

FORM
2A

Rev
08/13

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

400688539

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Date Received:

12/22/2014

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: _____

Submit signed original form. This Oil and Gas Location Assessment is to be submitted to the COGCC for approval prior to any ground disturbance activity associated with oil and gas operations. Approval of this Oil and Gas Location Assessment will allow for the construction of the below specified Location; however, it does not supersede any land use rules applied by the local land use authority. Please see the COGCC website at <http://cogcc.state.co.us/> for all accompanying information pertinent this Oil and Gas Location Assessment.

Location ID:

441566

Expiration Date:

04/21/2018

This location assessment is included as part of a permit application.

CONSULTATION

This location is included in a Comprehensive Drilling Plan. CDP # _____

This location is in a sensitive wildlife habitat area.

This location is in a wildlife restricted surface occupancy area.

This location includes a Rule 306.d.(1)A.ii. variance request.

Operator

Operator Number: 10459
Name: EXTRACTION OIL & GAS LLC
Address: 1888 SHERMAN ST #200
City: DENVER State: CO Zip: 80203

Contact Information

Name: Jennifer Grosshans
Phone: (303) 928-7128
Fax: (303) 218-5678
email: regulatory@petro-fs.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20130028 Gas Facility Surety ID: _____
 Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Troudt Number: 32-M Pad
County: WELD
Quarter: SESE Section: 32 Township: 2N Range: 67W Meridian: 6 Ground Elevation: 5078

Define a single point as a location reference for the facility location. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 537 feet FSL from North or South section line
1035 feet FEL from East or West section line

Latitude: 40.089066 Longitude: -104.909015

PDOP Reading: 2.5 Date of Measurement: 07/12/2014

Instrument Operator's Name: Alan Hnizdo

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE Cuttings Disposal Method: Other

Other Disposal Description:

Cuttings will be disposed of by land spreading.

Extraction Windsor Land Application COGCC Facility 433752 will be used for offsite disposal.

Beneficial reuse or land application plan submitted? Yes

Reuse Facility ID: 433752 or Document Number: _____

Centralized E&P Waste Management Facility ID, if applicable: _____

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Susan J. Troutt

Phone: _____

Address: 14491 Weld County Road 5

Fax: _____

Address: _____

Email: _____

City: Longmont State: CO Zip: 80504

Surface Owner: Fee State Federal Indian

Check all that apply. The Surface Owner: is the mineral owner

is committed to an oil and Gas Lease

has signed the Oil and Gas Lease

is the applicant

The Mineral Owner beneath this Oil and Gas Location is: Fee State Federal Indian

The Minerals beneath this Oil and Gas Location will be developed from or produced to this Oil and Gas Location: Yes

The right to construct this Oil and Gas Location is granted by: Surface Use Agreement

Surface damage assurance if no agreement is in place: _____ Surface Surety ID: _____

Date of Rule 306 surface owner consultation _____

CURRENT AND FUTURE LAND USE

Current Land Use (Check all that apply):

Crop Land: Irrigated Dry land Improved Pasture Hay Meadow CRP

Non-Crop Land: Rangeland Timber Recreational Other (describe): _____

Subdivided: Industrial Commercial Residential

Future Land Use (Check all that apply):

Crop Land: Irrigated Dry land Improved Pasture Hay Meadow CRP

Non-Crop Land: Rangeland Timber Recreational Other (describe): _____

Subdivided: Industrial Commercial Residential

CULTURAL DISTANCE INFORMATION

Provide the distance to the nearest cultural feature as measured from Wells or Production Facilities onsite.

| | From WELL | From PRODUCTION FACILITY |
|-----------------------------------|------------------|---------------------------------|
| Building: | 671 Feet | 714 Feet |
| Building Unit: | 866 Feet | 826 Feet |
| High Occupancy Building Unit: | 5280 Feet | 5280 Feet |
| Designated Outside Activity Area: | 5280 Feet | 5280 Feet |
| Public Road: | 510 Feet | 206 Feet |
| Above Ground Utility: | 462 Feet | 160 Feet |
| Railroad: | 5280 Feet | 5280 Feet |
| Property Line: | 357 Feet | 152 Feet |

INSTRUCTIONS:

- All measurements shall be provided from center of nearest Well or edge of nearest Production Facility to nearest of each cultural feature as described in Rule 303.b.(3)A.
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.
- For measurement purposes only, Production Facilities should only include those items with an asterisk(*) on the Facilities Tab.

