

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:

401593318

Date Received:

04/02/2018

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: 441213

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:

441213

Expiration Date:

10/26/2021

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) 420-8415

Fax: ()

email: slaird@sandridgeenergy.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20170015

Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Rich

Number: 2-32H

County: JACKSON

Quarter: SWSE Section: 32 Township: 7N Range: 80W Meridian: 6 Ground Elevation: 8205

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: 750 feet FSL from North or South section line

2340 feet FEL from East or West section line

Latitude: 40.528664 Longitude: -106.396479

PDOP Reading: 1.1 Date of Measurement: 06/03/2014

Instrument Operator's Name: Randall R. Miller

RELATED REMOTE LOCATIONS

(Enter as many Related Locations as necessary. Enter the Form 2A document # only if there is no established COGCC Location ID#)

This proposed Oil and Gas Location is:

LOCATION ID # FORM 2A DOC #

FACILITIES

Indicate the number of each type of oil and gas facility planned on location

Wells	<u>1</u>	Oil Tanks*	<u>4</u>	Condensate Tanks*	<u> </u>	Water Tanks*	<u>2</u>	Buried Produced Water Vaults*	<u> </u>
Drilling Pits	<u> </u>	Production Pits*	<u> </u>	Special Purpose Pits	<u> </u>	Multi-Well Pits*	<u> </u>	Modular Large Volume Tanks	<u> </u>
Pump Jacks	<u> </u>	Separators*	<u> </u>	Injection Pumps*	<u> </u>	Cavity Pumps*	<u> </u>	Gas Compressors*	<u> </u>
Gas or Diesel Motors*	<u> </u>	Electric Motors	<u>1</u>	Electric Generators*	<u> </u>	Fuel Tanks*	<u> </u>	LACT Unit*	<u> </u>
Dehydrator Units*	<u> </u>	Vapor Recovery Unit*	<u> </u>	VOC Combustor*	<u> </u>	Flare*	<u>1</u>	Pigging Station*	<u> </u>

OTHER FACILITIES*

Other Facility Type

Number

Meter	<u>2</u>
Heater Treater	<u>2</u>

Those facilities indicated by an asterisk () shall be used to determine the distance from the Production Facility to the nearest cultural feature on the Cultural Setbacks Tab.

Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

Buried flowlines/pipelines between wellhead and the tanks will be 2 1/2", Schedule 40 steel.

CONSTRUCTION

Date planned to commence construction: 10/29/2018 Size of disturbed area during construction in acres: 5.17
Estimated date that interim reclamation will begin: 10/29/2019 Size of location after interim reclamation in acres: 2.37
Estimated post-construction ground elevation: 8205

DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes

Is H₂S anticipated? No

Will salt sections be encountered during drilling: No

Will salt based mud (>15,000 ppm Cl) be used? No

Will oil based drilling fluids be used? Yes

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?

Reuse Facility ID: or Document Number:

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

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: North Park Herefords Phone: 970-723-4328
 Address: P.O. Box 1109 Fax: _____
 Address: _____ Email: _____
 City: Walden State: CO Zip: 80480
 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: No
 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 03/01/2010

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): Gravel Pit
 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:	4224 Feet	3839 Feet
Building Unit:	5069 Feet	5069 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	399 Feet	219 Feet
Above Ground Utility:	2460 Feet	1910 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	291 Feet	21 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

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: _____

- 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.

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: Ca-Cabin 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: Big sagebrush, Streambank wheatgrass, Yellow rabbitbrush, Sheep fescue, Muttongrass, Pine needlegrass, Prairie junegrass, Bluebunch wheatgrass, Buckwheat, Bottlebrush squirreltail, spiny phlox

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: 215 Feet

water well: 3430 Feet

Estimated depth to ground water at Oil and Gas Location 17 Feet

Basis for depth to groundwater and sensitive area determination:

The location was checked as sensitive due to potential shallow depth of groundwater. Depth to groundwater was determined from Water Well Permit No. 273561. Depth to first water bearing zone is 40 feet below ground surface which is more indicative of the depth at which groundwater could be encountered if any water could infiltrate/percolate through and past the cuttings and through the minimum thickness of 20 feet of clay/shale.

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

This area is out of a conservation easement and may be used in the future as a gravel pit per the Surface Use Agreement.

Natural Gas Production and Management

- Sandridge flares (enclosed combustor) each well's produced gas in our acreage in Jackson County. As per COGCC rule allows, SandRidge flares its produced gas during drilling, completions, and flowback operations of an oil and gas well. During flowback SandRidge captures a gas sample, submits that lab data as an attachment to a Form 4 request for continued flaring (enclosed combustor) during production of the well into permanent facilities until SandRidge can construct a pipeline to market or another process to sell produced gas. These Form 4's are approved by engineering staff / supervisors with the COGCC. SandRidge also permits these gas emissions with the CDPHE. Our CDPHE permits note a required 98% destruction efficiency for our enclosed combustors. Our combustors are tested yearly by a third party and verified by CDPHE to run at a destruction rate over the required 98%.
- SandRidge is working with a third party (Advantage Midstream) who is constructing two different gas processing equipment (GTL and MRU) to buy and sell produced gas from our wells instead of flaring / combusting. The first two units are currently being constructed south of the Bighorn CTB and should be operational by January 2019. These two units should greatly reduce emissions from wells that produce into the Bighorn CTB.
- SandRidge is also working to find a feasible pipeline route out of our acreage in Jackson County to market. This action is a multi-year process to identify, buy ROW, permit ROW, construct and then begin operations.

