

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:

400543999

Date Received:

02/06/2014

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: 319537

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:

319537

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: 100185

Name: ENCANA OIL & GAS (USA) INC

Address: 370 17TH ST STE 1700

City: DENVER State: CO Zip: 80202-5632

Contact Information

Name: Erin Lind

Phone: (720) 876-5827

Fax: ()

email: erin.lind@encana.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20100017

Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Mumby State

Number: 36H-P266

County: WELD

Quarter: SESE Section: 36 Township: 2N Range: 66W Meridian: 6 Ground Elevation: 5018

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: 1235 feet FSL from North or South section line

1003 feet FEL from East or West section line

Latitude: 40.090826 Longitude: -104.719588

PDOP Reading: 2.1 Date of Measurement: 12/20/2013

Instrument Operator's Name: JOHN RICE

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 9 Oil Tanks _____ Condensate Tanks 24 Water Tanks 4 Buried Produced Water Vaults _____
Drilling Pits _____ Production Pits _____ Special Purpose Pits _____ Multi-Well Pits _____ Temporary Large Volume Above Ground Tanks _____
Pump Jacks _____ Separators 9 Injection Pumps _____ Cavity Pumps _____
Gas or Diesel Motors _____ Electric Motors _____ Electric Generators _____ Fuel Tanks _____ Gas Compressors _____
Dehydrator Units _____ Vapor Recovery Unit 6 VOC Combustor 12 Flare _____ LACT Unit _____
Pigging Station _____

OTHER FACILITIES

Other Facility Type

Number

Other Facility Type	Number
Gas Buffer Vessels	4
Meters	8
VRT	2

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

All pipeline will be determined at a later time with a third party.

CONSTRUCTION

Date planned to commence construction: 01/01/2015 Size of disturbed area during construction in acres: 12.00
Estimated date that interim reclamation will begin: 12/01/2016 Size of location after interim reclamation in acres: 4.00
Estimated post-construction ground elevation: 5018

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? No

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Land application

Cutting Disposal: OFFSITE Cuttings Disposal Method: Centralized E&P WMF

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: Peter and Lisa Ramo

Phone: 720-422-4345

Address: 6495 CR 37

Fax: _____

Address: _____

Email: _____

City: Fort Lupton State: CO Zip: 80621

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 12/09/2013

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): Sub Irrigated Pasture

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): Sub Irrigated Pasture

Subdivided: Industrial Commercial Residential

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 673 Feet
Building Unit: 929 Feet
High Occupancy Building Unit: 5280 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 642 Feet
Above Ground Utility: 662 Feet
Railroad: 5280 Feet
Property Line: 84 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.

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: 12/23/2013

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: Symbol 44: olney loamy sand, 1-3% 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: blue grama, prairie sandreed, sand bluestem plan community

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, Chokeycherry)
 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: 1561 Feet

water well: 339 Feet

Estimated depth to ground water at Oil and Gas Location 16 Feet

Basis for depth to groundwater and sensitive area determination:

The depth to ground water was determined based on an analysis of all the water wells in the area and from water well permit #53651, which is 744' away from this location.

Is the location in a riparian area: No Yes

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

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

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

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

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

RULE 502.b VARIANCE REQUEST

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

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

OPERATOR COMMENTS AND SUBMITTAL

Comments

Equipment for the tank battery includes existing equipment that will be moved and consolidated into the proposed facilities area. This proposed facilities area will service the 8 proposed horizontal wells as well as the 1 existing vertical well, the Mumby State #1. This will minimize the permanent surface disturbance for the entire location. A temporary completions area, approximately 4 acres, will be utilized to hold 3 fresh water MLVTs. This area will be fully operated by a third party. Temporary pipelines will be installed and the rights to the water will be obtained by said third party. The total disturbed surface area will be reclaimed like the land directly north of the proposed location. Buffer Zone Notifications were sent 12/23/13 to the 5 Building Unit owners within 1000' of this entire location.

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

Signed: _____ Date: 02/06/2014 Email: erin.lind@encana.com

Print Name: Erin Lind Title: Permitting 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

1	Planning	The proposed location will be consolidated with an existing location, ID #319537, that contains the Mumby State #1, API #05-123-11429. The existing tanks for the Mumby State #1 will be moved and placed in the proposed facilities area. The facilities area was designated per the surface owner's request.
2	Pre-Construction	Prior to construction, Encana will write a "Risk Assessment Needs Determination" document to analyze the site for any other potential mitigation measures that might be needed.
3	Traffic control	After meetings with the surrounding Building Unit Owners, a request was made for the speed limit to be reduced on County Road 37 and "Children At Play" signs to be installed. Encana does not have jurisdiction over County Roads, however, we are working with Weld County to see if they will implement these requests. Nothing has been agreed upon at this time but Weld County is aware of these concerns.
4	General Housekeeping	Any material not in use that might constitute a fire hazard will be removed a minimum of twenty-five (25) feet from the wellhead, tanks and separator. Any electrical equipment installations inside the bermed area will comply with API RP 500 classifications and comply with the current national electrical code as adopted by the State of Colorado.
5	General Housekeeping	All surface trash, debris, scrap or discarded material connected with the operations of the property shall be removed from the premises or disposed of in a legal manner.
6	Material Handling and Spill Prevention	Well effluent containing more than ten (10) barrels per day of condensate or within two (2) hours after first encountering hydrocarbon gas of salable quality will be directed to a combination of sand traps, separators, surge vessels, and tanks as needed to ensure safe separation of sand, hydrocarbon liquids, water, and gas and to ensure salable products are efficiently recovered for sale or conserved and that non-salable products are disposed of in a safe and environmentally responsible manner.

