

FORM  
2A

Rev  
06/19

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:

401749741

Date Received:

10/18/2018

Oil and Gas Location Assessment

New Location     Refile     Amend Existing Location    Location#: \_\_\_\_\_

This Oil and Gas Location Assessment is to be submitted to the COGCC for approval prior to any ground disturbance activity associated with oil and gas operations. Approval of this Oil and Gas Location Assessment will allow for the construction of the below specified Location; however, it does not supersede any land use rules applied by the local land use authority. Please see the COGCC website at <http://cogcc.state.co.us/> for all accompanying information pertinent this Oil and Gas Location Assessment.

Location ID:

**465146**

Expiration Date:

**06/06/2022**

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: 10110

Name: GREAT WESTERN OPERATING COMPANY LLC

Address: 1001 17TH STREET #2000

City: DENVER    State: CO    Zip: 80202

Contact Information

Name: Linsey Jones

Phone: (720) 595-2218

Fax: ( )

email: ljones@gwogco.com

FINANCIAL ASSURANCE

- Plugging and Abandonment Bond Surety ID (Rule 706): 20160041     Gas Facility Surety ID (Rule 711): \_\_\_\_\_
- Waste Management Surety ID (Rule 704): \_\_\_\_\_

LOCATION IDENTIFICATION

Name: Rio LC Pad    Number: \_\_\_\_\_

County: ADAMS

Quarter: NWNW    Section: 6    Township: 1S    Range: 67W    Meridian: 6    Ground Elevation: 5070

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: 279 feet FNL from North or South section line

65 feet FWL from East or West section line

Latitude: 39.999575    Longitude: -104.940104

PDOP Reading: 1.5    Date of Measurement: 06/28/2018

Instrument Operator's Name: Mathew Miller

LOCAL GOVERNMENT INFORMATION

County: ADAMS    Municipality: N/A

Per § 34-60-106 (1)(f)(I)(A), the following questions pertain to the "local government with jurisdiction to approve the siting of the proposed oil and gas location."

The local government with jurisdiction is: County

Does the local government with jurisdiction regulate the siting of Oil and Gas Locations, with respect to this COGCC application? If the local government has waived its right to precede the COGCC in siting determination, indicate by selecting "NO" here and selecting "Waived" below.  Yes  No

If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The local government siting permit type is: Administrative Use by Special Review

The local government siting permit was filed on: 02/01/2019

The disposition of the application filed with the local government is: Approved

Additional explanation of local process:

### RELATED REMOTE LOCATIONS

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

<b>This proposed Oil and Gas Location is:</b>	<b>LOCATION ID #</b>	<b>FORM 2A DOC #</b>
<input type="checkbox"/>	_____	_____

### FACILITIES

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

Wells	<u>26</u>	Oil Tanks*	<u>12</u>	Condensate Tanks*	_____	Water Tanks*	<u>3</u>	Buried Produced Water Vaults*	_____
Drilling Pits	_____	Production Pits*	_____	Special Purpose Pits	_____	Multi-Well Pits*	_____	Modular Large Volume Tanks	<u>2</u>
Pump Jacks	_____	Separators*	<u>12</u>	Injection Pumps*	_____	Cavity Pumps*	_____	Gas Compressors*	<u>4</u>
Gas or Diesel Motors*	_____	Electric Motors	_____	Electric Generators*	_____	Fuel Tanks*	_____	LACT Unit*	<u>2</u>
Dehydrator Units*	_____	Vapor Recovery Unit*	_____	VOC Combustor*	_____	Flare*	_____	Pigging Station*	_____

### OTHER FACILITIES\*

<u>Other Facility Type</u>	<u>Number</u>
ECD	4
Gas Scrubber	3
VRT	2
Bulk Oil Treater	2
Temporary NGL Tank	1
Meter Run	2
Free Water Knockout	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:

26 Flowlines 2" Steel  
 5 Oil Lines 4" Steel  
 2 Water Line 6" poly  
 1 Water Line 4" poly  
 3 Gas Line 6" Steel  
 3 Gas Line 4" Steel

