

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:

401130313

Date Received:

10/14/2016

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:

448834

Expiration Date:

12/22/2019

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: 10598

Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Address: 123 ROBERT S KERR AVE

City: OKLAHOMA CITY State: OK Zip: 73102

Contact Information

Name: Spence Laird

Phone: (405) 4296518

Fax: ()

email: slaird@sandridgeenergy.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20160010

Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Grizzly Hebron 12

Number: 0881

County: JACKSON

Quarter: NENE Section: 12 Township: 7N Range: 81W Meridian: 6 Ground Elevation: 8130

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: 560 feet FNL from North or South section line

41 feet FEL from East or West section line

Latitude: 40.598147 Longitude: -106.425339

PDOP Reading: 1.3 Date of Measurement: 09/01/2016

Instrument Operator's Name: Chad Meiers

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

Centralized E&P Waste Management Facility ID, if applicable: _____

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Grizzly Land, LLC

Phone: 303-796-1108

Address: 5299 DTC Boulevard

Fax: _____

Address: _____

Email: _____

City: Greenwood Village State: CO Zip: 80111

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: Yes

The right to construct this Oil and Gas Location is granted by: Surface Use Agreement

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

Date of Rule 306 surface owner consultation _____

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.

	From WELL	From PRODUCTION FACILITY
Building:	1764 Feet	1603 Feet
Building Unit:	4601 Feet	4651 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	3019 Feet	2939 Feet
Above Ground Utility:	5038 Feet	4884 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	764 Feet	513 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 (on 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: Wa - Walden sandy loam

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: _____

List individual species: Sagebrush, muttongrass, pine needlegrass, streambank wheatgrass, bluebunch wheatgrass, bottlebrush squirreltail, prairie Junegrass, stoncrop, winterfat, yellow rabbitbrush, blue grama, needleandthread, buckwheat

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: 55 Feet

water well: 2562 Feet

Estimated depth to ground water at Oil and Gas Location 40 Feet

Basis for depth to groundwater and sensitive area determination:

Based on information from water wells in the area.

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

WILDLIFE

- This location is included in a Wildlife Mitigation Plan
- This location was subject to a pre-consultation meeting with CPW held on _____

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

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

Signed: _____ Date: 10/14/2016 Email: slaird@sandridgeenergy.com

Print Name: Spence Laird Title: Regulatory Supervisor

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:  Director of COGCC Date: 12/23/2016

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

	Facility Layout Drawing does not show oil tanks and water tanks. Based on the operator's comment - tanks will likely be located at a central battery. Operator shall submit a Form 4 Sundry with an updated Facility Layout Drawing and updated production facility count within 30 days of tank installations if tanks are constructed at the Grizzly Hebron 12
	In addition to the notifications required by COGCC listed in the Northwest Notification Policy (Notice of Intent to construct a new location) and Rule 316C. COGCC Form 42. FIELD OPERATIONS NOTICE (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; and/or any lines associated with truck loading 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.

Operator must ensure secondary containment for any volume of fluids contained at the 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 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 constructed 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 frac tanks during completion operations.

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.

Strategically apply fugitive dust control measures, including encouraging established speed limits on private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources.

Berms or other containment devices shall be constructed to be sufficiently impervious (corrugated steel with poly liner) to contain any spilled or released material around permanent oil and/or produced water storage tanks.

If oil and produced water storage tanks are not constructed on location, operator shall submit a scaled as-built drawing (plan view with distances) of the Grizzly Hebron 12 0881 well pad location (showing wellheads, pumping jacks, onsite flowlines, offsite pipelines, and production facilities [separators, etc.]) and the nearby Production Facility to which the oil and produced water will be sent to via underground pipelines (showing wellheads, onsite flowlines, offsite pipelines, pumping jacks, oil and produced water storage tanks, and other production facilities) within 30 calendar days of construction of the production equipment on each location.

