



I, Julia Rausch Lemaster, 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 Drill Location and the surrounding area, and have identified the following Geologic Hazards within a 1-mile radius:

- 100-Year Floodplain
- Corrosive Soil to Steel
- Collapsible and Hydrocompactive Soil Potential

No other hazards within a 1-mile radius were identified, including:

- Avalanches
- Landslides
- Rock falls
- Mudflows
- Slope stability
- Seismic
- Radioactivity
- Ground subsidence
- Mines

Julia Rausch Lemaster

6/1/2022

Julia Rausch Lemaster  
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WYPG #3894

Date

Please note:

A separate geologic hazard plan/map has not been prepared as this is covered under hydrology and floodplain information contained within the 2A filing

NOTES:

.Faults: [https://cogccmap.state.co.us/cogcc\\_gis\\_online/](https://cogccmap.state.co.us/cogcc_gis_online/) (5-15-22)

Landslide: <https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html>

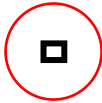
Mines: <https://maps.dnrgis.state.co.us/drms/Index.html?viewer=drms>

Collapsible Soils: <https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html>

Radioactive Minerals: <https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html?id=c5381e1335284d63bfa5d4b018b3372f>

Floodplain: See Hydrology Map

Hazards: <https://coloradogeologicalsurvey.org/hazards/>



Pad with 1-mile radius

**CARBON STORAGE SOLUTIONS**

FRONT RANGE #1

1557' FSL 2320' FEL


NW ¼ SE ¼, SECTION 26, T6N, R67W, 6<sup>th</sup> P.M.

**GEOLOGIC HAZARD MAP EXHIBIT 1**

## Collapsible Soil

Published by Colorado Geological Survey


[cgs\\_services/Collapsible Soils\\_withMeeker \(MapServer\) \(mines.edu\)](https://cgs.services/Collapsible%20Soils_withMeeker(MapServer)(mines.edu))

 Loess – can be a collapsible soil

Per analysis by other operators in the general area, there have been no known cases of subsidence due to eolian soil collapse in the area as a result of drilling operations in the greater Wattenberg Field area.

The drill site will be constructed and managed for water.

Collapsible soils are identified as a potential hazard. Prior to construction at the proposed location, topsoil is removed. During the cut and fill process, the ground is wetted and compacted. A cap of about 4-6" of road base provides additional protection from differential compaction. The grade and ditches promote flow off of the proposed location to further mitigate the risk of water saturating soils. Considering the soil composition, and the facility design and management, I determine the collapsible soil hazard is low.

