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: 401149764

Date Received: 11/22/2016

☐ New Location ☐ Refile ☒ Amend Existing Location Location#: 324340

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: **324340**

Expiration Date: **03/06/2020**

☒ 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: 100185

Name: ENCANA OIL & GAS (USA) INC

Address: 370 17TH ST STE 1700

City: DENVER State: CO Zip: 80202-5632

Contact Information

Name: Jevin Croteau

Phone: (720) 876-5339

Fax: ( )

email: jevin.croteau@encana.com

RECLAMATION FINANCIAL ASSURANCE

☐ Plugging and Abandonment Bond Surety ID:

☐ Gas Facility Surety ID:

☐ Waste Management Surety ID:

LOCATION IDENTIFICATION

Name: Encore West Unit Number: H2SW

County: GARFIELD

QuarterQuarter: LOT 12 Section: 2 Township: 8S Range: 93W Meridian: 6 Ground Elevation: 7406

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: 2774 feet FNL from North or South section line

888 feet FEL from East or West section line

Latitude: 39.396865 Longitude: -107.735196

PDOP Reading: 1.4 Date of Measurement: 08/31/2016

Instrument Operator's Name: Brian Taggart

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

OTHER FACILITIES*

Other Facility Type	Number

*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:

The proposed well will tie in to the existing water and gas lines located just off the southeast of the pad. Flowline from the wellhead to separator to condensate and produced water tanks will be 2" to 4" steel/ flexsteel.

CONSTRUCTION

Date planned to commence construction: 03/06/2017 Size of disturbed area during construction in acres: 4.74

Estimated date that interim reclamation will begin: 10/30/2017 Size of location after interim reclamation in acres: 1.20

Estimated post-construction ground elevation: 7405

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? No

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Recycle/reuse

Cutting Disposal: ONSITE Cuttings Disposal Method: Cuttings trench

Other Disposal Description:

Drilling Fluids Disposal Method - Recycle and reuse "ONSITE"; or disposal "OFFSITE".
Cuttings Disposal Method - "ONSITE" in cuttings management area (as shown on Construction Layout Drawings).

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: BLM - CRVFO Phone: 970-876-5339

Address: 2300 River Frontage Road Fax:

Address: Email:

City: Silt State: CO Zip: 81652

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 10/11/2016

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:	4758 Feet	4650 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:	4450 Feet	4550 Feet
Above Ground Utility:	222 Feet	292 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	1650 Feet	1790 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: 45. Morval-Tridell Complex, 6 to 25 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: 10/20/2016

List individual species: Mtn and WY Sagebrush, Bluebunch Wheatgrass, Bottlebrush Squirreltail, Rocky Mtn Beeplant, Slender Wheatgrass, Thickspike Wheatgrass, Western Wheatgrass and Indian Ricegrass.

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: 188 Feet

water well: 11147 Feet

Estimated depth to ground water at Oil and Gas Location 44 Feet

Basis for depth to groundwater and sensitive area determination:

Depth to GW is 44' according to the nearest water well Permit #282012 located over two miles to the NE with an approximate GL elevation of 6600'.

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

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: The subject location is an old well pad that has been successfully reclaimed with one plugged and abandoned well, MCU Disposal 1. This location will be re-occupied and expanded to drill one new well, Federal 7007E-2. According to the CO DWR web site the nearest water well, permit #282012, is located 11,147' away and has a static water level of 44'. The Reference Area for this location will be adjacent to the east side of the pad, located at 39.397102/-107.734483 and as shown on the attached Location Drawing and East Location Picture. All distances specifying the shortest distance to the nearest cultural feature as described in rule 303.b.(3)A. are measured from the Federal 7007E-2 well stake.

Reference Area Photos will be supplied within 12 months of this 2A Submittal.

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

Signed: _____ Date: 11/22/2016 Email: jevin.croteau@encana.com

Print Name: Jevin Croteau Title: Senior 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: 3/7/2017

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
	In addition to the notifications required by COGCC listed in the Northwest Notification Policy (Notice of Intent to Construct a New Location, Notice of Intent to Spud Surface Casing, and Notice of Intent to Commence Hydraulic Fracturing Operations) and Rule 316C. COGCC Form 42. FIELD OPERATIONS NOTICE (a. Notice of Intent to Conduct Hydraulic Fracturing Treatment and c. Notice of Construction or Major Change); operator shall notify the COGCC 48 hours prior to onsite flowline/pipeline testing (flowlines from wellhead to separator to tanks; and/or any temporary surface lines used for hydraulic stimulation and/or flowback operations) using the Form 42 (as described in Rule 316C.m. Notice of Completion of Form 2/2A Permit Conditions). The appropriate COGCC individuals will automatically be email notified.

