Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)			
Person(s) Conducting Field Inspection	Mark Mumby		
	RPG/Env. Program Manager		
Site Information			
Location:	RGU 12-1-298	Time: 11:30	
Type of Facility:	Existing well pad w/proposed expansion		
Environmental Conditions	Partly cloudy, mild, dry soil conditions		
Temperature (°F)	75		

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 tributary to Ryan Gulch and three (3) non-USGS ephemeral drainages which were identified during the site visit

   If yes, describe location relative to facility: The unnamed USGS identified intermittent drainage is located 670 feet to the west, two (2) of the unnamed non-USGS identified ephemeral drainages are located adjacent to the western side, and one unnamed non-USGS identified ephemeral drainage is located 242 feet to the east 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 facility on the eastern side, would flow to the east towards the unnamed ephemeral drainage feature.

3. Is the potential to impact surface water from a facility release high or low?
   ☒ Moderate to actual surface water features ☒ Low to actual flowing surface water

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
   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 $\leq 1.0x10^{-7}$ 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:

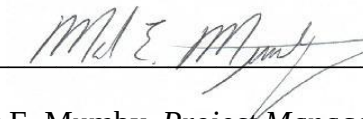
As stated in the surface water portion of this sensitive area determination, there is one (1) unnamed USGS identified intermittent drainage and three (3) unnamed non-USGS identified ephemeral drainages located within ¼ mile of the existing facility. The facility, as it is currently proposed to be expanded, limits the direction of a potential release to the eastern side. A potential release if it were to migrate off the eastern side would flow to the east towards and potentially into the unnamed ephemeral drainage identified during the site visit. The two unnamed non-USGS identified ephemeral drainages and the unnamed USGS identified intermittent drainage located to the west would not be impacted by any potential release. This would be due to the fact they will be separated from the facility by the cuttings trench and soil stockpile thus preventing any fluids from reaching and potentially impacting these drainages.

During facility expansion, it is recommended that Best Management Practices (BMPs) be installed on all fill slope sides of the facility. The installed BMPs should be in the form of an earthen perimeter berm along the graded edge of all fill slope side. If feasible, it is highly recommended that a diversion ditch be constructed along the toe of any fill slope sides 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 reviewed and no records were revealed which would provide any additional information pertaining to the depth to groundwater within a ¼ mile of the proposed facility expansion. The nearest permitted water well (permit number 4380) is located 5,359 feet (1.1 miles) south of the existing facility. The depth to groundwater is noted to be 50 feet. It is located in the Ryan Gulch alluvial deposits and would not be very representative of the geologic conditions in the immediate vicinity of the existing facility. However, there are a series of permitted water wells completed in a similar geologic setting located approximately 9,146 feet (1.7 miles) to the northwest of the existing facility. The wells are utilized to monitor resource water quality for the Natural Soda facility. In addition, a series of wells are also planned to be drilled in the vicinity of the existing facility and are targeting zones of water greater than 500 feet. Therefore it could be assumed that the depth to groundwater in the immediate vicinity of the existing facility is in excess of 500 feet. In addition, the vegetative cover surrounding the proposed facility is dominated by sage, juniper, and bunch grasses typical of the upland xeric environment and no seeps or springs were identified during the site visit which would suggest the presence of shallow groundwater.

Based on the information collected during the site visit and desktop review, the greatest potential for impacts would be to the unnamed non-USGS identified ephemeral drainage located east of the existing facility. Even if a potential release were to impact the above noted drainage, it is not anticipated that it would reach Ryan Gulch. The ephemeral drainage feature exhibits characteristics of infrequent and low volume flow which is evident as the drainage bottom contains abundant woody debris, vegetation and Chryptogamic soils which would not be present

if the drainage had intermittent flow. In addition, it is not anticipated a release would migrate any great distance in this drainage due to the high infiltration rates of the channel bottom soils and the distance it would have to flow (>1.0 mile) to reach Ryan Gulch. It is not anticipated groundwater would be impacted by the facility due to the fact groundwater is most likely in excess of 500 feet. With the potential to impact actual flowing surface water, and groundwater being deemed as low, the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 9/30/2014

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