

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Finn Whiting	05/22/14
	<i>Geologist</i>	
Site Information		
Location:	MV 16-9	Time: 9:45
Type of Facility:	Existing Facility w/ Proposed Expansion	
Environmental Conditions	Sunny, Dry ground conditions.	
Temperature (°F)	67	

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 (1) unnamed USGS identified intermittent drainage.

If yes, describe location relative to facility: The One (1) unnamed USGS identified intermittent drainage is located 170' from the existing facility center adjacent to the proposed southeast pad boundary.

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 flow to the southeast or northwest following the natural contours of the area towards the unnamed intermittent drainage.

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

☒ High to surface water features ☒ Low to actual flowing surface water

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 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.

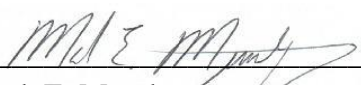
7. Is the potential to impact ground water from the facility in the event of a release high or low?
☐ High ☒ Low

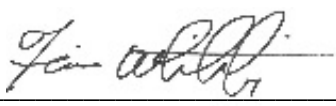
Additional Comments:

As stated in the surface water portion of this sensitive area determination there is one (1) unnamed USGS identified intermittent drainage within a ¼ mile of the existing facility. The facility as it is currently constructed and proposed to be expanded, limits the direction of a potential release to the northeastern and southeastern sides. If a potential release were to migrate off of the facility on the northeastern side, flow would be to the northeast where it would enter the access road bar ditch. The bar ditch is diverted under the access road two times as the road switch backs on the steep slopes before impacting the unnamed USGS identified intermittent drainage to the southeast. A potential release if it were to migrate off the southeastern side of the facility would flow directly into the unnamed USGS identified intermittent drainage located 224' to the southeast. During facility expansion, Best Management Practices (MBPs) should be installed in the form of an earthen perimeter berm on all fill slope sides of the pad with a raised pad entrance. If feasible, a diversion ditch should be constructed along the toe of the fill slope sides as well. All BMPs should be maintained and monitored to ensure containment of a potential release on site.

The State Engineers Office and USGS records were reviewed no records were revealed which would provide additional information on the depth to groundwater. The vegetation surrounding the facility is dominated by pinyon and juniper typical of the mesic uplands which does not suggest the presence of shallow groundwater, and the steep topography will encourage surface runoff rather than pooling and soil infiltration. In addition, the geologic setting of the facility suggests that the depth to bedrock (Wasatch Fm.) is very shallow. Due to the high shale content of the Wasatch, in the immediate area, it tends to be devoid of groundwater. Therefore it could be assumed that groundwater, if present, would be at a depth greater than 100 feet, making the potential for impacts to groundwater very low.

Based on the information collected during the site visit and desktop review, the potential to impact groundwater has been deemed as being low. The greatest potential for impacts would be to the unnamed USGS identified intermittent drainage located to the southeast of the facility. A potential release if it were to migrate of the southeastern side would flow directly into this drainage feature. However the unnamed USGS identified intermittent drainage, in the immediate vicinity of the facility, exhibits ephemeral characteristics in the form of heavy vegetation growth in the drainage channel, abundant woody debris, and no high water mark indicating it does not flow a vast majority of the time. It is not anticipated that a potential release, if it were to impact the drainage, would migrate any great distance due to the high infiltration rates of the channel bottom soils. In addition, a potential release would have to migrate a distance of 1,780' before converging with Riley Gulch. Although the potential for impacts to surface water features would be deemed to be high, the potential for impacts to actual flowing surface water and groundwater would be deemed as low. Therefore, the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 5/30/2014
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HRL Compliance Solutions, Inc.

Inspector Signature(s):  Date: 05/22/2014
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