7	Material Handling and Spill Prevention	<p>Encana's Leak Detection Program:</p> <ul style="list-style-type: none"> • annual hydrostatic test on the oil dump line from the separator to the tank battery. • annual hydrostatic "static" tests on our oil tanks. • Annual hydrostatic "static" tests on our produced water tank and water dump line from the separator to the produced water tank. • Lease Operator inspections of all equipment not to exceed 48 hours. • Monthly documented inspections (EU). • Annual environmental inspections of all battery and well equipment and pads. • Annual UT inspections of the pressure vessels and input into Encana's RIPL Predictive Integrity Maintenance Program. (HLP separators and fuel gas separators)
8	Dust control	Per meetings with the surrounding Building Unit Owners, Encana will work with Weld County to reduce dust caused by our increased truck traffic. Encana will use mag chloride, install crushed concrete on the access road and use street sweepers if necessary.
9	Construction	The pad will be constructed in such a manner that noise mitigation may be installed and removed without disturbing the site or landscaping.
10	Construction	Subject pad will have all weather access roads to allow for operator and emergency response.
11	Construction	Encana utilizes 48" tall corrugated galvanized metal berm walls with a capacity in excess of 150% of the largest tank contained within the wall. In addition, Encana best practices mandates the use of impervious liners that extends under each storage tank and up the walls, permanently affixed to the top of the metal berm wall. Protrusions of piping that come through the liner include a fully sealed "boot" to prevent leakage.
12	Construction	Encana will install fencing to restrict access to wellheads and equipment.
13	Noise mitigation	Per meetings with the surrounding Building Unit Owners, Encana will install 32' temporary sound walls on this location through drilling and completion operations.
14	Noise mitigation	Encana will perform a baseline noise survey prior to any operational activity measuring dBA at a distance 350 feet from the noise source. If low frequency noise is a concern, measurement of dBC will be taken 25 feet from the occupied structure towards the noise source.
15	Noise mitigation	The subject location will be constructed to allow potential future noise mitigation installation without disturbance.
16	Emissions mitigation	Flow lines, separators, and sand traps capable of supporting green completions as described in Rule 805 will be installed on subject location at which commercial quantities of gas are reasonably expected to be produced based on existing adjacent wells within 1 mile. Temporary flowback flaring and oxidizing equipment will include: adequately sized equipment to handle 1.5 times the largest flowback volume of gas experienced in a ten mile radius. If there is overrun, Encana will shut in the well versus freely venting
17	Drilling/Completion Operations	Closed-top tanks will utilize backpressure systems that exert a minimum of four (4) ounces of backpressure and a maximum that does not exceed the pressure rating of the tank to facilitate gathering and combustion of tank 800-5 C.
18	Drilling/Completion 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 will 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 will 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.

19	Drilling/Completion Operations	Encana will employ a rig without kelly that has double ram with blind and pipe ram and an annular preventer. At least one person at the well site during drilling operations will have Mineral Management certification or Director approved training for blowout prevention.
20	Drilling/Completion Operations	Backup stabbing valves shall 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.
21	Drilling/Completion Operations	Guy line anchors in the DJ Basin are not installed. Encana will use an engineered base beam that we guy wire anchor the derricks to.
22	Drilling/Completion Operations	All newly installed or replaced crude oil and condensate storage tanks will be designed, constructed, and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). Encana will maintain written records verifying proper design, construction, and maintenance, and will make these records available for inspection by the Director. In addition, onsite inspections are conducted internally to insure guidelines are met.
23	Drilling/Completion Operations	Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottomhole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment. For the proposed well, upon conclusion of drilling operations, an as-constructed gyro survey will be submitted to COGCC with the Form 5.
24	Drilling/Completion Operations	Encana will utilize a closed-loop system for drilling operations at this location. Encana will not utilize pits.

Total: 24 comment(s)

Attachment Check List

Att Doc Num	Name
400543999	FORM 2A SUBMITTED
400547049	LOCATION PICTURES
400547051	ACCESS ROAD MAP
400547054	MULTI-WELL PLAN
400547058	OTHER
400547060	NRCS MAP UNIT DESC
400547066	SURFACE AGRMT/SURETY
400547094	HYDROLOGY MAP
400549614	LOCATION DRAWING
400549620	WASTE MANAGEMENT PLAN
400551088	FACILITY LAYOUT DRAWING
400567144	EXCEPTION LOC WAIVERS
400568289	EXCEPTION LOC REQUEST

Total Attach: 13 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	RETURNED TO DRAFT:Request and waiver attached. The letter has an incorrect statement in the body of the letter. Please edit statement that Encana plans to drill the above referenced pad location at a surface location that is FURTHER than 150 feet from a property line.	3/7/2014 9:26:58 AM
Permit	Returned to draft: Cultural Setbacks tab indicates distance <150 feet (84) from property line but Exception Request letter is not attached.	2/10/2014 9:57:16 AM

Total: 2 comment(s)