	Operator shall pressure test pipelines (flowlines from wellheads to separators to tanks; pipelines from onsite separators to offsite storage tanks, and any temporary surface lines used for hydraulic stimulation and/or flowback operations) in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface or permanent buried pipelines and following any reconfiguration of the pipeline network, and tested annually, unless agreed to by both parties that the flowlines can be managed under an approved COGCC variance. Operator must routinely inspect the entire length of the surface pipeline to ensure integrity. Operator shall conduct daily inspections of surface poly pipeline routes for leaks during active transfer of fluids and implement best management practices to contain any unintentional release of fluids along all portions of the surface pipeline route where temporary pumps and other necessary equipment are located. Inspections shall be conducted by viewing the length of the pipeline; operator will endeavor to minimize surface disturbance during pipeline monitoring. In addition, pump stations along the surface poly or steel pipeline route will be continuously monitored when operating in order to swiftly respond to such a failure. Operator will implement BMPs necessary to mitigate a potential for a release of fluids to impact streams, intermittent streams, ditches, and drainage crossings. For these crossings: if poly pipe is used on the surface, operator will ensure appropriate containment by either installing over-sized pipe “sleeves” which extend the length of the crossing and beyond to a distance deemed adequate to capture (catchment basins) and/or divert any possible release of fluids and prevent fluids from reaching the stream or drainage; installing over-sized pipe “sleeves” which extend the length of the crossing and installing shut off valves on either side of crossing instead of catchment basins; or develop an alternative means for containment. For all other pipeline materials, operator will implement BMPs necessary to mitigate a potential for E&P fluids not to reach groundwater or flowing surface water. Operator will utilize, to the extent practical, all existing access and other public roads, and/or existing pipeline right-of-ways, when placing/routing the temporary surface pipelines. This will reduce surface disturbance and fragmentation of wildlife habitat in the area.
	The moisture content of drill cuttings managed onsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts. After drilling and completion operations have been completed, the drill cuttings that will remain on the well pad location (cuttings management area, the cut portion of the pad, cuttings trench, dry cuttings drilling pit), must meet the applicable standards of Table 910-1. After the drill cuttings have been amended (if necessary) and placed on the well pad, sampling frequency of the drill cuttings (to be determined by the operator) shall be representative of the material left on location. No offsite disposal of cuttings to another oil and gas location shall occur without prior approval of a Waste Management Plan (submitted via a Form 4 Sundry Notice) specifying disposal location and waste characterization method. Commercial disposal of drill cuttings will only require notification to COGCC via a Form 4 Sundry Notice. Flowback and stimulation fluids must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline, storage vessel, or lined pit (only if an amended Form 2A has been submitted/approved and a Form 15 Earthen Pit Permitted has been submitted/approved) located on the well pad; or into tanker trucks for offsite disposal. The flowback and stimulation fluid tanks, separators, or other containment/filtering equipment must be placed on the well pad in an area constructed to be sufficiently impervious to contain any spilled or released material. Potential odors associated with the completions process and/or with long term production operations must be controlled/mitigated.

	Operator must ensure secondary containment for any volume of fluids contained at the well site during drilling and completion operations; including, but not limited to, construction of a berm or diversion dike, diversion/collection trenches within and/or outside of berms/dikes, site grading, or other comparable measures (i.e., best management practices [BMPs] associated with fluid containment/control as well as stormwater management for the control of run-on and run-off) sufficiently protective of nearby surface water, especially, the cutthroat trout steam located approximately 1082' to the east-northeast. Any berm constructed at the well pad location will be stabilized, inspected at regular intervals as required by CDPHE (at least every 14 days and after precipitation events), and maintained in good condition. The design/build of any perimeter berm or fluid management structures shall be sized, constructed, and compacted sufficiently to contain and/or manage potential fluid releases during operations in a manner that prevents or controls potential sedimentation and scouring on adjacent lands and drainages. Such design/build of perimeter berms or fluid management structures may include, but are not limited to the following: on location berms; diversion ditches; enhanced vegetation; or other design features necessary to achieve the goal of protecting adjacent lands and drainages from potential sedimentation and scouring. The access road will be reconstructed and maintained as to not allow sediment to migrate from the access road to nearby surface water or any drainages leading to surface water. Strategically apply fugitive dust control measures, including encouraging established speed limits on private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources. Berms or other containment devices shall be constructed to be sufficiently impervious (corrugated steel with poly liner or equivalent) to contain any spilled or released material around permanent crude oil, condensate, and produced water storage tanks.