DESIGNATED SETBACK LOCATION INFORMATION

- Check all that apply. This location is within a:
- Buffer Zone
 - Exception Zone
 - Urban Mitigation Area

- Buffer Zone - as described in Rule 604.a.(2), within 1,000' of a Building Unit.
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.
- Urban Mitigation Area - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: _____
 Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: 08/10/2014

FOR MULTI-WELL PADS AND PRODUCTION FACILITIES WITHIN DESIGNATED SETBACK LOCATIONS ONLY:

- Check this box if this Oil and Gas Location has or will have Production Facilities that serve multiple wells (on or offsite) and the Production Facilities are proposed to be located less than 1,000 feet from a Building Unit. *(Pursuant to Rule 604.c.(2)E.i., the operator must evaluate alternative locations for the Production Facilities that are farther from the Building Unit, and determine whether those alternative locations were technically feasible and economically practicable for the same proposed development.)*
- By checking this box, I certify that no alternative placements for the Production Facilities, farther from the nearest Building Unit, were available based on the analysis conducted pursuant to Rule 604.c.(2)E.i.

In the space below, explain rationale for siting the multi-well Production Facility(ies) that supports your Rule 604.c.(2)E.i determination. Attach documentation that supports your determination to this Form 2A.

Extraction Oil & Gas, LLC (Extraction) designed the Troutd 32-M Production Facility to be a safe distance from neighboring houses and buildings, clear of the 100 year flood plain and located efficiently for regular maintenance and access. Extraction agreed upon an oil and gas operations area per the landowner/operator Surface Use Agreement pertaining to these horizontal wells. Where possible, consolidation of existing facilities has been attempted to keep the disturbed area to a minimum. Extraction has reviewed the surrounding areas to identify any technical and economical options outside of buffer zones. As a result of Operator's review of potential locations outside Buffer Zone, the operator has determined that this is the best possible location for the facilities given the surface owner's plans for development to the North, property boundaries, utility easements and current COGCC setbacks.

SOIL

List all soil map units that occur within the proposed location. attach the National Resource Conservation Service (NRCS) report showing the "Map Unit Description" report listing the soil typical vertical profile. This data is to used when segregating topsoil.

The required information can be obtained from the NRCS web site at <http://soildatamart.nrcs.usda.org/> or from the COGCC web site GIS Online map page found at <http://colorado.gov/cogcc>. Instructions are provided within the COGCC web site help section.

- NRCS Map Unit Name: 47-Olney Fine Sandy Loam - 1 to 3 percent slopes.
- NRCS Map Unit Name: 79-Weld Loam - 1 to 3 percent slopes
- NRCS Map Unit Name: 83-Wiley-Colby complex - 3 to 5 percent slopes

PLANT COMMUNITY:

Complete this section only if any portion of the disturbed area of the location's current land use is on non-crop land.

Are noxious weeds present: Yes No

Plant species from: NRCS or, field observation Date of observation: _____

List individual species:

Check all plant communities that exist in the disturbed area.

- Disturbed Grassland (Cactus, Yucca, Cheatgrass, Rye)
- Native Grassland (Bluestem, Grama, Wheatgrass, Buffalograss, Fescue, Oatgrass, Brome)
- Shrub Land (Mahogany, Oak, Sage, Serviceberry, Chokecherry)
- Plains Riparian (Cottonwood, Willow, Aspen, Maple, Poplar, Russian Olive, Tamarisk)
- Mountain Riparian (Cottonwood, Willow, Blue Spruce)
- Forest Land (Spruce, Fir, Ponderosa Pine, Lodgepole Pine, Juniper, Pinyon, Aspen)
- Wetlands Aquatic (Bullrush, Sedge, Cattail, Arrowhead)
- Alpine (above timberline)
- Other (describe): _____

WATER RESOURCES

Is this a sensitive area: No Yes

Distance to nearest

downgradient surface water feature: 143 Feet

water well: 310 Feet

Estimated depth to ground water at Oil and Gas Location 56 Feet

Basis for depth to groundwater and sensitive area determination:

Nearest downgradient surface water feature is a concrete ditch.
Nearest water well is CDWR Permit 60651, but the nearest water well with a recorded SWL is CDWR Permit 9601 which is 2470' SW.