A closed loop system must be implemented during drilling (as indicated on the Form 2 and Form 2A). All cuttings generated during drilling with oil based mud (OBM) must be segregated from water/bentonite based mud-(WBM-) generated drill cuttings and placed separately on the well pad. All OBM-generated drill cuttings must be kept in tanks/containers, or placed on a lined/bermed portion of the well pad; prior to disposition. The moisture content of any OBM-generated drill cuttings in a tank, cuttings containment area, or pile shall be as low as practicable to prevent accumulation of liquids greater than de minimis amounts. The operator has indicated that 'Cuttings Disposal' will be "OFFSITE" and that the 'Cuttings Disposal Method' will be "COMMERCIAL DISPOSAL" (as shown in the 'DRILLING WASTE MANAGEMENT PROGRAM SECTION' of the Form 2A). All liners associated with oil-based drilling mud and OBM-generated drill cuttings must be disposed of offsite per CDPHE rules and regulations. Any changes to drill cuttings management and disposal at this location will require submittal (via a Form 4 Sundry Notice) and approval of a Waste Management Plan detailing the changes (specifying cuttings characterization methods, cuttings management, amendment, and onsite disposal location[s]).

The moisture content of water/bentonite-based mud (WBM) generated cuttings during drilling of the surface casing intervals, that will be 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 of the 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. No offsite disposal of cuttings to another oil and gas location shall occur without prior approval of a Waste Management Plan (submitted via a Form 4 Sundry Notice) specifying disposal location and waste characterization method. Operator has indicated that commercial disposal of cuttings will be the method of disposal for all drill cuttings.

Flowback and stimulation fluids must be sent to enclosed tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline storage vessel, or other open top containment located on the well pad; or into tanker trucks for offsite disposal. No open top tanks can be used for initial flowback fluids containment. The flowback and stimulation fluid tanks, separators, or other containment/filtering equipment must be placed on the well pad in an area constructed to be sufficiently impervious to contain any spilled or released material. No additional downgradient berming is required if operator constructs a sufficiently sized perimeter berm.

Potential odors associated with the completions process and/or with long term production operations must be controlled/mitigated.

Operator shall follow all requirements of COGCC's current policy - NOTICE TO OPERATORS, Rule 912. VENTING OR FLARING PRODUCED NATURAL GAS – STATEWIDE, dated January 12, 2016; and to Rule 912. VENTING OR FLARING NATURAL GAS. a. thru e. in regards to venting and flaring.

Operator shall pressure test pipelines (flowlines from wellheads to separators to tanks; pipelines from onsite separators to offsite storage tanks, and any temporary surface lines used for hydraulic stimulation and/or flowback operations) in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface or permanent buried pipelines and following any reconfiguration of the pipeline network, and tested annually, unless agreed to by both parties that the flowlines can be managed under an approved COGCC variance.

Best Management Practices

No	BMP/COA Type	Description
1	Pre-Construction	Remove only the minimum amount of vegetation necessary for the construction of roads and facilities. Conserve topsoil during excavation and reuse as cover on disturbed areas to facilitate regrowth of vegetation. No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment.
2	General Housekeeping	Keep well site location, road and the pipeline easement free of noxious weeds, litter and debris. Spray for noxious weeds and implement dust control, as needed. Operator will not permit the release or discharge of any toxic or hazardous chemicals or wastes on Owner's Land.
3	Storm Water/Erosion Control	Implement and maintain BMPs to control storm water runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation.
4	Drilling/Completion Operations	A closed-loop drilling mud system will be used to preclude the use of an earthen reserve pit when available. Light Sources will likewise be directed downwards and away from occupied structures, where possible.
5	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to establish company guidelines to minimize wildlife mortality from vehicle collisions on roads. Slow speeds and increased awareness among employees and contractors should lessen impacts to wildlife.
6	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to preclude the use of aggressive non-native grasses in greater sage-grouse habitat reclamation
7	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to reclaim/restore greater sage-grouse habitats with native shrubs, grasses and forbs identified by CPW that contribute to optimal greater sage-grouse habitat and other wildlife appropriate to the ecological site
8	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	?The operator agrees to use hospital-grade mufflers on production equipment including: compressors, pump jacks or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration. (not applicable for any equipment that will be enclosed to mitigate noise).