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

Signed: _____ Date: 04/02/2018 Email: acallaway@upstreampm.com

Print Name: Angela G. Callaway Title: Permit Agent

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: 10/27/2018

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
	<p>Planning: The following COA will apply:</p> <ul style="list-style-type: none"> •Provide Notices as described in the most current version of the Northwest Notification Policy.
	<p>Construction: The following COAs will apply:</p> <ul style="list-style-type: none"> •Secondary containment for flowback storage tanks shall meet the requirements of Rule 906.d.(1). •No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment. •Keep well site location, road and pipeline easement free of noxious weeds, litter and debris.
	<p>Drilling/Completions: The following COAs will apply:</p> <ul style="list-style-type: none"> •All cuttings generated during drilling with oil based mud (OBM) must be kept in tanks or containers or placed on a lined and bermed portion of the well pad prior to disposition. •The moisture content of all cuttings managed onsite or transported offsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts. •Light sources will be directed downwards and away from occupied structures. •Flowback and stimulation fluids must be sent to enclosed tanks, separators, or other containment or 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.
	<p>Emissions Mitigation: The following COAs will apply:</p> <ul style="list-style-type: none"> •Operator shall comply with COGCC's current NOTICE TO OPERATORS: Rule 912. VENTING OR FLARING PRODUCED NATURAL GAS – STATEWIDE.
	<p>Material Handling and Spill Prevention: The following COA will apply:</p> <ul style="list-style-type: none"> •All onsite flowlines and pipelines and offsite pipelines will be constructed, maintained, registered, and integrity tested in accordance with the new COGCC 1100 Series Rules (1101, 1102, 1103, and 1104) updated on May 1, 2018. •Any temporary surface lines used for hydraulic stimulation and/or flowback operations will be pressure tested and will require to be registered if in use for longer than 12 months.

Best Management Practices

No	BMP/COA Type	Description
1	Planning	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.
2	General Housekeeping	Spray for noxious weeds and implement dust control, as needed.
3	Wildlife	The operator agrees to reclaim/restore greater sage-grouse habitats with native shrubs, grasses and forbs identified by CPW that contribute to optimal greater sagegrouse habitat and other wildlife appropriate to the ecological site
4	Wildlife	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).
5	Wildlife	The operator agrees to preclude the use of aggressive non-native grasses in greater sage-grouse habitat reclamation
6	Wildlife	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.
7	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.
8	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
9	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.
10	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	If oil and gas operations must occur (with documented justification) within 4.0 miles of greater sage grouse leks, the operator agrees to conduct oil and gas operations outside the period between March 1 and June 30
11	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to preclude the use of aggressive non-native grasses in greater sage-grouse habitat reclamation
12	CPW-Wildlife - Minimization-Black Bear	The operator will avoid and protect climax mast producing vegetation identified by CPW that annually provides a significant source of fall forage for black bear.
13	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: 13 comment(s)

Attachment Check List

Att Doc Num	Name
401593318	FORM 2A SUBMITTED
401593328	WASTE MANAGEMENT PLAN

Total Attach: 2 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	10/23/2018
Permit	Need the form 2 engineering approval.	06/04/2018
Permit	Preliminary review complete.	05/16/2018
OGLA	04/06/18 - passed by CPW with the operator submitted BMPs, that were agreed upon during the original consultation with CPW, still being adequate to address wildlife concerns associated with the proposed action; 04/12/18 - initiated/completed OGLA Form 2A review by Dave Kubeczko; previously submitted and approved (03-24-15) Form 2A #400762868 COAs apply - notification, fluid containment, spill/release BMPs, spill/release BMPs, flowback to tanks, flaring rules and policy adherence, cuttings management, and pipeline testing; revised drilling mud to oil and offsite disposal to commercial disposal per operator communication on 04-12-18; 04/27/18 - passed OGLA Form 2A review by Dave Kubeczko with notification, fluid containment, spill/release BMPs, dust control, spill/release BMPs, flowback to tanks, flaring rules and policy adherence, cuttings management, and pipeline testing COAs. 10/23/2018 - revised date of well pad / location construction from 06/18/2018 to 10/29/2018 and date of interim reclamation from 12/17/2018 to 10/29/2019.	04/12/2018
DOW	This permit application is a refile of a Form 2A permit submitted in January 2015. The operator has included the BMPs that were agreed upon during the original consultation with CPW, and they are still adequate to address wildlife concerns associated with the proposed action. There are no additional BMPs recommended at this time. By: Taylor Elm, April 6, 2018, 13:55	04/06/2018
Permit	Added form 2 Doc 401578174 in related documents. Form passes completeness.	04/05/2018
Permit	Returned form to draft for operator to remove unnecessary attachments.	04/03/2018

Total: 7 comment(s)

