

St. Croix Operating, Inc.
Revenant #1
NWNE Section 7, T3S R51W
Washington County, Colorado

GEOLOGIC HAZARDSEVALUATION

St. Croix Operating, Inc. (St. Croix) has drafted this Geologic Hazard Evaluation in accordance with Rules 304.b.(7) and 304.c.(21).

The COGCC references the Colorado Revised Statue (C.R.S.) § 24-65.1-103(8) definition of Geologic Hazard. C.R.S. 24-65.1-103(8) states: “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 and safety or to property.

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.

- St. Croix has prepared one map showing the Oil and Gas Location in relation to any Geologic Hazards within a 1-mile radius.

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.

- St. Croix has not identified any risk of Geologic Hazards at this location.

Collapsible Soils: St. Croix utilized the Colorado Geologic Survey (CGS) Collapsible Soils map to evaluate the potential for collapsible soils at this location. The location does map within EG-14 Eolian (wind-blown) deposits and EG-14 Cretaceous and Tertiary Formations. However, when compared to the Natural Resources Conservation Service Web Soil Survey data, the soil types for this area are primarily loams and clays. Additionally, the location is proposed within cultivated agricultural land; St. Croix does not believe that EG-14 Eolian sands nor the EG-14 Cretaceous and Tertiary Formations are present in significant enough quantities to adversely impact the proposed project.

Professional Geologist Certification

NO SIGNIFICANT HAZARDS IDENTIFIED:

I certify that I am a Professional Geologist, having met the education 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.



Paul Melnychenko

05/05/2022

Date

Geologic Hazard	Sources Reviewed	Findings
Avalanches	WASHCO	The Oil and Gas Location has a negligible risk due to mild topography. The risk is insignificant enough to not be listed in the County Risk Assessment.
Landslides	WASHCO & CGS	Landslides are not a geologic hazard at this site. The risk is insignificant enough to not be listed in the County Risk Assessment.
Rockfalls	WASHCO	Rockfall is not a geologic hazard at this site. The risk is insignificant enough to not be listed in the County Risk Assessment.
Mudflows	WASHCO	Mudflow and debris fans are not a geologic hazard at this site. The risk is insignificant enough to not be listed in the County Risk Assessment.
Unstable or potentially unstable slopes	NCRS	Unstable slopes are not a geologic hazard at this site.
Seismic effects	CGS	Seismic activity is not expected to impact the design or operations of the Pad.
Radioactivity		Radon is not expected to represent a geologic hazard at this pad.
Ground subsidence	NCRS	Ground subsidence is not a geologic hazard at this site.
Collapse Soils	CGS	The location maps within EG-14 Eolian (wind-blown) deposits and EG-14 Cretaceous and Tertiary Formations.

Sources Reviewed:

CGS: Colorado Geological Society, (2021) Hazards.
<https://coloradogeologicalsurvey.org/hazards/>

CGS: Colorado Geological Society, Collapse Soils
<https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html?id=a6f816b35fb64d3da096e84af661f070>

NCRS: National Resources Conservation Service (2021). Web Soil Survey. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

WASHCO: Washington County, Washington County Draft Hazard Mitigation Plan (2020)
<https://washingtoncounty.colorado.gov/sites/washingtoncounty/files/documents/Washington%20County%20CPE%208-12-20.pdf>



