

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:

401235025

Date Received:

06/08/2017

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:

**453552**

Expiration Date:

**12/25/2020**

☐ 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: 10447

Name: URSA OPERATING COMPANY LLC

Address: 792 BUCKHORN DR

City: RIFLE State: CO Zip: 81650

Contact Information

Name: CARI MASCIOLI

Phone: (970) 284-3244

Fax: ( )

email: cmascioli@ursaresources.com

RECLAMATION FINANCIAL ASSURANCE

- ☒ Plugging and Abandonment Bond Surety ID: 20120125 ☐ Gas Facility Surety ID: \_\_\_\_\_
- ☐ Waste Management Surety ID: \_\_\_\_\_

LOCATION IDENTIFICATION

Name: BMC F Pad Number: \_\_\_\_\_

County: GARFIELD

QuarterQuarter: SWSW Section: 16 Township: 7S Range: 95W Meridian: 6 Ground Elevation: 5858

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: 371 feet FSL from North or South section line

649 feet FWL from East or West section line

Latitude: 39.432282 Longitude: -108.010296

PDOP Reading: 1.1 Date of Measurement: 11/09/2016

Instrument Operator's Name: HOFFMANN

## 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	Oil Tanks*	Condensate Tanks*	Water Tanks*	100	Buried Produced Water Vaults*
Drilling Pits	Production Pits*	Special Purpose Pits	Multi-Well Pits*		Modular Large Volume Tanks
Pump Jacks	Separators*	Injection Pumps*	Cavity Pumps*		Gas Compressors*
Gas or Diesel Motors*	Electric Motors	Electric Generators*	Fuel Tanks*		LACT Unit*
Dehydrator Units*	Vapor Recovery Unit*	VOC Combustor*	Flare*		Pigging Station*

## OTHER FACILITIES\*

### Other Facility Type

### Number

Bermed areas w/600 bbl frac tanks	4
Water Transfer Pumps w/containment	2

\*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:

Approximately 900 linear feet of temporary 12-inch poly surface pipeline from water transfer pumps to existing subgrade steel water pipeline.

## CONSTRUCTION

Date planned to commence construction: 01/01/2018 Size of disturbed area during construction in acres: 5.40

Estimated date that interim reclamation will begin: 11/15/2021 Size of location after interim reclamation in acres: 5.40

Estimated post-construction ground elevation: 5856

## DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: No

Is H<sub>2</sub>S 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? No

## DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: Drilling Fluids Disposal Method:

Cutting Disposal: Cuttings Disposal Method:

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: BM Land Investments LLC

Phone: \_\_\_\_\_

Address: PO Box 6000

Fax: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

City: Parachute State: CO Zip: 81636

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 02/28/2017

## 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:	_____ Feet	1500 Feet
Building Unit:	_____ Feet	1500 Feet
High Occupancy Building Unit:	_____ Feet	5055 Feet
Designated Outside Activity Area:	_____ Feet	5280 Feet
Public Road:	_____ Feet	1768 Feet
Above Ground Utility:	_____ Feet	3463 Feet
Railroad:	_____ Feet	5280 Feet
Property Line:	_____ Feet	500 Feet

### INSTRUCTIONS:

- All measurements shall be provided from center of nearest Well or edge of nearest Production Facility to nearest of each cultural feature as described in Rule 303.b.(3)A.  
- Enter 5280 for distance greater than 1 mile.  
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.  
- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.  
- For measurement purposes only, Production Facilities should only include those items with an asterisk(\*) on the Facilities Tab.

## DESIGNATED SETBACK LOCATION INFORMATION

Check all that apply. This location is within a:

- ☐ Buffer Zone  
☐ Exception Zone  
☐ Urban Mitigation Area

- Buffer Zone - as described in Rule 604.a.(2), within 1,000' of a Building Unit.  
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.  
- Urban Mitigation Area - as defined in 100-Series Rules.  
- Large UMA Facility - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: \_\_\_\_\_

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: \_\_\_\_\_

## FOR MULTI-WELL PADS AND PRODUCTION FACILITIES WITHIN DESIGNATED SETBACK LOCATIONS ONLY:

- ☐ Check this box if this Oil and Gas Location has or will have Production Facilities that serve multiple wells (on or offsite) and the Production Facilities are proposed to be located less than 1,000 feet from a Building Unit. *(Pursuant to Rule 604.c.(2)E.i., the operator must evaluate alternative locations for the Production Facilities that are farther from the Building Unit, and determine whether those alternative locations were technically feasible and economically practicable for the same proposed development.)*
- ☐ By checking this box, I certify that no alternative placements for the Production Facilities, farther from the nearest Building Unit, were available based on the analysis conducted pursuant to Rule 604.c.(2)E.i.

In the space below, explain rationale for siting the multi-well Production Facility(ies) that supports your Rule 604.c.(2)E.i determination. Attach documentation that supports your determination to this Form 2A.

## SOIL

List all soil map units that occur within the proposed location. attach the National Resource Conservation Service (NRCS) report showing the "Map Unit Description" report listing the soil typical vertical profile. This data is to 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: 33. Ildefonso stony loam, 6 to 25 percent slopes.  
NRCS Map Unit Name: 56. Potts Loam, 6 to 12 percent slopes.  
NRCS Map Unit Name: 58. Potts-Ildefonso complex, 12 to 25 percent slopes.

