

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:

401045070

0

Date Received:

05/24/2016

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:

446527

Expiration Date:

07/07/2019

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: Laci Bevans

Phone: (405) 429-5610

Fax: ()

email: lbevans@sandridgeenergy.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20160010

Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: RAY RANCH 0780

Number: 16

County: JACKSON

Quarter: NESW Section: 16 Township: 7N Range: 80W Meridian: 6 Ground Elevation: 8136

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: 1482 feet FSL from North or South section line

1625 feet FWL from East or West section line

Latitude: 40.574318 Longitude: -106.382219

PDOP Reading: 1.4 Date of Measurement: 05/03/2016

Instrument Operator's Name: ADL

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)

438250

401011921

FACILITIES

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

Wells	8	Oil Tanks*	7	Condensate Tanks*		Water Tanks*	3	Buried Produced Water Vaults*	
Drilling Pits		Production Pits*		Special Purpose Pits		Multi-Well Pits*		Modular Large Volume Tanks	
Pump Jacks	8	Separators*	8	Injection Pumps*		Cavity Pumps*		Gas Compressors*	
Gas or Diesel Motors*		Electric Motors		Electric Generators*		Fuel Tanks*		LACT Unit*	1
Dehydrator Units*		Vapor Recovery Unit*		VOC Combustor*	1	Flare*		Pigging Station*	

OTHER FACILITIES*

Other Facility Type

Number

JET PUMPS	8
ELECTRIC RACK	1
SCRUBBER/GAS METER	1
8' HEATER TREATER	1

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:

This location will contain production facilities (oil tanks, water tanks, etc.) for the Evans 0780 21 pad (Form 2A#401011921), located approximately 2450' to the southeast of this pad; therefore, 4-inch schedule 40 steel produced water and oil pipelines will be run between the Evans well pad separators and the proposed well pad and tank battery at the Ray Ranch 0780 16, Form 2A#401045070. Buried pipelines between wellheads and separators will be 2-inch to 4-inch schedule 40 steel.

CONSTRUCTION

Date planned to commence construction: 07/09/2016 Size of disturbed area during construction in acres: 8.84

Estimated date that interim reclamation will begin: 08/01/2017 Size of location after interim reclamation in acres: 8.84

Estimated post-construction ground elevation: 8135

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? No

Reuse Facility ID: _____ or Document Number: _____

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

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Kohlman's O.K. LP

Phone: _____

Address: Gregory & Janet Ray

Fax: _____

Address: 21536 State HWY 14

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: 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:	<u>3852</u> Feet	<u>3476</u> 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 Unit:	5280 Feet	5280 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	5280 Feet	5280 Feet
Above Ground Utility:	1322 Feet	1044 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	1483 Feet	1261 Feet

- 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: Fh-Fluetsch Tiasgos association _____
 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, muttongrass, pine needlegrass, prairie Junegrass, streambank wheatgrass, blue grama, blubunch wheatgrass, bottlebrush squirreltail, needleandthread, yellow rabbitbrush, buckwheat, sheep fescue, 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: 133 Feet

water well: 2219 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. 211370. Depth to first water bearing zone is 40' bgs, 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' 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

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: 05/24/2016 Email: lbevans@sandridgeenergy.com

Print Name: Laci Bevans Title: Regulatory Analyst

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: 7/8/2016

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

	<p>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 the wellheads to separators to heater treater to storage tanks on this well pad/tank battery as well as the separators on the nearby well pads to the storage tanks on this well pad/tank battery location 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.</p> <p>Any changes to this well pad and tank battery location based on CPW's wildlife BMPs will require submittal (via a Form 4 Sundry Notice) of revised attachments (Access Road Map, Location Drawing, Construction Layout Drawings, Facility Layout Drawing) and any changes in distances to cultural features or water resources.</p>
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Operator must ensure secondary containment for any volume of fluids contained at the well pad and tank battery location during drilling operations, completion operations, truck tank loading operations, and production 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 and completion operations; as well as truck tank loading and production operations.

The access road will be constructed and 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 or equivalent protection) to contain any spilled or released material around permanent oil and produced water storage tanks.

Operator will construct a loading/unloading station located near the tank battery, to deliver fluids to or remove fluids from the oil and produced water storage tanks by truck. The loading/unloading station shall be designed and utilized to prevent hoses from being dropped and dragged over the ground, which could lead to releases outside of containment. The loading/unloading station will be the only permitted access for manual fluids transfers to or from the storage tanks. Vehicles will not be allowed to approach the storage tanks any closer than the loading/unloading station. Each station will be constructed to be sufficiently impervious to contain any spilled or released material and have a catch basin in case a leak occurs while operations personnel are connecting or disconnecting hoses. Signs clearly marking the truck loading/unloading station shall be provided and maintained by the operator.