44 Total Lines

## CONSTRUCTION

Date planned to commence construction: 05/20/2019 Size of disturbed area during construction in acres: 13.91  
Estimated date that interim reclamation will begin: 02/01/2022 Size of location after interim reclamation in acres: 4.58  
Estimated post-construction ground elevation: 5067

## DRILLING PROGRAM

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

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? Yes

## DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? \_\_\_\_\_

Reuse Facility ID: \_\_\_\_\_ or Document Number: \_\_\_\_\_

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

## SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Rio La, LLC

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

Address: 812 Gravier Street

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

Address: Suite 360

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

City: New Orleans State: LA Zip: 70112

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 07/11/2018

## CURRENT AND FUTURE LAND USE

Current Land Use (Check all that apply):

Crop Land:  Irrigated  Dry land  Improved Pasture  Hay Meadow  CRP

Non-Crop Land:  Rangeland  Timber  Recreational  Other (describe): \_\_\_\_\_

Subdivided:  Industrial  Commercial  Residential

Future Land Use (Check all that apply):

Crop Land:  Irrigated  Dry land  Improved Pasture  Hay Meadow  CRP

Non-Crop Land:  Rangeland  Timber  Recreational  Other (describe): \_\_\_\_\_

Subdivided:  Industrial  Commercial  Residential

## CULTURAL DISTANCE INFORMATION

Provide the distance to the nearest cultural feature as measured from Wells or Production Facilities onsite.

	From WELL	From PRODUCTION FACILITY
Building:	505 Feet	382 Feet
Building Unit:	505 Feet	452 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	225 Feet	152 Feet
Above Ground Utility:	276 Feet	366 Feet
Railroad:	467 Feet	388 Feet
Property Line:	50 Feet	50 Feet
School Facility::	5280 Feet	5280 Feet
School Property Line:	5280 Feet	5280 Feet
Child Care Center:	5280 Feet	5280 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, Designated Outside Activity Area, School Facility, and Child Care Center – as defined in 100 Series Rules.  
 -For measurement purposes only, Production Facilities should only include those items with an asterisk(\*) on the Facilities Tab.

## SCHOOL SETBACK INFORMATION

Was Notice required under Rule 305.a.(4)?  Yes  No

## 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: 08/15/2018

## 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.

The closest BU to the pad is the Surface owner. The closest school to the proposed location is Silver Creek Elementary and is approximately 1.95 miles away. Because of the spacing unit this pad will drill, placing the pad at the southern extent of the well bores would put the location much closer to the school and within a LUMA. In addition, drilling 1-mile laterals from the central location from the middle of the well bores may place the Location within a LUMA. Land owner negotiations to the Northwest were unsuccessful and would be potentially in a DSL, leaving this parcel the last available location to drill this spacing unit. Movement East is restricted by the nearest building unit, which is also the surface owner. Movement North is restricted by 168th Ave's ROW and movement West is restricted by Colorado Blvd's ROW.

Also, all surrounding parcels and areas are within a floodplain. The location where the pad is placed is the only area not located in a floodplain.

**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: Platner loam, 0 to 3 percent slopes

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:

**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: 29 Feet

water well: 642 Feet

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

Basis for depth to groundwater and sensitive area determination:

Sensitive area determination: ground water is less than 20'. Depth to ground water determination: Static Water Level-Permit #729-WCB

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 318A

## 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

MLVT Statement

1. The manufacturer of the TLVST is Brewer Steel Company
2. The size of the TLVST is 60,000 BBLs
3. The anticipated time frame the TLVST will be onsite is three weeks.
4. A Construction Layout Drawing depicting the placement of the MLVT's has been attached.

The well distance to the property line is approx 50 feet; the encroached upon property owner is the same as the surface owner.

