

FORM
2A

Rev
04/01

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:

400261755

Date Received:

04/25/2012

Oil and Gas Location Assessment

☐ New Location

☒ Amend Existing Location Location#: 324576

Submit original plus one copy. This form is to be submitted to the COGCC prior to any ground disturbance activity associated with oil and gas development operations. This Assessment may be approved as a standalone application or submitted as an informational report accompanying an Application for Permit-To-Drill, Form 2. Approval of this 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. This form may serve as notice to land owners and other interested parties, please see the COGCC web site at <http://colorado.gov/cogcc/> for all accompanying information pertinent to this Oil and Gas Location Assessment.

Location ID:

324576

Expiration Date:

10/16/2015

☒ This location assessment is included as part of a permit application.

1. 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.

2. Operator

Operator Number: 10369

Name: NATURAL RESOURCE GROUP INC

Address: 1789 W LITTLETON BLVD

City: LITTLETON State: CO Zip: 80120

3. Contact Information

Name: Brian Hedberg

Phone: (303) 797-5417

Fax: (303) 797-5418

email: bhedberg@nrgcolo.com

4. Location Identification:

Name: Jenny C

Number: 1

County: HUERFANO

QuarterQuarter: NWNW Section: 36 Township: 26S Range: 67W Meridian: 6 Ground Elevation: 6050

Define a single point as a location reference for the facility location. This point should be used as the point of measurement in the drawings to be submitted with this application. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 860 feet FNL, from North or South section line, and 766 feet FWL, from East or West section line.

Latitude: 37.746129 Longitude: -104.844176 PDOP Reading: 6.0 Date of Measurement: 03/09/2012

Instrument Operator's Name: Gary L. Terry

5. Facilities (Indicate the number of each type of oil and gas facility planned on location):

Special Purpose Pits: <input type="text" value="0"/>	Drilling Pits: <input type="text" value="1"/>	Wells: <input type="text" value="1"/>	Production Pits: <input type="text" value="0"/>	Dehydrator Units: <input type="text" value="0"/>
Condensate Tanks: <input type="text" value="0"/>	Water Tanks: <input type="text" value="1"/>	Separators: <input type="text" value="1"/>	Electric Motors: <input type="text" value="0"/>	Multi-Well Pits: <input type="text" value="0"/>
Gas or Diesel Motors: <input type="text" value="0"/>	Cavity Pumps: <input type="text" value="0"/>	LACT Unit: <input type="text" value="0"/>	Pump Jacks: <input type="text" value="0"/>	Pigging Station: <input type="text" value="0"/>
Electric Generators: <input type="text" value="0"/>	Gas Pipeline: <input type="text" value="0"/>	Oil Pipeline: <input type="text" value="0"/>	Water Pipeline: <input type="text" value="0"/>	Flare: <input type="text" value="0"/>
Gas Compressors: <input type="text" value="0"/>	VOC Combustor: <input type="text" value="0"/>	Oil Tanks: <input type="text" value="1"/>	Fuel Tanks: <input type="text" value="0"/>	

Other: _____

6. Construction:

Date planned to commence construction: 04/01/2013 Size of disturbed area during construction in acres: 0.50
Estimated date that interim reclamation will begin: 10/01/2013 Size of location after interim reclamation in acres: 0.25
Estimated post-construction ground elevation: 6051 Will a closed loop system be used for drilling fluids: Yes ☐
Will salt sections be encountered during drilling: Yes ☐ No ☒ Is H2S anticipated? Yes ☐ No ☒
Will salt (>15,000 ppm TDS Cl) or oil based muds be used: Yes ☐ No ☒
Mud disposal: Offsite ☐ Onsite ☐ Method: Land Farming ☐ Land Spreading ☐ Disposal Facility ☐
Other: Air drilling - No Mud