## 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: 09/14/2016

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: 115 Feet

water well: 958 Feet

Estimated depth to ground water at Oil and Gas Location 120 Feet

Basis for depth to groundwater and sensitive area determination:

Static water level from existing well (permit #9114487); Based on proximity of the well pad to downgradient surface water (intermittent stream located 115' to the south-southwest, COGCC's review of COGCC's 2015 Aerial Photo Layer, Topo Map layer, and Hydrology Map attachment), this location is designated a "sensitive area".

Is the location in a riparian area: ☒ No ☐ Yes

Was an Army Corps of Engineers Section 404 permit filed ☒ No ☐ Yes If yes attach permit.

Is the location within a Rule 317B Surface Water Supply Area buffer  No  
zone:

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified:

Is the Location within a Floodplain? ☒ No ☐ Yes Floodplain Data Sources Reviewed (check all that apply)

☒ Federal (FEMA)

☐ State

☒ County

☐ Local

☐ Other

## GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 609

## WILDLIFE

☒

This location is included in a Wildlife Mitigation Plan

☒ This location was subject to a pre-consultation meeting with CPW held on 04/27/2017

### 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 pad location will hold up to 100 600 barrel (BBL) frac tanks to support completions in the Battlement Mesa area, which will significantly reduce truck traffic. Depending on water needs, the tanks will primarily store produced water and frac flowback fluids; however, freshwater may also be stored if there is not enough produced water available for hydraulic stimulation operations at nearby wells. No condensate is anticipated in the influent as separation will be conducted at the individual well pads. The tanks will be in place up to three years from when the tanks are first used. No interim reclamation will occur due to the temporary nature of the pad. This site is anticipated to be in use for less than 3 years from date of first use to beginning of decommissioning and final reclamation of the location.

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

Signed: \_\_\_\_\_ Date: 06/08/2017 Email: cmascioli@ursaresources.com

Print Name: CARI MASCIOLI Title: REGULATORY TECH

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:  Director of COGCC Date: 12/26/2017

### 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>Planning: The following conditions of approval (COAs) will apply to the Form 2A for general planning, notification, and coordination of activities:</p> <p>* PLN 1 - Operator must notify the COGCC 48 hours prior to temporary surface pipeline installation and pipeline testing (all temporary surface lines used for hydraulic stimulation and/or flowback operations) using the Form 42 (as described in COGCC Rule 316C.m. Notice of Completion of Form 2/2A Permit Conditions).</p> <p>* PLN 2 (GarCo 27) - Prior to any oil and gas activities, including site construction, operator must update their site-specific Emergency Response Plan with current information; the plan must describe employee spill response and safety training, organizational structure, site specific response plan for spills and other emergency situations at this Oil and Gas Location, and preventative maintenance provisions. Operator must update the site-specific plan annually and submit to COGCC an attestation (signed by a Vice President of Operations or higher corporate signatory's) that the plan has been updated within 30 days of completing the annual update. The following procedures shall be included in the plan: 1) 24 hour personnel on site to observe, monitor, and record all water movements; 2) staffing of at least one person on the outgoing and one person on the incoming points of the temporary surface pipelines during water transfer activities; 3) all water that is sent shall be accounted for at both ends of the pipeline; and 4) constant pressure monitoring with pressure changes resulting in immediate action to troubleshoot the cause. The plan must be available to COGCC for review upon request.</p> <p>* PLN 3 - (GarCo 22) - Traffic Control Plan - In consultation with Garfield County, Town of Parachute, Battlement Mesa Service Association, and emergency responders, Operator must develop a traffic control plan which addresses all phases of activity at the site. The traffic control plan must include provisions describing limiting site access, signage on local roads warning of increased truck traffic, oil and gas related traffic restrictions (speed and routes), coordination of heavy equipment movement and intense traffic periods to avoid peak times and school bus routes, and flaggers and pilot vehicles.</p> <p>* PLN 4 - The approved Form 2A #401235025 for this location will be posted onsite during construction and facility operations.</p> <p>* PLN 5 (GarCo 17) - In accordance with referral comments from the CDPHE the URSA BMC F Water Storage Facility site may require an APEN Air Quality Permit. The Applicant shall provide information to the CDPHE on the estimated produced water volumes to be handled/processed and documentation of sampling to be used in the determination regarding APEN Air Quality Permitting requirements.</p> <p>* PLN 6 - A Contingency Plan for any tank leak and/or catastrophic failure of the tank integrity, resulting in loss of fluid must be prepared and submitted to COGCC via a Form 4 Sundry Notice prior to tank use. The plan should included a notification process to the COGCC and local Emergency authority (municipality, county or both) for any failure and resulting loss of fluid. BMPs shall be employed to prevent injuries, property damage or environmental impacts.</p> <p>* PLN 7 - In the case of any conflict between Ursa's compliance plans, Best Management Practices, or other documents associated with this permit and The Oil and Gas Act (The Act), COGCC Rules, or Conditions of Approval (COA), COGCC will enforce compliance with The Act, Rules, and COAs.</p>

Construction: The following conditions of approval (COAs) will apply to the Form 2A for access road, water storage facility site, and onsite equipment construction and installation activities:

\* CON 1 (GarCo 9) - Construction of the BMC "F" Water Storage Facility site shall be limited to the hours of 7:00 a.m. to 7:00 p.m. with the exception of emergencies and episodic events beyond the operator's control.

