

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:

401196254

(SUBMITTED)

Date Received:

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: _____

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:

Expiration Date:

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: MLD Number: 22-A Pad
 County: WELD
 Quarter: NWNW Section: 22 Township: 4N Range: 68W Meridian: 6 Ground Elevation: 4876

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: 802 feet FNL from North or South section line
604 feet FWL from East or West section line

Latitude: 40.303971 Longitude: -104.996668
 PDOP Reading: 1.3 Date of Measurement: 07/12/2014

Instrument Operator's Name: Ben Hardenbergh

Name: MLD Equities LLC

Phone: _____

Address: 1416 Harris Dr

Fax: _____

Address: _____

Email: _____

City: Fort Collins State: CO Zip: 80524

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: oil and gas lease

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:	914 Feet	726 Feet
Building Unit:	1091 Feet	916 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	424 Feet	275 Feet
Above Ground Utility:	404 Feet	255 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	436 Feet	287 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: 10/08/2016

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.

The MLD 22-A Horizontal drilling pad is planned for efficient and economical development of Section 22 T4N R68W. This location is outside of urban mitigation areas. Extraction has negotiated a Surface Damage and Release Agreement with the current property owner. Sound walls and/or hay bales will be utilized to protect neighbors during operations. Additional justification is attached as SITING RATIONALE.

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 be 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: 17 - Colby loam, 5 to 9 percent slopes

NRCS Map Unit Name: 79 - Weld loam, 1 to 3 percent slopes

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: 1165 Feet

Estimated depth to ground water at Oil and Gas Location 30 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 #244834-A which is 1165' N.

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: _____

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 _____

Operator Proposed Wildlife BMPs

No BMP

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 Letter to Director for COGCC Rule 303b.(3)J.iii. Building Unit Owner Pre-Application Notification receipts, attached as PRE-APPLICATION NOTIFICATION CERTIFICATION.

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 one (1) 157' diameter/ 42,000 BBLs
Anticipated time frame on site: 60 days

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

Signed: _____ Date: _____ Email: regulatory@ascentgeomatics.com

Print Name: Jeff Annable 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: _____ Director of COGCC _____ Date: _____

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

<u>COA Type</u>	<u>Description</u>

Best Management Practices

No BMP/COA Type

Description

<u>No BMP/COA Type</u>	<u>Description</u>
1 Planning	<p>604.c(2)M. Fencing: A meeting with the surface owner will determine a fencing plan. The location will be adequately fenced to restrict access by unauthorized persons. Extraction is working with the City of Berthoud for a Conditional Use Permit (CUP) which is being submitted in parallel with the required COGCC permits. Extraction met with the City of Berthoud planners and engineer on January 12, 2017 to start the process of the CUP.</p> <p>604.c.(2)J.i 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>604.c.(2)J.ii Backup stabbing valves will be required on well servicing operations during reverse circulation. Valves shall be pressure tested before each well servicing operation using both low-pressure air and high-pressure fluid.</p> <p>604.c.(2)N. 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>

2	Traffic control	<p>604.c.(2)S. 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. During construction and through the life of this location, Operator will utilize watering, via water trucks, to control fugitive dust. Additionally, the access road will be constructed with aggregate road base material and vehicle speeds will be limited to ten miles per hour to reduce dust. Contractors, employees, vendors and all associated traffic will be directed to utilize State HYW. 56.</p> <p>604.c.(2)D: If required by the local government, a traffic plan shall be coordinated with the local jurisdiction prior to commencement of move in and rig up. Any subsequent modification to the traffic plan must be coordinated with the local jurisdiction. Extraction will include a traffic plan to exit the MLD pad and head north to State HYW 56 with the City of Berthoud Conditional Use Permit. A traffic route map will be provided to the City of Berthoud with the CUP. All exhibits for the CUP are currently being drafted by Ascent Geomatic Solutions.</p>
3	General Housekeeping	<p>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.</p> <p>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>604.c.(2)P. Trash Removal: All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as applicable.</p>
4	Storm Water/Erosion Control	<p>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.</p> <p>Typical storm-water BMPs installed include a diversion ditch and berm with sediment traps and installation of wattles where necessary.</p>
5	Material Handling and Spill Prevention	<p>604.c.(2)F. Leak Detention Plan: Operator will monitor production facilities weekly at a minimum to a maximum of daily to identify fluid leaks, including, but not limited to, visually inspecting all wellheads, tanks and fittings. Additionally annual SPCC inspections will be conducted and documented. Annual flowline testing will also occur according to COGCC rules 1101 and 1102. Inspection and record retention of flowline testing will be in accordance per COGCC regulation. All records will be made available to the COGCC upon request.</p> <p>604.c.(2)R Tank Specifications: Tanks will be designed, constructed and maintained in accordance with NFPA Code 30 (2008 version). All tanks are visually inspected by the operator weekly at a minimum to a maximum of daily and annual SPCC inspections will be conducted and documented. Inspection and record retention of tank inspections will be in accordance per SPCC regulation. All records will be made available to the COGCC upon request.</p>
6	Dust control	<p>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. The access road entrance will be constructed with road base aggregate material and also a mud tracking pad. This with the other BMPs listed above will help reduce dust and material from leaving the site.</p>