Page 1 of the SUA states the described lands are in Sec 12 of 1S-67W. This is a typo and should be listed as Sec 6 of 1S-67W. "Map on page 7 correctly identifies Sec 6"

SUA parcel map is attached as other

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

Signed: \_\_\_\_\_ Date: 10/18/2018 Email: regulatorypermitting@gwogco.com

Print Name: Linsey Jones Title: Regulatory Analyst

Based on the information provided herein, this Oil and Gas Location Assessment complies with COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  \_\_\_\_\_ Director of COGCC Date: 6/7/2019

**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**

	Upon completion of construction activities, Operator shall submit an as-built survey verifying the cultural distances as provided on this Form 2A.
	Operator shall post this Form 2A at the Location at all times during construction and drilling and completions operations.

**Best Management Practices****No BMP/COA Type****Description**

1	Planning	Development from existing well pads - Rule 604.c.(2)V  GWOC strives to utilize multi-well pads to minimize potential impacts to neighbors and the environment. Multi-well pads are not always feasible due to numerous possible issues including but not limited to; landowner requirements, topographic constraints, well bore reaches, setback requirements, etc.
2	Planning	Wellbore Collision Prevention (Rule 317.r)  Prior to drilling operations the operator will perform an anti-collision evaluation of all active (producing, shut-in or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.

3	Planning	<p>Sound and Light Mitigation</p> <p>During the drilling and completions phase, Great Western will construct sound/visual walls that will be placed along the edges of the pad. The sound/visual walls will prevent ground level lighting from the oil and gas operations from shining on nearby residences and roads.</p> <p>Light sources will be directed downwards, and away from occupied structures. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p>
4	Community Outreach and Notification	<p>Operator shall make an offer to all owners of residential water wells located within 1/2 miles of the proposed location to conduct baseline sampling and analysis of each well. Sample results will be provided to each respective water well owner, Adams County, and the COGCC. Water wells sampled will be subject to the "Condition of Water Source" described in COGCC Rule 318A.f.(2).C.iv.</p>
5	Traffic control	<p>Traffic Plan - Rule 604.c.(2)D.</p> <p>An access route from the highway or county road to the proposed oil and gas location has been prearranged. Required access road permits will be obtained before construction begins and any special requirements outlined by the municipality will be followed. Emergency routes will be chosen prior to the commencement of operations and will be clearly marked and maintained throughout drilling, completion and production activities.</p>
6	General Housekeeping	<p>General Housekeeping</p> <p>General housekeeping will consist of neat and orderly storage of materials and fluids. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at offsite, suitable facilities. If spills occur cleanup will be implemented within 24-48 hours, as appropriate, to minimize any commingling of waste materials with storm water runoff. Routine maintenance will be limited to fueling and lubrication of equipment. Drip pans will be used during routine fueling and maintenance to contain spills or leaks. Any waste product from maintenance will be containerized and transported offsite for disposal or recycling. There will be no major equipment overhauls conducted onsite. Equipment will be transported offsite for major overhauls. Cleanup will consist of patrolling the roadways, access areas, and other work areas to pick up trash, scrap debris, other discarded materials, and any contaminated soil. These materials will be disposed of properly.</p>
7	General Housekeeping	<p>Removal of Surface Trash - Rule 604.c.(2)P</p> <p>All surface debris, trash, unusable scrap, or solid waste from the facility will be properly temporarily stored on location in a secure container and ultimately removed and disposed of in a legal manner.</p>
8	Storm Water/Erosion Control	<p>Storm Water Management Plans (SWMP)</p> <p>Storm water controls will be constructed around the perimeter of the site prior to construction. The controls will result in no migration of sediment beyond the location boundaries. Typically, GWOC utilizes a ditch and berm system of storm water control at its sites. BMP's used are determined just prior to construction by a third party storm water contractor and may vary according to the location. Storm water controls will remain in place until the pad is stabilized or reaches final reclamation.</p>

