C	4e	Low	No
14	Bodot clay, 3 to 10 percent slopes	Well-drained	D	4e	Low	No
27	Falfa clay loam, 3 to 8 percent slopes	Well-drained	C	4e	Low	No
63	Sili clay loam, 3 to 6 percent slopes	Well-drained	C	4e	Low	No
81	Zyme clay loam, 3 to 25 percent slopes	Well-drained	D	6e	Low	No
82	Zyme-Rock outcrop complex, 12 to 65 percent slopes	Well-drained	D	7e	Low	No

Soils in Hydrologic Soil Group C have a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission. Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission (United States Department of Agriculture, n.d.).

Falfa clay loam is classified as 4e for non-irrigated land capability; class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both (United States Department of Agriculture, n.d.). This category does not have any restrictions to commercial uses including the expansion of the existing well site pad at this location

None of the soils found within the 1-mile radius from the well pad fit the criteria of expansive soils or rock types.

COGCC GEOLOGIC HAZARD REQUIREMENTS

Rule 304.b.(7).I Geologic Hazard Map: A map identifying any Geologic Hazards within a 1-mile radius of the proposed Working Pad Surface. For any identified Geologic Hazard that extends beyond the 1-mile radius, a second map scaled to show the extent of that Hazard in relation to the proposed Oil and Gas Location.

- Several maps have been prepared to show the pad site in relation to all Geologic hazards within a 1-mile radius.
- The landslide area located near the site of the proposed Ardourel 33081718 well pad has been inactive since the early to mid-Pleistocene.

Rule 304.c.(21) Geologic Hazard Plan: If the Operator identifies any Geologic Hazards pursuant to Rule 304.b.(7).I, the Operator will submit a Geologic Hazard plan describing proposed mitigation measures.

- Geologic hazards related to this existing pad location may include a historic landslide as identified using CGS data and COGCC GIS Database maps
- The Ardourel 33081718 well pad is an existing location and has not experienced any issues with landslides. In the event that a future landslide should occur, NueVida Resources would enlist the services of an engineering firm that would suggest Best Management Practices.

SUMMARY

Based on the review of publicly available data, the only potential geologic hazard within a 1-mile radius of the Ardourel 33081718 well pad site is landslides. However, the landslide identified within the 1-mile radius does not pose a direct threat to the site since movement has not occurred since the early to mid-Pleistocene.

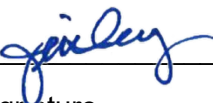
LIMITATIONS

This report is intended for preliminary evaluation purposes only for geologic hazards, as contained in this report, in the Ardourel 33081718 well pad project vicinity.

CERTIFICATION

I certify that I am a Professional Geologist, having met the educational requirements and professional work experience required by C.R.S. § 23-41-208(b). I have reviewed information pertaining to this Oil and Gas Location and the surrounding area, and have identified no Geologic Hazards within a one-mile radius.

Jessica Davey
Professional Geologist
AIPG MEM-3242
4585 Zuni Street
Denver, CO 80211