Is the location in a riparian area: No Yes

Was an Army Corps of Engineers Section 404 permit filed No Yes If yes attach permit.

Is the location within a Rule 317B Surface Water Supply Area buffer No zone:

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified: _____

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
- Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
- Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
- Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
- Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

RULE 502.b VARIANCE REQUEST

Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number _____

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

OPERATOR COMMENTS AND SUBMITTAL

| | |
|----------|--|
| Comments | <p>Letter to Director for COGCC Rule 303b.(3)J.iii. Building Unit Owner Pre-Application Notification receipts, attached as Correspondance.</p> <p>Extraction is aware that this location falls within the Town of Frederick city limits and will be applying for a Special Use Permit (SUP) with the Town of Frederick.</p> <p>Facility Layout attached.</p> |
|----------|--|

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: _____ Date: 12/22/2014 Email: regulatory@petro-fs.com

Print Name: Jennifer Grosshans Title: Regulatory Analyst

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Matthew Lee Director of COGCC Date: 4/22/2015

Conditions Of Approval

All representations, stipulations and conditions of approval stated in this Form 2A for this location shall constitute representations, stipulations and conditions of approval for any and all subsequent operations on the location unless this Form 2A is modified by Sundry Notice, Form 4 or an Amended Form 2A.

| <u>COA Type</u> | <u>Description</u> |
|-----------------|---|
| | Operator shall provide notice to COGCC 48 hours prior to commencing construction of this Oil and Gas Location via Form 42 per Rule 316C |

Best Management Practices

| <u>No</u> | <u>BMP/COA Type</u> | <u>Description</u> |
|-----------|---------------------|--|
| 1 | Planning | <p>Multi-well Pads are located in a manner which allows for resource extraction while maintaining the highest distances possible from the offsetting residential areas and complies with the wishes of the surface owner.</p> <p>A meeting with the surface owner will determine the fencing plan.</p> <p>Tanks will be designed, constructed and maintained in accordance with NFPA Code 30. The tanks are visually inspected once a day for issues, and recorded inspections are conducted once a month.</p> |