9	Material Handling and Spill Prevention	<p>Material Handling and Spill Prevention</p> <p>In accordance with COGCC Rule 1002.f.(2)A. &amp; B., GWOC shall provide a designated storage area for dry bulk chemicals and miscellaneous fluids. The dry chemicals in the storage area shall be adequately protected to prevent contact with precipitation, shall be elevated above storm- or standing water, and shall provide sufficient containment for liquid chemical storage to prevent release of spilled fluids from impacting soil, surface water or groundwater and will prevent the co-mingling of spilled fluids or chemicals with other E&amp;P Waste.</p>
10	Material Handling and Spill Prevention	<p>Leak Detection Plan - Rule 604.c.(2)F.</p> <p>GWOC designs its new facilities to both avoid leaks or releases as well as to help detect them in a time-efficient manner to minimize potential impacts. Tanks and all visible pipelines and valves etc. are inspected informally on a daily basis by company lease operators. In addition, GWOC also conducts formal annual SPCC inspections, and formal site specific and random audits, by third-party consultants to inspect for general site conditions as well as condition of tanks, pipelines, and containment structures. In addition, our company lease operators and Production staff review production records, including volumes and pressures, looking for irregularities that may indicate a problem with a tank or pipeline. If an irregularity is detected that may indicate a potential release the suspect tank and/or pipeline(s) are removed from service, isolated, and either pressure tested or visibly inspected for indications of a potential leak.</p>
11	Material Handling and Spill Prevention	<p>Control of Fire Hazards - Rule 604.c.(2)N</p> <p>GWOC constructs and operates our facilities to meet all applicable state and API codes, including API RP 500 electrical classifications inside bermed areas. Any unused potentially flammable materials are moved a minimum distance of 25-feet from wellhead, tanks, and separator areas. In addition, GWOC implements a Hot Work Permit Program for employees and contractors doing any defined 'Hot Work' activities on GWOC locations.</p>
12	Material Handling and Spill Prevention	<p>Tank specifications - Rule 604.c.(2)R</p> <p>All newly installed or replaced crude oil and condensate storage tanks shall be designed, constructed, and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). GWOC shall maintain written records verifying proper design, construction, and maintenance, and shall make these records available for inspection by the Director. Only the 2008 version of NFPA Code 30 applies to this rule.</p>
13	Material Handling and Spill Prevention	<p>Operator shall line the production facilities, program the Location for remote shut in capabilities and install leak detection.</p>
14	Dust control	<p>Dust Control</p> <p>Dust control measures will be implemented to minimize generation of visible dust: control measures will be applied as necessary and may include surface stabilization, or dust control with appropriate chemical or later applications.</p>

15	Construction	<p>Berm Construction - Rule 604.c.(2)G.</p> <p>A minimum containment capacity of 150% of the single largest storage vessel inside the containment will be constructed around any liquids storage area within a designated setback zone. For this location, steel containment with sealed liners will be utilized at all storage facilities on this location.</p> <p>Tanks and all visible pipelines and valves etc. will be inspected informally on a daily basis by company lease operators. In addition, GWOC also conducts formal annual SPCC inspections, and formal site specific and random audits, by third-party consultants to inspect for general site conditions as well as condition of tanks, pipelines, and containment structures.</p>
16	Construction	<p>Fencing requirements - Rule 604.c.(2)M</p> <p>At a minimum GWOC installs appropriate fencing to restrict access by any unauthorized persons. This fencing may vary depending on site-specific situations, such as reasonable security, local government or surface owner concerns. Fencing will be properly noted on facility. Fencing will be properly noted on facility layout diagrams for both drilling/completion and the production phases of operations.</p>
17	Construction	<p>Access Roads - Rule 604.c.(2)S</p> <p>All access roads are designed, constructed, and maintained such that heavy equipment, including emergency response vehicles, can readily access and exit the location. GWOC will construct all weather access roads to allow for operator and emergency response. In addition, GWOC will implement manual mud mitigation measures (eg. tracking control rock aprons) at location exits onto paved roads as necessary and in conjunction with county requirements.</p>
18	Noise mitigation	<p>Noise - Rule 604.c.(2)A.</p> <p>Great Western Operating Company, L.L.C. (GWOC) will operate in accordance with permissible noise levels per COGCC Rule 604.c.(2)A. and 802, as applicable. During the drilling and completions phase, Great Western plans to construct sound/visual walls that will be placed along the edges of the pad. Drilling rig and completion equipment engine exhaust will be directed away from the closest occupied buildings to assist with noise mitigation. These practices will be implemented upon initiation of drilling and completions</p>
19	Emissions mitigation	<p>Great Western shall conduct monitoring during drilling and completions and shall perform inspections during production (AVO and LDAR) and maintain compliance with the permit and control provisions of the Colorado Air Quality Control Program, Title 25, Article 7, C.R.S.</p>
20	Odor mitigation	<p>Odors Mitigation</p> <p>Drilling rig and completion equipment engine exhaust will be directed away from the closest occupied buildings to assist in mitigating potential odors. Sealed tanks with pressure relief valves and emissions controls will be utilized for the production phase. Great Western will be using a synthetic oil based drilling fluid called D822. Based upon laboratory analysis, the D822 contains lower levels of VOC and aromatics when compared to diesel. This will be used during the drilling phase in order to minimize any possible odors emitting from the site.</p>
21	Drilling/Completion Operations	<p>MLVT Certification Statement</p> <p>Great Western Operating Company certifies that the MLVTs on this location will be designed and implemented consistent with the COGCC Policy on the use of MLVTs in the state of Colorado.</p>

