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

## Oil and Gas Location Assessment

Document Number: 401171552

Date Received: 02/01/2017

☐ New Location ☐ Refile ☒ Amend Existing Location Location#: 444315

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: **444315**

Expiration Date: **03/09/2020**

☒ 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: 370 17TH STREET SUITE 5300
City: DENVER State: CO Zip: 80202

### Contact Information

Name: Jeff Annable
Phone: (303) 928-7128
Fax: (303) 218-5678
email: regulatory@ascentgeomatics.com

## RECLAMATION FINANCIAL ASSURANCE

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

## LOCATION IDENTIFICATION

Name: Stromberger Number: 22-E Pad
County: WELD

QuarterQuarter: SENE Section: 22 Township: 6N Range: 67W Meridian: 6 Ground Elevation: 4778

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: 1994 feet FNL from North or South section line
150 feet FEL from East or West section line

Latitude: 40.474235 Longitude: -104.870861

PDOP Reading: 2.7 Date of Measurement: 06/24/2015

Instrument Operator's Name: Bryan Johnson

## RELATED REMOTE LOCATIONS

(Enter as many Related Locations as necessary. Enter the Form 2A document # only if there is no established COGCC Location ID#)

| This proposed Oil and Gas Location is: | LOCATION ID # | FORM 2A DOC # |
|---|---|---|
| ☐ | | |

## FACILITIES

Indicate the number of each type of oil and gas facility planned on location

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Wells | 19 | Oil Tanks* | 13 | Condensate Tanks* | | Water Tanks* | 2 | Buried Produced Water Vaults* | |
| Drilling Pits | | Production Pits* | | Special Purpose Pits | | Multi-Well Pits* | | Modular Large Volume Tanks | 3 |
| Pump Jacks | | Separators* | 23 | Injection Pumps* | | Cavity Pumps* | | Gas Compressors* | 4 |
| Gas or Diesel Motors* | | Electric Motors | | Electric Generators* | | Fuel Tanks* | | LACT Unit* | 1 |
| Dehydrator Units* | | Vapor Recovery Unit* | | VOC Combustor* | 7 | Flare* | | Pigging Station* | |

## OTHER FACILITIES*

| Other Facility Type | Number |
|---|---|
| O2 Meter Building | 1 |
| Sales Meter Shed | 2 |
| Vapor Recovery Tower | 1 |

*Those facilities indicated by an asterisk (*) shall be used to determine the distance from the Production Facility to the nearest cultural feature on the Cultural Setbacks Tab.

Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

3" Schedule 80 Steel pipe from wellhead to separators, 1 line per well.
2" Schedule 40 Steel pipe for oil and water from separators to tanks.

## CONSTRUCTION

Date planned to commence construction: 03/13/2017 Size of disturbed area during construction in acres: 15.44

Estimated date that interim reclamation will begin: 08/10/2017 Size of location after interim reclamation in acres: 7.90

Estimated post-construction ground elevation: 4778

## DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes

Is $H_2S$ anticipated? No

Will salt sections be encountered during drilling: No

Will salt based mud (>15,000 ppm Cl) be used? No

Will oil based drilling fluids be used? Yes

## DRILLING WASTE MANAGEMENT PROGRAM

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

Cutting Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted?

Reuse Facility ID: or Document Number:

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

## SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Harold J Stromberger Phone:

Address: 2020 Trail Ridge Dr Fax:

Address: Email:

City: Severance State: CO Zip: 80615-8625

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: | 1619 Feet | 1729 Feet |
| Building Unit: | 1816 Feet | 1729 Feet |
| High Occupancy Building Unit: | 2711 Feet | 2607 Feet |
| Designated Outside Activity Area: | 5280 Feet | 5280 Feet |
| Public Road: | 1984 Feet | 1896 Feet |
| Above Ground Utility: | 547 Feet | 84 Feet |
| Railroad: | 579 Feet | 117 Feet |
| Property Line: | 150 Feet | 22 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.
- Large UMA Facility – 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: _____

## FOR MULTI-WELL PADS AND PRODUCTION FACILTIES 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.

## 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: 41 - Nunn clay loam, 0 to 1 percent slopes

NRCS Map Unit Name: _____

NRCS Map Unit Name: _____

## 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: 0 Feet

water well: 1473 Feet

Estimated depth to ground water at Oil and Gas Location 12 Feet

Basis for depth to groundwater and sensitive area determination:

Distance to nearest downgradient water feature is a ditch.

