

RGU 44-1-298 Pad

Sensitive Area Determination Checklist



TEP Rocky Mountain, LLC	
Person (s) Conducting Field Inspection	
Name: Dean Goebel	Date: August 23, 2021
Comment: Desktop analysis	
Site Information	
Location Name: RGU 44-1-298 Pad	COGCC Location ID: 335640
Type of Facility: Expanded Well Pad	
Environmental Conditions	
Temperature (°F): NA	
Comments	

Sensitive Area: A sensitive area is an area vulnerable to potential significant adverse groundwater impacts, due to factors such as the presence of shallow groundwater or pathways for communication with deeper groundwater; proximity to surface water, including lakes, rivers, perennial or intermittent streams, creeks, irrigation canals, and wetlands. Additionally, areas classified for domestic use by the Water Quality Control Commission, local (water supply) wellhead protection areas, areas within 1/8 mile of a domestic water well, areas within 1/4 mile of a public water supply well, ground water basins designated by the Colorado Ground Water Commission, and surface water supply areas are sensitive areas.

Has the proposed, new, or existing location been designated as a sensitive area?

Yes No

SURFACE WATER

- Are there any Surface Water Supply Areas (SWSAs) adjacent to or within ¼ mile of the proposed or existing facility?

Yes No

If yes, describe location relative to facility:

- Are there any surface water features within 500 feet of the proposed or existing facility?

Yes No

If yes, list type of surface water feature(s), i.e. rivers, creeks, streams, seeps, springs, wetlands:
Intermittent drainages

If yes, describe location relative to facility: See attached hydrology map

- Could a potential release from the facility reach intermittent surface water features?

Yes No

If yes, describe the pathway a release from the facility would likely follow to determine if the potential to impact surface water is high or low. A site release would migrate in a southerly direction towards the Ryan Gulch, an intermittent drainage, eventually discharging to perennial Piceance Creek located approximately 2.5 miles away.

Is the potential to impact surface water from a facility release high or low?

High Low

GROUNDWATER

1. Will the proposed/new or existing facility have any pits which will contain hydrocarbons and chlorides or other E&P wastes?

Yes No

If yes, List the pit type(s):.

2. Is the site of the proposed facility underlain by an unconfined aquifer or recharge zone?

Yes No

3. Is the hydraulic conductivity of the underlying soil or geologic material $\leq 1.0 \times 10^{-7}$ cm/sec?

Yes No

4. Is the proposed facility located within 1/8 mile of a domestic water well or 1/4 mile of a public water supply well which would use the same aquifer?

Yes No

5. Is the proposed facility located within a 100-year floodplain?

Yes (Sensitive) No (If no, proceed to question #6)

6. Is the depth to groundwater known?

Yes (If yes, follow instructions provided in 6(a) of this section).

No (If no, follow instructions provided in 6(b) of this section).

- a. If yes, could a potential release from the proposed facility reach groundwater?

Yes No

If yes, explain:

- b. If no:

- i. Evaluate surrounding soils, topography, and vegetation which may suggest the presence of shallow groundwater.
- ii. Gather information from surrounding well data in order to determine a depth to groundwater, i.e. State Engineers Office.

7. Is the potential to impact ground water from the facility in the event of a release high or low?

High Low

Additional Comments:

Potential surface water impacts are deemed to be moderate due to the relative close proximity of intermittent streams to the proposed existing well pad slated for expansion. There are four identified intermittent streams located within a 1/2 mile of the proposed site. The existing pad is constructed immediately north of the flow path of an intermittent stream, integrity of this drainage and existing hydraulic capacity is not negatively impacted by the existing or proposed expanded well pad. The southeast edge of the pad is 368 feet from the intermittent stream in the bottom of Ryan Gulch and 443

feet from an intermittent stream discharging to the Ryan Gulch drainage. The intermittent stream located 550 feet to the northeast is located in a parallel direction (across) to topographic contours thus lacking potential head to receive flow from a potential release from the site. The intermittent stream located 1,615 feet southwest of the site is also oriented across topographic contours with low environmental risk associated with the existing and proposed expanded well pad. All four of the identified intermittent drainages discussed above supports Water of the United States (WOUS) defined as riverine aquatic resources with an intermittent flow regime tied to a seasonally flooded stream bed. The receiving intermittent drainage in Ryan Gulch eventually discharges to perennial Piceance Creek. Site grading will provide control measures minimizing potential fluid migration off site. Best Management Practices (BMPs) slated during site construction will eliminate preferential pathways for offsite depression flow using earthen berms and diversion ditches. All newly constructed BMPs will be closely monitored and maintained to ensure complete on-site containment of a potential release.