22	Drilling/Completion Operations	<p>Closed Loop Drilling – Pit Restrictions Rule 604.c.(2)B.</p> <p>Great Western Operating Company, LLC (GWOC) will be utilizing a closed loop drilling system.</p>
23	Drilling/Completion Operations	<p>Green Completions – Emissions Control System Rule 604.c.(2)C.</p> <p>Green Completions -Test separators and associated flow lines, sand traps and emission control systems shall be installed on-site to accommodate green completions techniques. When commercial quantities of salable quality gas are achieved at each well, the gas shall be immediately directed to a sales line or shut in and conserved. If a sales line is unavailable or other conditions prevent placing the gas into a sales line, the operator shall not produce the wells without an approved variance per Rule 805.b.(3)C.</p>
24	Drilling/Completion Operations	<p>Multi-well Pads - Rule 604.c.(2)E.</p> <p>This is a multi-well pad. GWOC utilizes multi-well pads wherever feasible to minimize potential impacts to neighbors and the environment. The pad has all weather access roads to allow for operator and emergency response.</p>
25	Drilling/Completion Operations	<p>BOPE for well servicing - Rule 604.c.(2)J</p> <p>A BOPE with a minimum pressure rating of 3,000 psi will be utilized. At a minimum it will consist of 2 ram preventers and 1 annular preventer. The blind rams will be positioned below the pipe rams. A backup system of pressure control will be onsite consisting of at a minimum 1,000 psi accumulator (backup pressure). Accumulator is tested to 1,000 psi. Operator may use fixed sized pipe rams matching the tubular size. The annular preventer will be pressure tested to 250 psi low and 2,000 psi high for 10 minutes each. The ram preventers will be tested to 250 psi low and 2,500 psi high for 10 minutes each. All remaining well control equipment will be tested to 250 psi low and 2,500 psi high for 10 minutes each. The pressure tests will be conducted when the equipment is first installed and every 30 days thereafter. Pipe rams and blind rams will be function tested before every well service operation. Annual BOP inspections and pressure tests will be performed by the service company and will be charted &amp; retained for 1 year. Backup stabbing valves shall be used on operations that require reverse circulation. Valves will be pressure tested before each well service operation in low pressure and high pressure range. The GWOC onsite representative will be certified in Well Control Operations by a Well-Cap certified training service.</p>
26	Drilling/Completion Operations	<p>Pit level indicators - Rule 604.c.(2)K</p> <p>GWOC does not typically utilize pits in any of its operations. No pits will be used for this facility.</p>
27	Drilling/Completion Operations	<p>Load lines - Rule 604.c.(2)O</p> <p>All load lines will be capped or bull-plugged or locked shut to reduce the likelihood of a release occurring. In addition, GWOC places all load line receivers/valves inside secondary containment areas or in a proper load line containment device or both.</p>
28	Drilling/Completion Operations	<p>Guy line anchors - Rule 604.c.(2)Q</p> <p>Great Western will primarily utilize Base Beams to stabilize the rig and removed after drilling. In the event Great Western is unable to use a rig with Base Beams, Guy Line Anchors will be utilized. In the event guy line anchors are utilized and left buried for future use shall be identified by a brightly colored marker at least 4-foot in height and within 1-foot to the east of the anchor.</p>

