

FORM
2A

Rev
04/18

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:

401691487

Date Received:

08/14/2018

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:

458558

Expiration Date:

10/30/2021

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: Diane Overbey

Phone: (405) 429-5828

Fax: ()

email: doverbey@sandridgeenergy.com

FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID (Rule 706): 20170015

Gas Facility Surety ID (Rule 711): _____

Waste Management Surety ID (Rule 704): _____

LOCATION IDENTIFICATION

Name: Marmot 0880

Number: S19 CTB

County: JACKSON

Quarter: SESE Section: 19 Township: 8N Range: 80W Meridian: 6 Ground Elevation: 8100

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: 711 feet FSL from North or South section line

778 feet FEL from East or West section line

Latitude: 40.645891 Longitude: -106.409662

PDOP Reading: 1.3 Date of Measurement: 06/19/2018

Instrument Operator's Name: LRK

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 #**

Production Facilities Location serves Well(s)

401442287

FACILITIES

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

Wells	<u>1</u>	Oil Tanks*	<u>12</u>	Condensate Tanks*	<u> </u>	Water Tanks*	<u>7</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>1</u>	Injection Pumps*	<u>1</u>	Cavity Pumps*	<u> </u>	Gas Compressors*	<u> </u>
Gas or Diesel Motors*	<u> </u>	Electric Motors	<u> </u>	Electric Generators*	<u> </u>	Fuel Tanks*	<u> </u>	LACT Unit*	<u>2</u>
Dehydrator Units*	<u> </u>	Vapor Recovery Unit*	<u> </u>	VOC Combustor*	<u>1</u>	Flare*	<u> </u>	Pigging Station*	<u> </u>

OTHER FACILITIES*

Other Facility Type

Number

Heater Treaters	<u>2</u>
Fuel Gas Scrubber	<u>1</u>
Triplex Pump	<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:

All offsite incoming pipelines will be 8" or smaller and be at least schedule 40 steel lines and will meet APD standards. The offsite incoming lines will follow the access road. All location flowlines connected to the takeaway lines will be 4" or smaller and be at least schedule 40 steel lines and will meet APD standards. All pipelines will be buried to a minimum of 4' below grade.

CONSTRUCTION

Date planned to commence construction: 10/30/2018 Size of disturbed area during construction in acres: 10.46

Estimated date that interim reclamation will begin: 10/29/2019 Size of location after interim reclamation in acres: 8.18

Estimated post-construction ground elevation: 8104

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: TRK Properties, LLC

Phone: 307-421-5524

Address: P.O. Box 867

Fax:

Address:

Email:

City: Pine Bluffs State: WY Zip: 82082

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 06/06/2018

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:	1128 Feet	600 Feet
Building Unit:	1434 Feet	1009 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	3914 Feet	3492 Feet
Above Ground Utility:	622 Feet	2640 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	778 Feet	371 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 be 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: Fh: Fluetsch-Tiagos association. _____

NRCS Map Unit Name: Te: Tealson-Rock land association. _____

NRCS Map Unit Name: CyF: Cryorthents steep. _____

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, Prairie junegrass, Muttongrass, Pine needlegrass, Bottlebrush squirreltail, Needle and thread, Bluebunch wheatgrass, Blue grama, Yellow rabbitbrush, Buckwheat, sheep fescue, Spiny phlox, and miscellaneous annual forbs

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: 448 Feet

water well: 2491 Feet

Estimated depth to ground water at Oil and Gas Location 40 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. 16726. It is noted that the depth to first water bearing zone is 40' below ground surface. This depth 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' 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 06/06/2018

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

Please note that the distance from the production facilities to the above ground utility is noted as "0" on the attached location drawing. However, the proposed above ground utility will be located at the NE corner of the pad, and is currently approximately 2,640' from the pad, as noted in the form.

This location will have an injection well, however, the final design of the well has not been completed, so the Form 2 and other associated injection well forms / permits have not yet been submitted.

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: 08/14/2018 Email: acallaway@upstreampm.com

Print Name: Angela 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: 10/31/2018

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>Planning: The following COA will apply:</p> <ul style="list-style-type: none"> • Since oil and produced water storage tanks are not planned to be constructed on the nearby well pad location(s), operator shall submit a scaled as-built drawing (plan view with distances) of this central tank battery facility location showing onsite flowlines, offsite and onsite pipelines, truck loadout (if constructed), and production facilities (separators, combustor, etc.) and the nearby well pad location(s) to which the oil and produced water will be sent from via underground pipelines, showing wellheads, onsite flowlines, offsite pipelines, pumping jacks, oil and produced water storage tanks, and other production facilities, within 60 calendar days of construction of the production equipment on all locations.
	<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 COA 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 COAs 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 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.

