

## Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
<b>Person(s) Conducting Field Inspection</b>	Ashlee Lane	03/07/13
	Biologist	
<b>Site Information</b>		
Location:	GM 245-1	Time: 1500
Type of Facility:	Existing Well Pad	
<b>Environmental Conditions</b>	Clear skies; slight breeze; melting conditions	
Temperature (°F)	61°	

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) USGS identified unnamed intermittent drainages and Allen Water Creek, an intermittent drainage. One of the unnamed ephemeral drainage east of the facility that would not have the potential to be impacted due to topographical barriers and the other unnamed ephemeral drainage within close proximity of the well pad does not exist.

If yes, describe location relative to facility: Allen Water Creek is located 199 feet to the 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, would tend to flow towards the diversion ditch adjacent to the southeastern side of the facility.

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

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 and fluids 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  $\leq 1.0 \times 10^{-7}$  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 section of this sensitive area determination, Allen Water Creek, a USGS identified intermittent drainage, is located 199 feet west from the center of the facility. There is also a USGS identified ephemeral drainage located 120 feet east of the location. However, it no longer exists due to man-made modifications to the land surface. There is an additional USGS identified intermittent drainage located approximately ¼ mile east of the facility. There is no potential for impacts to this drainage feature due to topographical barriers. The facility, as it is currently constructed, limits the direction of a potential release to a portion of the southwestern and the entire southeastern sides of the facility. If a potential release were to migrate off the facility, flow would be directly towards an existing diversion ditch adjacent to the southwestern side of the facility. Flow from this diversion ditch leads directly into Allen Water Creek. During reconfiguration of the facility, Best Management Practices (BMPs) should be assessed and upgraded if necessary and/or new ones be constructed if needed. The BMPs should be in the form of an earthen perimeter berm along the graded edge on the southwestern and southeastern sides of the facility. A drive over berm should also be constructed on the entrance to the facility on the southeastern side. Additional consideration should be given in regards to having materials or devices in place to halt any flow of water in the diversion ditch on the southeastern side of the facility should a potential release impact this drainage feature. All installed and upgraded BMPs should be monitored and maintained to ensure site containment in the event of a release.

The State Engineer's Office and USGS records were reviewed and no records were revealed which would provide additional information pertaining to the depth to groundwater in the immediate vicinity of the facility. Vegetation within the immediate vicinity of the well pad consists of typical intermountain desert species, Pinyon Juniper woodland with scrub oak mix which would not suggest the presence of shallow groundwater. However there are cottonwoods and elms present adjacent to the Hayes Gulch/Allen Water Creek channel suggesting groundwater may be relatively shallow (<40 feet).

Based on the information collected during the earlier site visit and desktop review, the potential to impact surface water features and actual flowing surface water, if present, would be deemed to be high. In addition, by COGCC decision, the close proximity of Allen Water Creek (<500 feet) would classify the facility as being in a sensitive area. Although shallow groundwater may be present the potential to impact groundwater would be deemed low due to the fact all cuttings and fluids will be managed on the surface and there will be no pits on the facility thus eliminating the potential for impacts from a release over a longer period of time such as a leaking pit. Based on the close proximity of Allen Water Creek, the potential for impacts to the drainage from a potential release are high as stated above. With this high potential for impacts to surface water features and by COGCC decision, the facility should be classified as being in sensitive area.

Inspector Signature(s): Mark E. Mumby Date: 3/8/2013  
Mark E. Mumby, *Project Manager/RPG*  
HRL Compliance Solutions, Inc.

Ashlee Lane Date: 3/7/2013  
Ashlee Lane, *Biologist*  
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