

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:

400878161

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Date Received:

09/01/2015

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:

**443555**

Expiration Date:

**10/13/2018**

☒ 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: 370 17TH STREET SUITE 5300

City: DENVER State: CO Zip: 80202

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: Silverback Number: 36-A Pad

County: WELD

QuarterQuarter: NENW Section: 36 Township: 12N Range: 62W Meridian: 6 Ground Elevation: 5282

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: 300 feet FNL from North or South section line

1435 feet FWL from East or West section line

Latitude: 40.972551 Longitude: -104.272114

PDOP Reading: 2.1 Date of Measurement: 09/30/2015

Instrument Operator's Name: Charlie Scott

## 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	3	Oil Tanks*	9	Condensate Tanks*		Water Tanks*	6	Buried Produced Water Vaults*	
Drilling Pits		Production Pits*		Special Purpose Pits		Multi-Well Pits*		Modular Large Volume Tanks	
Pump Jacks		Separators*	3	Injection Pumps*		Cavity Pumps*		Gas Compressors*	
Gas or Diesel Motors*		Electric Motors		Electric Generators*		Fuel Tanks*		LACT Unit*	
Dehydrator Units*		Vapor Recovery Unit*		VOC Combustor*		Flare*	1	Pigging Station*	

## OTHER FACILITIES\*

Other Facility Type

Number

Vapor Recovery Tower	1
Emission Control Device	3

\*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: 10/14/2015 Size of disturbed area during construction in acres: 4.95

Estimated date that interim reclamation will begin: 04/14/2016 Size of location after interim reclamation in acres: 2.47

Estimated post-construction ground elevation: 5282

## DRILLING PROGRAM

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

Is H<sub>2</sub>S 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: ONSITE

Cuttings Disposal Method: Other

Other Disposal Description:

See attached Waste Management Plan.  
Drill cuttings will either be hauled off by a licensed third party transporter to a Commercial Facility, or recycled and re-used on location using Bio-Remediation.

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: or Document Number:

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

## SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: State of Colorado

Phone: \_\_\_\_\_

Address: 600 Grant Street

Fax: \_\_\_\_\_

Address: Suite 640

Email: \_\_\_\_\_

City: Denver State: CO Zip: 80203-3527

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:	1110 Feet	1068 Feet
Building Unit:	1271 Feet	1225 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	286 Feet	69 Feet
Above Ground Utility:	1586 Feet	1547 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	300 Feet	83 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: \_\_\_\_\_

## 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 (onll 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 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: 1—Altvan fine sandy loam, 0 to 6 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: 2880 Feet

water well: 1038 Feet

Estimated depth to ground water at Oil and Gas Location 35 Feet

Basis for depth to groundwater and sensitive area determination:

Nearest downgradient surface water feature is a seasonal pond to the NE.  
Nearest water well is CDWR Permit 124439, however the nearest water well with a recorded static water level is CDWR Permit 13183 which is 1844' to the NE.

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 609 \_\_\_\_\_

## 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 Since there are no surface water features within 1,000' of the proposed location, a Hydrology Map is not required.

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

Signed: \_\_\_\_\_ Date: 09/01/2015 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: 10/14/2015

#### **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.**

<b>COA Type</b>	<b>Description</b>
	Any accumulation of fluid in treatment area(s) shall be removed upon detection. All treatment area(s) shall be monitored after any significant precipitation event.
	Precautions (such as a synthetic liner) shall be used to prevent potential impacts to the subsurface soil and shallow groundwater resulting from the onsite remediation stockpiles.
	All berms placed around the stockpile locations shall be sufficient to prevent stormwater run on and runoff. Berms shall be maintained and constructed of non- E&P waste material.
	The Operator shall prepare and submit for prior Director approval a Form 27 Site Investigation and Remediation Workplan for the onsite land treatment of oily waste (drill cuttings that contain hydrocarbons) in accordance with Rule 909.c.(3). The Form 27 shall include a site map showing the site layout and stockpile locations, a description of the confirmation sampling program, a description of and any pertinent literature about proposed amendments to enhance remediation of the drill cuttings, and a diagram of where cuttings will be beneficially reused.
	Onsite treatment and reuse of drill cuttings must be successfully completed prior to the indicated date that Interim Reclamation will begin. In the event that treatment and reuse of drill cuttings is not completed prior to this date, Operator shall submit a 502.b Variance Request Letter to extend the time period or dispose of the drill cuttings at commercial facility.

### **Best Management Practices**

<b>No</b>	<b>BMP/COA Type</b>	<b>Description</b>
1	Planning	A meeting with the surface owner will determine the fencing plan.
2	Traffic control	Access Roads: The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times. An Access Road Permit will be applied for through Weld County.
3	General Housekeeping	Visual Impacts: Equipment, regardless of construction date, which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to, but slightly darker than, the surrounding landscape.
4	Dust control	Operator shall employ practices for control of fugitive dust caused by their operations.
5	Construction	Guy line anchors: All guy line anchors shall be brightly marked pursuant to Rule 604.c.(2)Q.  Tank berms will 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. Secondary containment devices will be sufficiently impervious to contain any spilled or released material.
6	Emissions mitigation	805.b.(3)A. Green completion practices are not required for this area as it is considered exploratory. If it is determined that the wells will produce gas in economic quantities, then Extraction will negotiate with nearby midstream operators to connect to their gas sales line.