29	Drilling/Completion Operations	<p>Oil-Based Drilling Fluids and Drill Cuttings Waste Management</p> <p>Oil-based drilling fluids (OBDF) will be separated from the cuttings at surface. At the end of its use on a particular well, the liquid oil-based mud will be reused for additional drilling operations or it will be returned to then vendor who originally supplied the mud. Transportation will occur on a daily basis as required to facilitate on ongoing drilling operations.</p> <p>Oil-based drill cuttings (OBDC) will be separated from liquid mud onsite and the cuttings will be temporarily stored onsite in steel bins. Accumulated cuttings will be transported for permanent disposal to a licensed solid waste disposal facility. The actual solid waste disposal facility that will be used will depend on geographic proximity to the well being drilled. Transportation will occur on a daily basis as required to facilitate ongoing drilling operations.</p>
30	Drilling/Completion Operations	<p>Operator shall program the Location with remote shut in capabilities. This capability will allow the Operator to remotely access the Control System on site and shut in any or all wells within seconds.</p>
31	Final Reclamation	<p>Well site cleared - Rule 604.c.(2)T</p> <p>Within ninety (90) days after a well is plugged and abandoned, the well site shall be cleared of all non-essential equipment, trash, and debris.</p>
32	Final Reclamation	<p>Identification of P&amp;A wells - Rule 604.c.(2)U</p> <p>GWOC shall identify the location of the P&amp;A wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument. P&amp;A wellbores shall be cutoff well below ground surface in agricultural areas to provide for landowners to safely farm the reclaimed well area.</p>

Total: 32 comment(s)

## Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1010634	306.e CERTIFICATION
1010640	CORRESPONDENCE
1010649	LGD RESPONSE
1010650	NEIGHBORHOOD MEETING SUMMARY
1010654	LOCAL PERMIT
1010663	DIRECTOR CRITERIA REVIEW SUMMARY
1010664	PUBLIC COMMENT RESPONSE MEMO
401749741	FORM 2A SUBMITTED
401780804	ACCESS ROAD MAP
401780811	CONST. LAYOUT DRAWINGS
401780812	FACILITY LAYOUT DRAWING
401780817	HYDROLOGY MAP
401780819	LOCATION PICTURES
401780820	MULTI-WELL PLAN
401780863	WASTE MANAGEMENT PLAN
401780867	SURFACE AGRMT/SURETY
401780869	OTHER
401780893	LOCATION DRAWING
401781607	NRCS MAP UNIT DESC
401802161	PRE-APPLICATION NOTIFICATION CERTIFICATION

Total Attach: 20 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
OGLA	OGLA review complete.	06/07/2019
OGLA	Updated BMP language with Operator concurrence.	06/07/2019
OGLA	Per request by the COGCC, Operator has provided the School Setback Cultural Distances, the Child Care Facility Cultural Distance and the Local Government Information. COGCC has entered this information onto the updated Form 2A.	05/29/2019
OGLA	OGLA Task PENDING per eForm update for Local Government Information.	05/24/2019
OGLA	Set Review Status back to PENDING.	05/24/2019
Final Review	•Final permitting review complete. Sent to Final Approval.	05/17/2019
OGLA	Per Operator:  Surface Owner:  The surface owner for the Rio Pad is William Corcilus, who is also the developer and the closest building unit.	05/17/2019
OGLA	On May 15, 2019, COGCC staff contacted the Cities of Thornton and Northglenn. The City of Thornton worked with the Operator regarding weight limits for the use of their roads. The operator has agreed to abide by the weight limits as requested by the City of Thornton. The City of Thornton has no additional concerns regarding the proposed Oil and Ga Location. At that time of discussion with the City of Northglenn, the City of Northglenn had no immediate concerns regarding the proposed Oil and Gas Location.	05/17/2019

