

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Alexander Nees	05-01-14
	<i>Environmental Scientist</i>	
Site Information		
Location:	DOE 2-M-35	Time: 12:30am
Type of Facility:	Proposed well pad expansion	
Environmental Conditions	Sunny, scattered clouds, gentle breeze.	
	Dry surface; sig. precipitation events in area 2-5 days prior	
Temperature (°F)	52	

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

If yes, describe location relative to facility: One (1) unnamed USGS identified intermittent drainage is located 164 feet to the southwest; one (1) unnamed USGS ephemeral drainage is located 925 feet to the east-southeast 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.

If a potential release were to migrate off the facility on the southwestern corner, flow would be to the southwest down the pad fill slope and into the unnamed ephemeral drainage located to the southwest.

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 off the fill slope side of the pad in a low lying area.
 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 are two (2) unnamed USGS identified intermittent drainages within a ¼ mile of the proposed facility. The facility, as it is currently proposed to be expanded, limits the direction of a potential release to a small portion of the northwestern and a majority of the southwestern sides. A potential release, if it were to migrate off these sides, would flow towards and directly into unnamed intermittent drainage located 164 feet to the southwest of the facility. The drainage located 925 feet to the east-southeast is separated from the facility by intervening elevated topography, and could not be affected by any release from the facility. During facility expansion, Best Management Practices (BMPs) should be installed in the form of an earthen perimeter berm on all fill slope sides of the facility. An elevated pad entrance should be constructed to contain a potential release on site and prevent runoff down the access road. If feasible, a diversion ditch should be constructed along the toe of the fill slope sides as well to capture any fluids which could potentially migrate off the facility. All installed BMPs should be monitored and maintained to ensure site containment in the event of a potential release.

The State Engineers Office and USGS records were reviewed and revealed no water wells located within a ¼ mile of the proposed facility. The closest water well (permit number 27547) is located 1,906 feet west of the existing pad center. The depth to groundwater is noted to be 63 feet and the well is located approximately 80 feet lower in elevation than the proposed facility expansion. Therefore it could be assumed that the depth to groundwater, if even present, in the vicinity of the proposed facility expansion would be greater than 100 feet. The vegetation and observed hydrology reinforce this estimate. The vegetation in the immediate vicinity of the facility is a mix of upland species typical for the elevation and location, including greasewood, rabbitbrush, and scattered juniper. The drainage in closest proximity to the facility exhibits more ephemeral characteristics such as no ordinary high water mark, and a vegetated bottom containing the same vegetation as noted above indicating it does not flow a majority of the time. There are no indications of seeps and no observed hydrophytic vegetation that would suggest the presence of perennial or seasonal groundwater. All these factors suggest that the potential for impacts to groundwater are 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 ephemeral drainage located to the southwest of the facility. By COGCC decision the close proximity of the drainage would classify the facility as being in a sensitive area. However, the drainage displays vegetation typical of upland areas, as would be expected of an ephemeral drainage that flows only during significant precipitation events. In addition, the drainage has no downstream connectivity to intermittent or perennial waters (including Parachute Creek). Any potential release, if it were to migrate off the facility, would enter the ephemeral drainage and flow downslope towards and under County Road 215. Once on the opposite side of County Road 215, man-made topographical barriers associated with the

existing pipeline right-of way and the Natural Soda facility would prevent the release from potentially impacting Parachute Creek. 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: 5/16/2014

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 Date: 5/06/2014

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