

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:

401137690

Date Received:

11/03/2016

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:

**448823**

Expiration Date:

**12/21/2019**

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: 10628

Name: GREENLEAF ENVIRONMENTAL SERVICES LLC

Address: PO BOX 99

City: EASTLAKE    State: CO    Zip: 80614

Contact Information

Name: Lisa Smith

Phone: (303) 324-9350

Fax: (303) 450-9200

email: lisa@permitco-usa.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20160085     Gas Facility Surety ID: \_\_\_\_\_

Waste Management Surety ID: \_\_\_\_\_

LOCATION IDENTIFICATION

Name: Greenleaf Disposal    Number: 1

County: MESA

Quarter: NESW    Section: 36    Township: 9S    Range: 97W    Meridian: 6    Ground Elevation: 5554

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: 2450 feet FSL from North or South section line

1721 feet FWL from East or West section line

Latitude: 39.230348    Longitude: -108.170227

PDOP Reading: 2.4    Date of Measurement: 02/12/2016

Instrument Operator's Name: Michael Langhorne



Name: Greenleaf Environmental S

Phone: 970-283-8992

Address: PO Box 1803

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

Address: \_\_\_\_\_

Email: jakem@greenleafservices.com

City: Grand Junction State: CO Zip: 81502

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: No

The right to construct this Oil and Gas Location is granted by: applicant is owner

Surface damage assurance if no agreement is in place: \_\_\_\_\_ Surface Surety ID: \_\_\_\_\_

Date of Rule 306 surface owner consultation 10/24/2016

### 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.

	<b>From WELL</b>	<b>From PRODUCTION FACILITY</b>
Building:	750 Feet	_____ Feet
Building Unit:	1361 Feet	_____ Feet
High Occupancy Building Unit:	5280 Feet	_____ Feet
Designated Outside Activity Area:	5280 Feet	_____ Feet
Public Road:	651 Feet	_____ Feet
Above Ground Utility:	52 Feet	_____ Feet
Railroad:	5280 Feet	_____ Feet
Property Line:	189 Feet	_____ 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 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 (onl 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: 12 - Bunkwater very fine sandy loam, 1 to 8 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: 02/11/2016

List individual species: Vegetation consists of very sparse grasses and small shrubs. Area has been previously disturbed and future land use is commercial.

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: 450 Feet

water well: 2961 Feet

Estimated depth to ground water at Oil and Gas Location 310 Feet

Basis for depth to groundwater and sensitive area determination:

Distance to nearest downgradient surface water feature is 450 feet. (Intermittent Stream).  
Closest permitted water well (monitoring well) is Permit #216166; completion status unknown. Closest non-monitoring, active water well is Permit #122957 (Depth 450 ft., Static Water Level 310 ft.)

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 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 Applicant requests that a consultation with the Colorado Parks and Wildlife not occur since the proposed re-entry location is on private surface owned by the application. See request letter attached.

Re-entry of this well will be done with a truck mounted rig.

Reference Area is located adjacent to the existing well pad to the east (on the other side of the access road), as shown on the east view Location Pictures attachment.

The building that is 750' away from the well is the office building warehouse for Greenleaf Environmental Services. The office is 600 square feet and the attached warehouse is 1200 square feet. The office and warehouse are occupied during normal business hours from 7 a.m. to 7 p.m.

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

Signed: \_\_\_\_\_ Date: 11/03/2016 Email: lisa@permitco-usa.com  
Print Name: Lisa Smith Title: consultant for Greenleaf

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: 12/22/2016

**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
	<p>In addition to the notifications required by COGCC listed in the Northwest Notification Policy (Notice of Intent to Construct a New Location 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 pipeline testing (flowlines from wellheads to separators to tanks; permanent buried take away pipelines; 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.</p> <p>Operator shall notify the COGCC 48 hours prior to disconnecting the above ground utility line located 52' to the southeast and keep the line de-energized during the drilling and completion operations for this injection well.</p>
	<p>Operator must ensure secondary containment for any volume of fluids contained at the well site during drilling and recompletion 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. Any berm reconstructed 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 shall be sized, constructed, and compacted sufficiently to contain fluids during drilling operations, as well as all fluids contained in temporary tanks during recompletion operations.</p> <p>The access road will be maintained as to not allow sediment to migrate from the access road to nearby surface water or any drainages leading to surface water.</p>
	<p>The moisture content of water/bentonite based mud (WBM) generated 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, any WBM 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.</p> <p>Potential odors associated with the injection well operations must be controlled/mitigated.</p>
	<p>Operator shall pressure test pipelines (flowlines from storage tanks to the injection pump to the wellhead) in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface or permanent buried pipelines, and tested annually, unless agreed to by both parties that the flowlines can be managed under an approved COGCC variance.</p>
	<p>Approval of this Form 2A and the Form 2 #401137504 for the injection well (Greenleaf Disposal 1) does not authorize operator the right to inject. Authorization to inject into the selected Formation(s) requires approval of both the Form 31 and the Form 33.</p> <p>Operator will use qualified containment devices for all appropriate chemicals/hazardous materials and injection equipment (pumps) used onsite during the operation of the injection well.</p> <p>Unless otherwise determined by COGCC staff (COGCC Engineering Staff) that a water sample of the proposed injection Formation(s) is(are) not required, before hydraulic stimulation of the injection well, operator shall collect a groundwater sample from the target Formation(s); that are indicated on the Form 2 for the injection well; and analyze for total dissolved solids (TDS); submit laboratory analytical results to COGCC (emails: bob.koehler@state.co.us and arthur.koelspell@state.co.us).</p>