OGLA	<p>Per Operator:</p> <p>Municipality Outreach</p> <p>As part of the Adams County AUSR process, jurisdictions are given the opportunity to submit referral comments on permits. In the case of the Rio Pad, Adams County sent referral comment opportunities to Weld County, City of Brighton, and City of Thornton. The City of Thornton provided several comments concerning weight restrictions along some of the proposed traffic routes. Based on their comments, Great Western revised and selected, and Adams County approved, three truck routes. Neither Weld County nor City of Brighton responded to the referral notice. Therefore, Adams County considers them to have a favorable response to the Rio Pad AUSR.</p>	05/17/2019
OGLA	<p>Per Operator, the following is a summary of the communications with the Building Unit Owners within the Buffer Zone.</p> <p>The following notifications were sent out to the building unit owners in the buffer zone:</p> <p>COGCC Pre-Application notices on 8/21/2018 Buffer Zone notices on 11/1/2018</p> <p>*No comments or questions were received after these notices went out</p> <p>Adams County As part of the Adams County permit process, a Neighborhood Meeting was held on 12/12/2018. Parcel Owners within ½ a mile of the parcel our pad is on, are invited. There were 4 people in attendance who were from the parcel to the east of our project who had a few questions about our project but no major concerns. We had no other comments or questions from others before or after the meeting.</p> <p>As part of the Adams County Permit process, Adams County sends out referral notices to the same parcel owners within a ½ mile on 2/11/18. There was an open comment period and we received no comments / questions / concerns.</p>	05/10/2019
Final Review	<p>ON HOLD pending resolution of LGD questions and BMPS as necessary.</p> <p>- Resolution of LGD questions received and uploaded 04/15/2019: MMH - With Operator concurrence, added Baseline Water Well Sampling, Air Monitoring and Shut In Capabilities BMPs to the Operator BMPs. - MMH</p>	04/10/2019
OGLA	<p>Pushed back to In Process. Internal database issues have been resolved.</p>	04/10/2019
Permit	<ul style="list-style-type: none"> <li>•With concurrence from operator, updated Construction Date.</li> <li>•Initial permitting review complete and task passed.</li> </ul>	03/08/2019
Permit	<ul style="list-style-type: none"> <li>•With concurrence from operator, removed additional wells within the related forms tab.</li> <li>•With concurrence from operator, corrected the right to construct to SUA.</li> <li>•With concurrence from operator, corrected the distance to railroad, per the Form 2 Doc#401783056.</li> </ul>	02/12/2019
Permit	<ul style="list-style-type: none"> <li>•Number of wells on the facilities tab does not agree with the number of related forms. Requesting concurrence on removal.</li> <li>•Right to construct is incorrect. Requesting concurrence on correction to SUA.</li> </ul>	01/25/2019
OGLA	<p>Moved the following from the stormwater BMP to the Submit Tab as it is not an enforceable COGCC BMP.</p> <p>Storm Water Management Plans (SWMP) are in place to address construction, drilling and operations associated with Oil and Gas development throughout the state of Colorado in accordance with Colorado Department of Public Health and Environment (CDPHE).</p> <p>Spill Prevention Control and Countermeasures (SPCC) plans in place to address any possible spills associated with Oil and Gas operations throughout the state of Colorado in accordance with CFR 112.</p>	01/22/2019
OGLA	<p>Missing 1 FWKO from the Facilities List</p>	12/12/2018

