Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Ashlee Lane	10/08/12
Site Information		
Location:	DOE 1-W-27	Time: 12:30
Type of Facility:	Existing Well Pad	
Environmental Conditions	Clear; calm; soil conditions are dry.	
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 ephemeral drainages.

   If yes, describe location relative to facility: One (1) ephemeral drainage is located 166 feet to the west, one (1) is located approximately 400 feet feet to the east and the other is located approximately 205 feet to the south.

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 follow the topographical contours to the southeast and/or southwest.

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

WPXENERGY

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): Cuttings will be managed on the surface.

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 (2) USGS unnamed intermittent drainages within a quarter mile of the existing facility which could be impacted by a potential release. The unnamed USGS identified intermittent drainages are located 166 feet to the west and approximately 205 feet to the south of the existing facility. The facility, as it is currently constructed limits the direction of a potential release to portions of the southern and western sides of the facility. If a potential release were to migrate off these sides, flow would be directly towards the two (2) unnamed USGS identified intermittent drainages. However, it is not anticipated a potential release would impact any live flowing surface water for the following reasons.

The unnamed intermittent drainage to the south of the facility exhibits ephemeral characteristics in the immediate vicinity of the pad which include a poorly defined channel and vegetated bottom including some woody species. In addition, the drainage feature blends in to the surrounding topography and does not exist approximately 2,025 feet to the south of the facility. The unnamed USGS identified intermittent drainage to the west of the facility exhibits ephemeral characteristics as well. If a potential release were to impact this drainage feature, it could potentially flow a greater distance due to the steepness of the channel in the vicinity of the existing facility. However, flow would tend to congregate in the low lying area approximately 4,000 feet to the south of the existing facility. In addition, a potential release would have to flow an additional 1,800 feet to impact Cottonwood Gulch. It is not anticipated the USGS identified intermittent drainage located 400 feet to the east of the facility would be impacted by a potential release as a small ridgeline separates the drainage feature from the facility.

In order to mitigate any potential impacts to the above mentioned drainages, it is recommended Best Management Practices (BMPs) be installed along the fill slope sides of the existing facility. When facility expansion occurs, BMPs in the form of an earthen perimeter berm should be installed along the graded edge and a diversion ditch should be constructed, if possible, along the toe of the fill slope to contain any fluids which could potentially migrate off site. This would include portions of the southern, eastern, and western sides of the facility.

The State Engineers Office and USGS records were reviewed and no records were revealed which would provide additional information pertaining to the depth to groundwater. The vegetative cover in the immediate vicinity of the existing facility (sage brush, rabbit brush, shadscale, and Piñon juniper woodland) does not suggest the presence of shallow groundwater. The topographical setting of the facility (thin ridgeline) also precludes the possibility of shallow groundwater. In addition, no seeps or springs were identified within the quarter (1/4) mile buffer zone during the site visit.

Based on the information collected during the field investigation and desktop review, the potential to impact actual surface water features would be deemed to be high. The close

proximity of the above mentioned drainages (less than 500 feet) would also classify the existing facility as being in a sensitive by COGCC decision. However, with the ephemeral characteristics exhibited by both drainages and the distance a potential release would have to flow in order to reach any flowing surface water (Cottonwood Gulch), the potential to impact any flowing surface water would be deemed very low. Based on the topographical setting of the existing facility, the potential to impact groundwater is very low as well. Therefore the existing facility should be designated as being in a non-sensitive area.

Inspector Signature(s): _____ Date: 12/5/2012

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

_____ Date: 10/11/2012

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