

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Finn Whiting	
	Geologist	
Site Information		
Location:	RU 13-6	Time: 1:29
Type of Facility:	Existing production facility/w proposed expansion	
Environmental Conditions	Partly cloudy, dry ground conditions.	
Temperature (°F)	74	

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: Two (2) unnamed USGS identified intermittent drainages both of which are tributary to Beaver Creek.

If yes, describe location relative to facility: One (1) unnamed USGS identified intermittent drainage is located 351 feet south and one (1) unnamed USGS identified intermittent drainage is located 995' west 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, could flow to the west, towards the USGS identified intermittent drainage located 351feet south of the facility.

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

Moderate to High Low

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 Trench

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

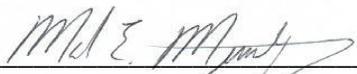
Additional Comments:

As stated in the surface water portion of this sensitive area determination, there are two (2) unnamed USGS identified intermittent drainages located within a ¼ mile of the proposed facility expansion. The facility, as it is currently constructed and proposed to be expanded, limits the direction of a potential release to a portion of the southern, and the entire western sides. If a potential release were to migrate off facility on the above mentioned sides, flow would be to the west southwest down a fairly steep hillside towards the USGS identified intermittent drainage located 355 feet to the south. This drainage eventually intersects the unnamed intermittent drainage located 995 feet to the west which is tributary to Beaver Creek. Currently, the facility is constructed with a diversion ditch directing all stormwater run on and run off into rock armored drainages which mitigate erosion. During facility expansion, the current diversion ditch should be reconstructed. Additional Best Management Practices (BMP's) should be installed in the form of an earthen perimeter berm on all fill slope sides of the pad with a raised pad entrance. An additional diversion ditch should be constructed, if feasible, along the toe of the western fill slope side as well. All BMPs should be monitored and maintained to ensure containment of a potential release on site.

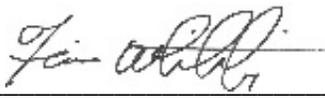
The State Engineers Office and USGS record were reviewed and no records were revealed which would provide additional information on the depth to groundwater. Two water wells have been permitted but were never drilled or been completed. The vegetation in the immediate vicinity of the facility is dominated by sage, juniper, oak brush and bunch grasses typical of the mesic uplands which does not suggest the presents of shallow groundwater. Furthermore, there were no springs or seeps identified in the immediate vicinity of the pad. Beaver Creek is host to more hydrophytic species but they are localized to the creek banks. Therefore, based on the vegetative cover and topography, it could be assumed that the depth to groundwater is at least 40 feet, if not greater, in the immediate vicinity of the existing facility.

Based on the information collected in the site visit and desktop review, the potential to impact groundwater has been deemed as being low. The greatest potential for impacts is to the unnamed USGS identified intermittent drainage located 351feet south of the facility. A release would have to be fairly large in order to impact this draining as flow would be somewhat parallel to the drainage and a majority of any fluids released would tend to infiltrate into the heavily vegetated hillside before reaching the drainage feature. However, if a potential release were to impact the drainage feature during periods of flow, Beaver Creek could be potentially impacted as both drainage features, as noted in this SAD, are tributary to Beaver Creek. In addition, the close proximity of the unnamed USGS intermittent drainage (<500 feet) and the fact that the facility is located in the external buffer zone of the Beaver Creek SWSA; would also classify the facility as being in a sensitive area. It should be noted that due to the moderate to high potential for impacts to the intermittent drainage features and Beaver Creek, an Emergency Response Control Valve has been installed just after the access road turn off to redirect flow and prevent it from reaching Beaver Creek in the event the unnamed drainage features were impacted. With the moderate to

high potential for impacts to actual surface water features, especially during periods of flow, and by both written (317b) and unwritten rule (<500 feet) the facility should be classified as being in a sensitive area.

Inspector Signature(s):  Date: 6/23/2014

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

Inspector Signature(s):  Date: 06/11/2014

Finn Whiting, *Geologist / Environmental Inspector*
HRL Compliance Solutions, Inc.