Best Management Practices

No	BMP/COA Type	Description
1	General Housekeeping	• Strategically apply fugitive dust control measures, including enforce established speed limits on Encana private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources.
2	Wildlife	• Perform biological surveys (on-site) for each new development, using the most recent data sets for wildlife and wetland resources. • Perform pre-disturbance surveys when the on-site inspection and commencement of disturbance occur in different field seasons using the most recent data sets for wildlife and wetland resources. • Minimize the number, length and footprint of oil & gas development roads and use existing access roads where possible. • Combine utility infrastructure planning (gas, electric & water) when possible with roadway planning to avoid separate utility corridors.
3	Dust control	• Strategically apply fugitive dust control measures, including enforcing established speed limits on Encana private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources.
4	Construction	• Wattles, vegetation buffers, slash (If pad construction begins following snowfall, veg will be pushed to slash berm), topsoil windrows (Diversion & ROPs), terminal containment, run-on protection, ECM (Erosion Control Mulch), check dams, seeding, mulching, stabilization of unpaved surface (gravel), stormwater & snow storage containment, culverts with inlet & outlet protection are all construction BMP's to be implemented at the proposed location during all seasons. • Use multiple gathering lines placed in a single trench to minimize disturbance and construction, where appropriate, economically and technically feasible.

Total: 4 comment(s)

Attachment Check List

Att Doc Num	Name
2108079	CORRESPONDENCE
401149764	FORM 2A SUBMITTED
401150119	NRCS MAP UNIT DESC
401150121	ACCESS ROAD MAP
401150176	LOCATION PICTURES
401150207	CONST. LAYOUT DRAWINGS
401150212	FACILITY LAYOUT DRAWING
401157806	HYDROLOGY MAP
401158076	LOCATION DRAWING

Total Attach: 9 Files

General Comments

User Group	Comment	Comment Date
Permit	Final review complete.	03/02/2017
OGLA	Initiated/Completed OGLA Form 2A review on 03-01-17 by Dave Kubeczko; requested acknowledgement of notification, fluid containment, spill/release BMPs, sediment and dust control access road, flowback to tanks, tank berming, odor control, cuttings low moisture/management, and pipeline testing COAs from operator on 03-01-17; received acknowledgement/concurrence of COAs from operator on 03-1-17; revised: Date planned to commence construction: from 03/01/2017 to 03/061/2017; revised - Drilling Fluids Disposal: to “OFFSITE” and Drilling Fluids Disposal Method to Recycle and reuse "ONSITE"; or disposal "OFFSITE", Cuttings Disposal Method to “Cuttings Trench”, and Other Disposal Description to “in cuttings management area (as shown on Construction Layout Drawings)”; corrected distances from Production Facility to Building from 4758’ to 4650’, Production Facility to Public Road 4450’ to 4550’, Production Facility to Above Ground Utility from 222’ to 292’, and Production Facility to Property Line from 1650’ to 1790’ based on COGCC's review of the survey data on the Location Drawing attachment, the Facility Layout Drawing, and review of COGCC’s Online GIS Map, 2015 Aerial Photo layer; location does not fall within ‘Sensitive Wildlife Habitat (SWH) nor ‘Restricted Surface Occupancy (RSO)’ areas, therefore no CPW consultation is required; passed OGLA Form 2A review on 03-2-17 by Dave Kubeczko; notification, fluid containment, spill/release BMPs, sediment and dust control access road, flowback to tanks, tank berming, odor control, cuttings low moisture/management, and pipeline testing COAs.	03/01/2017
Permit	Ready to pass pending OGLA review and approval.	12/29/2016
Permit	Passed completeness.	12/05/2016
Permit	Added comment to Submit tab: "Reference Area Photos will be supplied within 12 months of this 2A Submittal.", with Operator Approval.	12/05/2016
Permit	Returned to Draft per Operator Request.	11/30/2016
Permit	Returned to Draft per Operator Request.	11/30/2016
Permit	Put Wildlife BMP in the Operator BMP/COA Tab.	11/28/2016
Permit	Returned to Draft: * Need Plugging and Abandonment Bond Surety ID. * Typo on Qtr/Qtr. * Need Reference Area Photos and Map (for Rangeland land use designation).	11/28/2016

Total: 9 comment(s)