

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:

401374577

Date Received:

10/09/2017

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: 320867

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:

320867

Expiration Date:

12/08/2020

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: 10000

Name: BP AMERICA PRODUCTION COMPANY

Address: 380 AIRPORT RD

City: DURANGO State: CO Zip: 81303

Contact Information

Name: Naomi Azulai

Phone: (970) 3757511

Fax: ()

email: naomi.azulai@bp.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20010158

Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: KERRIGAN

Number: 32-6-2

County: ARCHULETA

Quarter: SESW Section: 2 Township: 32N Range: 6W Meridian: N Ground Elevation: 6392

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: 1178 feet FSL from North or South section line

1439 feet FWL from East or West section line

Latitude: 37.042452 Longitude: -107.473706

PDOP Reading: 1.8 Date of Measurement: 09/29/2017

Instrument Operator's Name: KENNETH E. REA

Name: Patrick Kerrigan

Phone: 970-883-2225

Address: 3531 County Road 973

Fax: _____

Address: _____

Email: _____

City: Ignacio State: CO Zip: 81137

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: oil and gas lease

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:	335 Feet	372 Feet
Building Unit:	335 Feet	372 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	1135 Feet	1050 Feet
Above Ground Utility:	1079 Feet	998 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	210 Feet	210 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: 08/11/2017

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.

This is an existing location to which a second well and associated equipment is proposed. A pad expansion is preferable in order to consolidate disturbance.

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: V7-B. Sili clay loam, 1 to 3 percent slopes

NRCS Map Unit Name: A6-B. Bayfield silty clay loam, 1 to 3 percent slopes

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:

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: 2232 Feet

water well: 310 Feet

Estimated depth to ground water at Oil and Gas Location 20 Feet

Basis for depth to groundwater and sensitive area determination:

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 608

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 location is being amended to accommodate an additional well and associated equipment.

As noted in the Facilities section, a temporary gas powered generator may be installed in the event that LPEA is delayed in providing service upgrade to the site.

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

Signed: _____ Date: 10/09/2017 Email: naomi.azulai@bp.com

Print Name: Naomi Azulai Title: Well Permitting 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: Matthew Lee Director of COGCC Date: 12/9/2017

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 Rule 316C. COGCC Form 42. FIELD OPERATIONS NOTICE (a. Notice of Intent to Conduct Hydraulic Fracturing Treatment; b. Notice of Spud; and c. Notice of Construction or Major Change); operator shall notify the COGCC 48 hours prior to rig mobilization and pipeline testing (flowlines from wellheads to separators to tanks; and/or any temporary surface lines used for hydraulic stimulation and/or flowback 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>Operator must ensure secondary containment for any volume of fluids contained at the well site during drilling and completion operations (as shown on the Proposed BMPs attachment); 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 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.</p> <p>Strategically apply fugitive dust control measures to reduce fugitive dust and coating of vegetation and deposition in water sources.</p> <p>Berms or other containment devices shall be constructed to be sufficiently impervious (corrugated steel with poly liner or equivalent engineered protection) to contain any spilled or released material around permanent produced water storage tanks.</p>
	<p>A closed loop system must be implemented during drilling (as indicated on the Form 2s and Form 2A). The moisture content of all drill cuttings managed onsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts. All cuttings generated during drilling with salt-based mud (SBM) must be segregated from water/bentonite based mud-(WBM-) generated drill cuttings and placed separately on the well pad. All SBM-generated drill cuttings must be kept in tanks/containers, or placed on a lined/bermed portion of the well pad; prior to disposition. 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 salt-based drilling mud and SBM-generated drill cuttings must be disposed of offsite per CDPHE rules and regulations.</p> <p>Flowback and stimulation fluids must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline or 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.</p>
	<p>Potential odors associated with the completions process and/or with long term production operations must be controlled/mitigated.</p>
	<p>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.</p>
	<p>All of the disturbed 'Temporary Use Areas' shown on the Construction Layout Drawings attachment will be final reclaimed as soon as possible after drilling and completions activities. This will include re-contouring slopes to 3:1 or greater and seeding/mulching. The seed will be drilled or broadcasted where machinery cannot access. Straw mulch will be spread and crimped over the seeded areas to retain moisture and limit erosion.</p>