7	Construction	<p>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.</p> <p>604.c.(2).Q. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.</p> <p>604.c.(2).E. This will be a multi-well pad, located in a manner which allows for the greatest distances possible from building units.</p>
8	Noise mitigation	<p>604.c.(2)A. Sound walls and/or hay bales will be used during drilling and completion operations. Sound walls and/or hay bales will be installed on north, west and south edges of the pad.</p>
9	Emissions mitigation	<p>Extraction will send salable quality gas immediately down the DCP sales line upon tie-in if already available. Else, Operator will bring a new or expand existing gas sales lines in a timely manner.</p> <p>604.c.(2)C.i. 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.</p>
10	Odor mitigation	<p>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.</p>
11	Drilling/Completion Operations	<p>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> <p>604.c.(2).I. BOPE testing for drilling operations. Upon initial rig-up and at least once every thirty (30) days during drilling operations thereafter, pressure testing of the casing string and each component of the blowout prevention equipment including flange connections shall be performed to seventy percent (70%) of working pressure or seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing shall be conducted and the documented results shall be retained by the operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted on a daily basis when practicable.</p> <p>604.c.(2)B.i. Operator will be utilizing a closed loop system.</p> <p>604.c.(2).K. Pit level Indicators shall be used for tanks on location.</p> <p>604.c.(2).O. All loadlines shall be bull plugged or capped.</p> <p>Anti-collision: Operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.</p>
12	Drilling/Completion Operations	<p>317.p One of the first wells drilled on the pad will be logged with open-hole Resistivity Log and Gamma Ray Log from the kick-off point into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measured-while-drilling gamma-ray log. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs shall clearly state "No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run.</p>

13	Drilling/Completion Operations	<p>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.</p> <p>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.</p> <p>All liner seams will be welded and tested in accordance with applicable ASTM International standards.</p> <p>Operator will be present during initial filling of the MLVT and the contractor will supervise and inspect the MLVT for leaks during filling.</p> <p>Operator will comply with the testing and re-inspection requirements and associated written standard operating procedures (SOP) listed on the design package.</p> <p>Signs will be posted on the MLVT indicating that the contents are freshwater.</p> <p>The MLVT will be operated with a minimum of 1 foot of freeboard at all times.</p> <p>Access to the MLVT will be limited to operational personnel and authorized regulatory agency personnel.</p> <p>Operator or contractor will conduct daily visual inspections of the exterior wall and surrounding area for integrity deficiencies.</p> <p>Operator has developed a contingency plan/emergency response plan associated with the MLVT and it is on file at their office.</p> <p>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.</p> <p>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.</p>
14	Interim Reclamation	<p>Operator shall be responsible for segregating the topsoil, backfilling, re-compacting, 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.</p>
15	Final Reclamation	<p>604.c.(2)T. 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. Identification of plugged and abandoned wells will be identified pursuant to 319.a.(5)</p> <p>604.c.(2).U. The operator shall identify the location of the wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument</p>

Total: 15 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
401196651	LOCATION DRAWING
401196652	HYDROLOGY MAP
401196653	FACILITY LAYOUT DRAWING
401196654	LOCATION PICTURES
401196655	ACCESS ROAD MAP
401196656	MULTI-WELL PLAN
401196657	NRCS MAP UNIT DESC
401196658	NRCS MAP UNIT DESC
401196659	WASTE MANAGEMENT PLAN
401198027	SITING RATIONALE
401202327	PRE-APPLICATION NOTIFICATION CERTIFICATION

Total Attach: 11 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)

Public Comments

No public comments were received on this application during the comment period.

