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State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



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Document Number:

400217163

Oil and Gas Location Assessment

☒ New Location ☐ Amend Existing Location Location#: _____

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:

427088

Expiration Date:

12/26/2014
☒ 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: 10255

Name: QUICKSILVER RESOURCES INC

Address: 801 CHERRY ST - #3700 UNIT 19

City: FT WORTH State: TX Zip: 76102

3. Contact Information

Name: Pamela Osburn

Phone: (817) 665-4918

Fax: (817) 665-5009

email: posburn@qvinc.com

4. Location Identification:

Name: PIRTLAW PARTNERS Ltd Number: 24-33

County: ROUTT

QuarterQuarter: SE SW Section: 33 Township: 7N Range: 87W Meridian: 6 Ground Elevation: 6945

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: 645 feet FSL, from North or South section line, and 1963 feet FWL, from East or West section line.

Latitude: 40.516138 Longitude: -107.155573 PDOP Reading: 1.8 Date of Measurement: 08/25/2011

Instrument Operator's Name: Gordon R. Dowling

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

Special Purpose Pits: <input type="text"/>	Drilling Pits: <input type="text" value="1"/>	Wells: <input type="text" value="1"/>	Production Pits: <input type="text"/>	Dehydrator Units: <input type="text"/>
Condensate Tanks: <input type="text" value="2"/>	Water Tanks: <input type="text" value="1"/>	Separators: <input type="text" value="2"/>	Electric Motors: <input type="text"/>	Multi-Well Pits: <input type="text"/>
Gas or Diesel Motors: <input type="text" value="1"/>	Cavity Pumps: <input type="text"/>	LACT Unit: <input type="text"/>	Pump Jacks: <input type="text" value="1"/>	Pigging Station: <input type="text"/>
Electric Generators: <input type="text"/>	Gas Pipeline: <input type="text"/>	Oil Pipeline: <input type="text"/>	Water Pipeline: <input type="text"/>	Flare: <input type="text"/>
Gas Compressors: <input type="text"/>	VOC Combustor: <input type="text"/>	Oil Tanks: <input type="text" value="2"/>	Fuel Tanks: <input type="text"/>	

Other: 1 HEATER TREATER

6. Construction:

Date planned to commence construction: 01/30/2012 Size of disturbed area during construction in acres: 3.16
Estimated date that interim reclamation will begin: 01/30/2013 Size of location after interim reclamation in acres: 1.00
Estimated post-construction ground elevation: 6944 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: _____

7. Surface Owner:

Name: _____ Phone: _____
Address: _____ Fax: _____
Address: _____ Email: _____
City: _____ State: _____ Zip: _____ Date of Rule 306 surface owner consultation: 02/03/2011
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: 20080107 ☐ Gas Facility Surety ID: _____ ☐ Waste Mgmt. Surety ID: _____

9. Cultural:

Is the location in a high density area (Rule 603.b.): Yes ☐ No ☒
Distance, in feet, to nearest building: 5380, public road: 4850, above ground utilit: 690
, railroad: 5280, property line: 646

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: 10E - Bulkley Silty Clay 12 to 25 percent slopes

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: 09/09/2011

List individual species: Rabbitbrush, Intermediate Wheatgrass, Snowberry

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: 812, water well: 2500, depth to ground water: 100

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:

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

Signed: _____ Date: 10/31/2011 Email: ggriffin@oaconsulting.com

Print Name: Grant C. Griffin Title: Project Scientist

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: David S. Neslin Director of COGCC Date: 12/27/2011

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.

SITE SPECIFIC COAs:

The drilling pit, if constructed, must be lined, or a closed loop system (which operator has indicated on the Form 2A) must be implemented during drilling. All cuttings generated during drilling with OBM/high chloride mud must be kept in the lined drilling pit, or placed either in containers or on a lined/bermed portion of the well pad; prior to analysis and/or offsite disposal.

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.

Operator must implement best management practices to contain any unintentional release of fluids, including any fluids conveyed via temporary surface or buried pipelines.

Operator must ensure secondary containment for any volume of fluids contained at 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 stormwater management) sufficiently protective of nearby surface water. Any berm constructed at the well pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition.

Flowback and stimulation fluids must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline or pit 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 with additional downgradient perimeter berming. The area where flowback fluids will be stored/reused must be constructed to be sufficiently impervious to contain any spilled or released material.

The access road will be constructed to prevent sediment migration from the access road to nearby surface water or any drainages leading to other nearby surface waters.