Signature

8/30/2022

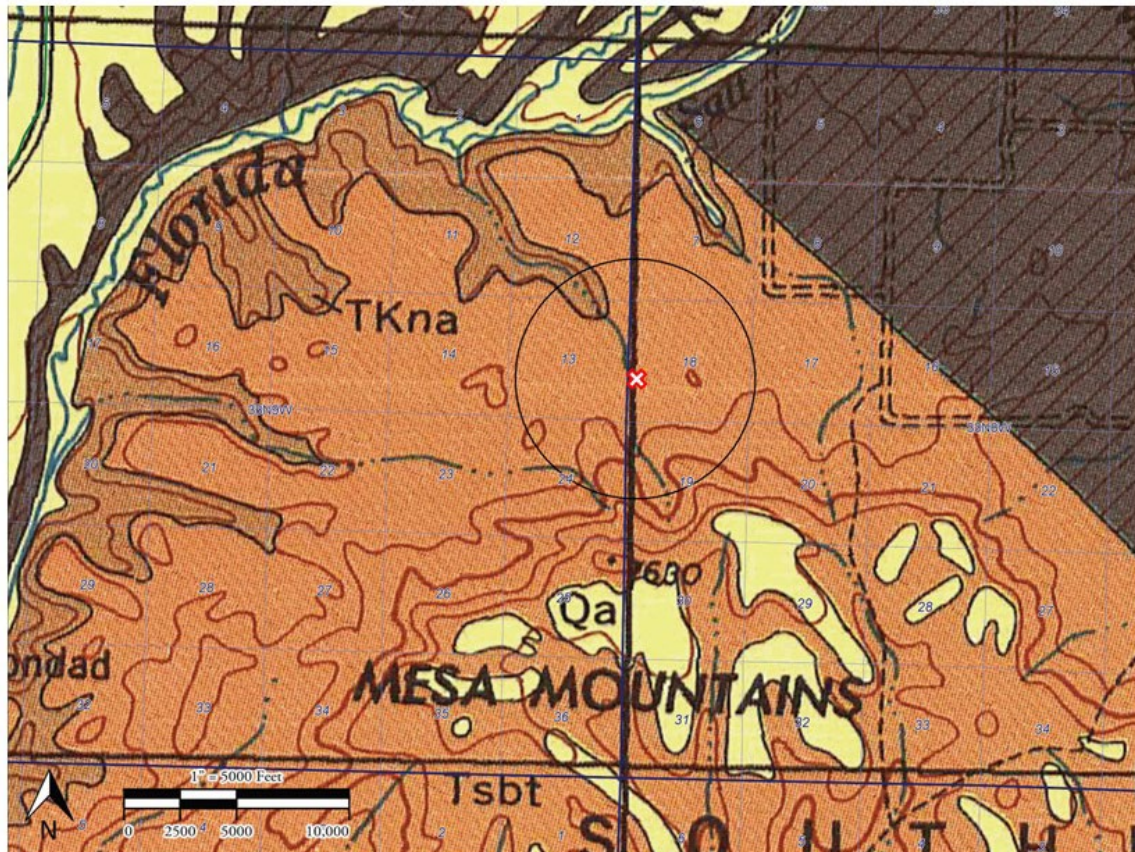
Date

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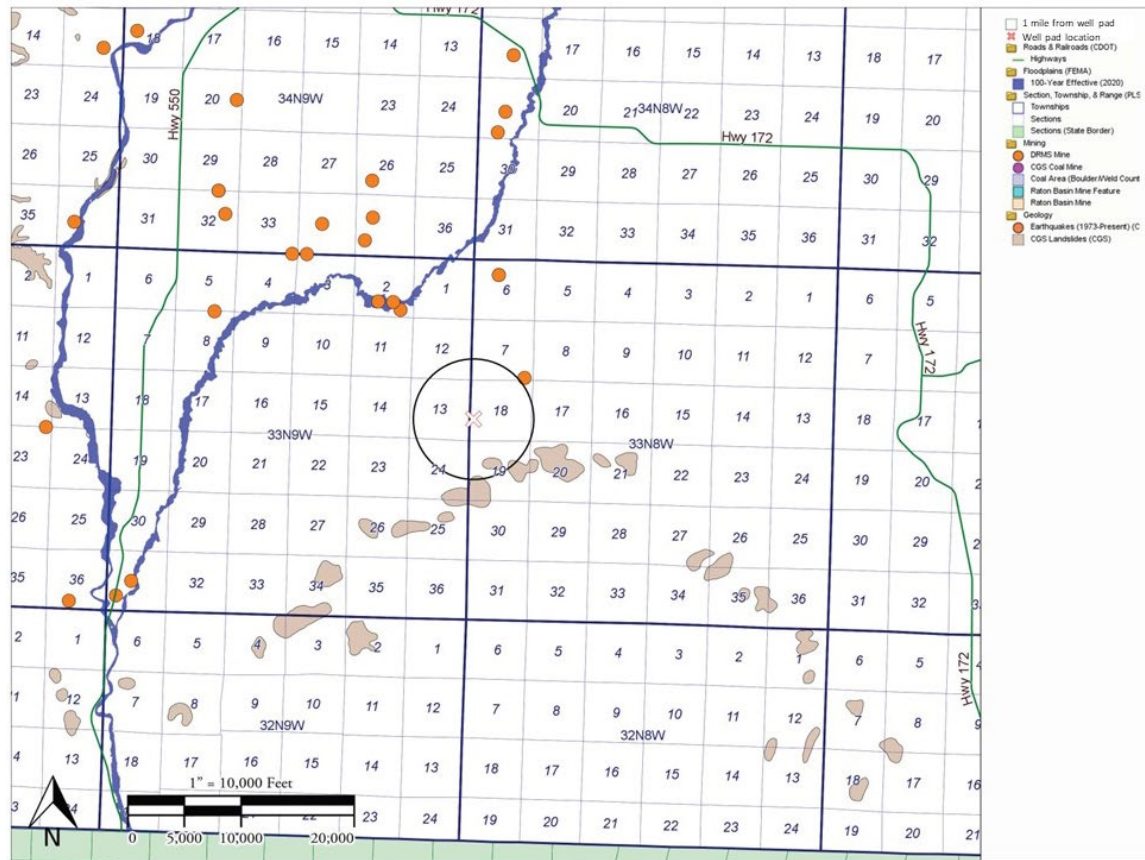
APPENDIX A – GEOLOGIC MAP