This COA applies to vehicles (oil and water trucks) used for pulling water or oil from the loadout station, not directly from the tanks, unless there is equipment problems at the loadout station, in which case, water and oil trucks could then pull directly from the individual tanks. Also, if operator needs to remove/repair/replace a tank, then such equipment necessary to perform the work (water truck, vacuum truck, crane truck) would be allowed as close to the tank battery area and individual tanks as necessary.

Operator shall submit a scaled as-built drawing (plan view with distances) of the Ray Ranch 0780 16 well pad and tank battery location (showing oil and produced water storage tanks, onsite flowlines, offsite pipelines, and other production facilities) and the nearby well pad location, OGCC ID# 438250-Evans 0780 21 Pad, (showing wellheads, onsite flowlines, offsite pipelines, pumping jacks, and onsite production facilities) within 30 calendar days of construction of the production equipment on each location.

	<p>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#401011921; OGCC ID#438250). 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]).</p> <p>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.</p> <p>Potential odors associated with the completions process and/or with long term production operations must be controlled/mitigated.</p> <p>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.</p>
	<p>Operator shall pressure test pipelines 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.</p>

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Wildlife	<p>1. If oil and gas operations must occur 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.</p> <p>2. The operator and its contractors agree to restrict well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the lekking, nesting and early brood rearing seasons (March 1 to June 30) within 4.0 miles of a lek.</p> <p>3. The operator agrees to use hospital-grade mufflers for compressors, pump jacks, or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration.</p> <p>4. The operator has agreed to CPWs request to shift the pad location to be entirely on the south side of the existing access road. Maintaining a strip of sagebrush between the irrigated hay fields and the pad will benefit grouse during the brood-rearing season.</p>
2	Storm Water/Erosion Control	SandRidge Exploration & Production LLC will implement a storm water and erosion control plan to prevent sedimentation and erosion.

Total: 2 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2107877	CPW CORRESPONDENCE and PROPOSED BMPs
2107878	OPERATOR CORRESPONDENCE
401045070	FORM 2A SUBMITTED
401052217	NRCS MAP UNIT DESC
401052218	NRCS MAP UNIT DESC
401052773	ACCESS ROAD MAP
401052774	CONST. LAYOUT DRAWINGS
401052776	FACILITY LAYOUT DRAWING
401052777	HYDROLOGY MAP
401052778	LOCATION DRAWING
401052779	MULTI-WELL PLAN
401052780	LOCATION PICTURES
401052781	REFERENCE AREA PICTURES
401054268	SURFACE AGRMT/SURETY
401057636	REFERENCE AREA MAP

Total Attach: 15 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Surface Use Agreement is not signed by the Operator representative. The updated signed Surface Use Agreement was attached 7/6/2016.	7/1/2016 10:06:21 AM
Permit	Added 8 pump jacks and 8 jet pumps to the Facilities tab per Operator request.	6/28/2016 12:04:05 PM
OGLA	Initiated/Completed OGLA Form 2A review on 06-22-16 by Dave Kubeczko; requested acknowledgement of notification, pad change sundry, fluid containment, spill/release BMPs, sediment control access road, dust control, flowback to tanks, cuttings low moisture content and management, flaring/venting control, as-built drawing, and pipeline testing COAs from operator on 06-22-16; received concurrence of COAs from operator on 06-22-16; corrected facilities section to include 12 separators and 12 jet pumps per operator on 06-22-16; passed by CPW on 06-21-16 with agreed to wildlife (sage grouse) BMPs acceptable; passed OGLA Form 2A review on 06-22-16 by Dave Kubeczko; notification, pad change sundry, fluid containment, spill/release BMPs, sediment control access road, dust control, flowback to tanks, cuttings low moisture content and management, flaring/venting control, as-built drawing, and pipeline testing COAs.	6/22/2016 11:41:24 AM
DOW	The proposed pad location falls within greater sage-grouse sensitive wildlife habitat. The operator and CPW conducted an onsite of this location on June 8, 2016. During the onsite, the following best management practices (BMPs) were discussed and the operator agreed by email (June 21, 2016) to implement these BMPs at this location. 1. If oil and gas operations must occur 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. 2. The operator and its contractors agree to restrict well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the leking, nesting and early brood rearing seasons (March 1 to June 30) within 4.0 miles of a lek. 3. The operator agrees to use hospital-grade mufflers for compressors, pump jacks, or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration. 4. The operator has agreed to CPWs request to shift the pad location to be entirely on the south side of the existing access road. Maintaining a strip of sagebrush between the irrigated hay fields and the pad will benefit grouse during the brood-rearing season. By: Taylor Elm, June 21, 2016, 11:13 a.m.	6/21/2016 11:11:51 AM
Permit	Passed completeness.	5/6/2016 2:02:59 PM
Permit	Noted: reference area map attached, SWH box checked, related forms documented	5/6/2016 2:01:50 PM
Permit	Returned to draft: -- Missing Reference Area Map -- Missing additional Related Forms document #s -- Need to check Sensitive Wildlife Habitat consultation box	6/2/2016 10:47:18 AM

Total: 7 comment(s)