\* CON 2 - Due to the proposed water storage facility site's close proximity to nearby intermittent drainages to the south and southeast, operator must implement adequate stormwater control measures to prevent ponding upstream, erosion, and off site sedimentation. All stormwater BMPs utilized at the Oil and Gas Location must be stabilized and must be inspected weekly [every 7 days] and within 24 hours after any significant precipitation event during construction activities.

\* CON 3 - The design/build of any perimeter berm or fluid management structures around the 600 bbl frac tanks shall be sized, constructed, and compacted sufficiently to contain and/or manage potential fluid releases during operations in a manner that prevents or controls potential sedimentation and scouring on adjacent lands and drainages. Such design/build of perimeter berms or fluid management structures may include, but are not limited to the following: on location berms; diversion ditches; enhanced vegetation; or other design features necessary to achieve the goal of protecting adjacent lands and drainages from potential sedimentation and scouring.

\* CON 4 (GarCo 14) - Operator shall use recycled asphalt, also referred to as black base, for surfacing of the area beneath the 600 bbl water storage tanks and access roadways.

\* CON 5 (GarCo 7) - Due to the proposed access road's close proximity to nearby intermittent drainages to the south and southeast, the access road will be constructed and maintained to prevent sediment migration from the access road to nearby surface water or any drainages or ditches leading to surface water.

\* CON 6 (GarCo 7) - The access road to the Oil and Gas Location must be graveled (or equivalent surfacing material) to reduce fugitive dust. Operator will take active measures to prevent fugitive dust emissions from the graveled access road to the water storage facility site access entrance during construction and facility operations. Dust reducing access road surfaces must be maintained during water storage facility operations.

\* CON 7 - Operator will provide temporary engineering or administrative controls to prevent uncontrolled public access during construction and facility operations.

\* CON 8 - Cut slopes, fill slopes, soil stockpiles, and berms must be stabilized immediately following construction of the water storage facility site and placement of stockpiles.

\* CON 9 (GarCo 13) - Operator will implement measures (covers, misting, etc.) to reduce dust and PM emissions during transport of solids materials to and from the water storage facility site.

\* CON 10 - Within 30 calendar days of construction of the temporary produced water and frac flowback fluid storage tanks on this Oil and Gas Location, operator shall submit a scaled as-built drawing (plan view and cross section view) of the BMC "F" water storage facility site and access road; showing site construction details including water storage tanks and their secondary containment, stormwater/erosion controls, and onsite temporary surface pipelines. The as-built drawing shall be certified by a professional engineer or a professional land surveyor.



Facility Operations: The following conditions of approval (COAs) will apply to the Form 2A for all facility activities during associated completion operations at nearby well pads:

- \* OPS 1 - Open top tanks are not permitted for storage of any fluids other than freshwater.
- \* OPS 2 - All operator and contractor personnel working at the location during operations must be trained on COGCC requirements for spill response and reporting (documentation of this training will be maintained in the operator's office/onsite trailer). Operator will hold and document weekly meetings during facility operations to refresh all personnel onsite regarding response and reporting requirements and staff responsibilities during spill events.
- \* OPS 3 (GarCo 7) - Operator will conduct daily inspections of equipment for leaks and equipment problems. All equipment deficiencies must be corrected immediately or as soon as practical (all identified problems and corrections/repairs will be documented and records will be maintained in the operator's office/onsite trailer). Daily monitoring can end 14 days after first date of production; however, timely inspections should continue during the production phase.
- \* OPS 4 - A spill response trailer or spill response container will be on location 24 hours a day, 7 days a week during construction and facility operations to facilitate a timely response to any spills that may occur. If the spill response trailer is not onsite, it must be available within 15 minutes.
- \* OPS 5 - Appropriate heavy equipment (e.g., a backhoe, front end loader) will be staged at the location during facility operations so that any emergency diversions or pits to contain spills can be built immediately upon discovery; or to quickly build additional earthen berms in the event of a spill outside of containment.
- \* OPS 6 - Operator must monitor wildfire potential daily during all construction and facility operations at this Oil and Gas Location, and coordinate as necessary with the local fire department on Red Flag Days to ensure appropriate response to any fire emergencies.
- \* OPS 7 (GarCo 8) - All lighting, except as demonstrated for safety reasons, shall be directed inward and downward and be shaded in order to prevent direct reflection on adjacent property or nearby residences. LED lights will be used when possible and practical. Workers will be advised when moving light plants to ensure that the light is focused directly on the work being done.
- \* OPS 8 (GarCo 11) - Air quality and odor controls will be implemented and will include the following: 1) using carbon blankets, or equivalent or better technology, over thief hatches on storage tanks; 2) frac fluids/flowback storage tank hatches must be closed and latched; 3) daily odor monitoring should be conducted during facility operations, documentation of such monitoring must be maintained and made available to COGCC or CDPHE upon request; 4) maintain a portable meteorological weather station during facility operations, that includes a data logger to archive wind speed/direction, temperature, and humidity; and 5) Data must be kept on file by the Operator and provided to COGCC or CDPHE upon request.
- \* OPS 9 (GarCo 7) - Operator will implement measures to ensure that adequate separation of hydrocarbons from the influent occurs at the well pads to prevent accumulation of oil on the surface of stored fluids. Operator shall also employ a method for monitoring buildup of phase-separated hydrocarbons on the surface of stored fluids.
- \* OPS 10 (GarCo 7) - Potential odors associated with the facility operations must be controlled/mitigated.
- \* OPS 11 (GarCo 20) - The temporary water storage facility shall be used for a period of no more than three (3) years for storage, recycling, reuse, treatment, or disposal of E&P waste or fresh water, as applicable. The three year time clock will start from the date of first use after construction and be based on submittal of the Form 42 providing that date.

