

Objective Criteria Review Memo - Extraction Oil and Gas Inc.

Greeley Directional Additional APD:

GP Cody Fed 20E-15-1 -- Form 2 Application for Permit to Drill (APD) Doc# 401645517

Greeley Directional Pad -- Form 4 Sundry Doc# 402106046

Approved Form 2A Oil & Gas Location Assessment (Doc# 400447565, 11/22/2013)

Location ID# 332837

This memo summarizes COGCC's technical review of the subject well within the context of SB 19-181 and the required Objective Criteria.

Location History and Background:

The Greeley Directional Oil & Gas Location has been continuously active since it was first constructed in 2005. Location ID#s 332838 and 311495 were created by COGCC staff in April 2009 to more easily regulate the historic wells and Location. In 2013, a Form 2A (Doc# 400447565) was approved to expand the Location, including the addition of wells for a total of 58 wells permitted at the Location. With the approval of this Form 2A, the original two Locations were consolidated into a single Location - Greeley Directional Location, Loc ID# 332837.

The current inventory of wells at this Location (as of 7/16/19) is as follows:

- 31 plugged and abandoned (PA) wells: these are the original directional wells that were PA'd in 2017-2018;
- 1 shut-in (SI) well: this is a 2006 directional well currently undergoing plugging operations; final cut & cap work is scheduled for 7/18/2019;
- 4 producing (PR) wells: two of the wells are old directionals scheduled for plugging in 2019 (Form 6 Notice of Intent to Abandon is approved on each well); the other two PR wells are horizontals spud in 2015;
- 17 permitted but yet undrilled (XX) wells: permits are valid with expiration date 3/14/2021;
- 2 abandoned permits (AL): AL wells were never drilled and the permits are no longer valid. These wells do not count toward the total well count on the Location.

Extraction has submitted the subject APD for a horizontal boundary well on this approved Oil & Gas Location. Four additional, similar, APDs have also been submitted concurrently; only the subject APD has been reviewed for this Objective Criteria Memo. 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. The subject well APD meets the following Objective Criteria:

1. **Criteria #1** - The Oil and Gas Location is within 1500' of a Building Unit (BU) or High Occupancy BU: this Location is in an Exception Zone - the nearest BU is 519' to the south.

2. **Criteria #2** - The Oil and Gas Location is within a municipality: this Location is within the city of Greeley.
3. **Criteria #3** - The Oil and Gas Location is within 1500' of a municipal boundary: this Location is within 1500' of Garden City and Evans.

Because the subject well met multiple Criteria, COGCC staff determined a Form 4 Sundry Notice was required to amend the Location with additional BMPs to more accurately reflect the protective requirements of SB 19-181. Extraction submitted Sundry Doc# 402106046 on 7/12/2019 to add or update 40 BMPs for the Location. The following sections provide details regarding the evaluation of each criterion.

Criteria 1: Oil and Gas Locations within 1,500 feet of a Building Unit (BU).

Site Specific Description of Applicability of Criteria 1: The subject well is 519' feet north of the nearest BU. The same BU is only 471' from one of the additional planned wells on this Location, establishing this Location within an Exception Zone.

Site Specific Measures to Address Criteria 1: This Location is in a well-established industrial area with no homes, and as such, the construction of additional wells on the pad will have very few, if any, new impacts. All proximal BUs are industrial in nature, housing commercial and warehouse businesses such as pet food manufacturing, concrete product supplies, cold storage facility, welding services, petroleum industry offices, safety & supply equipment, and a machine shop. As such, quality of life and aesthetic degradations are not anticipated. Extraction has an Emergency Response Plan in place with Greeley Fire Department, as well as a traffic plan and landscape plan approved by the City of Greeley. A decorative wall has been installed along 29th street to further screen the pad from view of pedestrians and vehicles. Newly revised BMPs include updates employing technology not available in 2013 when the prior 2A was approved. These updated BMPs include control of fire hazards, proppant dust and silica dust control measures, increased fencing and restriction of unauthorized persons, operational notifications to nearby businesses that include a Community Response Line and email for questions and concerns; emissions will be reduced with the use of electrical power to the site rather than diesel generators; automated system allows for remote monitoring and shut in; noise mitigation includes the use of a 32' sound wall, electric drill rig, and quiet frac fleet during construction, drilling and completions operations; lighting directed downward and shielded; oil and gas pipeline takeaway will reduce truck traffic.