Total: 8 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2108024	NRCS MAP UNIT DESC
2108025	LOCATION DRAWING
2108026	MULTI-WELL PLAN
2108027	CORRESPONDENCE
2108028	CPW CORRESPONDENCE and PROPOSED BMPs
2108029	SURVEYOR PACKAGE
2108031	REFERENCE AREA MAP
2108032	REFERENCE AREA PICTURES
2108033	PROPOSED PIPELINE ROUTE
2108034	TOPO MAP
401130313	FORM 2A SUBMITTED
401130570	NRCS MAP UNIT DESC
401158790	SURFACE AGRMT/SURETY
401158958	CONST. LAYOUT DRAWINGS
401158963	LOCATION PICTURES
401158965	FACILITY LAYOUT DRAWING
401158967	CONST. LAYOUT DRAWINGS
401158970	ACCESS ROAD MAP
401159520	HYDROLOGY MAP

Total Attach: 19 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Complete.	12/23/2016
DOW	This permit is for a new pad location within greater sage-grouse sensitive wildlife habitat (SWH). CPW has provided recommendations to the operator to minimize wildlife impacts and received operator concurrence via email on Dec. 21, 2016. Recommended BMPs have been entered using the Wildlife BMP tab within eForms on Dec. 21, 2016. By: Taylor Elm, 12-21-2016, 11:26 a.m.	12/21/2016
OGLA	Initiated OGLA Form 2A review on 12-19-16 by Dave Kubeczko; Completed OGLA Form 2A review on 12-21-16 by Dave Kubeczko; requested acknowledgement of notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, tank berming, flowback to tanks only, adherence to flaring and venting policy, as-built drawing, and pipeline testing COAs from operator on 12-21-16; requested new Multi-Well Plan and complete Surveyor Package from operator on 12-21-16; received concurrence of COAs from operator on 12-21-16; received revised Multi-Well Plan and complete Surveyor Package from operator on 12-22-16; revised - Date planned to commence construction: from 11/21/2016 to 12/26/2016; corrected - Size of disturbed area during construction in acres from 4.75 to 4.95 based on COGCC's review of the Construction Layout Drawings; corrected distances from Production Facility to Building Unit from 4601' to 4651' and from Production Facility to Public Road from 2749' to 2939', based on COGCC's review of the Facility Layout Drawing attachment and COGCC's Online GIS Map; corrected distance to nearest water well from 140' to 2562', based on COGCC's review of COGCC's Online GIS Map and the Hydrology Map attachment; attached Reference Area Map, Reference Area Pictures, NRCS Map Unit Description, Location Drawing, revised Multi-Well Plan, Proposed Pipeline Route, Topo Map, and complete Surveyor Package; passed by CPW on 12-21-16 with CPW and operator agreeing to wildlife minimization BMPs as acceptable - including noise/vibration mitigation, collision avoidance, and sage grouse habitat seed mix BMPs; passed OGLA Form 2A review on 12-23-16 by Dave Kubeczko; notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, tank berming, flowback to tanks only, adherence to flaring and venting policy, as-built drawing, and pipeline testing COAs.	12/20/2016
Permit	Passed completeness.	12/02/2016
Permit	Re-Attached Attachments with Operator Approval: Hydrology map and Multi-Well Plan.	12/02/2016
Permit	Return to Draft to update Pad name on attachments.	11/30/2016
Permit	Return to Draft: * Uncheck Buffer Zone Review. * Correct distances to Building and Building Units. * Reattach updated distances spreadsheet.	11/18/2016

Total: 7 comment(s)