Material Handling and Spill Prevention: The following conditions of approval (COAs) will apply to the Form 2A for all temporary surface pipelines (poly or steel) used during operations at the water storage facility site and/or nearby well pad locations:

- \* MH 1 - 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.
- \* MH 2 - Operator must implement best management practices (secondary containment) to contain any unintentional release of fluids along all portions of the surface pipeline route where temporary pumps and other necessary equipment are located.
- \* MH 3 - Operator must routinely inspect the entire length of the temporary surface pipeline to ensure integrity. Operator shall conduct daily inspections of surface poly pipeline routes for leaks during active transfer of fluids. Inspections shall be conducted by viewing the length of the pipeline; operator will endeavor to minimize surface disturbance during pipeline monitoring.
- \* MH 4 (GarCo 7) - Prior to operation, pipelines will be tested for integrity. When in operation, pump stations will be manned continuously to ensure immediate response to pressure changes or pump issues. Qualified personnel, interconnected via 2-way radio, manning each booster pump will carefully synchronize pump turn-on and shut-down according to written and practiced procedure. The entire line will be monitored, where feasible, during pumping and flowback operations. For stream or intermittent stream crossings, operator will ensure appropriate containment by installing over-sized pipe "sleeves" which extend the length of the crossing and beyond to a distance deemed adequate to capture and/or divert any possible release of fluids and prevent infusion into the stream water.
- \* MH 5 - Operator will utilize, to the extent practical, all existing access and other public roads, and/or existing pipeline right-of-ways, when placing/routing the temporary surface pipelines. This will reduce surface disturbance and fragmentation of wildlife habitat in the area.

### **Best Management Practices**

No	BMP/COA Type	Description
1	Planning	<ul style="list-style-type: none"> <li>• Ursa conducts voluntary inspections and corrective actions of all locations at least monthly using a self-implemented checklist of key actions (including environmental) that require compliance with COGCC, Federal, and other state and county requirements.</li> <li>• Ursa will comply with CDPHE regulations regarding air permitting, compliance monitoring, inspections and reporting. All air sources will be assigned AIRS ID numbers by the CDPHE and tracked for compliance and reporting purposes. In addition, Ursa is required to track, monitor and report Greenhouse Gas (GHG) emissions to EPA annually.</li> <li>• Safety requirements and buffers as required by the COGCC 602, 603, and 606A and 606B Series Rules, among others, and the Office of Safety and Health Administration (OSHA) will be observed at all time. Daily safety briefings and Job Safety Assessments (JSA's) are routinely conducted in all phases of operations. In addition, Ursa employees a full-time safety manager to oversee all field contractors.</li> <li>• As part of the siting rationale and alternatives analysis, Ursa has developed a comprehensive fly-over tool allowing for viewshed analysis from selected points of interest proximate to the pad location in an effort to better illustrate proposed operations impacts to the surrounding community. The fly-over tool for the BMC F temporary water facility can be accessed through this link: BMC F Temp Water Facility: <a href="https://skfb.ly/6nUHW">https://skfb.ly/6nUHW</a></li> <li>• Ursa held a LUMA consultation site visit in February, 2017. The following BMPs have been adopted as a direct result of the LUMA consultation process and are included and site-specific mitigation measures:</li> </ul> <p>Per request of Garfield County Vegetation Manager:</p> <ul style="list-style-type: none"> <li>• Prior to delivery to site, equipment will be cleaned of soils and other materials remaining from previous construction sites.</li> <li>• Equipment and material handling will be done on established sites to reduce the area and extent of soil compaction.</li> <li>• Ursa commits to use only weed free straw or mulch and weed-free wattles for sediment retention work.</li> <li>• Reclaimed areas will be stable and will be free from large rills and gullies, perceptible soil movement or head-cutting in drainages, slope instability on or adjacent to the reclaimed area</li> <li>• Slopes will be stabilized using appropriate reshaping and earthwork measures, including proper placement of soils and materials.</li> <li>• Topsoil will be salvaged from areas to be disturbed and managed for later use in reclamation. Topsoil stockpiles will be seeded to prevent erosion.</li> </ul>
2	Community Outreach and Notification	<ul style="list-style-type: none"> <li>• Ursa has a dedicated phone line to address complaints and responds 24 hours per day, 7 days a week. All complaints received by Ursa are documented, investigated, responded to immediately with appropriate corrective actions and communicated to the complainant, landowner, county LGD and appropriate state agency officials. Coordination with Kirby Wynn, Garfield County LGD, will be ongoing to ensure the effectiveness of our complaint management process. The following phone numbers and websites are available to the community members to report complaints:</li> </ul> <ul style="list-style-type: none"> <li>- Ursa complaint / 24 hr hotline: 970-620-2787</li> <li>- Ursa emergency / 24 hotline: 855-625-9922</li> <li>- Community Counts: 866-442-9034</li> <li>- Garfield County (Kirby Wynn): 970-987-2557</li> <li>- Colorado Oil &amp; Gas Conservation Commission: <a href="http://cogcc.state.co.us/complaints.html#/complaints">http://cogcc.state.co.us/complaints.html#/complaints</a></li> </ul>
3	Traffic control	<ul style="list-style-type: none"> <li>• In consultation with Garfield County and the local emergency response agencies (Fire/police), Ursa has developed a site-specific Emergency Response Plan and Haul Route Map which is communicated to local emergency response agencies and stakeholders, as well as contractors performing work at the location. The preferred/primary haul route for this location is the Upper Route (I-70 exit 75). The Lower Route (I-70 exit 72) shall be a secondary route.</li> </ul>

