

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:

2237707

Date Received:

10/15/2012

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:

430807

Expiration Date:

11/18/2015

☒ 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: 10234

Name: BAYHORSE PETROLEUM LLC

Address: 2558 E PORTSMOUTH AVE

City: SALT LAKE CITY State: UT Zip: 84121

3. Contact Information

Name: ROD VAUGHN

Phone: (435) 752-2021

Fax: (435) 752-2021

email: RLVAUGHN47@GMAIL.COM

4. Location Identification:

Name: SENTINEL Number: 1

County: KIOWA

QuarterQuarter: SENW Section: 31 Township: 20S Range: 45W Meridian: 6 Ground Elevation: 3729

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: 1750 feet FNL, from North or South section line, and 2140 feet FWL, from East or West section line.

Latitude: 38.277320 Longitude: -102.501430 PDOP Reading: 3.3 Date of Measurement: 09/27/2012

Instrument Operator's Name: KEITH WESTFALL

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

Special Purpose Pits: <input type="checkbox"/>	Drilling Pits: <input type="text" value="3"/>	Wells: <input type="text" value="1"/>	Production Pits: <input type="checkbox"/>	Dehydrator Units: <input type="checkbox"/>
Condensate Tanks: <input type="checkbox"/>	Water Tanks: <input type="text" value="1"/>	Separators: <input type="text" value="1"/>	Electric Motors: <input type="checkbox"/>	Multi-Well Pits: <input type="checkbox"/>
Gas or Diesel Motors: <input type="checkbox"/>	Cavity Pumps: <input type="checkbox"/>	LACT Unit: <input type="checkbox"/>	Pump Jacks: <input type="text" value="1"/>	Pigging Station: <input type="checkbox"/>
Electric Generators: <input type="checkbox"/>	Gas Pipeline: <input type="checkbox"/>	Oil Pipeline: <input type="checkbox"/>	Water Pipeline: <input type="checkbox"/>	Flare: <input type="checkbox"/>
Gas Compressors: <input type="checkbox"/>	VOC Combustor: <input type="checkbox"/>	Oil Tanks: <input type="text" value="2"/>	Fuel Tanks: <input type="checkbox"/>	

Other: DRILLING PITS=RESERVE, MUD, WATER

6. Construction:

Date planned to commence construction: 11/15/2012 Size of disturbed area during construction in acres: 2.06
 Estimated date that interim reclamation will begin: 02/15/2013 Size of location after interim reclamation in acres: 0.90
 Estimated post-construction ground elevation: 3729 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: DRY & BACKFILL

7. Surface Owner:

Name: _____ Phone: _____
 Address: _____ Fax: _____
 Address: _____ Email: _____
 City: _____ State: _____ Zip: _____ Date of Rule 306 surface owner consultation: 10/02/2012
 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: 20090091 ☐ 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: 4332, public road: 6424, above ground utilit: 6444
 , railroad: 49302, property line: 820

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: VALENT LOAMY SAND (MAP UNIT SYMBOL 37)

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: PRAIRIE SANDREED, SAND BLUESTEM, SAND SAGEBRUSH, SAND DROPSEED, INDIAN
RICE GRASS, NEEDLEGRASS, SIDEOATS GRAMA, SWITCHGRASS, SANDHILL MUHLY,
LITTLE BLUESTEM, THICKSPICK WHEATGRASS

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: 2809, water well: 1349, depth to ground water: 50

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:

NO CONDUCTOR PIPE WILL BE USED. NEAREST WELL PERMIT: #139528, DEPTH 80', STATIC WATER LEVEL 50'.
NO APPARENT IMPROVEMENTS WITHIN 400' OF WELL PAD.

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

Signed: _____ Date: 10/12/2012 Email: RLVAUGHN47@Q.COM

Print Name: RODNEY L. VAUGHN Title: PRESIDENT

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: 11/19/2012

**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.

Water Testing: Prior to drilling, operator shall sample the two (2) closest water wells, springs, or surface water features within a one (1) mile radius of the proposed oil and gas location. Testing preference shall be given to water wells and springs over surface water. Testing of surface water features shall only be conducted if two (2) water wells or springs do not exist within a one (1) mile radius of the selected oil and gas location. The sample location shall be surveyed in accordance with Rule 215.

Water well testing shall include laboratory analysis of pH, total dissolved solids (TDS), specific conductivity (SC), sodium adsorption ratio (SAR) calculation, total recoverable metals (calcium [Ca], potassium [K], magnesium [Mg], sodium [Na], arsenic [As], boron [B], barium [Ba], cadmium [Cd], chromium [Cr], copper [Cu], iron [Fe], manganese [Mn], lead [Pb], selenium [Se]), cations and anions (bromide [Br], chloride [Cl], fluoride [F], sulfate [SO₄]), alkalinity (total, HCO₃, and CO₃ – all expressed as CaCO₃), benzene, toluene, ethyl benzene, o-xylene, m- + p-xylene (BTEX), dissolved methane, diesel range organics (DRO), gasoline range organics (GRO), and nutrients (nitrates, nitrites). Sampling shall be performed by qualified individuals using commonly accepted environmental sampling procedures. Field observations such as pH, temperature, specific conductance, odor, water color, sediment, bubbles, and effervescence shall also be included.

Post-completion tests shall be performed for the same analytical parameters listed above and shall be conducted not less than 12 months, nor more than 18 months following completion. Additional test(s) may be required if changes in water quality are identified during follow-up testing. The Director may require further water well sampling at any time in response to complaints from water well owners.

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 thermogenic gas is detected or 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.

Copies of all test results described above shall be provided to the Director and the landowner where the water quality testing well is located within three (3) months of collecting the samples used for the test. The analytical data and surveyed sample locations shall also be submitted to the Director in an electronic data deliverable format approved by Director.

Attachment Check List

Att Doc Num	Name
1642099	REFERENCE AREA MAP
2237707	FORM 2A
2237708	LOCATION PICTURES
2237709	LOCATION DRAWING
2237710	HYDROLOGY MAP
2237711	ACCESS ROAD MAP
2237713	REFERENCE AREA PICTURES
2237714	NRCS MAP UNIT DESC

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review completed; no LGD or public comment received.	11/13/2012 6:03:18 AM
OGLA	Per operator, changed pad size to 2.06 acres	11/2/2012 9:17:23 AM
OGLA	Per Operator: Bayhorse will utilize existing roads as much as possible to access the Sentinel #1 location. Barring unexpected circumstances, we will exit the current 2-track road due north of the location and proceed straight south to the well site.	11/2/2012 9:16:09 AM
Permit	The well location falls within an area that potentially may have higher than average levels of H2S gas.	11/1/2012 6:35:41 AM
OGLA	OGLA review conducted. Correspondence to operator to address the following: Reference area lat/lon as shown on reference area map does not map in Section 5 as shown on the map. The access road map does not follow existing track in section 5. COGCC Rule 1002.e.(4) requires the use of existing roads where practicable. Location Drawing and Hydrology map show a 300' x 300' well pad. 300' x 300' = 2.06 acres as opposed to 3.60 listed on the Facilities and Construction Tab.	10/25/2012 11:30:39 AM
Permit	Per operator, answered "no" to H2S question and checked the surface owner "is committed to oil and gas lease" box.	10/17/2012 2:41:48 PM

Total: 6 comment(s)

BMP

<u>Type</u>	<u>Comment</u>
Construction	Bayhorse will utilize existing roads as much as possible to access the Sentinel #1 location. Barring unexpected circumstances, we will exit the current 2-track road due north of the location and proceed straight south to the well site.

Total: 1 comment(s)