| | | |
|---|--|---|
| 2 | Pre-Construction | <p>Anti-Collision: Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed wells. The anti-collision scan may include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed well path with its respective error of uncertainty. If current surveys do not exist for the offset wells, operators may have gyro surveys conducted to verify bottom hole location. The proposed well may only be drilled if the anti-collision review results indicate that the risk of collision is sufficiently low as defined by the anti-collision plan, with separation factors greater than 1.5, or if the risk of collision has been mitigated through other means including shutting in wells, plugging wells, increased drilling fluid in the event of lost returns or as is appropriate for the specific situation. In the event of an increased risk of collision, that risk will be mitigated to prevent harm to people, the environment or property. For the proposed well, upon conclusion of drilling operations, an as-constructed directional survey will be submitted to the COGCC with the Form 5.</p> <p>Identification of plugged and abandoned wells will be identified pursuant to 319.a.(5)</p> |
| 3 | Traffic control | <p>Access Roads: The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times. Traffic will be routed to minimize local interruption. Operator has worked with local government and traffic control to minimize disturbance of traffic and impact to building unit owner.</p> |
| 4 | General Housekeeping | <p>Visual Impacts: All long term facility structures will be painted a color that enables the facilities to blend in with the natural background color of the landscape, as seen from a viewing distance and location typically used by the public. Maintain appearance with garbage clean-up; a trash bin will be located on site to accumulate waste by the personnel drilling the wells. Site will have unused equipment, trash and junk removed immediately.</p> <p>Operator shall keep the Surface Use Area as well as any roads or other areas used by Operator safe and in good order, including control of noxious weeds litter and debris.</p> |
| 5 | Material Handling and Spill Prevention | <p>Leak Detention Plan: Pumper will visit the location daily and visually inspect all tanks and fittings for leaks. Additionally, monthly documented SPCCP inspections are conducted pursuant to 40 CFR 112.</p> <p>Control of fire hazards: All material that is considered a fire hazard shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code.</p> <p>Operator shall comply with state and federal laws, rules and regulations governing the presence of any petroleum products, toxic or hazardous chemicals or wastes on the Subject lands.</p> |
| 6 | Dust control | <p>Fugitive dust will be controlled by speed restrictions on all neighboring roads, regular road maintenance and repair, and avoiding construction activity during high wind days. If technologically and economically feasible, additional management practices may also be required to minimize fugitive dust as well as to control silica dust while handling sand during frac'ing operations.</p> |
| 7 | Construction | <p>Berm Construction- Tanks berms shall be constructed of steel rings with a synthetic or engineered liner and designed to contain 150% of the capacity of the largest tank. All berms will be visually checked periodically to ensure proper working condition.</p> <p>Containment berms shall be constructed and designed to prevent leakage and resist degradation from erosion or routine operation. Tertiary containment, such as an earthen berm, will be installed as required for Production Facilities within 500 feet of downgradient water surface water feature. All berms will be visually checked periodically to ensure proper working condition.</p> |
| 8 | Construction | <p>Since tanks are within the buffer zone, Operator will utilize Low-profile tanks.</p> |
| 9 | Noise mitigation | <p>Sound walls and/or hay bales will be used on the West and East side of location to shield sensitive areas.</p> |

| | | |
|----|--------------------------------|---|
| 10 | Noise mitigation | Extraction will be doing a baseline sound modeling test for the pad site starting next week. This will include sound monitoring equipment at the wellpad and facility location as well as at Mr. Sais home to the east of location. Extraction will tailor the sound wall height based on the results of that test. There were also discussions around placing hay bales in Mr. Sais yard and/or along the portion of the access road that is in the direct line-of-sight to the home to act as another sound barrier to Extraction's site. |
| 11 | Emissions mitigation | Green Completions - Emission Control System: Test separators and associated flow lines and sand traps shall be installed on-site to accommodate green completions techniques pursuant to COGCC Rules. In the anticipated absence of a viable gas sales line, the flowback gas shall be thermally oxidized in an emissions control device (ECD), which will be installed and kept in operable condition for least the first 90-days of production pursuant to CDPHE rules. This ECD shall have an adequate capacity for 1.5 times the largest flowback within a 10 mile radius, will be flanged to route gas to other or permanent oxidizing equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present. |
| 12 | Odor mitigation | Operator will regulate odors in accordance with COGCC Rule 805. The production facilities will have VOC Combustors with emission control devices to comply with the Department of Public Health and Environment, Air Quality Control Commission. |
| 13 | Drilling/Completion Operations | <p>A closed –loop system will be used for drilling operations.</p> <p>Blowout Prevention Equipment (“BOPE”): A double ram and annular preventer will be used during drilling. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.</p> <p>Lighting: Light sources during all phases of operations will be directed downwards and away from occupied structures where possible. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p> <p>Bradenhead Monitoring: Operator acknowledges and will comply with COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area dated May 29, 2012.</p> |
| 14 | Interim Reclamation | Operator shall be responsible for segregating the topsoil, backfilling, repacking, reseeding, and recontouring the surface of any disturbed area so as not to interfere with Owner's operations and shall reclaim such area to be returned to pre-existing conditions as best as possible with control of all noxious weeds. |
| 15 | Interim Reclamation | The final Landscape Plan was discussed in terms of how the eastern edge of location would be bermed and landscaped in order to mask the wellheads and facility from the building unit owner in the future. This will be a part of the reclamation process. |
| 16 | Final Reclamation | Within 90 days subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site. The Operator shall restore the surface of the Land affected by such terminated operations as near as possible to the previous state that existed prior to operations. |