4	General Housekeeping	<ul style="list-style-type: none"> <li>• Weeds will be managed in accordance COGCC Rule 1003.f. and 1004.e. as incorporated into Ursa's Noxious Weed plan; to include up to three treatments per year depending upon the species being managed and mapping as needed, throughout the life cycle of the location (construction – final reclamation). Additionally, once construction begins, the Operator shall treat all List A, B, C noxious weeds within pad site perimeter and along access road according to Ursa's noxious weed management plan. This shall include up to three treatments annually by a licensed and certified herbicide applicator.</li> <li>• The location will be managed in accordance with COGCC 907 and 907A Rules, which are incorporated into Ursa's Waste Management Plan, which addresses both E&amp;P and non-E&amp;P waste, including those under the jurisdiction of the CDPHE and EPA. The plan, in combination with Ursa's Spill Prevention and Management Plan, minimizes the potential for any exploration and production wastes, chemicals, fluids, etc. from leaving the location, using BMPs including berms, barriers, and use of spill control materials.</li> </ul>
5	Wildlife	<ul style="list-style-type: none"> <li>• Ursa will operate in accordance with the Wildlife Mitigation Plan (signed with CPW in 2011) that allows for up to 15 well pads in the Battlement Mesa area (including within the PUD). Ursa has met with CPW to determine the appropriate BMP implementation and has completed all wildlife mitigation commitments required per the 2011 Wildlife Mitigation Plan in the Battlement Mesa area.</li> <li>• The Ursa BMC A, L and F Pad locations were provided to CPW and analyzed as part of the Antero (now Ursa) Battlement Mesa Wildlife Mitigation Plan (WMP). The terms and conditions agreed upon within the WMP document are still adequate to avoid, minimize, and mitigate any impacts to wildlife from the proposed actions. Agreed upon BMPs from the WMP document have been sent for inclusion as an attachment to the Form 2A permit and are listed below: <ul style="list-style-type: none"> <li>• Annual raptor and other bird surveys will be conducted in accordance with protocols provided by CPW.</li> <li>• Location visits during the production phase of operations (post drilling and completion for all wells on a well pad location) will be restricted when/where possible to between the hours of 10am and 3pm to minimize impacts to wildlife unless operational concerns warrant pad visits outside this timeframe.</li> <li>• Buried water and gas pipelines will be utilized as means to reduce truck traffic and impacts to wildlife.</li> <li>• Maintaining a ¼ mile no surface occupancy buffer around active bald eagle nests.</li> <li>• Bury all gas and water pipelines adjacent to roads whenever possible.</li> <li>• A weed management plan will be developed and implemented to monitor and control noxious and invasive weeds.</li> <li>• Noxious weed control includes three treatments per year.</li> <li>• Existing weed infestations will be mapped prior to the development of each pad, access road and pipeline when practicable.</li> </ul> </li> <li>• Ursa has completed all habitat restoration contributions contained within the WMP.</li> </ul>