LEGEND:

- | | | | | | | | |
|---|---------------------|---|-----------------|---|------------------------------|---|----------------------------|
|  | = Well Pad Location |  | = Section Line |  | = 5280' Radius from Well Pad |  | = Tsbt, San Jose Formation |
| | |  | = Township Line | | |  | = TKna, Nacimiento Fm |

APPENDIX B – GENERAL REGIONAL GEOHAZARDS MAP



APPENDIX C – GROUND SUBSIDENCE MAP



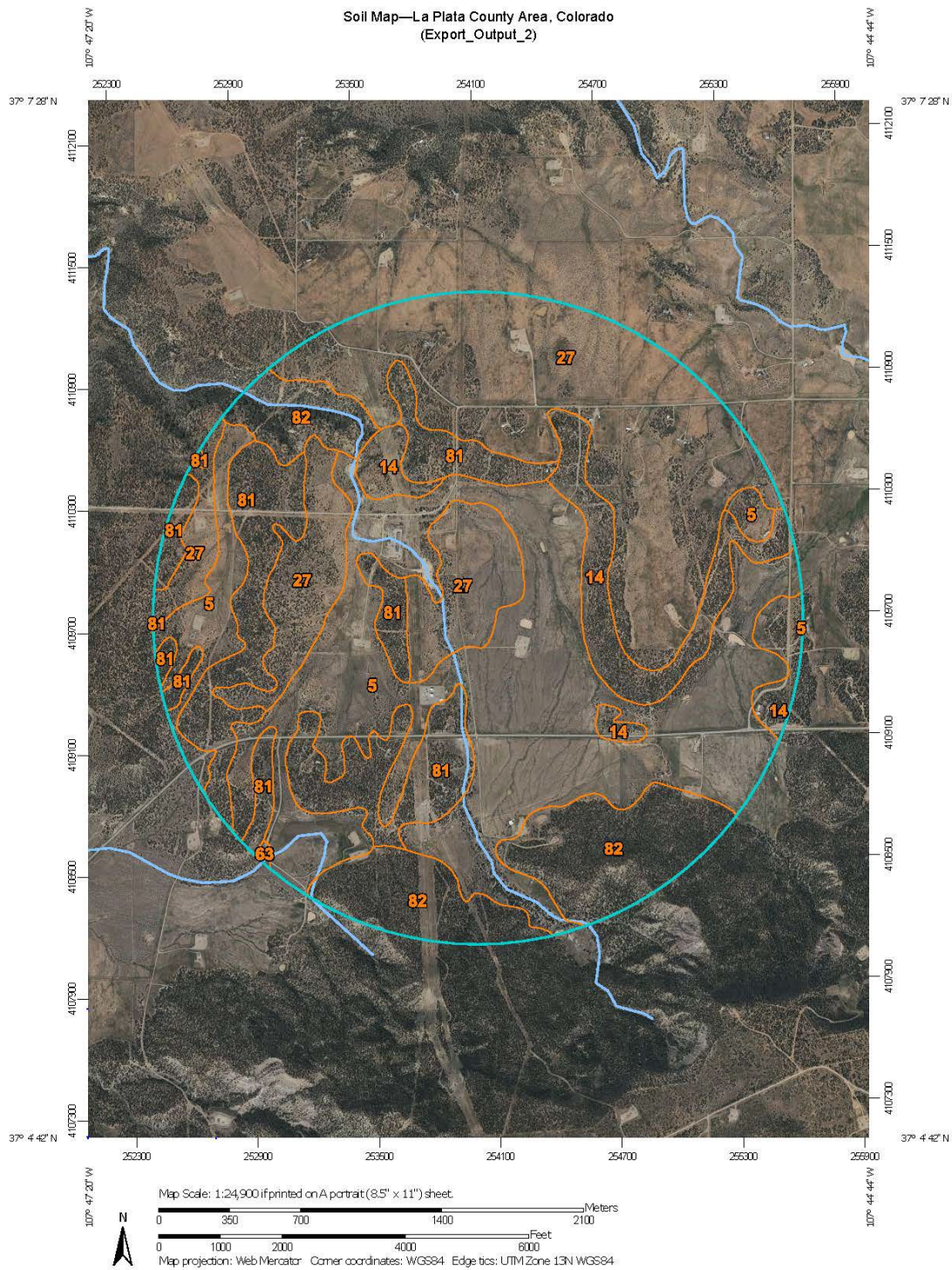
APPENDIX D – LANDSLIDE MAP

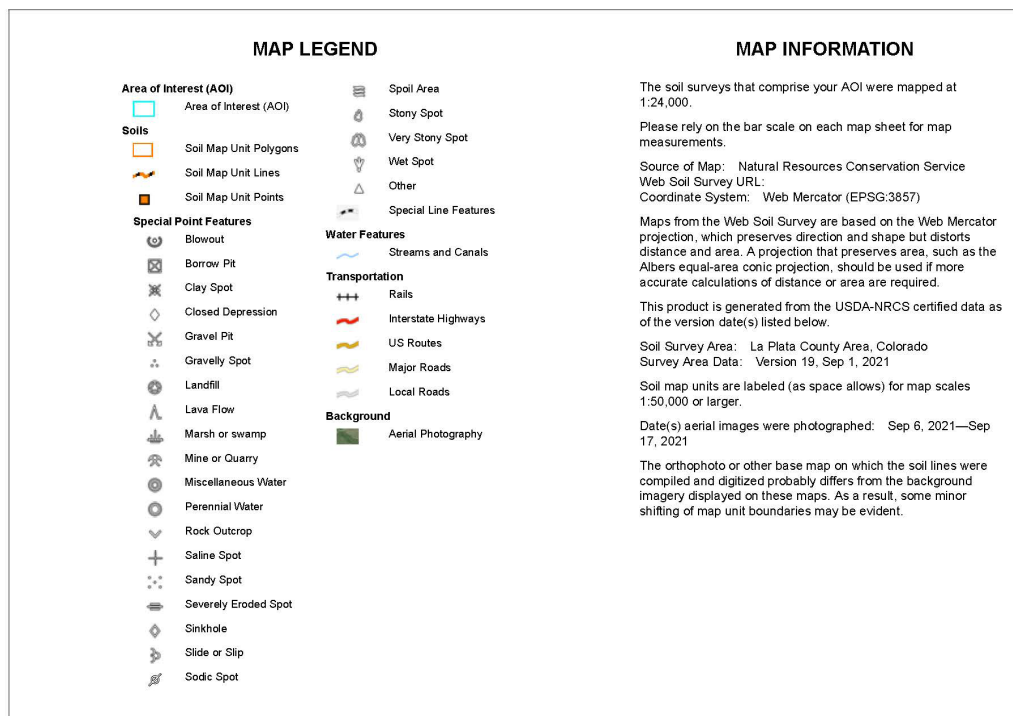


LEGEND:

- | | | |
|--|---|---|
| — = Tank Pad Surface | — = Section Line | = Colorado Geological Survey Landslide Inventory Areas |
| — = Pad Access Roads | — = Township Line | — = Proposed Flowline Pipeline Corridor |
| — = Working Pad Surface | --- = 5280' Radius from Well Pad | |

APPENDIX E – SOILS MAP





Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Arboles clay, 3 to 12 percent slopes	695.7	34.6%
14	Bodot clay, 3 to 10 percent slopes	147.6	7.3%
27	Falfa clay loam, 3 to 8 percent slopes	627.4	31.2%
63	Sili clay loam, 3 to 6 percent slopes	1.7	0.1%
81	Zyme clay loam, 3 to 25 percent slopes	286.8	14.3%
82	Zyme-Rock outcrop complex, 12 to 65 percent slopes	249.8	12.4%
Totals for Area of Interest		2,009.0	100.0%