Nearest water well is CDWR Permit #318-RD.

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 zone: No

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

Is the Location within a Floodplain? ☐ No ☒ Yes

Floodplain Data Sources Reviewed (check all that apply)

- ☒ Federal (FEMA)
- ☒ State
- ☐ County
- ☐ Local
- ☐ Other

## GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

## WILDLIFE

☐

This location is included in a Wildlife Mitigation Plan

☐ This location was subject to a pre-consultation meeting with CPW held on _____

## DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

☐ Rule 604.a.(1)A. Exception Zone (within 500' of a Building Unit) and is in an Urban Mitigation Area

☐ 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

This location is being amended to expand the DA, add MLVTs, add wells, and change facility count.

Operator acknowledges that this location is in close proximity to the Town of Windsor. Operator will contact the Town of Windsor LGD to discuss, however, the site is located within Weld County on property zoned AG (agriculture) and therefore oil and gas operations are considered a use by right.

Operator certifies that the MLVTs will be designed and implemented consistent with the COGCC Policy on the Use of Modular Large Volume Tanks in Colorado. MLVT Design Package, certified and sealed by a licensed professional engineer, is available upon request.

Manufacturer of MLVT: Hydrologistics
Size and Volume: Up to three (3) 157' diameter/ 42,000 BBLs
Anticipated time frame on site: 90 days

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

Signed: _____ Date: 02/01/2017 Email: regulatory@ascentgeomatics.com

Print Name: Jeff Annable Title: Regulatory Analyst

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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: 3/10/2017

## 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.**

| COA Type | Description |
|---|---|
| | |

## Best Management Practices

| No | BMP/COA Type | Description |
|---|---|---|
| 1 | General Housekeeping | 804. 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<br><br>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. |
| 2 | Storm Water/Erosion Control | Implement and maintain BMPs to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. Co-locate gas and water gathering lines whenever feasible, and mitigate any erosion problems that arise due to the construction of any pipeline(s). Location will be covered under Extraction Oil & Gas's field wide permit, permit number COR03M013. |
| 3 | Dust control | 805.c. Operator shall employ practices for control of fugitive dust caused by their operations. Such practices shall include but are not limited to the use of speed restrictions, regular road maintenance, restriction of construction activity during high-wind days, and silica dust controls when handling sand used in hydraulic fracturing operations. Additional management practices such as road surfacing, wind breaks and barriers may be used. |
| 4 | Construction | 803. Light sources during all phases of operations will be directed downwards and away from occupied structures where possible. Permanent lighting shall be mounted at compressor stations on a pole or building and directed downward to illuminate key areas within the facility, while minimizing the amount of light projected outside the facility. |