7. Surface Owner:

Name: _____ Phone: _____
Address: _____ Fax: _____
Address: _____ Email: _____
City: _____ State: _____ Zip: _____ Date of Rule 306 surface owner consultation: 04/25/2012
Surface Owner: ☒ Fee ☐ State ☐ Federal ☐ Indian
Mineral Owner: ☐ Fee ☒ State ☐ Federal ☐ Indian
The surface owner is: ☐ the mineral owner ☐ committed to an oil and gas lease
☐ is the executer of the oil and gas lease ☐ the applicant
The right to construct the location is granted by: ☐ oil and gas lease ☒ Surface Use Agreement ☐ Right of Way
☐ applicant is owner
Surface damage assurance if no agreement is in place: ☐ \$2000 ☐ \$5000 ☐ Blanket Surety ID _____

8. Reclamation Financial Assurance:

☒ Well Surety ID: 20110094 ☐ Gas Facility Surety ID: _____ ☐ Waste Mgnt. Surety ID: _____

9. Cultural:

Is the location in a high density area (Rule 603.b.): Yes ☐ No ☒
Distance, in feet, to nearest building: 1000, public road: 850, above ground utilit: 850
, railroad: 19800, property line: 766

10. 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

11. 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

12. Soils:

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.gov/> 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: Wiley-Kim loams, 2 to 9 percent

NRCS Map Unit Name: _____
NRCS Map Unit Name: _____

13. 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, Western wheatgrass, Green needlegrass, Sand dropseed, Sideoats grama,
Buffalograss, Needleandthread

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): _____

14. Water Resources:

Rule 901.e. may require a sensitive area determination be performed. If this determination is performed the data is to be submitted with the Form 2A.

Is this a sensitive area: ☒ No ☐ Yes Was a Rule 901.e. Sensitive Areas Determination performed: ☒ No ☐ Yes

Distance (in feet) to nearest surface water: 400, water well: 1050, depth to ground water: 55

Is the location in a riparian area: ☒ No ☐ Yes Was an Army Corps of Engineers Section 404 permit filed ☒ No ☐ Yes

Is the location within a Rule 317B Surface Water Supply Area buffer zone:

☒ No ☐ 0-300 ft. zone ☐ 301-500 ft. zone ☐ 501-2640 ft. 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: ☐ No ☐ Yes

15. Comments:

There are no improvements within 400 ft of the site. The reference area is adjacent to the site, so no reference area map is needed. The reference area photos will be submitted in approximately two weeks but no later than 12 months as allowed in section 303.d.(3)F.ii.bb of the 300 Series Rules.

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

Signed: _____ Date: 04/25/2012 Email: bhedberg@nrgcolo.com

Print Name: Brian Hedberg Title: General Counsel

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: 10/17/2012

**CONDITIONS OF
APPROVAL, IF ANY:**

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.

Flowback and stimulation fluids must be sent to tanks. The flowback and stimulation fluid tanks must be placed on the well pad in an area with additional down gradient perimeter berming sufficiently impervious to contain any spilled or released material (per Rule 604.a.(4)). Tanks used for flowback must be equipped with emission reducing devices during flowback.

Provide notice to COGCC 48-hours prior to commencement of hydraulic fracturing activities via form 42.

Provide notice to COGCC 48-hours prior to commencement of construction activities via form 42.

Only enclosed flares shall be utilized at the location. A Form 4 Sundry Notice is required to be filed with the COGCC stating that flaring will be taking place on the location. The Sundry is required to be submitted and approved prior to initiating flaring. The Sundry shall also include a line drawing of the flare.

Emissions from condensate, crude oil, and produced water tanks and from glycol dehydrators shall be controlled by a device capable of 95% control efficiency of VOC. The device(s) shall be maintained to allow maximum efficiency during operations. If necessary, a permit from the Colorado Department of Public Health and Environment, Air Pollution Control Division, for the tank(s), Dehydrator(s) and control device(s) shall be obtained.

Results of the pit closure sampling shall be supplied to Peter Gintautas at Peter.Gintautas@state.co.us via form 4 prior to closing the pit.

Venting of gas is prohibited on the location.

The operator will conduct baseline sampling of (at a minimum) the two (2) closest water wells prior to spudding the well. At least one of the sampled wells shall be between the operators proposed location and the Huerfano River. The operator may conduct additional groundwater monitoring at their own discretion.