No	BMP/COA Type	Description
1	Planning	<p>Best Management Practices</p> <p>Rule 604.c.(2). A. Noise – The type of equipment planned for this site during the production operations phase is expected to remain below COGCC’s acceptable noise limits. Noise levels will be tested at the request of nearby property owners. Sound levels will be measured in accordance with COGCC Rule 802.c. If the noise levels are found to exceed COGCC permissible levels, then BP will implement measures such as mufflers or sound walls. Production operations phase includes the permanent equipment set on location once drilling and completions has concluded. Operator plans on utilizing electric powered production equipment on this well pad location. A temporary gas powered generator may need to be installed in the event that La Plata Electric Association (LPEA) is delayed in providing service upgrade to the site.</p> <p>Rule 604.c.(2). B. Closed-loop Drilling Systems – Addressed in the APDs submitted for the proposed well planned on this site. Closed loop drilling rig will be used. No pits are planned.</p> <p>Rule 604.c.(2). C. Green Completions/Emission Control Systems - Coal wells do not utilize a flowback process. A post frac clean out is performed to prepare the well for production. During the cleanout procedure, fluids are routed to a temporary tank. Once gas starts to flow, the well is shut in so that gas is not released and can be routed to production. BP does not anticipate venting or flaring. In the unlikely event the well cannot be shut in in a timely manner, the gas would be vented through the temporary tank.</p> <p>Rule 604.c.(2). D. Traffic Plan – All equipment associated with drilling/completion operations will be transported using existing road access in accordance with applicable CDOT/La Plata and Archuleta County requirements, complying with La Plata and Archuleta County traffic control measures, obeying traffic laws, and using pilot cars for oversize loads. Traffic control will be used in the event of the disruption of two-way traffic.</p> <p>Rule 604.c.(2). E. Multi-well Pads - This is an existing well pad with one producing well and is planned as a multi-well pad with the well locations dictated by the landowner’s request. Applicable noise mitigation measures will be in place. An all-weather access road allows access to the site.</p> <p>Rule 604.c.(2). F. Leak Detection Plan – A wellsite-based monitoring system can automatically shut-in the wells upon the occurrence of anomalous conditions such as pressures outside of normal operating range in the water/gas pipelines on the downstream side of a well’s water/gas separator vessel or high water levels in tanks monitored by float switches. In addition, locations are continuously monitored by remote SCADA system. In the event of an unintentional release, BP will report the event as required by COGCC regulations, Rule 906, Spills and Releases. Immediate actions will be taken to stop the source and minimize potential offsite impact. If necessary, clean-up will be initiated as soon as possible, consistent with COGCC 1000 series regulations.</p> <p>Rule 604.c.(2). G. Berm Construction – All secondary containment requirements will be met for buffer/exception zone setback. Secondary containment for the produced water tank will be constructed of a steel ring, designed and installed to prevent leakage and resist degradation from erosion or routine operation. The secondary containment area for this tank will be constructed with a synthetic or engineered liner that contains all primary containment vessels and flowlines and is mechanically connected to the steel ring to prevent leakage.</p> <p>Rule 604.c.(2). M. Fencing – Cattle panels around equipment or adequate fencing such as to support interim reclamation will be installed.</p> <p>Rule 604.c.(2). N. Control of Fire Hazards – Any material not in use that might constitute a fire hazard will be removed a minimum of 25 feet from the wellhead, tanks and separator. Any electrical equipment installations inside the bermed area will comply with API RP 500 classifications and comply with the current national electrical code as adopted by the State of Colorado.</p> <p>Rule 604.c.(2). P. Removal of Surface Trash – All surface trash, debris, scrap or discarded material connected with the operation will be removed from the premises and disposed of in a legal manner.</p> <p>Rule 604.c.(2). R. Tank Specifications – No crude oil or condensate storage is planned as a result of this operation.</p> <p>Rule 604.c.(2). S. Access Roads – Access roads will accommodate emergency vehicle access and will be maintained in a reasonable condition.</p> <p>Rule 604.c.(2). W. Site Specific Measures – During drilling/completions operations the site lighting shall be directed downward and inward and shielded (to the extent</p>