6	Wildlife	<p>CPW Wildlife Consultation/Comment: The following comment was placed on the Form 2A by CPW on 06-30-17:</p> <p>"This pad location was provided to CPW and analyzed as part of the Battlement Mesa Wildlife Mitigation Plan (WMP). The terms and conditions agreed upon within the WMP document are still adequate to avoid, minimize, and mitigate any impacts to wildlife from the proposed activity. BMPs from the WMP document have been provided to COGCC OGLA specialist to be included with the Form 2A permit.</p> <p>BY: Taylor Elm, June 30, 2017, 9:23 a.m."</p> <p>The following Best Management Practices (BMPs), which were developed by the operator and CPW to avoid and minimize impacts to wildlife from the proposed development, are contained within the approved Battlement Mesa Wildlife Mitigation Plan (WMP), and apply to this location:</p> <ul style="list-style-type: none"> <li>*1) Closed loop (pitless) drilling systems.</li> <li>*2) Annual raptor and other bird surveys will be conducted in accordance with protocols provided by CPW.</li> <li>*3) Rig shift changes will take place when practical at 6am and 6pm and will utilize one (1) vehicle to minimize impacts to wildlife.</li> <li>*4) Development program is planned to include four phases as a means for mitigating wildlife impacts. These phases will be based on infrastructure construction schedules and will be coordinated with affected land owners, the Battlement Mesa Services Association (BMSA), local municipalities, Garfield County, COGCC, and CDPHE during the Comprehensive Drilling Plan and the Major Land Use Impact Review process.</li> <li>*5) Well pad location visits during the production phase of operations (post drilling and completion for all wells on a well pad location) will be restricted when/where possible to between the hours of 10am and 3pm to minimize impacts to wildlife unless operational concerns warrant pad visits outside this timeframe.</li> <li>*6) Buried water and gas pipelines will be utilized as means to reduce truck traffic and impacts to wildlife.</li> <li>*7) Restrict rig operation to no more than 2 rigs per section (or equivalent acreage) within the big-game seclusion areas during the winter.</li> <li>*8) Maintaining a ¼ mile no surface occupancy buffer around active bald eagle nests.</li> <li>*9) New pad construction not to exceed 3 acres of working surface.</li> <li>*10) Pad density not to exceed 1 pad per 160 acres.</li> <li>*11) Bury all gas and water pipelines adjacent to roads whenever possible.</li> <li>*12) A weed management plan will be developed and implemented to monitor and control noxious and invasive weeds.</li> <li>*13) Noxious weed control includes three treatments per year.</li> <li>*14) Existing weed infestations will be mapped prior to the development of each pad, access road and pipeline when practicable.</li> <li>*15) Antero (now Ursa) has completed all habitat restoration contributions contained within the WMP.</li> </ul>
7	Material Handling and Spill Prevention	<ul style="list-style-type: none"> <li>• BMC F temporary water storage facility will be manned 24 hours a day while the facility is in use.</li> <li>• MAINTENANCE - Corrective actions relating to the tanks will have effected equipment repaired or replaced as necessary.</li> <li>• TANK INSPECTIONS - will be formally inspected quarterly under the Spill Prevention Control and Countermeasures (SPCC) plan.</li> </ul>

8	Material Handling and Spill Prevention	<ul style="list-style-type: none"> <li>• Signs with the information required in Rule 210.d. will be placed at each tank battery / bermed tank area; including A) Name of operator, B) Operator's emergency contact telephone number; C) Tank capacity; D) Tank contents; and E) National Fire Protection Association (NFPA) Label. Individual tanks will have magnetic signs indicating either "Produced Water" or "Not in Service".</li> <li>• Condensate and Produce Water Management: Gas and fluids come up from the wellhead and go to the large primary separator, where gas, fluids and condensate are separated. Any condensate recovered goes to the condensate production tank on the well pad. The produced water to the P-tank (separator) then to the working tanks (temp frac tanks) onsite. From there, the fluids will be transferred to the BMC F water storage facility for reuse/recycling purposes. When transferring fluids from these tanks the draw valve is approximately 12" above the bottom of the tanks to ensure that no sludges are transferred. The transfer draw stops around 24" from the bottom to ensure nothing is drawn from the top layer of the fluids (potential condensate). The Battlement Mesa wells are located in a very dry portion of the field, without a lot of condensate produced compared to other portions of the Piceance Basin field and other nearby fields. Build up of ondensate in the working flowback tanks or frac tanks has not been a historical issue for Ursa in this field. If any condensate is observed, it is immediately skimmed off. In addition, we have recently performed water sampling for the BMC F water storage facility air permitting needs; and have determined that the fluids expected to go to the BMC F facility have very little condensate or oil, below any permitting thresholds. Ursa is currently working with the CDPHE on evaluating this information.</li> </ul>
9	Dust control	<ul style="list-style-type: none"> <li>• The pad and access road will be graveled to reduce fugitive dust and maintained as required by COGCC rules. In addition, Operator will have water trucks onsite for dust abatement during construction. Water and other dust suppressants are used as required, dependent upon the level of activity, moisture conditions, etc. throughout all phases of operations. Ursa commits to ensuring truckloads of dirt, sand, aggregate materials, and similar materials are covered to reduce dust and PM emissions during transport.</li> </ul>
10	Construction	<ul style="list-style-type: none"> <li>• The construction of the BMC F Pad shall be limited to the hours of 7:00AM to 7:00PM, with the exception of emergencies and episodic events beyond Ursa's control.</li> <li>• Access road will be maintained as an all-weather access route for operator and emergency response. Accumulations of snow that prevent or limit access to the location will be removed within 24 hours or as soon as conditions allow after a weather event. The road will be timely maintained to prevent ruts, potholes and other damage.</li> <li>• An earthen berm will be constructed around the pad location as secondary containment and will be sized to hold 150% of the volume of the largest single tank in the containment. Black base will be used for areas where tanks will be placed to help alleviate permeability into soil should a leak occur.</li> </ul>
11	Noise mitigation	<ul style="list-style-type: none"> <li>• Volume of the sound generated: Every use shall be so operated that the volume of sound inherently and recurrently generated does not exceed 70 dB(A) from 7:00 AM to 7:00 PM and 65 dB(A) from 7:00 PM to 7:00 AM, measured 350 feet from the edge of the pad. As set forth in COGCC Regulation 802(b), the noise levels shall be subject to an increase by 10 dB(A) for a period not to exceed 15 minutes in any one (1) hour period and cannot exceed 65 dB(A) for shrill or periodic impulsive noise. Complaint protocols shall be governed by COGCC Rule 802(c).</li> <li>• Lighting, noise, odors, dust and related nuisances are managed in accordance with COGCC 600 and 802, 803, 804 and 805 Series Rules, and in accordance with Ursa policies, procedures and checklists. Additional noise monitoring above and beyond COGCC regulations may be conducted by Ursa on a voluntary basis. If conditions warrant further mitigation at the time of operations, Ursa will request approval as necessary from the COGCC to implement additional measures.</li> </ul>

