

Sensitive Area Determination Checklist

Williams Production RMT Company		
Person(s) Conducting Field Inspection	Ashlee Lane	10/12/10
	<i>Biologist</i>	
Site Information		
Location:	Federal 399-1-4	Time: 1200
Type of Facility:	Existing Well Pad	
Environmental Conditions	Clear and calm	
Temperature (°F)	70°	

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: One USGS intermittent drainage; Wagonroad Gulch, tributary to Yellow Creek and one unnamed ephemeral drainage tributary to Wagonroad Gulch.

If yes, describe location relative to facility: Wagonroad Gulch is located 1,243 feet west and the unnamed ephemeral drainage is located approximately 552 feet to the northeast 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. A potential release, if it were to migrate off the facility, would tend to flow to the west towards Wagonroad Gulch and northeast towards the unnamed ephemeral drainage.

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

☒ Moderate to actual surface water features ☒ Low to any flowing surface water

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): Multi-well pits.
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:

As stated in the surface water section of this sensitive area determination Wagonroad Gulch is an intermittent drainage located 1,243 feet to the west of the facility. Wagonroad Gulch is identified as intermittent but exhibits more ephemeral characteristics in the immediate vicinity west of the facility. The lack of a well defined channel, OHMW, and a vegetated bottom suggests that flow does not occur in Wagonroad Gulch a majority of the time. The unnamed ephemeral drainage is located approximately 552 feet to the northeast of the facility. The facility as it is currently constructed, limits flow directions primarily to the northeast and west. If flow were to migrate off the western edge of the facility it would run down the hillside towards Wagonroad Gulch. However the potential to reach Wagonroad Gulch would be low due to the relatively thick vegetative cover, the moderate to high infiltration rates of the underlying soils, and the distance the release would have to migrate (1,243 feet) in order to reach Wagonroad Gulch. If a potential release were to migrate the entire 1,243 feet to Wagonroad Gulch, it would have to flow an additional 2.25 miles further to the northeast to potentially impact any live surface water (Yellow Creek) if flowing. If flow were to migrate off the northeastern side of the facility it would run down the hillside towards the unnamed ephemeral drainage which is tributary to Wagonroad Gulch. If a release were to reach the unnamed ephemeral drainage the potential to impact Wagonroad Gulch would be deemed to be low. The unnamed ephemeral drainage in the immediate vicinity of the facility has poorly defined channel, no ordinary high water mark (OHWM), and a fairly thick vegetated bottom indicating that the drainage does not flow a majority of the time. In addition to the above mentioned characteristics it is not anticipated that a potential release would reach and potentially impact Wagonroad Gulch due to the distance a release would have to travel (~3,800 ft).

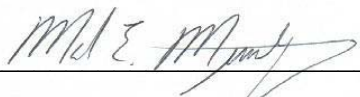
When the pad is expanded, Best Management Practices (BMP's) should be installed along the northeastern, northwestern and possibly the southeastern sides of the facility in the form of a perimeter berm on the facility itself and a diversion ditch along any fill slopes of the facility. These should be monitored and maintained to ensure site containment. With the installation of the recommended BMP's, the potential to impact the above noted drainages would be considerably lower.

The State Engineer's Office and USGS records were reviewed and no records were revealed that would provide additional information pertaining to the depth to groundwater. The vegetative cover in the immediate vicinity of the facility, Piñon Juniper woodland and sage brush does not suggest the presence of shallow groundwater. The facility resides in the Uintah formation, which like the Green River Formation, tends to be fractured both vertically and horizontally which allows fluids to migrate in the subsurface over large distances. Based on the topographical setting of the facility, it is not anticipated that an overland release would impact groundwater due to the short duration time involved and the fact it would spread out over a large area. The greatest potential for impact to groundwater, if present, would be from a release that occurred over a longer period of time such as a leaking pit. However to lessen any potential to impact

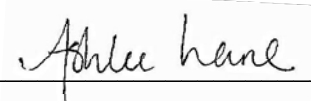


groundwater, it would be highly recommended that the pit be lined in accordance to COGCC criteria and tested prior to placement of any materials into it.

Based on the information collected during the site investigation and desktop review, the potential to impact actual surface water features has been deemed to be moderate. However the potential to impact any live surface water (Yellow Creek if flowing) is deemed to be low due to the distance a potential release would have to migrate (~2.25 miles). Based on the topographical setting of the proposed facility the potential to impact ground water has been deemed low as well. Therefore the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 10/26/2010

Mark E. Mumby, *Project Manager/RPG*
HRL Compliance Solutions, Inc.

 Date: 10/15/2010

Ashlee Lane, *Biologist*
HRL Compliance Solutions, Inc.