 Pad with 1-mile radius

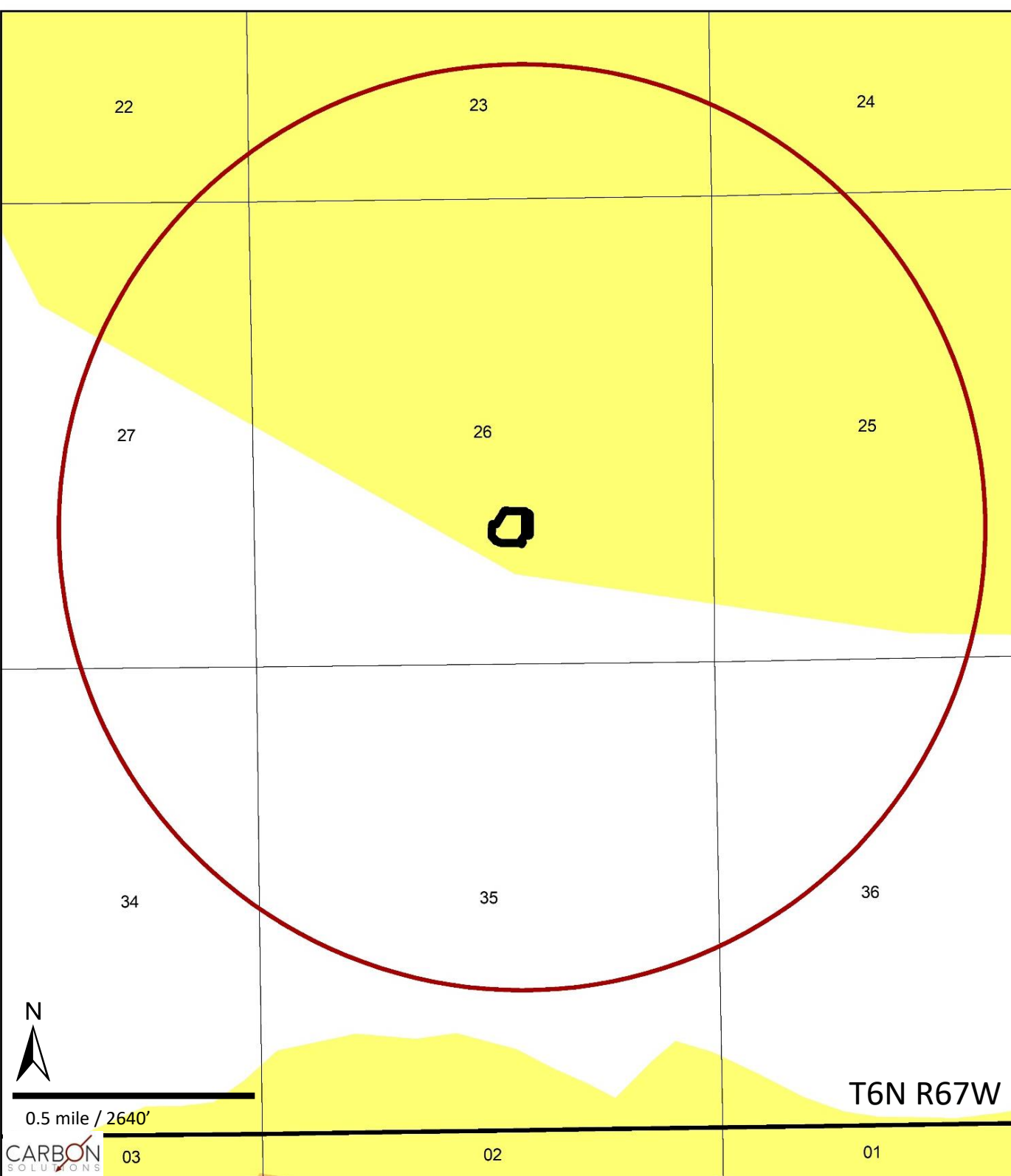
### CARBON STORAGE SOLUTIONS

FRONT RANGE #1

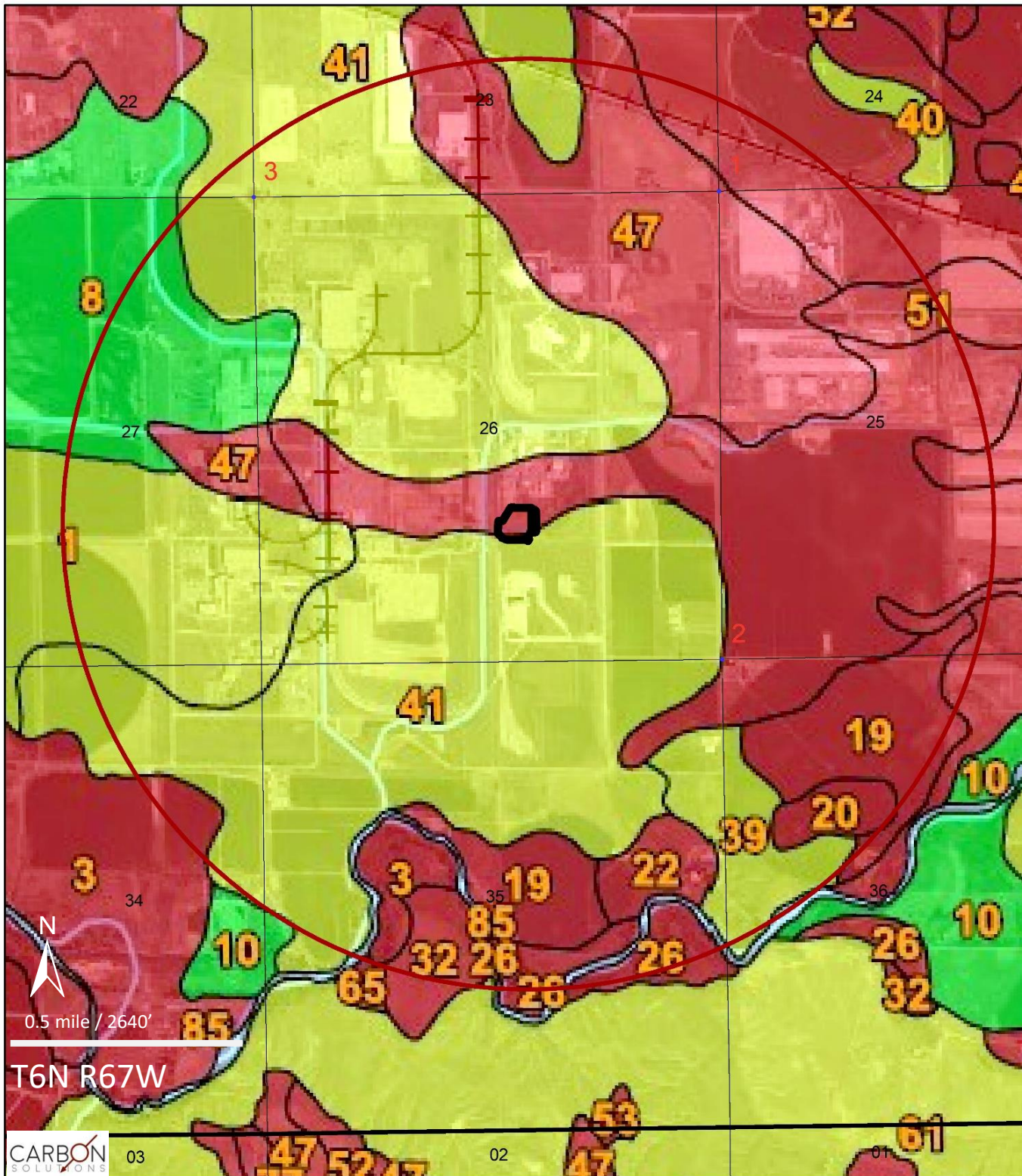
1557' FSL 2320' FEL

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**GEOLOGIC HAZARD MAP EXHIBIT 2**







## Corrosion of Steel

USDA Natural Resources Conservation Service

Web Soil Survey

<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

## Soil Corrosion Rating

<span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span>	High
<span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span>	Moderate
<span style="display:inline-block; width:15px; height:15px; background-color:green; border:1px solid black;"></span>	Low

## Soil Type

1, 8, 26, 32, 39: loam

3: Aquillos and Aquents, gravelly substratum

19, 20, 22, 41: clay loam

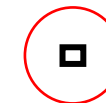
47 & 51: sandy loam

85: water

Corrosion to steel is identified as a potential hazard in vicinity of, but not at, the proposed location. No steel at the proposed location will be exposed to the soil because

- 1) all steel equipment on location will have impervious liners,
- 2) steel flowlines will have protective lining, and
- 3) imported gravel or road base will separate the natural soil from steel.

Considering the primary soil on the location, and facility design and management, I determine the steel corrosion hazard from soil at the proposed location is insignificant.



Pad with 1-mile radius

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**GEOLOGIC HAZARD MAP EXHIBIT 3**