Total: 11 comment(s)

## Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1642209	CORRESPONDENCE
2108301	GARFIELD COUNTY SPECIAL USE PERMIT RESOLUTION and COAs
2108302	SUPPLEMENTAL LOCATION PICTURES
2108303	LOCATION DRAWING
2108304	HYDROLOGY MAP
2108305	WATER TRANSFER PUMP LAYOUT DRAWING
2108306	SURFACE 12" POLY WATER PIPELINE LOCATION MAP
2108307	CORRESPONDENCE
401235025	FORM 2A SUBMITTED
401302764	ACCESS ROAD MAP
401302765	NRCS MAP UNIT DESC
401302766	CONST. LAYOUT DRAWINGS
401302768	FACILITY LAYOUT DRAWING
401302770	EQUIPMENT LIST
401302773	LOCATION PICTURES
401302777	WASTE MANAGEMENT PLAN
401314317	REFERENCE AREA PICTURES
401315375	SURFACE AGRMT/SURETY
401315376	REFERENCE AREA MAP
401323408	PROPOSED BMPS

Total Attach: 20 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete and ready as per OGLA Supervisor.	12/26/2017
OGLA	<p>02/28/17 - location originally onsited by COGCC, LGD, CPW, Garfield County, and operator;</p> <p>06/30/17 - passed by CPW with location being incorporated into the Battlement Mesa Wildlife Mitigation Plan (WMP), with the terms and conditions agreed upon within the WMP document being adequate to avoid, minimize, and mitigate any impacts to wildlife from the proposed activity; fifteen (15) BMPs listed in the WMP document have been placed on 'Operator BMP/COA' tab;</p> <p>08/02/17 - location onsited by COGCC, CDPHE, LGDs, CPW, Garfield County Planning Commission, and operator;</p> <p>09/12/17 - location onsited by COGCC, LGD, Garfield County Planning Commission, Garfield County Commissioners, and operator;</p> <p>11/14/17 - Board of Garfield County Commissioners meeting in Battlement Mesa activity center;</p> <p>11/16/17 - Board of Garfield County Commissioners meeting in Glenwood Springs Administration Building;</p> <p>11/21/17 - initiated OGLA Form 2A review by Dave Kubeczko and reviewed the three (3) Public Comments and two (2) LGD Comments for this location and determined that the comments were positive in nature (no negative issues or concerns were listed) and did not require a formal response, COGCC will review all of the Garfield County Special Use Permit conditions of approval (COAs) for the BMC F Water Storage Facility site and evaluate which COAs (which can be enforced by COGCC) can be placed on the Form 2A;</p> <p>11/29/17 – discussed additional Form 2A information and/or revised attachments with operator - sent email to operator requesting that URSA submit the following:</p> <p>*1) revised Location Drawing showing the 500-foot buffer from the edge of disturbance;</p> <p>*2) revised Hydrology Map showing the 1000-foot buffer from the edge of disturbance indicating the distance and bearing to all surface water features and</p>	11/29/2017