		practicable) so as to avoid glare on public roads and building units within 1000'. Once the well is in production operations phase, no permanent lighting will be installed on the pad.
2	Wildlife	Covered in the San Juan Basin Wildlife Mitigation Plan (WMP) dated March 2011 with an extension dated May 2017.
3	Storm Water/Erosion Control	Covered in the Field Wide Storm Water management Plan. Site specific SWMPs have been developed for this location including sediment control logs and rock rundowns. See attached Construction and Reclamation SWMP drawings for details.
4	Dust control	Graveled access road and locations; speed limit traffic control communications; fresh water used to mitigate dust as needed. Water is provided by local contractors using water trucks with spray bars to disperse the water onto the areas requiring dust control.
5	Interim Reclamation	All of the disturbed areas not used for routine operations will be reclaimed. This will include re-contouring slopes to 3:1 or greater and seeding/mulching. The seed will be drilled or broadcasted where machinery cannot access. Straw mulch will be spread and crimped over the seeded areas to retain moisture and limit erosion. Weeds will be inspected and treated annually, when necessary, by a certified weed control contractor.

Total: 5 comment(s)

Attachment Check List

Att Doc Num	Name
2108281	ACCES ROAD MAP - DRILLING
2108283	CORRESPONDENCE
2108284	SURFACE USE AGREEMENT
401374577	FORM 2A SUBMITTED
401374976	NRCS MAP UNIT DESC
401374977	NRCS MAP UNIT DESC
401422886	PROPOSED BMPS
401422895	MULTI-WELL PLAN
401422897	WAIVERS
401422908	CONST. LAYOUT DRAWINGS
401422916	ACCESS ROAD MAP
401422919	LOCATION DRAWING
401422922	WASTE MANAGEMENT PLAN
401422925	LOCATION PICTURES
401422959	30 DAY NOTICE LETTER
401423009	CONST. LAYOUT DRAWINGS
401423239	HYDROLOGY MAP
401423241	FACILITY LAYOUT DRAWING

Total Attach: 18 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed. No LGD or public comment received.	12/07/2017
OGLA	06/29/17 - location originally onsite by COGCC and operator; 11/06/17 - location is within approximately 1200 feet of a known Bald Eagle winter night roost; passed by CPW with location being incorporated into the March 2011 Wildlife Mitigation Plan; 11/03/17 - initiated OGLA Form 2A review by Dave Kubeczko; 11/08/17 - discussed Form 2A information with operator to better define Buffer Zone and Exception Zone BMPs, Surface Use Agreement issues, Temporary Use Areas, and Designated Setback Location Exceptions; 11/08/17 - completed OGLA Form 2A review by Dave Kubeczko; 11/08/17 - sent email to operator requesting concurrence to the changes to information (Exceptions to Setbacks, BMPs, SUA) on the Form 2A (as discussed on November 8, 2017) and concurrence with notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, flowback to tanks only, final reclamation on temporary use areas, and pipeline testing COAs; 11/13/17 - received revised SUA and operator COA and revisions concurrence; 11/13/17 - passed OGLA Form 2A review by Dave Kubeczko with notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, flowback to tanks only, final reclamation on temporary use areas, and pipeline testing COAs.	11/08/2017
CPW	The Operator has agreed to incorporate this well into BPs existing San Juan Basin Colorado Wildlife Mitigation Plan (dated March 2011). The well will be subject to the BMPs specified in the Plan, including pre-construction biological surveys, compliance with raptor nest guidelines, and screening of planned day rig activity for conflicts with known eagle nests and roosts prior to commencing rig work. In addition, any new surface disturbance associated with this well pad, access road, and gathering pipeline will be incorporated into Tables 1 and 2 of the Plan and mitigated off-site per the standards identified in the plan. Please note that this location is within approximately 1200 feet of a known Bald Eagle winter night roost.	11/06/2017
Permit	Passed completeness.	10/18/2017
OGLA	Passed Buffer Zone completeness review. Address adequate nuisance BMPs during technical review.	10/18/2017
Permit	Referred to OGLA Supervisor for buffer zone review.	10/10/2017

Total: 6 comment(s)