Attachment Check List

Att Doc Num	Name
2034077	CORRESPONDENCE
2034096	PROPOSED BMPs
400217163	FORM 2A SUBMITTED
400219109	NRCS MAP UNIT DESC
400219110	LOCATION DRAWING
400219111	WELL LOCATION PLAT
400219112	HYDROLOGY MAP
400219113	REFERENCE AREA MAP
400219114	ACCESS ROAD MAP
400219116	CONST. LAYOUT DRAWINGS
400219117	LOCATION PICTURES
400219118	DOW CONSULTATION
400219636	PROPOSED BMPs
400219781	SURFACE AGRMT/SURETY

Total Attach: 14 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	LGD comments addressed by OGLA Comprehensive Final Review status -- Passed	12/21/2011 10:09:59 AM

OGLA	COGCC has review Routt County's comments. COGCC does not request review of permits from other agencies except those listed on the review tab in eForms; fire safety equipment is covered under 600 series rules; mineral owner is not identified as the surface owner on Form 2A, owners are described in SUA; wildlife BMPs agreed to by operator and CPW are enforceable on the Form 2A permit; production equipment and cuttings pits in non-high density area do not require fencing.	12/20/2011 9:40:11 AM
DOW	<p>CPW and Quicksilver have consulted and are in agreement for the following BMPs for the Pirtlaw 24-33 well pad located in Routt County.</p> <p>Quicksilver will construct and drill the pad and well outside of the period between March 15 and July 30.</p> <p>Quicksilver will construct and or drill any subsequent wells outside of the period between March 15 and July 30.</p> <p>Quicksilver will conduct post-development well site visitations between the hours of 10:00 a.m. and 3:00 p.m. and reduce well site visitations between March 15 and July 30 in sharp-tail lek and production areas.</p> <p>Quicksilver agrees to use hospital grade mufflers for compressors, pump jacks or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration.</p> <p>Interim and final reclamation will match existing vegetation.</p> <p>Quicksilver will include a weed management plan and implement the plan as part of reclamation.</p> <p>Monday, December 12, 2011 at 3:40 p.m.</p>	12/12/2011 3:37:32 PM
OGLA	<p>Comment received from LGD via e-mail on 11/23/11:</p> <p>Pirtlaw Partners LTD #24-33 Doc #400217163 Form 2A Quicksilver Resources Routt County LGD Comments</p> <p>The well site is proposed at the west edge of mapped Potential Unstable Slopes (PUS). The State Geologic Survey should review this site to determine if there are any concerns and if so how to mitigate.</p> <p>The site is mapped for moderate wildfire concerns. Fire equipment/extinguishers should be in all vehicles during construction of roads, well pad and drilling operations.</p> <p>This property is under a conservation easement and the operator has been working with the owner and conservation easement personnel. Submitted COGCC Form 2A and 2 to Routt County by the operator show the surface and mineral owner the same. Due to conservation easement concerns it should be noted that the mineral owner is not the surface owner.</p> <p>There are many wildlife concerns included Sage Grouse Lek sites, Elk Severe Winter Range and severe winter range for mule deer. BMP's by the Division of Wildlife should be adhered too.</p> <p>Agriculture and cattle grazing operations are also in this area and access roads, gates, cattle guards should be designed to protect the ag operations. Fencing of the well pad or all equipment and containment areas is suggested to keep cattle from rubbing on equipment and destroying berms and containment areas. There should be no unfenced pits at any time due to wildlife and cattle in the area.</p>	11/28/2011 11:18:54 AM
Permit	Changed instrument operator from company name to surveyor's name	11/10/2011 9:58:00 AM

OGLA	Initiated/Completed OGLA Form 2A review on 11-08-11 by Dave Kubeczko; requested acknowledgement of fluid containment, spill/release BMPs, lined pits/closed loop, cuttings containment, moisture content cuttings, and flowback to tanks COAs from operator on 11-08-11; received acknowledgement of COAs from operator on 11-09-11; passed by CDPW on 12-12-11 with operator agreed to BMPs acceptable; passed OGLA Form 2A review on 12-20-11 by Dave Kubeczko; fluid containment, spill/release BMPs, lined pits/closed loop, cuttings containment, moisture content cuttings, and flowback to tanks COAs.	11/8/2011 2:37:01 PM
Permit	Operator corrected SHL and surface and mineral info. Form has passed completeness.	11/2/2011 1:47:18 PM
Permit	Returned to draft. SHL needs to be from section lines. Surface and mineral owner info missing.	11/1/2011 6:44:19 AM

Total: 8 comment(s)

BMP

<u>Type</u>	<u>Comment</u>
Wildlife	<p>Quicksilver will construct and drill the pad and well outside of the period between March 15 and July 30.</p> <p>Quicksilver will construct and or drill any subsequent wells outside of the period between March 15 and July 30.</p> <p>Quicksilver will conduct post-development well site visitations between the hours of 10:00 a.m. and 3:00 p.m. and reduce well site visitations between March 15 and July 30 in sharp-tail lek and production areas.</p> <p>Quicksilver agrees to use hospital grade mufflers for compressors, pump jacks or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration.</p> <p>Interim and final reclamation will match existing vegetation.</p> <p>Quicksilver will include a weed management plan and implement the plan as part of reclamation.</p>
Site Specific	Wattle, Earthen Berm, Diversion Ditch, Rock Sock Check Dam, Sediment Trap, Rock Armour, Cut and Fill Slope

Total: 2 comment(s)