Sensitive Area Determination Checklist

Williams Production RMT Company			
Person(s) Conducting Field Inspection		Jennifer Belcastro *Environmental Scientist*	09/19/11
Site Information			
Location:	SG 44-23		Time: 1300
Type of Facility:	Proposed Well Pad		
Environmental Conditions	Sunny; dry ground conditions.		
Temperature (°F)	78°		

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 two unnamed USGS indentified intermittent drainages, the Colorado River, and the 100 year Colorado River flood plain.

   If yes, describe location relative to facility: The first unnamed intermittent drainage is located 382 feet west, the second unnamed intermittent drainage is located ~660 feet west, the Colorado River is 807 feet west, and the 100 year Colorado River flood plain commences at the center point of the proposed facility.

2. Could a potential release from the facility reach surface water features?
3. ☒ 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 western side of the facility flow would be directly towards the first unnamed intermittent drainage.

4. Is the potential to impact surface water from a facility release high or low?
   ☒ High to actual surface water features ☒ Moderate to 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
   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 $\leq 1.0x10^{-7}$ 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 two unnamed intermittent drainages 442 feet and 660 feet west of the facility. Although identified as intermittent, the site visit determined both drainages exhibit more ephemeral characteristics in the immediate vicinity of the facility such as poorly defined channels and vegetated bottoms. However, both unnamed intermittent drainages to the west have direct unimpeded flow to the Colorado River. The facility, as it is currently proposed, limits flow directions of a potential release to primarily the western side. If a potential release were to migrate off the western edge of the facility, it would tend to flow directly to the west directly towards the unnamed intermittent drainage. If this occurred, the release would flow directly into the unnamed intermittent drainage which could potentially impact the Colorado River; in the event of a large release. It is recommended Best management Practices (BMPs) be installed in the form of an earthen perimeter berm along the graded edge on the western an potions of the northern and southern sides of the proposed facility and a diversion ditch along the fill slope edges on the same sides as well.. These BMPs should be monitored and maintained to ensure site containment in the event of a release.

The State engineers Office and USGS records were reviewed and it was revealed there is one permitted water well located 813 feet to the northeast of the proposed facility. Based on the topographical setting of the well, upgradient of the proposed facility, it would not be impacted by a potential release from the facility. However, the proposed facility does reside within the 100 year floodplain of the Colorado River. Therefore, it can be assumed the depth to groundwater within the 100 year floodplain is most likely less than 20 feet, if not higher in some areas making the potential for a release to impact groundwater high.

Based on the information collected during the desktop review phase of this determination, the potential to impact surface water features and potentially the Colorado River has been deemed moderate to high. In addition, the unnamed intermittent drainage located 382 feet to the west of the proposed facility would classify the facility as being in a sensitive area by the COGCC 500-foot rule. Portions of the proposed facility also reside within the 100 year floodplain of the Colorado River which automatically classifies the facility as being in a sensitive area. The potential to impact groundwater has been deemed high as well due to additional well data just outside the ¼ mile buffer zone. Therefore, based on the above noted information, the proposed facility should be designated as being in a sensitive area.

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Inspector Signature(s): _____ Date: 4/12/2012

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

_____ Date: 9/19/2011

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