

Objective Criteria Review Memo - PDC Energy Inc.

Ferguson 23G-202 -- Form 2 Application for Permit to Drill (APD) Doc# 401962481

Ferguson 5N64W23F -- Form 4 Sundry to update Location BMPs Doc# 402220702

Approved Form 2A Oil & Gas Location Assessment (Doc# 401392013, approved 11/30/2017)

Location ID# 453208

This memo summarizes COGCC's technical review of the subject well within the context of SB 19-181 and the required Objective Criteria. Prior to the implementation of SB 19-181, the Form 2A and APDs for 10 wells proposed for this Oil & Gas Location were submitted and approved. PDC Energy Inc. has since built the location and drilled surface casing for all 10 wells. PDC Energy Inc. has now submitted this subject refile APD for this approved, built, Oil & Gas Location. This refile APD and one other refile APD are to extend the wellbores from 1.5 miles to 3 miles.

For Oil & Gas Locations approved prior to SB 19-181, the Objective Criteria apply to any wells proposed on those approved or existing Oil & Gas Locations. This APD meets the following Objective Criteria:

1. (Criteria 1) Oil and Gas Locations within 1,500' of a Building Unit or High Occupancy Building, which include Urban Mitigation Area ("UMA") and Large UMA Facility ("LUMAF") locations. There are three building units within 1,500 feet (closest BU is 690 feet to the NE).
2. (Criteria 3) Oil and Gas Locations within 1,500' of a municipal boundary, platted subdivision, or county boundary. The city boundary of Kersey is within 1,500 feet (1025 feet to the SW).
3. (Criteria 5c) Oil and Gas Locations within: a Sensitive Area for water resources. The depth to groundwater is estimated to be 10 feet.
4. (Criteria 6) Oil and Gas Locations within a Colorado Parks and Wildlife ("CPW") mapped Restricted Surface Occupancy Area ("RSO") or Sensitive Wildlife Habitat ("SWH"), or locations receiving site- or species-specific CPW comments. The most recently approved Form 2A contained a comment from CPW regarding "two new bald eagle nests in the immediate area".
5. (Criteria 8) Oil and Gas Locations with storage of hydrocarbon or produced liquid in more than 18 tanks or in excess of 5,200 barrels. The most recently approved Form 4 Sundry to the location listed 12 oil tanks totalling 6000 bbls of volume.

The following sections provide details regarding the evaluation of each criterion:

Criteria 1: Oil and Gas Locations within 1,500' of a Building Unit or High Occupancy Building, which include Urban Mitigation Area ("UMA") and Large UMA Facility ("LUMAF") locations.

Site Specific Description of Applicability of Criteria 1: There are three building units within 1,500 feet:

- BU1 is 690 feet to the NE
- BU2 is 743 feet to the NW
- BU3 is 1280 feet to the SW

There two additional BUs between 1500 feet and 2000 feet of the location: BU4 is 1620 feet to the NW and BU5 is 1780 feet to the E.

Site Specific Measures to Address Criteria 1: The closest BU owner (BU1) is also the surface owner and owns minerals that will be developed by the unit the wells will be producing. The Operator has entered into a Surface Use Agreement with this surface owner. This BU owner also owns BU5 (1780 feet to the E). There were no complaints or issues from these BU owners when the rig was on location drilling the surface holes. Additional reach out by phone and mail was done 10/24/2019 to provide notice of the rig moving back on location as well as address any comments since the CDPHE study. No concerns were addressed.

The second closest BU (BU2) owner met with PDC on 10/16/2017 to discuss the planned access road, battery location and sound mitigation. To mitigate against noise and light from drilling and completions activities on BU2, the Operator provided BMPs for:

- 32' sound walls on the north side of the location
- 16-20' Hay bales on the west side of the location
- 11' sound walls on the SW & SE sides of BU2's property (sound walls are on BU2's property)

Additional outreach to BU2 was made on 8/15/2019 and a phone conversation on 8/20/2019 confirming BU2 had no further issues with this location. There were no complaints or issues from this BU owner when the rig was on location drilling the surface holes. Additional reach out by phone and mail was done 10/24/2019 to provide notice of the rig moving back on location as well as address any comments since the CDPHE study. No concerns were addressed. Additionally, PDC obtained an agreement with Union Pacific Railroad (UPRR) for permanent access to the location from the south to reduce the truck traffic impact to BU2 while the wells are under production.

Outreach to BU3 via letter and phone calls began prior to permit submittal in 2017. Contact was also made prior to spudding the surface casing for these wells. BU3 had no complaints or issues raised during the recent drilling of surface holes in 2019. Additional reach out by phone and mail was done 10/24/2019 to provide notice of the rig moving back on location as well as address any comments since the CDPHE study. No concerns were addressed.

Lights will be directed down so as to not adversely affect BU3 & BU5. The 32' sound walls on the north side of the location will mitigate against any nuisance effects (noise, light, emissions) to BU1, BU2, & BU4 (BU4 is 1620 feet to the NW).

Fugitive dust will be controlled via 1) the use of speed restrictions, 2) regular road maintenance, 3) restriction of construction activity during high-wind days, and 4) silica dust controls when handling sand used in hydraulic fracturing operations. PDC shall coordinate dust mitigation on County Road 56 with Weld County; liquid magnesium chloride will be applied under dry conditions.

In addition to these BMP's, PDC agreed to the addition of the following COA to the location Sundry:

COA: The Director requested PDC agree to participate in the deployment of a to be determined joint COGCC/CDPHE air quality monitoring program, and PDC agrees this Oil & Gas Location and other PDC Oil and Gas locations in the general vicinity shall be made available for such purposes.