Laboratory analysis at a minimum will include the following: pH (lab), TDS, Conductivity (lab, not resistivity), SAR calculation, Ca, K, Mg, Na, As, B, Ba, Cd, Cr, Cu, Fe, Mn, Pb, Se (all total recoverable) Br, Cl, F, SO₄, Alkalinity (Total, HCO₃ and CO₃ – all expressed as CaCO₃) benzene, toluene, ethyl benzene, o-xylene, m- + p-xylene, Dissolved Methane, DRO, GRO, Field parameters including pH, Temperature and Conductivity shall be recorded prior to collecting the sample for laboratory analysis. Field observations such as odor, water color, sediment, bubbles and effervesce shall also be included.

If free gas or a dissolved methane concentration level greater than one (1) milligrams per liter (mg/l) is detected in a water well, gas compositional analysis and stable isotope analysis of the methane (carbon and deuterium) shall be performed to determine gas type (biogenic or thermogenic). If the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l, the operator shall notify the Director and the owner of the water well immediately. If thermogenic methane concentrations increase between sampling periods, the operator shall submit to the Director an action plan to determine the source of the increase.

The selected sampling locations will be sampled again 1 year, 3 years and 6 years after completion. Post completion sampling of water wells will consist of the same analyte list as the pre-drilling program. Copies of all test results, field parameters and field observations described above shall be provided to the Director, and the water well owner within three (3) months of collecting the samples. The analytical data and surveyed sample locations shall also be submitted to the Director in an electronic data deliverable format approved by Director.

THE MOISTURE CONTENT OF ANY DRILL CUTTINGS IN A CUTTINGS PIT, TRENCH, OR PILE SHALL BE AS LOW AS PRACTICABLE TO PREVENT ACCUMULATION OF LIQUIDS GREATER THAN DE MINIMIS AMOUNTS. AT THE TIME OF CLOSURE, THE DRILL CUTTINGS MUST ALSO MEET THE APPLICABLE STANDARDS OF TABLE 910-1.

Attachment Check List

Att Doc Num	Name
2515999	CORRESPONDENCE
2533570	CORRESPONDENCE
2533576	CORRESPONDENCE
2533577	DOW CONSULTATION
2533582	CORRESPONDENCE
2533611	CORRESPONDENCE
2533613	CORRESPONDENCE
2533625	CORRESPONDENCE
2533639	DOW CONSULTATION
2533644	CORRESPONDENCE
2533645	REFERENCE AREA PICTURES
2533667	LOCATION DRAWING
2533675	CORRESPONDENCE
400261755	FORM 2A SUBMITTED
400264144	HYDROLOGY MAP
400271063	ACCESS ROAD MAP
400271064	CONST. LAYOUT DRAWINGS
400271067	NRCS MAP UNIT DESC
400276554	ACCESS ROAD MAP
400277113	SURFACE AGRMT/SURETY
400277123	LOCATION PICTURES

Total Attach: 21 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Permit received comments from LGD and the public. Public and LGD concerns were addressed in a detailed manner resulting in BMPs and COAs.	10/17/2012 5:59:44 AM
OGLA	Changed construction date and interim reclamation date based on conversation with operator (Paul Laird). Dates provided are in the future and outside timing restrictions.	10/16/2012 3:14:03 PM
OGLA	Provided letter addressing public comments received on Form 2A and related Form 2 to County Commissioners. Provided copy of same to commenters. Letter attached as CORRESPONDENCE.	10/16/2012 1:25:45 PM
OGLA	Received an email from Brian Hedberg acknowledging the Conditions of approval. Ready to pass pending completion of the COGCC response letter.	9/7/2012 11:25:54 AM
OGLA	Received reference area photos from NRG. The photos did not meet the minimum requirements for reference area photos. Most of the photos showed disturbance of some kind. the Correspondence is in the attachments Doc # LF@2947427 2533625.	7/3/2012 9:02:16 AM
OGLA	Sent a third email requesting information from the operator. Suggested that the operator withdraw the application if they cannot provide the information.	6/18/2012 8:42:47 AM
OGLA	Email received from NRG on 5/23/2012. It has been included in the attachments doc # 2926241 2533582.	5/23/2012 1:35:48 PM

