

## Sensitive Area Determination Checklist

| WPX Energy Rocky Mountain, LLC (WPX)         |  |            |
|--|--|------------|
| <b>Person(s) Conducting Field Inspection</b> | Finn Whiting                               |            |
|  | <i>Geologist / Environmental Inspector</i> |            |
| <b>Site Information</b>                      |  |            |
| Location:                                    | MV 5-10                                    | Time: 9:35 |
| Type of Facility:                            | Existing Facility w/ Proposed Expansion    |            |
| <b>Environmental Conditions</b>              | Overcast, Wet ground conditions.           |            |
|  |  |            |
| Temperature (°F)                             | 62   |            |

Has the proposed, new or existing location been designated as a sensitive area?

☐ Yes      ☒ No

### **SURFACE WATER**

- 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 and Mount Callahan Spring

If yes, describe location relative to facility: The one (1) USGS identified intermittent drainage is located 685 feet to the west and Mount Callahan Spring is located approximately 261 feet to the south of the existing facility

- 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.

- 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 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 is one (1) unnamed USGS identified intermittent drainage and Mount Callahan Spring located within ¼ mile of the proposed facility. The facility, as it is currently constructed and proposed to be expanded, limits the direction of a potential release to the northern side. If a potential release were to migrate off of the facility, flow would follow the natural topography through heavy vegetation into low lying depression just to the south of the access road. All stormwater which enters the pad from the southern cut slope side or any potential flow from Mount Callahan Spring is diverted by a ditch to the northeast onto an existing pipeline right of way.

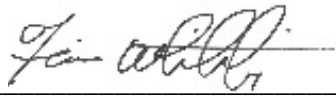
During facility expansion, Best Management Practices (BMPs) should be installed in the form of an earthen perimeter berm along the graded edge on all fill slope sides. A water bar should be constructed across the facility entrance as well. The diversion ditch on the southern side should be re-constructed after expansion to prevent stormwater run-on and any potential flow from Mount Callahan Spring from entering the facility. It can be diverted off to the eastern side.

The State Engineer's Office and USGS records were reviewed and no records were revealed which provide additional information pertaining to the depth to groundwater. The topography of the general area slopes generally to the north, although there is significant topographical variation on a local scale. The vegetation is dominated by xeric species typical of the elevation and location, including sagebrush, juniper, and cheatgrass. There are no occurrences of hydrophytic vegetation that would suggest the presence of shallow groundwater or anything other than occasional ephemeral surface flow. The channel of the above noted drainage displayed similar vegetation to the upland areas, indicating that it only carries surface water originating from elevated topography to the south during precipitation events and none appear to have any connection to more permanent sources of groundwater. Therefore it could be assumed that groundwater, if present, would be at a depth greater than 40 feet, making the potential for impacts to groundwater low.

Based on the information collected during the site visit and desktop review, the potential to impact groundwater has been deemed as being low as noted above. As stated above, if a potential release were to migrate off the facility flow would be to the north following the natural topography of the area. Any released fluids would tend to migrate in a low lying area just to the north of the facility and south of the existing access road. If a release were large enough to reach the access road bar ditch it would be diverted under the access road through a culvert and out into a low lying area just to the north where it would most likely infiltrate into the underlying soils. Mount Callahan Spring would not be impacted by a potential release as it is located to the south and is at an elevation higher than that of the existing facility. With the potential for impacts to groundwater and actual flowing surface water being deemed as low, the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 8/26/2014

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

Inspector Signature(s):  Date: 08/26/2014

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