## Best Management Practices

**No BMP/COA Type**

**Description**

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### Attachment Check List

<b>Att Doc Num</b>	<b>Name</b>
2108014	LOCATION PICTURES
2108020	REFERENCE AREA MAP
2108023	CORRESPONDENCE
401137690	FORM 2A SUBMITTED
401142343	LOCATION DRAWING
401142344	VARIANCE REQUEST
401142345	ACCESS ROAD MAP
401142348	DOW CONSULTATION
401142349	OTHER
401142350	CONST. LAYOUT DRAWINGS
401142351	CONST. LAYOUT DRAWINGS
401142352	CONST. LAYOUT DRAWINGS
401142356	NRCS MAP UNIT DESC
401142358	FACILITY LAYOUT DRAWING
401142359	FACILITY LAYOUT DRAWING
401142360	LOCATION DRAWING
401146500	HYDROLOGY MAP

Total Attach: 17 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
OGLA	Reference area pictures must be submitted in accordance with Rule 303.b.(3)G.bb within 12 months of Form 2A approval.	12/22/2016
Permit	Removed variance request. Operator has indicated they are the owner of the overhead utility line for this existing well and will disconnect prior to drilling.	12/22/2016
Permit	Final review complete.	12/21/2016
OGLA	Initiated OGLA Form 2A review on 12-14-16 by Dave Kubeczko; Completed OGLA Form 2A review on 12-16-16 by Dave Kubeczko; requested acknowledgement of notification, fluid containment and spill/release BMPs, sediment control access road, cuttings management, odor control, pipeline testing, and injection well COAs from operator on 12-16-16; received concurrence of COAs from operator on 12-16-16; revised to New Location since the Existing Location ID# 312454 is closed and associated with EnCana Oil and Gas (USA) Inc.; revised: Date planned to commence construction: from 11/28/2016 to 12/26/2016; added Rangeland to the CURRENT AND FUTURE LAND USE Section of the Form 2A; revised: Distance from WELL to nearest Building Unit from 750' to 1361', closest residence located to the northeast; removed distances From PRODUCTION FACILITY since there are no tanks, separators, or other production-related equipment on this well pad location; based on COGCC's 100-Series Rules (Definitions) for Building Unit, the Greenleaf Office Building (Commercial) and Warehouse Building (Industrial) square footages are less than 5,000 sq-ft and 15,000 sq-ft (used to determine whether a building is a building unit), and therefore, this location is not within a "Buffer Zone", the Form 2A has been revised to indicate this; COGCC has added the following statement to the OPERATOR COMMENTS AND SUBMITTAL Section of the Form 2A: "The building that is 750' away from the well is the office building warehouse for Greenleaf Environmental Services. The office is 600 square feet and the attached warehouse is 1200 square feed. The office and warehouse are occupied during normal business hours from 7 a.m. to 7 p.m."; based on proximity of the well pad to downgradient surface water (intermittent stream located 450' to the east-southeast), this location has been designated a "sensitive area"; passed by CPW on 11-14-16 with CPW indicating that there would not be any anticipated wildlife impacts at this time due to the existing large area of disturbance associated with the Greenleaf Disposal Ponds and Facility; passed OGLA Form 2A review on 12-20-16 by Dave Kubeczko; notification, fluid containment and spill/release BMPs, sediment control access road, cuttings management, odor control, pipeline testing, and injection well COAs.	12/16/2016
Agency	Ready to pass after OGLA review and approval.	12/15/2016
DOW	CPW submitted comments on September 13, 2016 for the Greenleaf Disposal 1 Form2A (Doc #: 401075631). There are no additional comments regarding this permit amendment.  By: Taylor Elm, Nov. 14, 2016, 11:33 am	11/14/2016
Permit	Passed completeness.	11/09/2016
Permit	Per Operator Request: Corrected Document name in Attachments and attached Hydrology Map in Attachments.	11/09/2016
OGLA	Passed Buffer Zone completeness review	11/09/2016
Permit	Referred to OGLA Supervisor for Buffer Zone Review.	11/04/2016

Total: 10 comment(s)