

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:

400864567

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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:

443490

Expiration Date:

10/05/2018

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: Meader Number: 5-N Pad
 County: WELD
 Quarter: SESW Section: 5 Township: 11N Range: 63W Meridian: 6 Ground Elevation: 5337

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: 350 feet FSL from North or South section line
2604 feet FWL from East or West section line

Latitude: 40.945030 Longitude: -104.456916

PDOP Reading: 2.1 Date of Measurement: 06/24/2015

Instrument Operator's Name: Alan Hnizdo

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	<u>4</u>	Oil Tanks*	<u>12</u>	Condensate Tanks*	<u> </u>	Water Tanks*	<u>8</u>	Buried Produced Water Vaults*	<u> </u>
Drilling Pits	<u> </u>	Production Pits*	<u> </u>	Special Purpose Pits	<u> </u>	Multi-Well Pits*	<u> </u>	Modular Large Volume Tanks	<u> </u>
Pump Jacks	<u> </u>	Separators*	<u>4</u>	Injection Pumps*	<u> </u>	Cavity Pumps*	<u> </u>	Gas Compressors*	<u> </u>
Gas or Diesel Motors*	<u> </u>	Electric Motors	<u> </u>	Electric Generators*	<u> </u>	Fuel Tanks*	<u> </u>	LACT Unit*	<u> </u>
Dehydrator Units*	<u> </u>	Vapor Recovery Unit*	<u> </u>	VOC Combustor*	<u> </u>	Flare*	<u>1</u>	Pigging Station*	<u> </u>

OTHER FACILITIES*

Other Facility Type

Number

Vapor Recovery Tower	<u>1</u>
Emission Control Device	<u>4</u>

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: 10/01/2015 Size of disturbed area during construction in acres: 7.98

Estimated date that interim reclamation will begin: 04/01/2016 Size of location after interim reclamation in acres: 3.99

Estimated post-construction ground elevation: 5337

DRILLING PROGRAM

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

Is H₂S 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.
See comments for additional disposal information.
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: Meader Ranch, Inc.

Phone: 970-895-3357

Address: 65009 County Road 67

Fax: _____

Address: _____

Email: _____

City: Grover State: CO Zip: 80729

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:	5280 Feet	5280 Feet
Building Unit:	5280 Feet	5280 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	2556 Feet	2490 Feet
Above Ground Utility:	2532 Feet	2450 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	350 Feet	105 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 (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 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: 4—Ascalon fine sandy loam, 0 to 6 percent slopes

NRCS Map Unit Name: 74—Vona sandy loam, 3 to 9 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: 06/30/2015

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: 626 Feet

water well: 1643 Feet

Estimated depth to ground water at Oil and Gas Location 49 Feet

Basis for depth to groundwater and sensitive area determination:

Distance to nearest downgradient water feature is an intermittent stream.

Nearest water well is a field verified well, however the nearest water well with a recorded SWL is CDWR Permit #22575 which is 4025' to the 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 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 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 Drill cuttings will either be hauled off site by a licensed third party transporter to a Commercial Facility or recycled and re-used on location using Bio-Remediation. See attached Waste Management Plan. A Form 4 Sundry will be filed once a disposal method is decided.

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:  Director of COGCC Date: 10/6/2015

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.

COA Type	Description
	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.
	Operator shall minimize post-completion disturbance per Rule 1003.
	Unnecessary or excessive flaring is prohibited. Operator shall direct all salable quality gas to a sales line as soon as practicable or be shut in and conserved per Rule 805.b.(3)B.v.
	Operator shall provide notice to COGCC 48 hours prior to commencing construction of this Oil and Gas Location via Form 42. Please note that this notice is now required under Rule 316C.c.

Best Management Practices

No	BMP/COA Type	Description
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 has been applied for and approved 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	<p>Guy line anchors: All guy line anchors shall be brightly marked pursuant to Rule 604.c. (2)Q.</p> <p>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.</p>
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 & 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	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 weeds.
9	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: 9 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2477712	CORRESPONDENCE
400864567	FORM 2A SUBMITTED
400869327	NRCS MAP UNIT DESC
400869328	NRCS MAP UNIT DESC
400883354	LOCATION DRAWING
400883357	LOCATION PICTURES
400883359	REFERENCE AREA MAP
400883361	REFERENCE AREA PICTURES
400883362	ACCESS ROAD MAP
400883365	HYDROLOGY MAP
400883366	MULTI-WELL PLAN
400883367	WASTE MANAGEMENT PLAN
400891023	SURFACE AGRMT/SURETY

Total Attach: 13 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed. No LGD or public comment received.	10/5/2015 3:38:48 PM
OGLA	No Public Comments. OGLA task passed.	9/28/2015 7:42:59 AM
OGLA	IN PROCESS - Operator provided clarification regarding the Surface Use Agreement, revised the operator comment regarding drill cuttings disposal, and concured with a COA regarding on-site remediation of oil based drill cuttings. OGLA review complete. Waiting on Public Comment eriod.	9/23/2015 10:25:40 AM
OGLA	ON HOLD - Requested operator provide clarification regarding the Surface Use Agreement, revise the operator comment regarding drill cuttings disposal, and concur with a COA regarding on-site remediation of oil based drill cuttings. Due by 10/21/15.	9/21/2015 11:32:41 AM
Permit	Passed completeness.	9/7/2015 7:37:12 AM

Total: 5 comment(s)