	<p>waters wells;</p> <p>*3) additional Location Pictures - a minimum of four (4) color photographs, one (1) of the staked location (reference point or center of location) from each cardinal direction (each photograph shall be identified by: date taken, well or location name, and direction of view);</p> <p>*4) an updated inventory of equipment on location (pumps, secondary containment for pumps, etc.);</p> <p>*5) a description (type, diameter) of the temporary surface pipeline leading from the tanks on this location to the existing permanent subgrade water pipeline; and</p> <p>*6) a map attachment showing the proposed temporary surface pipeline route from this location to the existing permanent subgrade water pipeline.</p> <p>11/29/17 – based on COGCC's review, the following revisions were made to the Form 2A#401235025 – 1) revised: Date planned to commence construction: from 11/15/2017 to 01/01/2018, 2) revised the Distance to the nearest cultural feature: Production Facility to Public Road from 625' to 1768' based on review of COGCC's Online GIS Map Aerial Photo for 2015, Roads and Railroads layer, and discussion with URSA on 11-29-17, 3) based on revised Hydrology Map, revised Distance to nearest downgradient surface water feature from 133' to 115' and Distance to nearest water well from 1000' to 958'; 4) based on proximity of the well pad to downgradient surface water (intermittent stream located 115' to the south-southwest, COGCC's review of COGCC's 2015 Aerial Photo Layer, Topo Map layer, and Hydrology Map attachment), COGCC has designated this location "sensitive area", and 4) revised the 'Floodplain Data Sources Reviewed (check all that apply): to include 'Federal (FEMA)';</p> <p>12/18/17 - Garfield County Board of Commissioners adopted a resolution of approval for a Special Use Permit for extraction and processing of a natural resource, granted to Battlement Mesa Land Investments llc (surface owner) and Ursa Operating Company LLC (operator) to develop a water storage facility known as the Ursa BMC F Temporary Water Storage Facility, located in Section 16, Township 7 South, Range 95 West, Garfield County;</p> <p>12/18/17 - received from the operator revised Location Drawing, Hydrology Map, additional Location Pictures, an updated inventory of equipment on location, a description (type, diameter) of the temporary surface pipeline, and a map showing the proposed temporary surface pipeline route from this location to the existing permanent subgrade water pipeline; and comments/revisions to COAs;</p> <p>12/18/17 - completed OGLA Form 2A review by Dave Kubeczko;</p> <p>12/18/17 and 12/21/17 - sent email to operator requesting concurrence to the changes to information, listing of additional and revised attachments, and final concurrence with notifications, traffic control plan, contingency plans for releases and spills, fluid containment and spill/release BMPs, leak detection, graveled or equivalent access road material, sediment and dust control access road, site access security, slopes-soil stockpiles-berm stabilization, truck material containment during transport, as-built drawings, open top tanks for freshwater only, spill response training, spill response trailer-container and heavy equipment, air quality monitoring, odor and VOC emission control, lighting control and mitigation, flowback fluid containment-management-hydrocarbon separation, and pipeline installation-inspection-testing COAs;</p> <p>12/22/17 - received email from operator indicating acknowledgement and concurrence to the changes to information on the Form 2A, and concurrence with final COAs; made revisions to facilities section (number of water tanks and bermed tank areas), operator comment section (fluid types being stored in frac tanks), and operator BMP/COA section (tank and tank battery bermed area signage, condensate separation);</p> <p>12/22/17 - passed OGLA Form 2A review by Dave Kubeczko with planning, construction, facility operations, emission mitigation, and material handling-spill prevention COAs.</p>		
Agency	<p>LGD COMMENT received from Battlement Mesa Metro District LGD, Bill Nelson on 09-08-2017; 2:45 PM:</p> <p>Here are my comments for the referenced Ursa applications: 2A#401235025 BMC F Pad</p> <p>No Comment</p>	09/08/2017	
Permit	Initial review complete.	07/31/2017	



LGD	<p>This location within the Battlement Mesa Planned Unit Development requires a Garfield County Special Use Permit (SUP). SUP approval can only be provided through a public hearing process with the Board of County Commissioners. Ursa Operating Company has only very recently submitted the SUP application to the county and as such the initial hearing and in-depth technical reviews at the Planning Commission cannot be scheduled before September 2017 with further in-depth technical review and a Board of County Commissioner's hearing to follow at a later date. As such Garfield County is unable, at this time, to provide the substantive comments and guidance to COGCC we will provide regarding Best Management Practices and Conditions of Approval that should be attached to the COGCC permit and that would meet the needs of both Garfield County and COGCC.</p> <p>Ursa Operating Company has indicated to Garfield County they will request that COGCC "withhold decision on approval of the Form 2A for this location until the time the Local Government permitting process has reached resolution, therefore providing agreement as to the siting of the location as required by Rule 305A. If the technical review has been completed by COGCC staff prior to obtaining local government approval, Ursa will request that the permits be put in an "On Hold" status until the Garfield County process has concluded. As the Garfield County permitting process has been initiated and is moving forward, Ursa does not anticipate the need for mediation nor a Commission hearing to make a determination on these applications. Work on this location will not commence until permits are received from both the Local Government and the COGCC."</p> <p>Garfield County asks COGCC to honor a forthcoming request from Ursa Operating Company to withhold a decision on the Form 2A for this location until the County permitting process is complete. Garfield County further asks COGCC to carefully consider and adopt relevant county SUP Conditions of Approval and/or Best Management Practices to protect the health, safety and welfare of the local community.</p> <p>COGCC Response: 12/18/17 - COGCC reviewed all 28 of the Garfield County Special Use Permit conditions of approval (COAs) for the BMC F Water Storage Facility site (attached as 'Garfield County Special Use Permit Resolution and COAs') and evaluated which COAs (which can be enforced by COGCC) can be placed on the Form 2A; COGCC has incorporated portions or all of the following GarCo COAs - 7, 8, 9, 11, 13, 14, 17, 20, 22, 24, and 27 into COGCC's COAs.</p>	07/28/2017
OGLA	Public comment period extended from 7/19 to 7/29 upon written request from Garfield County LGD.	07/03/2017
DOW	<p>This pad location was provided to CPW and analyzed as part of the Battlement Mesa Wildlife Mitigation Plan (WMP). The terms and conditions agreed upon within the WMP document are still adequate to avoid, minimize, and mitigate any impacts to wildlife from the proposed activity. BMPs from the WMP document have been provided to COGCC OGLA specialist to be included with the Form 2A permit.</p> <p>BY: Taylor Elm, June 30, 2017, 9:23 a.m.</p>	06/30/2017
Permit	Passed Completeness.	06/29/2017
Permit	<p>Returned to draft for:</p> <p>-Missing Reference Area Map &amp; Photos.</p>	06/16/2017

Total: 9 comment(s)