Legend



1 Mile Radius



EG-14 cretaceous and
Tertiary Formations



Oil and Gas Location



EG-14 Eolian (wind-
blow) deposits

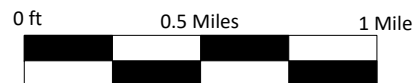


Working Pad Surface



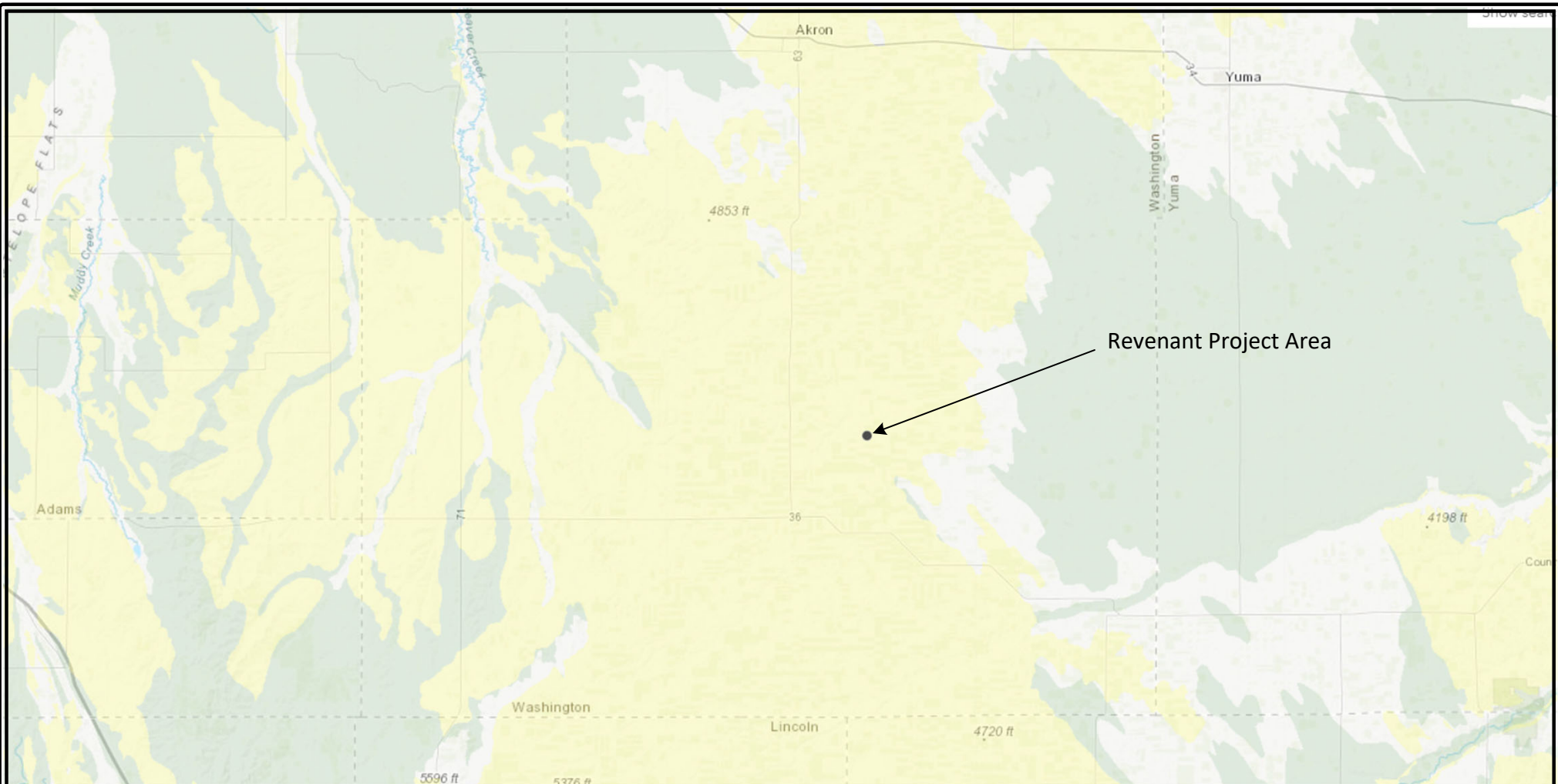
Proposed Access Road and
Off-Location Flowline

Revenant #1 St. Croix Operating, Inc. NWNE S7 T3S R51W GeoHazard Map



Prepared By:
Ardor Environmental LLC

May 5, 2022

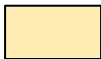


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 NWNE S7 T3S R51W
 GeoHazard Map

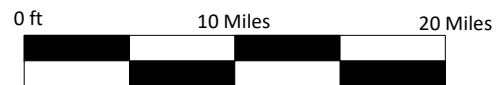
Legend



EG-14 cretaceous and
Tertiary Formations



EG-14 Eolian (wind-
blow) deposits



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