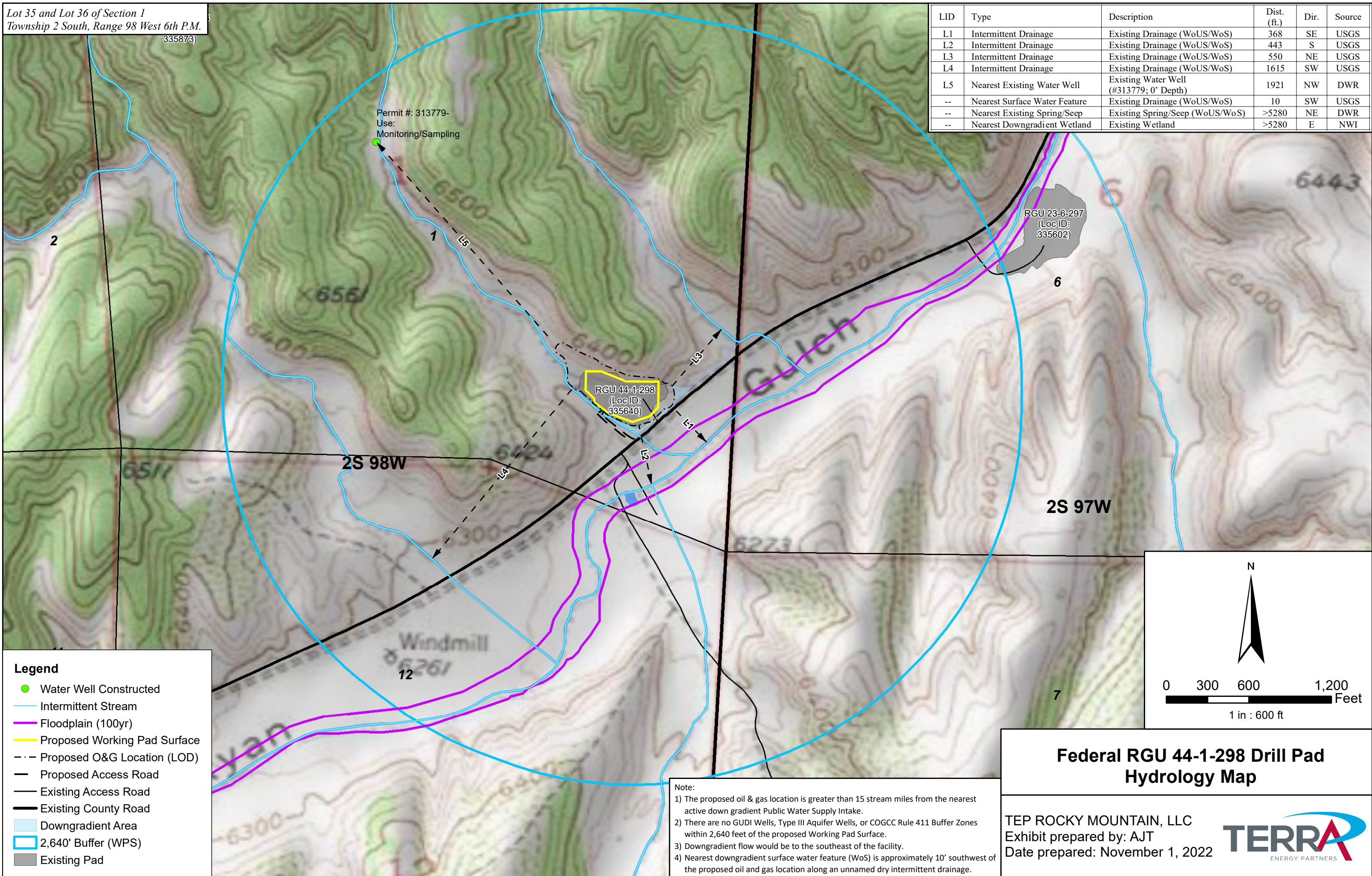
State Engineers Office and USGS records were reviewed indicating only one permitted water well (permit no. 313779) drilled in an alluvial aquifer adjacent to Ryan Gulch and located 1,921 feet northwest of the pad. Visual observations of the site based on site photos taken during the biological survey and aerial photography indicates upland vegetation including scrub pinyon and juniper vegetation and sagebrush shrublands. Depth to shallow groundwater residing in the local flow system is greater than 80 inches (6.67 feet) based on NRCS soil properties and qualities for the Barcus channery loamy sand mapped soil unit occurring at the site. Typical soil profiles for these mapped soils indicate bedrock subcrops 5 to 22 inches below ground surface. The saturated hydraulic conductivity for this soil is less than 1.0×10^{-7} cm/sec.