Total: 16 comment(s)

Attachment Check List

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|---------------------------|
| 1668655 | RULE 306.E. CERTIFICATION |
| 1668690 | ACCESS ROAD MAP |
| 1668691 | FACILITY DRAWING |
| 1668692 | HYDROLOGY MAP |
| 1668693 | LOCATION DRAWING |
| 1668694 | CORRESPONDENCE |
| 1668695 | CORRESPONDENCE |
| 1668696 | CONST. LAYOUT DRAWING |
| 1668697 | OTHER |
| 400688539 | FORM 2A SUBMITTED |
| 400724628 | MULTI-WELL PLAN |
| 400724637 | LOCATION PICTURES |
| 400724640 | NRCS MAP UNIT DESC |
| 400725534 | NRCS MAP UNIT DESC |
| 400725537 | NRCS MAP UNIT DESC |
| 400737427 | SURFACE AGRMT/SURETY |
| 400740880 | CORRESPONDENCE |
| 400757638 | WASTE MANAGEMENT PLAN |

Total Attach: 18 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|---|---------------------------|
| Permit | Final Review Completed. No LGD or public comment received. | 4/22/2015 8:34:17 AM |
| OGLA | <p>COGCC has determined that the proposed Troudt 32-M Pad, Oil and Gas Location meets the requirements for approval based on compliance with COGCC Rules, including but not limited to the Rule 604 Series Setback and Mitigation Measures. The Operator has presented a siting rationale for the Production Facilities in the Buffer Zone and Best Management Practices that adequately address site specific environmental, health, safety and welfare concerns.</p> <p>At COGCC's request, the Operator organized a meeting on April 14, 2015, at the proposed Location that was attended by COGCC Staff, the Operator, the Surface Owner, and the owner of the Building Unit in the Buffer Zone. The BU owner discussed concerns with the Operator about noise, traffic and visual aesthetics. The Operator described landscaping plans, plans to use low-profile tanks, the planned access route, and noise mitigation to address those concerns. The Surface Owner is aware that the proposed, equipment, landscaping plans and access will result in a larger facility and increased loss of cropland. The Operator submitted site-specific Best Management Practices for noise, access, traffic, and a preliminary landscaping plan to COGCC.</p> <p>During COGCC's technical review, the Operator revised the layout of the equipment to place it further from the Building Unit. This revision resulted in an increase from 722' to 826' between the Building Unit and the nearest planned Production Facility.</p> | 4/16/2015 4:23:15 PM |
| OGLA | Hydrology map distance reference is from the nearest well or equipment, on the 2A is from the edge of disturbance. | 4/15/2015 3:14:41 PM |
| OGLA | OGLA review is complete. No public comments received. OGLA task passed. | 4/15/2015 3:00:00 PM |
| OGLA | COGCC met with Operator, Surface Owner, and nearest Building Unit Owner to discuss proposed location. Operator addressed questions and concerns by all parties. Additional BMPs, new access road map, landscaping information, new location and facility drawings, and site plan were provided. Communication via email is attached to the 2A. Updated cultural distances based on revised production layout. | 4/15/2015 2:55:54 PM |
| OGLA | Asked Operator, to evaluate other areas for production outside the buffer zone area. Operator moved separators to the far side of the disturbance area. Surface owner wants to keep further west open for future development. COGCC had a meeting with the operator on 4/9/2015 and will meet with neighboring building unit owner and operator at proposed location on 4/14/2015. | 4/13/2015 4:23:08 PM |
| Permit | Permitting Review Completed. | 1/15/2015 12:20:12 PM |
| Permit | Passed completeness. | 12/29/2014 7:31:54 AM |
| OGLA | Passed Buffer Zone completeness review | 12/26/2014 3:13:39 PM |
| Permit | With buffer zone, sent to OGLA for further review. | 12/23/2014 10:15:27 AM |
| Permit | Per operator request: returned to draft. | 12/22/2014 1:31:51 PM |

Total: 11 comment(s)