Underground Injection Well Control: The following COAs will apply:

- Approval of this Form 2A does not authorize the right to inject at the Marmot 0880 S19 CBT Pad. Authorization to inject into the selected Formation(s) requires approval of the following COGCC Forms; Form 2 APD, Form 31, Form 33, Form 14A, and Form 26.
- Operator will use suitable containment devices for all required chemicals, hazardous materials, and injection equipment (pumps) used onsite during the operation of the injection well.
- Operator must equip all produced water storage tanks associated with the injection well with an electronic level monitoring device that automatically shuts in all flow to the injection tanks to prevent overflowing or during an upset condition, such as a leak or a fire.
- Operator must construct the secondary containment for the injection well tanks to have a capacity of 150 percent of the largest tank in the containment area.
- Operator's pumpers will perform daily inspections to monitor tanks and secondary containment capacity. Operator will temporarily shut in all production wells on the pad in the event of any upset condition.
- Unless otherwise determined by COGCC staff (Engineering Group) a water sample of the proposed injection formation(s) will be collected and analyzed for total dissolved solids (TDS), before the start of hydraulic stimulation of the injection well.

Best Management Practices

No	<u>BMP/COA Type</u>	<u>Description</u>
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	Storm Water/Erosion Control	Implement and maintain BMPs to control stormwater runoff in a manner that minimizes erosion, transport or sediment offsite, and site degradation.
4	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 July 15.
5	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator and its contractors agree to restrict visitations to this facility to between the hours of 8:00 a.m. and 7:00 p.m. Emergency situations are not applicable to this daily timing stipulation.
6	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to utilize enclosed flares or internal combustors at this facility to reduce noise and light impacts on adjacent wildlife habitats.
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 install raptor perch deterrents on equipment, fences, cross arms and pole tops in greater sage-grouse habitat

Total: 8 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2108604	LOCATION DRAWING
401691487	FORM 2A SUBMITTED
401729866	SURFACE AGRMT/SURETY
401729869	NRCS MAP UNIT DESC
401729873	CONST. LAYOUT DRAWINGS
401729874	HYDROLOGY MAP
401729876	LOCATION PICTURES
401729877	WELL LOCATION PLAT
401729878	FACILITY LAYOUT DRAWING
401729879	REFERENCE AREA MAP
401729880	REFERENCE AREA PICTURES
401733885	ACCESS ROAD MAP

Total Attach: 12 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	10/30/2018
OGLA	<p>06/06/18 - onsite by CPW and the operator;</p> <p>09/17/18 - passed by CPW with all requested BMPs from CPW to minimize wildlife impacts being agreed upon by the operator by email on Sept. 13, 2018;</p> <p>09/20/18 - onsite by COGCC and operator;</p> <p>09/24/18 - initiated OGLA Form 2A review by D. Kubeczko; placed the following COAs on the Form 2A - notification, fluid containment and spill/release BMPs, adherence to flaring and venting policy, as-built drawing, pipeline testing, and injection well control; based on proximity of the central tank battery facility location to downgradient surface water (North Platte River 448' to the south), and due to the potential for shallow groundwater (40' below ground surface), this location has been designated a "sensitive area";</p> <p>09/24/18 - discussed COAs and gas combustion issues with operator; added information concerning proposed management of gas at this and other locations to the 'Operator Comments and Submittal' section of the Form 2A;</p> <p>09/25/18 - completed OGLA Form 2A review by Dave Kubeczko;</p> <p>09/25/18 - passed OGLA Form 2A review by Dave Kubeczko with notification, fluid containment and spill/release BMPs, adherence to flaring and venting policy, as-built drawing, pipeline testing, and injection well control COAs;</p> <p>10/23/2018 - revised date of well pad / location construction from 10/01/2018 to 10/29/2018 and date of interim reclamation from 04/01/2019 to 10/29/2019; placed Form 2A "ON HOLD" waiting for a revised Location Drawing from operator;</p> <p>10/24/2018 - received update Location Drawing and replaced original attachment;</p> <p>10/25/2018 - took Form 2A off of "ON HOLD" and placed permit back into "IN PROCESS".</p>	09/24/2018
DOW	<p>This permit application is for a new central tank battery facility to service nearby well pads. The location falls within greater sage-grouse sensitive wildlife habitat. CPW conducted an onsite visit of this location on June 6, 2018 with representatives from Sandridge and the Bureau of Land Management. All requested BMPs from CPW to minimize wildlife impacts have been agreed upon by the operator by email on Sept. 13, 2018. The hours of the daily timing stipulation were adjusted to accommodate for the increased truck traffic associated with a CTB facility. BLM will be granting ROW permissions for the access road and pipeline routes.</p> <p>Taylor Elm, September 17, 2018, 10:44 a.m.</p>	09/17/2018
Permit	Form passes completeness.	09/04/2018
CPW-Wildlife - Minimization- Black Bear	<p>Operator proposed the following BMP:</p> <p>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.</p> <p>CPW commented as follows:</p> <p>This BMP is not relevant for the planned location.</p>	Stamp Upon Approval

Total: 5 comment(s)