Dominant upland vegetation indicates pervasive dry antecedent soil conditions conducive with thin soil horizons overlying shallow bedrock not in hydraulic connection with the local groundwater flow system. Evidence of springs or seeps in project vicinity were not detected during site reconnaissance and vegetation assessment conducted for the Biological Survey Report. Hydrogeological indicators do not support the occurrence of shallow groundwater at the site, depth to groundwater is probably greater than 50 feet in the underlying bedrock. Potential impact to groundwater resources at the site is deemed to be low based on the site hydrogeology.

Based on the information collected during the desktop review, the potential for impacts to surface water, and groundwater would be deemed to be moderate based on the proximity to intermittent drainages. The moderate environmental risk will be mitigated using BMPs and stormwater control measures. The proposed expanded well pad is designated as being in a sensitive area.

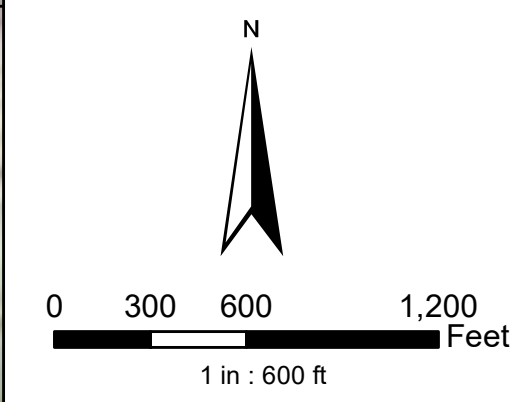
Lot 35 and Lot 36 of Section 1
Township 2 South, Range 98 West 6th P.M.
(335873)

LID	Type	Description	Dist. (ft.)	Dir.	Source
L1	Intermittent Drainage	Existing Drainage (WoUS/WoS)	368	SE	USGS
L2	Intermittent Drainage	Existing Drainage (WoUS/WoS)	443	S	USGS
L3	Intermittent Drainage	Existing Drainage (WoUS/WoS)	550	NE	USGS
L4	Intermittent Drainage	Existing Drainage (WoUS/WoS)	1615	SW	USGS
L5	Nearest Existing Water Well	Existing Water Well (#313779; 0' Depth)	1921	NW	DWR
--	Nearest Surface Water Feature	Existing Drainage (WoUS/WoS)	10	SW	USGS
--	Nearest Existing Spring/Seep	Existing Spring/Seep (WoUS/WoS)	>5280	NE	DWR
--	Nearest Downgradient Wetland	Existing Wetland	>5280	E	NWI



Legend

- Water Well Constructed
- Intermittent Stream
- Floodplain (100yr)
- Proposed Working Pad Surface
- Proposed O&G Location (LOD)
- Proposed Access Road
- Existing Access Road
- Existing County Road
- Downgradient Area
- 2,640' Buffer (WPS)
- Existing Pad



**Federal RGU 44-1-298 Drill Pad
Hydrology Map**

TEP ROCKY MOUNTAIN, LLC
Exhibit prepared by: AJT
Date prepared: November 1, 2022



Note:

- 1) The proposed oil & gas location is greater than 15 stream miles from the nearest active down gradient Public Water Supply Intake.
- 2) There are no GUDI Wells, Type III Aquifer Wells, or COGCC Rule 411 Buffer Zones within 2,640 feet of the proposed Working Pad Surface.
- 3) Downgradient flow would be to the southeast of the facility.
- 4) Nearest downgradient surface water feature (WoS) is approximately 10' southwest of the proposed oil and gas location along an unnamed dry intermittent drainage.