OGLA	<p>COGCC Received the following comment via e-mail: Subject: Huerfano County Oil and Gas Drilling</p> <p>Dear Mr. Kerr, My husband and I own a house near Gardner in Huerfano County. We were already concerned about Shell Oil's plan to drill there this autumn and the possible environmental consequences to our air, water, and wildlife habitats. Now we are notified that NGR Inc. has filed an APD to drill near Gardner as well. We are very concerned that there are not adequate regulations in place to safeguard our health and the value of our property. We are also worried that the particular geology of Huerfano County (i.e., the vertical fissures) and its fragile ecosystem will not be able to withstand the intensity of this level of drilling.</p> <p>Therefore, we are writing to urgently request that the COGCC:</p> <ol style="list-style-type: none"> 1) complete a full hydrogeology study before granting any more permits in Huerfano Count (2) complete a full review of wildlife habitat before granting any more permits to drill in Huerfano County (3) complete a full health baseline before granting any more permits to drill in Huerfano County (4) apply the Seven Safeguards outlined by the citizen's group, Citizens for Huerfano County, as Conditions of Approval (COAs) to any permit you do grant. <p>We feel very strongly about these issues. Thank you for considering our concerns.the Nat</p>	5/23/2012 7:18:35 AM
OGLA	Called Brian Hedberg with NRG to discuss the the Jenny 1 C form 2A on 5/21/2012 at approximately 1:50 pm. A message was left for him to respond to the emails that have been sent.	5/21/2012 1:50:54 PM
OGLA	Second attempt to contact operator regarding additional information and acknowledging COAS. The email can be found in the attachments Correspondence 2924651 2533576.	5/21/2012 11:51:14 AM
Public	Examination of the other oil and gas wells nearby (Impact Energy), shows there was no production. Will this well be hydraulically fractured?There are no production pits listed. Would that mean no? If it IS to be fracked, what is the depth and direction? This would have to be known to evaluate in advance the presence of adequate frack barriers and lack of connectivity to natural fractures which can move fluids out of the target formation.	5/20/2012 12:59:38 AM
Public	Will this be a vertical well? There is no drilling plan diagram.Also, is this well for oil, gas or CBM? Gas is checked in Form 2 #2, but the planned depth is comparable to prior CBM wells drilled in the county, and the Niobrara is being explored by SWEPI for oil. Given the problems with Petroglyph and CBM drilling, please be careful not to allow the same situation/problem to occur.	5/20/2012 12:58:50 AM
Public	What are the locations of the deep dikes/fractures/faults in the vicinity?These features create secondary hydraulic conductivity from depth to surface. They can be transmissive. Dikes are mapped on the surface (www.spanishpeakscolorado.com/DikesRoads.html), but not all are visible on the surface.They extruded from the magma and not all reached the surface. These features should be avoided.What has been done to determine separation and barriers from these natural features (both during drilling and fracking) at the location?	5/20/2012 12:57:59 AM

Public	The surface casing is planned to go 250 deep.What is the location/depth of deepest aquifer, and where did the information come from?Bedrock aquifers do exist in Huerfano county (see e.g. McLaughlin - USGS paper 1805).	5/20/2012 12:56:31 AM
Public	Form 2A (#6) has that salt sections and H2S are NOT expected to be encountered.Form 2A And #10 and #11 Current/Future Land Use = Dry land. How were these determined?	5/20/2012 12:54:14 AM
Public	What did CDOW do and what information did they look at to assess the location before passing their Form 2A task?What did CDPHE do and what information did they look at to assess the location before passing their Form 2A task?	5/20/2012 12:53:28 AM
Public	In Form 2A #1 This location is in a sensitive wildlife habitat area is NOT checked, but a quick check of the COGIS maps indicates that it IS (for the Pronghorn).Please evaluate the accuracy of the application on this point, and the implication of the SWH.	5/20/2012 12:52:40 AM
Public	Form 2A #14 has Is this a sensitive area? = NO and Was a Rule 901.e Sensitive Area Determination performed? =NO.How can the operator claim this is not a sensitive area if the No Sensitive Area Determination has been made?Is this a flaw in the application?	5/20/2012 12:51:50 AM
Public	Form 2A #15 says There are no improvements within 400 ft of the site. Rule 303.d (3)C requires this information. Yet, there seems to be a canal to the south-southwest less than 400 feet away (see Google maps). Please evaluate the accuracy of the application on this point, and the implication of the canal so close.	5/20/2012 12:50:55 AM
Public	Form 2 #19 has the distance to the nearest well permitted/completed in the same formation as 30 miles, and the proposed total measured depth is 2250. Impact Energy well Huerfano State 1-36 is about 500 feet away and it had 2,150 TVD. There are 4 wells (Huerfano State 1-36, HRI-BAR 35-1, Huerfano State 2-36, and Sporleder 1-26) within approx. 1 mile that have TVD of 1800-2330.Please evaluate the accuracy of the application on this point, and examine the records of these nearby OG wells to ensure they have integrity and pose NO risk in this case.	5/20/2012 12:49:41 AM
Public	There appear to be 3-4 water wells within approx. 1/2 mile of this site.Given the other questions,it is important that they be tested.Additionally, the Huerfano River is approx. 1/2 mile away and could be impacted. Downstream testing would help monitor surface water pollution levels and ensure compliance.	5/18/2012 1:14:01 AM

