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

Oil and Gas Location Assessment

Document Number: 2288921

Date Received: 08/31/2012

☒ 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: **430380**

Expiration Date: **10/05/2015**

☒ 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: 10431

Name: CHAMA OIL & MINERALS LLC

Address: PO BOX 50203

City: MIDLAND State: TX Zip: 79710

3. Contact Information

Name: WILLIAM HEARD

Phone: (432) 683-8000

Fax: (432) 683-8250

email: BHEARD@SIERRA-ENGINEERING.NET

4. Location Identification:

Name: KERN STATE 36-16-46 Number: 1H

County: CHEYENNE

QuarterQuarter: NENE Section: 36 Township: 16S Range: 46W Meridian: 6 Ground Elevation: 4131

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: 600 feet FNL , from North or South section line, and 660 feet FEL , from East or West section line.

Latitude: 38.626530 Longitude: -102.512550 PDOP Reading: 2.6 Date of Measurement: 08/15/2012

Instrument Operator's Name: R GABRIEL

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

Special Purpose Pits:		Drilling Pits:	1	Wells:	1	Production Pits:		Dehydrator Units:			
Condensate Tanks:		Water Tanks:	2	Separators:	1	Electric Motors:	1	Multi-Well Pits:			
Gas or Diesel Motors:	1	Cavity Pumps:		LACT Unit:		Pump Jacks:	1	Pigging Station:			
Electric Generators:		Gas Pipeline:	1	Oil Pipeline	1	Water Pipeline:	1	Flare:	1		
Gas Compressors:				VOC Combustor:		Oil Tanks:	9	Fuel Tanks:	1		

Other: _____

6. Construction:

Date planned to commence construction: 10/01/2012 Size of disturbed area during construction in acres: 4.00

Estimated date that interim reclamation will begin: 05/01/2013 Size of location after interim reclamation in acres: 1.50

Estimated post-construction ground elevation: 4130 Will a closed loop system be used for drilling fluids: Yes [X]

Will salt sections be encountered during drilling: Yes [ ] No [X] Is H2S anticipated? Yes [ ] No [ ]

Will salt (>15,000 ppm TDS Cl) or oil based muds be used: Yes [ ] No [X]

Mud disposal: Offsite [ ] Onsite [X] Method: Land Farming [X] Land Spreading [ ] Disposal Facility [ ]

Other:

7. Surface Owner:

Name: Phone:

Address: Fax:

Address: Email:

City: State: Zip: Date of Rule 306 surface owner consultation: 08/29/2012

Surface Owner: [ ] Fee [X] State [ ] Federal [ ] Indian

Mineral Owner: [ ] Fee [X] State [ ] Federal [ ] Indian

The surface owner is: [X] the mineral owner [X] committed to an oil and gas lease [X] is the executer of the oil and gas lease [ ] the applicant

The right to construct the location is granted by: [X] 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:

[X] Well Surety ID: 20120073 [ ] Gas Facility Surety ID: [ ] Waste Mgnt. Surety ID:

9. Cultural:

Is the location in a high density area (Rule 603.b.): Yes [ ] No [X]

Distance, in feet, to nearest building: 8500 , public road: 4680 , above ground utilit: 4680

, railroad: 68380 , property line: 600

10. Current Land Use (Check all that apply):

Crop Land: [ ] Irrigated [ ] Dry land [ ] Improved Pasture [ ] Hay Meadow [ ] CRP

Non-Crop Land: [X] 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: [X] 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 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 COMPLEX, 0 TO 3 PER CENT SLOPES, ERODED

NRCS Map Unit Name: STONEHAM LOAM, 0 TO 3 PER CENT SLOPES

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: SEE ATTACHED NRCS RANGELAND PRODUCTIVITY AND PLANT COMPOSITION LISTING

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: 800 , water well: 1400 , depth to ground water: 0

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 Suppl 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:

KERN STATE 36-16-46 #1P (PILOT HOLE) AND KERN STATE 36-16-46 #1H (HORIZONTAL HOLE) ARE BEING PERMITTED FOR THIS LOCATION; OMLY ONE WELL BORE WILL BE ON LOCATION. THE LOCATION DOES NOT REQUIRE A VARIANCE FROM ANY OF THE RULES LISTED IN RUL 306.D(1)(A)(II). THE LOCATION IS NOT A RESTRICTED SURFACE OCCUPANCY AREA. THE LOCATION IS NOT IN A SENSITIVE WILDLIFE HABITAT AREA. THERE ARE NO VISIBLE IMPROVEMENTS WITHIN 400' OF LOCATION. REFERENCE AREA IS IMMEDIATELY ADJACENT TO LOCATION TO THE WEST. LOCATION PICTURES ADEQUATELY SHOW THE REFERENCE AREA.

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

Signed: Date: 08/30/2012 Email: WH1@CHAMAOIL.COM

Print Name: WILLIAM HEARD Title: DRILLING ENGINEER

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: 10/6/2012

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.

2.Water Testing: Prior to drilling, operator shall sample the two (2) closest domestic 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 domestic 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. If possible, the water wells or springs selected should be on opposite sides of the oil and gas location not exceeding a one (1) mile radius. If water wells or springs on opposite sides of the oil and gas location cannot be identified, then the two (2) closest wells or springs within a one (1) mile radius of the oil and gas location shall be sampled. 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 repeated one (1), three (3) and six (6) years thereafter. If no significant changes from the baseline have been identified after the third test (i.e. the six-year test), no further testing shall be required. 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 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.

1.Location is in a sensitive area because of shallow groundwater; therefore, either a lined drilling pit or closed loop system is required. A drilling pit used for disposal of cuttings from the closed loop system does not require lining. The contents of any drilling pit shall meet Table 910-1 Standards upon closure.

Attachment Check List

Att Doc Num	Name
2288921	FORM 2A SUBMITTED
2288922	LOCATION PICTURES
2288923	LOCATION DRAWING
2288924	HYDROLOGY MAP
2288925	ACCESS ROAD MAP
2288926	NRCS MAP UNIT DESC
2288927	CONST. LAYOUT DRAWINGS
2288928	NRCS MAP UNIT DESC

Total Attach: 8 Files

General Comments

User Group	Comment	Comment Date
Permit	State Land board says operater is bonded. Well is State minerals and State surface; removed COGCC surface bond from application. Surface bond discussion resolved.	10/1/2012 6:40:16 AM
Permit	On hold- pending discussion about surface bond.	9/28/2012 1:55:54 PM
Permit	Final review completed; no LGD or public comment received.	9/28/2012 12:09:10 PM
OGLA	Phone call with operator: Operator plans to use closed loop, dispose mud offsite at a commercial facility, and bury cuttings in the drilling pit, in which case cuttings will meet Table 910-1 standards for pit closure; operator may need the use of a reserve pit if a closed loop rig is not available, in which case the reserve pit will be lined, mud will be disposed offsite and the drilling pit will be closed in accordance with Rule 905. Water well permits in the region of the proposed location indicate that water is produced from a shallow unconfined aquifer. Therefore, the location is in a Sensitive Area due to the presence of shallow ground water. Changed the Sensitive Area Designation to Yes. Operator has agreed to the COAS; Initial review complete	9/19/2012 3:55:30 PM
OGLA	emailed operator for clarification on use of drilling pit, depth to water/sensitive area, and water sampling COA	9/18/2012 10:32:28 AM
Permit	Notified State Land Board.	9/7/2012 6:54:10 AM
Permit	Location drawing shows pit. Operator says will be closed loop.	9/7/2012 6:52:32 AM
Permit	Operator (William Heard) gave permission to amend surface surety bond to 20120077, which was correct on submitted Form 2A, but entered incorrectly in eform.	9/6/2012 10:22:47 AM
Permit	Return to Draft (contacted operator): 1. Surface surety number does not match database.	9/6/2012 9:26:40 AM

Total: 9 comment(s)

BMP

Type	Comment

Total: 0 comment(s)