

## Sensitive Area Determination Checklist

TEP Rocky Mountain, LLC		
<b>Person(s) Conducting Field Inspection</b>	None conducted	
<b>Site Information</b>		
Location:	GV 1-8 Well Pad	Time:
Type of Facility:	Existing Well Pad w/Proposed Expansion	
<b>Environmental Conditions</b>	N/A	
Temperature (°F)	N/A	

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

Yes       No

### SURFACE WATER

1. Are there any surface water features or SWSAs adjacent to or within ¼ mile of the proposed/new or existing facility?

Yes       No

If yes, list type of surface water feature(s), i.e. rivers, creeks, streams, seeps, springs, wetlands: Riley Gulch USGS identified intermittent drainage, and four (4) unnamed USGS identified drainages all of which are tributary to Riley Gulch.

If yes, describe location relative to facility: Riley gulch is located 0 feet to the east. Three of the unnamed intermittent drainages, tributary to Riley Gulch, are located approximately 546, 951, and 1,130 feet to the northeast. The fourth unnamed intermittent drainage, tributary to Riley gulch is located approximately 479 feet to the southwest of the existing facility.

2. Could a potential release from the facility reach 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. If a potential release were to migrate off the facility on the northeastern side flow would be directly towards Riley Gulch.

3. 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 Area*)       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: See additional comments section
  
  - (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:**

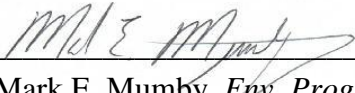
As stated in the surface water portion of this sensitive area determination; there are five (5) USGS identified intermittent drainages located within a ¼ mile of the existing facility. The facility, as it is currently proposed to be expanded will cover Riley Gulch. Riley Gulch will flow through a culvert beneath the expanded area of the facility with the outlet located a small distance from the northeastern side. The facility expansion will limit the direction of a potential release to the northeastern side. If a potential release were to migrate off the northeastern side, flow would be to northeast following the natural contours of the area directly towards and potentially into Riley Gulch. It is not anticipated that the four intermittent drainages to the northeast and southwest would be impacted by a potential release as all the drainages are tributary to Riley Gulch. In order to mitigate any potential impacts to Riley Gulch it is recommended that Best Management Practices (BMPs) be installed along all fill slope sides during facility expansion. These should be in the form of an earthen perimeter berm. If feasible, a diversion ditch should be constructed along the toe of these fill slope sides as well. A raised pad entrance should also be considered to prevent any potential flow from migrating down the access road on the northeastern access point. Any existing and newly constructed BMPs should be monitored and maintained to ensure total site containment in the event of a potential release.

The State Engineer's Office and USGS records were reviewed and no records were revealed which would provide additional information pertaining to the depth to groundwater. The closest permitted water well is located 13,338 feet (2.5 miles) to the east northeast and would not provide accurate information on the depth to groundwater. There are however five (5) permitted groundwater monitoring wells on the southwestern side of the existing facility which are part of an ongoing remediation project being managed by another operator. Depth to water in these wells averages approximately 30 feet bgs. In addition, based on aerial photography review, the vegetative cover in the immediate vicinity of the existing facility consists of bunch grasses, oak brush, and deciduous species (cotton wood) further indicating the presence of shallow groundwater. Due to the heavy vegetative cover, it is difficult to determine if any springs or seeps are present.

Based on the information collected during this desk top review, the potential for impacts to groundwater has been deemed to be high. However, the greatest potential for impacts would be to Riley Gulch. As noted above; if a potential release were to migrate off the facility on the northeastern side flow would be directly towards and potentially into Riley Gulch due to its very close proximity to the facility. Based on the vegetative cover; Riley Gulch, in the immediate vicinity of the existing facility, does appear to flow intermittently during a majority of the year with heaviest flow occurring in the spring runoff season. If a release were to enter the Riley Gulch during periods of intermittent flow, impacts could potentially reach Parachute Creek as Riley Gulch has direct hydraulic connection to it.



With the high potential for impacts to groundwater, surface water and potentially Parachute Creek during periods of intermittent flow, the existing facility should be designated as being in a sensitive area.

Inspector Signature(s):  Date: 6/28/2018  
Mark E. Mumby, *Env. Program Manager/RPG*  
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