Sensitive Area Determination Checklist

Williams Production RMT Company			
Person(s) Conducting Field Inspection	Jennifer Belcastro *Environmental Scientist*	10/10/12	
Site Information			
Location:	RWF 23-25	Time: 1100	
Type of Facility:	Proposed Well Pad		
Environmental Conditions	Sunny, dry soil conditions		
Temperature (°F)	60°		

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 are three (3) unnamed USGS identified intermittent drainages.

   If yes, describe location relative to facility: One unnamed intermittent drainage is located 323 970 feet to the northwest; one is located approximately 628 feet to the northeast; and one is located approximately 1,620 feet to the southwest of the proposed 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, flow would tend to be to the north towards the unnamed intermittent drainages.

3. Is the potential to impact surface water from a facility release high or low?
   ☒ High to surface water features ☒ Low to actual live flowing surface water.

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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, cuttings and fluids will be managed on the surface
   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:

   (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, there are three (3) unnamed USGS identified intermittent drainages in the vicinity of the proposed facility; Two (2) of the unnamed intermittent drainages are located 323 and 628 feet to the northwest and northeast of the proposed facility. The facility, as it is currently planned, limits the directions of a potential release to the northern and a small portion of the eastern and western sides of the facility. If a potential release were to migrate off the facility, flow would be to the north and northeast following the natural contours of the area and directly towards the unnamed drainage features. It is not anticipated the drainage feature located to the southwest would be impacted by a potential release as it is at a higher elevation than that of the proposed facility. During the site investigation, it was revealed both drainages to the northeast and northwest for the most part no longer flow due to man-made modifications to the land surface. They are mostly low lying depressions with fairly thick vegetated bottoms indicating that flow is very infrequent or non-existant. In addition the topography is relatively flat and the soils have a moderate to high infiltration rate in the immediate vicinity. Therefore, if a potential release were to migrate off the facility, it would not migrate any great distance due to the above noted conditions. However, it is still recommended that Best Management Practices (BMPs) be installed during construction in the form of an earthen perimeter berm around the graded edge of the fill slope sides and a diversion ditch constructed along the toe of the fill slope sides of the facility. These should be monitored and maintained to ensure site containment in the vent of a release.

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 proposed facility consists of *Artemisia tridentata* (sagebrush), *Chrysothamnus nauseosus* (rabbitbrush), and *Juniperus osteosperma* (juniper) which does not suggest the presence of shallow groundwater.

Based on the information collected during the site visit and desk top review, the potential to impact actual surface water features has been deemed high due to the close proximity of the two (2) USGS identified unnamed intermittent drainages. However, as stated above, the relatively flat topography, the man-made land modifications, and thick vegetative cover, the potential to impact any flowing surface water would be deemed very low. In addition, based on the topographic setting, the vegetative cover, and the fact fluids will be managed on the surface, the potential to impact groundwater has been deemed low as well. Therefore, the facility can be classified as being in a non-sensitive area.

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Inspector Signature(s): _____ Date: 2/19/2013

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

_____ Date: 10/12/2012

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