

Objective Criteria Review Memo – Magpie Operating Inc Bunker 8 Pad, Form 2A #401803881

This summary explains how COGCC staff conducted its technical review of the Magpie Operating Inc Bunker 8 Pad, Form 2A #401803881 within the context of SB 19-181 and for the required Objective Criteria. This proposed Location is for 10 wells, 18 oil tanks, 9 separators, 9 water tanks, and 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 two BUs within 1500 feet of the location (one BU 1500' to the west and one BU 1500' to the southeast).
2. (Criteria 3) Oil and Gas Locations within 1,500' of a municipal boundary, platted subdivision, or county boundary. There is a platted subdivision 400' from the location.
3. (Criteria 5c) Oil and Gas Locations within: a Sensitive Area for water resources. The estimated depth to groundwater at the location is 12 feet.
4. (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 Form 2A indicates the site is planned to have 18 oil tanks and 9 water tanks.

COGCC staff met with the Director to discuss whether the Objective Criteria were sufficiently addressed and whether the Form 2A could be approved with the proposed Best Management Practices (BMPs) and applied Conditions of Approval (COAs). 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: Based on the technical review and desktop evaluation, there are two BUs within 1500 feet of the location (one BU 1500' to the west and one BU 1500' to the southeast).

Site Specific Measures to Address Criteria 1: The following describes the outreach the Operator has done regarding the two BUs within 1500 feet of the location:

- The Operator met with the western building unit owners on 1/29/2020 and met with the southeastern building unit owners on 1/17/2020.
- The Operator and BU owners discussed the following: future drilling operations, BMPs, and questions and concerns were addressed by the Operator with the landowners. The BU owners have been provided direct contact information for the Operator's operations manager and all applicable notifications will be made as activity moves forward

In addition to the aforementioned outreach, the Operator provided the following BMPs to mitigate having two BUs 1500' from the location:

- Dust Mitigation: speed restrictions, regular road maintenance, restriction of construction activity during highwind days, and silica dust controls when handling sand used in hydraulic fracturing operations.
- Light sources during all phases of operations will be directed downwards and away from occupied structures.
- Noise Mitigation: 32' 'heigh sound walls on the south, east and west sides to control noise during drilling and completion activities to control noise; and a quiet frac fleet. Additionally, Magpie will control their work hours per Larimer county rules and will discuss any operations with neighbors to head off any complaints.
- Emission controls: Green completions practices will be used, enclosed frac tanks, installation of enclosed combustion Devices (ECDs), installation of Vapor Recovery Units (VRUs). Zero flaring or venting of gas upon completion of flowback, excepting upset or emergency conditions, or with prior written approval from the Director for necessary maintenance operations.
- Oil Based Mud (OBM): For the oil base system, the fluid is a refined product that has low VOC and BTEX counts. The BTEX counts are trace levels so this provides a much safer work environment as compared to diesel.

Summary: Magpie Operating provided BMPs that address possible impacts to having two BUs 1500' from the location. The BMPs include lights directed downward, 32' sound walls on three sides of the location, a quiet frac fleet, and emission controls.

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: Based on communication from the Larimer COunty LGD, there is a platted subdivision 400' from the location..

Site Specific Measures to Address Criteria 3: The Larimer County LGD identified the edge of the Mile High Estates Conservation Development as being located 400' from the edge of the location. However, while this is the edge of the platted subdivision, the nearest approved residential lot is 2500' from the edge of the location. Since there are no planned residential units within 1500' of the location, the BMPs identified in the Criteria 1 discussion, particularly for noise and light minimization, will minimize impacts to the residential lots for the planned subdivision.

Summary: While the location is within 1500' of a platted subdivision, the nearest planned residential lot is over 2500' away and the BMPs outlines in Criteria 1, particularly lights directed downward, 32' sound walls on three sides of the location, a quiet frac fleet, and emission controls, will minimize impacts to future residents of the subdivision.

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

Site Specific Description of Applicability of Criteria 5c: Based on the technical review and desktop evaluation, the estimated depth to groundwater at the location is 12 feet.

Site Specific Measures to Address Criteria 5c: The Operator provided the following BMPs on the Form 2A to mitigate against possible impacts to shallow groundwater:

- Stormwater Controls, typically a ditch and berm system, constructed around the perimeter of the site prior to construction. Storm water controls will remain in place until the pad is stabilized or reaches final reclamation.
- Leak Detection Plan to identify fluid leaks, including, but not limited to, visually inspecting all wellheads, tanks, and fittings.
- Spills: Operator will ensure that all personnel and subcontractors working onsite have SPCC training, engage in daily tailgate meetings and job safety analysis.
- Operator shall line the secondary containment areas for the tanks and separators with an impervious material.

Summary: Magpie Operating provided BMPs that address possible impacts to shallow groundwater. The BMPs include stormwater controls, leak detection and spill plans, and lined secondary containment for tank and separator areas.

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: Based on the technical review and desktop evaluation, the Form 2A indicates the site is planned to have 18 oil tanks and 9 water tanks.

Site Specific Measures to Address Criteria 8: In addition to the BMPs mentioned in the discussion of Criteria 5c, the Operator included a BMP for the implementation of a SCADA (Supervisory control and data acquisition) system and remote monitoring with shut-off capabilities at the location.

Summary: Magpie Operating provided BMPs that address possible impacts to having a large number of tanks onsite. The BMPs include leak detection and spill plans, remote monitoring with shut-off capabilities, and lined secondary containment for tank and separator areas.

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.