Public	<p>The water table depth listed is only 14 feet and the hydraulic conductivity of the soils at the site is at least moderately high. How will the COGCC ensure compliance of surrounding water and soils with the concentration levels in table 910-1? Pit liners are known to leak. Will there be baseline sampling and monitoring? Are additional requirements from 901.c</p> <p>appropriate? They are probably not sufficient in this case. Closed loop drilling should be used, otherwise</p> <p>this pit creates a danger and risk. Also, where is the pit application (Form 15)? What is going to be in the pit? What waste will there be and how will it be disposed of?</p>	5/18/2012 1:09:41 AM
OGLA	Waiting on additional information from the operator regarding depth to water and updated drawings. See correspondence in the attachments for further details.	5/9/2012 10:06:18 AM
Permit	Tim Kelley of State Land Board was contacted to verify required State Land Board bonding.	5/8/2012 10:10:50 AM
LGD	The Huerfano County Commissioners ask that the operator utilize a closed loop system - or a lined pit with liner to be removed upon completion	5/4/2012 9:18:16 AM
LGD	Huerfano County Conditional Use Permit required	5/1/2012 3:33:41 PM
LGD	would like to see projected profile of bore site and anticipated depth.	5/1/2012 3:31:36 PM
Permit	Operator corrected location number. This form has passed completeness.	5/1/2012 2:06:50 PM
Permit	Returned to draft. Missing location number. Operator corrected pictures and SUA attachment.	4/27/2012 7:21:36 AM
Permit	Returned to draft. Should be an amended location, missing location pictures, and SUA attachment.	4/26/2012 7:00:10 AM

Total: 30 comment(s)

BMP

<u>Type</u>	<u>Comment</u>
Site Specific	Use existing farm roads for access to site so no new roads will need to be constructed. All equipment associated with construction and drilling will be thoroughly washed before entering Huerfano County to remove weed seeds and/or other potentially hazardous substances.
Planning	Adequately size infrastructure and facilities to accomodate both current and future gas production. Avoid constructing of any road segment in the channel of an intermittent or perennial stream. Combine utility infrastructure (gas, electric, water) planning with roadway planning to avoid separate utility corridors. Where possible consolidate pipeline and existing roadways, or roadways that are planned for development.
Wildlife	Enforce policies to protect wildlife (e.g., no poaching, no dogs on location, no feeding of wildlife, etc.).
Drilling/Completion Operations	Promptly report spills that affect wildlife to the CDOW. Limit parking to already disturbed areas that have not yet been reclaimed.
Interim Reclamation	During drilling, production and reclamation operations, all disturbed areas will be kept as free from all undesirable plant species as practicable.
Wildlife	Due to the location being in an Antelope Wintering Area no new construction/drilling will be conducted from January 1 to March 31.
Construction	Use minimum right-of-way width and vegetation mats where pipelines cross riparian areas and streams wherever possible.
General Housekeeping	The site will be maintained free of debris and excess materials during construction and operation. All gates will remain closed unless otherwise requested by surface owner.
Final Reclamation	Seed during appropriate season to increase likelihood of reclamation success. Do not include aggressive, non-native grasses in reclamation seed mixes.

Total: 9 comment(s)