

Objective Criteria Review Memo – Mallard Exploration LLC , Goldeneye East Pad, Form 2A Document # 401631824

This summary explains how COGCC staff conducted its technical review of the Goldeneye East Pad, Form 2A Document # 401631824 within the context of SB 19-181 and for the required objective Criteria. This Form 2A permit application met the following Objective Criteria:

1. (Criteria 5.c) The proposed Location lies within a Sensitive Area for water resources (proposed Location lies within an area of potential shallow groundwater).
2. (Criteria 8) Locations with more than 18 tanks or >5,200 barrels of hydrocarbon or produced liquid storage.

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

Site Specific Description of Applicability of Criteria 5.c: The proposed location is in a sensitive area due to potential shallow groundwater. The estimated depth to groundwater entered on the Form 2A is 20 feet below ground surface (bgs).

Staff reviewed the operator provided BMPS on Form 2A Doc # 401631824 and placed the following additional COA(s) on the Form 2A in order to protect groundwater resources:

The location is in a sensitive area because of the presence of shallow groundwater, therefore, the operator shall line the secondary containment areas for the tanks and separators with an impervious material to prevent the downward migration of produced liquids.

Criteria 8: Locations with more than 18 tanks or >5,200 barrels of hydrocarbon or produced liquid storage..

Site Specific Description of Applicability of Criteria 8: The location is being permitted for twenty six oil tanks, 13 water tanks for a total of 39 tanks. A summary of Operator Provided BMPs that directly apply to Objective Criteria 8 include:

24 to 48 Hour site inspections that include valves and fittings. Lease Operators inspect all equipment on their locations at a minimum of once every 48 hours, but most sites are

inspected every 24 hours. Valves and fittings inspections are part of the daily job duties of the lease operators. Any valve or fitting that is found to be leaking is either repaired immediately by the lease operator or shut-in procedures are implemented.

The use of a Supervisory Control and Data Acquisition (SCADA) system that can automatically shut in the wells during an upset condition. The SCADA system has both automatic and remote shut in capabilities to prevent spills related to tank overflows.

The Goldeneye East Pad will have an approved Weld County Oil and Gas Location Assessment (WOGLA) in place prior to construction . The WOGLAs require operators coordinate with local emergency responders in case of a fire or explosion at the location.

Determination: The Director determined that Criteria 5.c was sufficiently analyzed and that the inclusion of the additional COA for the protection of groundwater resources met the standard for protection of the sensitive environment and water resources.

The Director determined that Criteria 8 was sufficiently analyzed and that the coordination with local emergency responders and remoteness of the location address the protection of public health and safety. The SCADA system and lined separator and tank battery address the potential impacts of spills to the environment.