Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)			
Person(s) Conducting Field Inspection		Ashlee Lane 05/06/2013 *Biologist*	Alex Nees, 05/06/2013 *Environmental Scientist*
Site Information			
Location:	RU 42-7		Time: 2:00pm
Type of Facility:	Proposed well pad		
Environmental Conditions	Cloudy, scattered showers, ground slightly saturated.		
Temperature (°F)	54		

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 unnamed USGS identified intermittent drainage which is tributary to Beaver Creek. One non-USGS spring/seep which was identified during the site visit.

   If yes, describe location relative to facility: The unnamed USGS identified intermittent drainage tributary to Beaver Creek is located 717 feet to the northeast and the non-USGS identified spring/seep is located approximately 1,048 feet to the southeast 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. A potential release if it were to migrate off the facility would tend to migrate to the northeast following the natural contours of the area.

3. Is the potential to impact surface water from a facility release high or low?
   ☒ High during times of spring runoff ☒ Low during periods of no flow

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 Cuttings will be managed on the pad 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 $\leq 1.0x10^{-7}$ 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

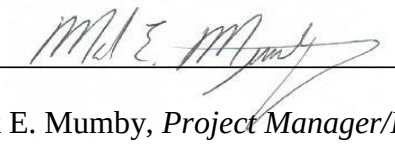
Additional Comments:

As stated in the surface water section of this sensitive area determination, there is one (1) unnamed USGS identified intermittent drainage located 717 feet to the northeast and one (1) non-USGS identified spring/seep located approximately 1,048 feet to the southeast of the proposed facility. The facility, as it is currently proposed to be constructed, limits the direction of a potential release to the northern and portions of the eastern and western fill slope sides. If a potential release were to migrate off these sides flow would be to the northeast following the natural contours of the area and towards the unnamed intermittent drainage. Due to the topographic setting of the proposed facility, it is not anticipated the non-USGS identified spring/seep would be impacted by a potential release as it is at a slightly higher elevation. During facility construction, it is recommended that Best Management Practices (BMPs) be installed in the form of an earthen perimeter berm along the graded edge of the fill slope sides of the facility (northern and a portion of the eastern and western sides). If feasible, a diversion ditch should be installed along the toe of the above mentioned fill slope sides of the as well. All installed BMPs should be monitored and maintained to ensure site containment in the event of a potential release.

The State Engineer's Office and USGS records were reviews and it was revealed that there are no permitted water wells within a ¼ mile radius which would provide any additional information pertaining to the depth to groundwater. The vegetative cover in the immediate vicinity of the proposed facility (primarily oak brush and sagebrush) does not suggest the presence of any shallow groundwater. However, there is a relatively flat lying marshy area located to the southeast of the proposed facility at an elevation approximately 60 feet below the proposed facility elevation. Therefore it could be estimated that the depth to groundwater from the proposed facility surface would be sixty (60) feet or greater.

Based on the information collected during the site investigation and desktop review, the greatest potential for impacts would be to the unnamed USGS identified intermittent drainage located 717 feet to the northeast of the proposed facility. A potential release, if it were to migrate off the northern or a portion of the eastern and western sides, would tend to flow to the northeast towards the unnamed intermittent drainage. During spring runoff, while the tributary is flowing and surface soils are saturated, a release could potentially migrate quickly downgradient and enter the tributary to Beaver Creek. Therefore, during spring runoff season, the potential to impact surface water is high. During the remainder of the year, when soils are dry and the drainage is not flowing, a potential release would be unlikely to migrate quickly towards the drainage due to the fairly heavy vegetative cover and the moderate to high infiltration rates of the underlying soils in the immediate vicinity of the proposed facility. In addition, if a potential release were to impact the unnamed intermittent drainage during periods of no flow, it is not anticipated the release would impact Beaver Creek due to the distance the release would have to migrate (>1.5 miles) to reach Beaver Creek and the high infiltration rates of the channel bottom soils.

Due to the topographical setting of the proposed facility the potential to impact groundwater would be deemed to be low. As noted above, the primary concern with the proposed facility is its proximity to a tributary of Beaver Creek, which is a SWSA for Rifle and the fact the drainage enters Beaver Creek above the City of Rifle's water intake. With the high potential for impacts to the unnamed intermittent drainage and Beaver Creek during spring runoff, the facility should be classified as being in a sensitive area.

Inspector Signature(s):  Date: 10/18/2013

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

 Date: 5/7/2013

Alexander Nees, *Environmental Scientist*
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