

## Sensitive Area Determination Checklist

<b>Williams Production RMT Company – Highlands</b>		
<b>Person(s) conducting field inspection</b>	Ashlee Lane	8/17/10
	<i>Biologist</i>	
<b>Site Information</b>		
Location:	Federal RGU 41-1-298	Time: 1030
Type of Facility:	Proposed well pad	
<b>Environmental Conditions</b>	Clear and calm	
Temperature (°F)	80	

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: There is a small section of a well defined unnamed ephemeral drainage and numerous small unnamed ephemeral drainage features.

If yes, describe location relative to facility: The small section of the well defined ephemeral drainage is located 1,168 feet west of the proposed facility. The numerous small unnamed ephemeral drainage features surround the entire proposed facility. Five of these drainages, two on the north side and two on the south side are adjacent to the proposed facility. The remaining small unnamed ephemeral drainage is 499 feet west of the proposed well pad.

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. Any potential release off of the facility would have the tendency to flow to the north, south, east and west based on the topographical setting of the facility.

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): Drilling pit.

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:

- (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:**

The proposed well pad resides on a hill top within the Ryan Gulch Field of the Piceance Basin. As stated in the surface water section of this SAD there are numerous small ephemeral drainage features on all sides of the proposed facility. Any potential release, if it were to migrate off the facility, could impact these small drainages all of which lead to larger more defined unnamed ephemeral drainages to the north, south, east, and west of the facility. These in turn are tributaries to Ryan Gulch which eventually leads to Piceance Creek which is a perennial stream. With five of the small unnamed ephemeral drainages adjacent to or within 500 feet of the proposed facility the facility would be considered as being in a sensitive area by COGCC decision. In addition with these small drainages intersecting Ryan Gulch, there is a slight potential that a large release could impact Piceance Creek from Ryan Gulch if and when Ryan Gulch is flowing.


Well constructed BMPs should be installed around the entire perimeter of the well pad itself and at the bottom of the fill slope in the form of a diversion ditch. These BMPs should be monitored and checked on a frequent basis to ensure site containment in the event of a release. Temporary BMP's can be placed in the smaller unnamed ephemeral drainages as well to further ensure site containment.

The vegetation in the area of the proposed facility consists of Piñon/Juniper woodland along with sage brush and serviceberry. No accurate water well data was obtainable for this location from the State Engineer's office. However there were no field indicators which indicated the presence of shallow ground water in the immediate vicinity of the proposed facility or within the drainages themselves including Ryan Gulch. The proposed facility is located approximately 200 feet higher than any of the stream valleys which could potentially have shallow groundwater present. The facility is also situated on geologic material with very low hydraulic conductivities. Based this information, it is not anticipated that ground water would be impacted from a potential release on or off the facility.

Due to the findings presented in this sensitive area determination checklist especially in regards to potential surface water feature impacts the proposed facility should be designated as being in a sensitive area.

Inspector Signature(s):  Date: 8/18/2010

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 Date: 8/18/2010

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