7	Drilling/Completion Operations	<p>Bioremediation of Drill Cuttings</p> <p>1. Mixing and Treatment:</p> <p>A. All cuttings shall be mixed on location</p> <p>B. Cuttings shall be mixed with additives. The amount of additives shall be determined based on laboratory analysis of untreated cuttings.</p> <p>C. Mixing shall be performed with equipment to ensure contact between the cuttings and additives</p> <p>D. Additives</p> <p>i. CMC – polymer absorbent, non-toxic, non-hazardous</p> <p>ii. Oppenheimer Piranha – bioremediation of hydrocarbons</p> <p>iii. Water soluble calcium – chemical reduction of SAR</p> <p>2. Stockpile Management:</p> <p>A. Treated, solidified cuttings shall be stored on location in individual well stockpiles. One stockpile per well. Each stockpile shall be marked with the name of the well.</p> <p>B. Stockpiles shall be windrows with a height as tall as practical. Taller windrows aid in the retention of warmth increasing microbial activity.</p> <p>C. Leachate shall be managed by absorbent material. The inherent properties of CMC reduces leachate levels of TDS to below standards based on laboratory analysis.</p> <p>D. An earthen berm, one foot in height, shall be constructed around the stockpile(s) to minimize storm water runoff</p> <p>E. As the solidified cuttings dry, a protective crust layer will form on the surface of the stockpile. This crust layer helps retain moisture and heat within the stockpile while also protecting the native landscape from windborne contaminated particulate. Care shall be taken by the Operator and all contractors to minimize stockpile disturbance until a properly trained soil sampling technician visits the site.</p> <p>3. Sampling &amp; Testing:</p> <p>A. The stockpile of treated cuttings will be sampled and tested according to standard laboratory and sampling protocols and COGCC table 910-1. Stockpiles will be sampled in increments no greater than 100 cubic yards. Ten samples shall be taken from each segment of the stockpile of treated drill cuttings, mixed and then one composite sample will be used for testing. Samples will be taken from the stockpile in such as way as to preserve any potential volatile organic compounds. Ten random samples shall be taken of the stockpile of subsoil for use as a source for background data.</p> <p>B. After the cuttings have achieved the threshold limits specified in table 910-1, the treated material will be thin spread on the well site and incorporated into the reclamation fill material.</p> <p>A permanent record of the laboratory analysis shall be maintained by the Operator.</p>
8	Drilling/Completion Operations	<p>One of the first wells drilled on the pad will be logged with openhole 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 &amp; number) the well in which openhole logs were run.</p>
9	Interim Reclamation	<p>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 weeds.</p>
10	Final Reclamation	<p>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.</p>

Total: 10 comment(s)



### **Attachment Check List**

<b><u>Att Doc Num</u></b>	<b><u>Name</u></b>
1009965	CORRESPONDENCE
1009975	CORRESPONDENCE
2238497	MULTI-WELL PLAN
2238498	OTHER
2238499	ACCESS ROAD MAP
2238500	LOCATION DRAWING
2238501	LOCATION PICTURES
2238511	SURFACE AGRMT/SURETY
2477710	CORRESPONDENCE
2477713	CORRESPONDENCE
400878161	FORM 2A SUBMITTED
400879788	NRCS MAP UNIT DESC
400881526	WASTE MANAGEMENT PLAN
400891125	OIL & GAS LEASE

Total Attach: 14 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	10/13/2015 1:52:20 PM
Permit	Per Steve Freese at State Land Board, bond and lease are in good order.  For informational purposes, attached SUA provided by operator.	10/13/2015 8:09:08 AM
OGLA	On behalf of the safety concerns of Weld County and the adjacent landowner, Extraction agreed to move the original location. COGCC worked with the Operator to revise the original submittal.	10/8/2015 7:51:24 AM
Permit	Operator moved surface hole location. Corrections to Form have been made using Form 2A Red Line attachment titled other on attachments tab per the operator. Deleted submitted Access Road Map, Location Drawing, Location photos and Multi-Well Plan and replaced with updated like attachments provided by operator on 10/6/2015.	10/6/2015 3:24:50 PM
LGD	In response to an adjacent (north of CR 136) property owners concerns regarding safety, Weld County requested the permit comment period be extended, allowing the adjacent landowner and Extraction Oil Gas more time to meet to investigate, discuss, and attempt to address safety issues when landing at the airstrip, which was directly across the road from the proposed location. Extraction and the adjacent landowner were able to come to an agreement, which included moving the 3 wells 100 east, and moving the tank battery 200 to the east. Please modify this in-process permit and approve changes to this proposed location that reflect Extractions agreed upon move. This will address the Countys and the adjacent landowners concerns regarding this proposed location and the adjacent landowner to the north and the community in this rural area will be able to continue to use and benefit from the airstrip.	10/6/2015 9:41:03 AM
Permit	Emailed Steve Freese at SLB for verification of Surface Restoration Bond	9/28/2015 8:13:05 AM
OGLA	IN PROCESS - Operator provided revised dates to commence construction and begin interim reclamation, revised the operator comment regarding drill cuttings disposal, concured with a COA regarding on-site remediation of oil based drill cuttings, and agreed to changing Sensitive Area to YES. OGLA review complete. Waiting on Public Comment period.	9/23/2015 10:33:06 AM
OGLA	ON HOLD - Requested operator provide revised date to commence construction, revise the operator comment regarding drill cuttings disposal, concur with a COA regarding on-site remediation of oil based drill cuttings, and change Sensitive Area to YES. Due by 10/21/15.	9/21/2015 3:03:00 PM
OGLA	LGD and public comment period extended 10 days to 10/8/15 per LGD request	9/18/2015 8:45:26 AM
Permit	Pass completeness	9/8/2015 8:51:08 AM

Total: 10 comment(s)