| | | |
|---|---|---|
| 5 | Construction | Operator has an MLVT Design Package, certified and sealed by a licensed professional engineer, which is on file in their office and available upon request. The site shall be prepared in accordance with the specifications of the design package prior to tank installation; including ensuring that proper compaction requirements have been met.<br><br>The MLVT will be at least 75 feet from a wellhead, fired vessel, heater-treater, or a compressor with a rating of 200 horsepower or more. It will be placed at least 50 feet from a separator, well test unit, or other non-fired equipment.<br><br>All liner seams will be welded and tested in accordance with applicable ASTM International standards.<br><br>Operator will be present during initial filling of the MLVT and the contractor will supervise and inspect the MLVT for leaks during filling.<br><br>Operator will comply with the testing and re-inspection requirements and associated written standard operating procedures (SOP) listed on the design package.<br><br>Signs will be posted on the MLVT indicating that the contents are freshwater.<br><br>The MLVT will be operated with a minimum of 1 foot of freeboard at all times.<br><br>Access to the MLVT will be limited to operational personnel and authorized regulatory agency personnel.<br><br>Operator or contractor will conduct daily visual inspections of the exterior wall and surrounding area for integrity deficiencies.<br><br>Operator has developed a contingency plan/emergency response plan associated with the MLVT and it is on file at their office.<br><br>A fabric reinforced liner will be utilized. In the event that a tank breach were to occur, the fabric reinforced liner will prevent a “zippering” failure from occurring. The liner will meet the specifications per the design package.<br><br>Operator acknowledges and will comply with the Colorado Oil & Gas Conservation Commission Policy on the Use of Modular Large Volume Tanks in Colorado dated June 13, 2014.<br><br>Extraction will install an engineered containment system around the tank battery. The containment system is constructed of a perimeter of walls that are post driven into the ground around a flexible geotextile base. All components are then sprayed with a polyurea liner technology. This liner technology maintains impermeability and puncture resistance under exposure to UV rays, weather extremes, and chemicals commonly encountered in oil and natural gas production, and provides seamless protection. In addition to the engineered containment system, Extraction will install bollards on the upstream end of the tank battery as an added safety measure. The bollards will provide added protection to the tank battery in the event of a flood in which objects and debris may be floating downstream. The bollards will be constructed of steel pipe filled with concrete and will protect the containment system from being struck and compromised by floating debris.<br><br>All equipment will be anchored to the extent necessary to resist flotation, collapse, lateral movement, or subsidence. |
| 6 | Odor mitigation | 805. Oil & gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare. Operator is in the process of implementing a new base fluid for Oil Base Mud systems. The aromatics and BTEX concentrations are much less than that of generic diesel. With these two things being the major contributors to the odor from diesel, this should lead to less odor at the drill site caused by OBM. |

| | | |
|---|---|---|
| 7 | Interim Reclamation | Operator shall be responsible for segregating the topsoil, backfilling, re-compacting any backfill, reseeding, and re-contouring 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. |

Total: 7 comment(s)

## Attachment Check List

| Att Doc Num | Name |
|---|---|
| 2478174 | CORRESPONDENCE |
| 401171552 | FORM 2A SUBMITTED |
| 401175796 | LOCATION PICTURES |
| 401186381 | LOCATION DRAWING |
| 401186514 | HYDROLOGY MAP |
| 401200099 | MULTI-WELL PLAN |

Total Attach: 6 Files

## General Comments

| User Group | Comment | Comment Date |
|---|---|---|
| Permit | Final Review Completed. | 03/09/2017 |
| OGLA | IN PROCESS - Operator revised the date planned to commence construction, revised the Interim Reclamation BMP, and provide an update/summary of the issue with handling the topsoil from this location.<br><br>OGLA review complete and task passed. | 03/09/2017 |
| OGLA | ON HOLD - Requested operator revise the date planned to commence construction, clarify the Interim Reclamation BMP, and provide an update/summary of the issue with handling the topsoil from this location. Due by 4/8/17. | 03/08/2017 |
| LGD | This proposed oil and gas facility is located in the Agricultural Zoned District of unincorporated Weld County.As of today's date, February 28, 2017, the Weld County Oil and Gas Liaison/LGD has not been contacted by any nearby resident(s) or governmental jurisdiction(s) regarding this proposed location.The County will respond to legitimate concerns or issues regarding a proposed location and attempt to facilitate a solution with the operator.The COGCC Form 2A for this location was submitted on or before February 1, 2017 and is considered a Use by Right with no Weld Oil and Gas Location Assessment (WOGLA) required.A building permit is required for production equipment (tank battery, separators, pump jacks, compressors, generators, etc.) and the operator has been issued a Flood Hazard Development Permit (FHDP15-0078, the amendments in this 2A were evaluated by the Floodplain Administrator) from the Department of Planning Services.Access is off State Highway 392.Troy Swain, Weld Oil/Gas Liaison and LGD (970) 400-3579. | 02/28/2017 |
| Permit | Permitting Review Complete. | 02/28/2017 |
| Permit | Passed completeness. | 02/08/2017 |

Total: 6 comment(s)