- Per operator request, added one Free Water Knockout to the Facilities List. - 01/22/2019  
 Need the 306.e Certification Letter  
 - Received - 03/01/2019: Uploaded - 03/06/2019

Siting Rationale needs further review. Moving the Location to the southern extent of the wellbores would potentially place it within 1000 feet of a school. It also appears that potentially drilling 1-mile laterals drilled from a Location within the center of the well bores may place the Location within a LUMA?  
 - Verifying addition to the siting rationale with the Operator. 01/08/2019  
 - Discussed Siting Rationale with Operator - 01/22/2019  
 Operator provided updated siting rationale:  
 "The closest BU to the pad is the Surface owner. The closest school to the proposed location is Silver Creek Elementary and is approximately 1.95 miles away. Because of the spacing unit this pad will drill, placing the pad at the southern extent of the well bores would put the location much closer to the school and within a LUMA. In addition, drilling 1-mile laterals from the central location from the middle of the well bores may place the Location within a LUMA. Land owner negotiations to the Northwest were unsuccessful and would be potentially in a DSL, leaving this parcel the last available location to drill this spacing unit. Movement East is restricted by the nearest building unit, which is also the surface owner. Movement North is restricted by 168th Ave's ROW and movement West is restricted by Colorado Blvd's ROW.

Also, all surrounding parcels and areas are within a floodplain. The location where the pad is placed is the only area not located in a floodplain."

Changed the distance to the nearest railroad to 467 feet based on APD Document #401783056.

Changed the estimated depth to groundwater to 17 feet based on the static water level reported for DWR Water Well Permit #729-WCB. Changed the Basis Statement to reflect DWR Permit #729-WCB and groundwater less than 20 feet bgs.

Surface water feature located 29 feet from the proposed Location is a side ditch located parallel to CR 2 / E 168 Avenue.

Rio LA Location to the south to be abandoned.  
 - Per Operator concurrence, placed the following Condition of Approval on the Form 2A. 03/11/2019  
 Operator shall abandon the Rio LA Location, Location ID #320491, within 30 days of approval of this Form 2A.  
 - Removed COA. Operator may amend existing Location.  
 - Placed ON HOLD. Change of Operators between 07/2016 and 11/2017 places a PetroShare Well (Sack) on a GWOC Location (Rio LA).  
 - Data cleanup to separate the Locations is being completed. This Form 2A will remain submitted as a new Location. Operator will be using the same Rio LA API numbers for the Rio Location. Wells will shift upon approval of this Form 2A.

Modified Noise BMP.

Operator held neighborhood meeting. Will send update information. - 03/06/2019  
 - Received 03/13/2019 - uploaded 03/21/2019

LGD	<p>1)Great Western is engaged in an MOU agreement with Adams County.</p> <p>2)Great Western is required to hold a neighborhood meeting allowing residents in the community to attend and ask questions about the project. COGCC is encouraged to attend.</p> <p>3)Per the operators MOU with Adams County, baseline testing of all residential water wells located within 1/2 mile of the proposed location will be required upon the owner's request.</p> <p>4)Remote well pressure monitoring and shut in controls should be required to minimize spills, or other emergencies from occurring.</p> <p>5)Multiple mobilizations for drilling and completions increase the impact to neighboring communities. What is the planned drilling completions schedule for wells being permitted?</p> <p>6)What specifically is Great Western doing to maintain compliance with air quality regulations? What equipment will be installed, what phases will the equipment be installed, will there be onsite air monitors, at what frequency will the equipment be checked for performance standards (old unmaintained equipment may not function as effectively), How frequently will the facility be checked for leaking equipment?</p> <p>7)Electric drill and completions equipment would help meet local noise ordinances and reduce overall impacts to the neighboring communities, and should be a required BMP.</p>	11/21/2018
OGLA	Public comment period extended 10 days at the request of the Adams County LGD under Rule 305.d.(1)A. The new comment period end date is 11/28/2018.	11/06/2018
Permit	Passed completeness	10/29/2018

Total: 20 comment(s)