Determination: The Director determined that Criteria 1 was sufficiently analyzed because the location and surrounding area has long been an active industrial park, and updated BMPs will further mitigate any potential impacts.

Criteria 2: The Location is within a municipality.

Site Specific Description of Applicability of Criteria 2: The surface hole location for the proposed well, and thus the Location, are within the City of Greeley.

Site Specific Measures to Address Criteria 2: Extraction has worked extensively with the City of Greeley over the past several years. Extraction has a Use-by-Special-Review (USR) permit, approved 4/22/2014, with administrative amendments currently being made to further specify landscaping requirements such as the number and types of trees and shrubs to be installed on site. A traffic plan was also developed with and approved by the City of Greeley. The Greeley LGD confirmed to COGCC staff on 7/15/19 that no additional mitigation measures are required, and no issues for consideration have been identified at this Location.

Determination: The Director determined that Criteria 2 was sufficiently analyzed because there was sufficient communication and coordination between the operator and the relevant local government and local jurisdiction.

Criteria 3: The Location is within 1500' of a county boundary:

Site Specific Description of Applicability of Criteria 3: The existing Location is within 1500' of Garden City and Evans. The Location is approximately 420' east of the municipal boundary of Evans, and approximately 1300' southeast of the municipal boundary of Garden City.

Site Specific Measures to Address Criteria 3: This Location has been an active Oil & Gas Location for over a decade, and lies in the heart of an industrial area that is supported by similar land use in adjacent areas of both Garden City and Evans. The municipal boundary of Evans adjacent to the Location contains the intersection between US Highway 85 and US Highway 34; this parcel is a major transportation corridor and right-of-way, with the nearest building approximately 2500' to the southwest (the building is industrial/commercial). Evans LGD waived any comments on the subject APD during the public comment period. COGCC has received no notice of objection or issues from the City of Evans. Garden City's municipal boundary closest to the Location is separated from the Location by a parcel of unincorporated Weld County that includes the transportation corridor and right-of-way of Highways 85 & 34; Garden City is not immediately adjacent to the Location. Extraction reached out to Garden City to inform of upcoming activity on the Location, and followed up with an email. COGCC has received no notice of objection or issues from Garden City.

Determination: *The Director determined that Criteria 3 was sufficiently analyzed because the LGD for the City of Evans waived the city's status on the APD with no comment added, and no objections or comments have been received by the COGCC from either Garden City or Evans.*

Additional Information:

1. Extraction confirmed on 7/16/19 that although the originally approved Form 2A lists 42 oil tanks and 8 water tanks, there are only 8 oil tanks and 2 water tanks on site, with no plans to add more. This is below the threshold for Criteria #8, thus Criteria #8 is not met.

2. During the recent plugging operation of the old directional District Six C6 well (123-24211) on this Location, Extraction and COGCC staff identified a possible gas migration issue due to a small hole in the surface casing. The well was squeezed and replugged under COGCC guidance, and tested for 5 consecutive days; the well remained at 0 psi and is believed to be fully corrected and plugged. Cut & cap is scheduled for 7/18/19. COGCC Environmental staff has added a COA to the Sundry, requiring Extraction to submit a Form 27 Site Investigation Workplan to verify no impacts occurred to soil or groundwater on the Location.
3. The subject APD includes a request for this horizontal boundary well to be completed in a wellbore spacing unit (WSU) as designated per Rule 318A.a.(4).D. Per Rule 318A.e.(5), the operator notified all mineral owners within the proposed WSU at least 30 days prior to submitting the Form 2 APD. No valid objections were received, or, any valid objections received have been resolved and are no longer ongoing. The APD does not require a hearing for the approval of the spacing unit; a WSU is approved administratively with the approval of the Form 2 APD.

Final Determination:

COGCC staff met with the Director to discuss whether the Objective Criteria were sufficiently addressed and whether the subject Sundry Notice and subject APD could be approved with the updated Best Management Practices (BMPs) and applied Conditions of Approval (COAs). No complaints have been received for this Location; no spills or releases have been reported; no NOAVs have been issued. The Director determined that following the application of the additional analysis from the Objective Criteria, both the Sundry and the permit application meet the standard for protection of public health, safety, welfare, the environment and wildlife resources set by SB 19-181.