Summary: PDC has been in continuous communication with the three BU owners within 1500' of the location (BU1 is 690 feet to the NE, BU2 is 743 feet to the NW, BU3 is 1280 feet to the SW), even to follow up with them on the release of the recent CDPHE Health study. PDC has constructed a sound wall on the northern side of the location and hay bales on the western side of the location and introduced BMPs to mitigate against light and fugitive dust, and has agreed to an air monitoring program COA.

Criteria 3: Oil and Gas Locations within 1,500' of a municipal boundary, platted subdivision, or county boundary.

Site Specific Description of Applicability of Criteria 3: The city boundary of Kersey is within 1,500 feet (1025 feet SW).

Site Specific Measures to Address Criteria 3: PDC reached out to the City of Kersey via letter on 2/6/2019 and 8/15/2019, to which the City of Kersey did not express any concern about the development of this location. PDC also reached out via phone call on 8/15/2019, to which the City of Kersey again did not express any concern about the development of this location. The City of Kersey did not express any concerns about the development of this location to require modification of PDC's development plans.

COGCC staff reached out to the City Planner for Kersey on 10/22/2019 and they confirmed "PDC already reached out to the Town of Kersey regarding this permit and the Town has no concerns or objection to the permit."

Summary: PDC reached out to the City of Kersey multiple times and received no concerned response regarding the location. COGCC staff also confirmed that the City of Kersey has no concerns or objections to this location.

Criteria 5c: Oil and Gas Locations within: a Sensitive Area for water resources.

Site Specific Description of Applicability of Criteria 5c: The depth to groundwater is estimated to be 10 feet.

Site Specific Measures to Address Criteria 5c: The Operator submitted a Form 4 Sundry doc# 402220702 to add the following BMP's to the location to address lined containment and auto shutoffs:

- Containment berms for Permanent and Temporary Tanks shall be constructed of steel rings with a geosynthetic liner, designed and installed to prevent leakage and resist degradation from erosion or routine operation. Berms and secondary containment will be designed to enclose an area sufficient to contain a minimum of 150% of the largest single tank. Tank batteries are inspected on an annual basis for Spill Prevention, Control and Countermeasure (SPCC) Plan compliance. Secondary containment devices shall be sufficiently impervious to contain any spilled or released material. Secondary containment at the production facility is typically visually observed by PDC personnel on a daily basis. Any deficiencies are relayed to appropriate PDC staff and a work order is generated to schedule necessary repairs. The separator area will have a separate berm from the tanks. PDC shall line the secondary containment areas for the tanks and separators with an impervious material.
- This location will have remote shut-in and remote tank level monitoring capabilities.

Summary: PDC provided BMPs that address possible impacts to shallow groundwater. The BMPs include specifying the berm and liner containment around tanks and separator areas.

Criteria 6: Oil and Gas Locations within a Colorado Parks and Wildlife (“CPW”) mapped Restricted Surface Occupancy Area (“RSO”) or Sensitive Wildlife Habitat (“SWH”), or locations receiving site- or species-specific CPW comments.

Site Specific Description of Applicability of Criteria 6: The most recently approved Form 2A contained a comment from CPW regarding “two new bald eagle nests in the immediate area”.

Site Specific Measures to Address Criteria 6: CPW NE Region Energy Liaison made a comment on 10/13/2017 requesting an onsite consult with PDC to determine if/how the ¼ & ½ mile buffers for the identified eagle nests intersected with the planned location. Upon visiting the site CPW determine the nearest eagle nest was greater than 5280 feet away and therefore outside the ½ mile buffer for any CPW timing stipulations.

PDC followed up with the CPW NE Region Energy Liaison on 10/11/2019 and CPW again confirmed that there were no eagle nests within the proposed development.

Summary: CPW requested a site visit because of concerns of nearby eagle nests. During that site visit it was determined at the time that the nearest nest was over a mile away. PDC reached out to CPW again recently and received confirmation that there are no eagle nests that would be affected by this location.

Criteria 8: Oil and Gas Locations with storage of hydrocarbon or produced liquid in more than 18 tanks or in excess of 5,200 barrels.

Site Specific Description of Applicability of Criteria 8: The most recently approved Form 4 Sundry to the location indicates there will be 12 - 500 bbl oil tanks onsite for a total volume of 6000 bbls.

Site Specific Measures to Address Criteria 8: In addition to the remote shut-in and tank level monitoring and steel berm and liner containment BMPs previously mentioned, the Operator has an approved traffic plan, haul route and Emergency Action Plan with Weld County for this location.

The Operator also plans to transport oil from the location via pipeline and the oil tanks on location are for “safety concerns related to an unplanned oil gathering pipeline shut down and for routine maintenance operations”.

Summary: PDC provided BMPs that address possible impacts of having tanks onsite with a total volume of 6000 bbls. The BMPs include remote shut-in and tank level monitoring and steel berm and liner containment for the tank area. PDC also has an approved Emergency Action Plan with Weld County and plans to reduce the need for keeping large volumes of oil onsite through the use of a pipeline for transporting oil offsite.

Additional Information:

- These two APDs are awaiting a new Spacing Order that is currently on the Consent Agenda for the October 2019 Hearing as docket number 190400320.

Director Determination: Based on the Objective Criteria review, the Director has determined that this permit application meets the standard for protection of public health, safety, welfare, the environment and wildlife resources set by SB 19-181.