

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:

401128265

Date Received:

11/01/2016

Oil and Gas Location Assessment

☒ New Location ☐ Refile ☐ Amend Existing Location Location#: _____

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

Location ID:

449521

Expiration Date:

03/05/2020

☒ 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: 10110
Name: GREAT WESTERN OPERATING COMPANY LLC
Address: 1801 BROADWAY #500
City: DENVER State: CO Zip: 80202

Contact Information

Name: Callie Fiddes
Phone: (303) 398-0550
Fax: ()
email: cfiddes@gwogco.com

RECLAMATION FINANCIAL ASSURANCE

☒ Plugging and Abandonment Bond Surety ID: 20160041 ☐ Gas Facility Surety ID: _____
☐ Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Ottesen LE Pad Number: 06-330HN
County: WELD
QuarterQuarter: NWSE Section: 33 Township: 1N Range: 66W Meridian: 6 Ground Elevation: 5079
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: 1410 feet FSL from North or South section line
1608 feet FEL from East or West section line
Latitude: 40.004325 Longitude: -104.778431
PDOP Reading: 1.5 Date of Measurement: 06/30/2016
Instrument Operator's Name: Dallas Nielsen

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 #

Well Site is served by Production Facilities

401128290

FACILITIES

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

Wells	49	Oil Tanks*		Condensate Tanks*		Water Tanks*		Buried Produced Water Vaults*	
Drilling Pits		Production Pits*		Special Purpose Pits		Multi-Well Pits*		Modular Large Volume Tanks	2
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

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:

49 – 3" steel line
50 - 3" steel oil line
50 – 3" steel vent line
2 – 3" steel return gas line
2 – 3" poly pipe

CONSTRUCTION

Date planned to commence construction: 04/01/2018

Size of disturbed area during construction in acres: 17.20

Estimated date that interim reclamation will begin: 08/01/2018

Size of location after interim reclamation in acres: 4.00

Estimated post-construction ground elevation: 5073

DRILLING PROGRAM

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

Is H₂S anticipated? No

Will salt sections be encountered during drilling: No

Will salt based mud (>15,000 ppm Cl) be used? No

Will oil based drilling fluids be used? Yes

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE

Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE

Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

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

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Sukhminder & Jasvir Mann

Phone: _____

Address: 9670 Swan Lake Dr

Fax: _____

Address: _____

Email: _____

City: Granite Bay State: CA Zip: 95746

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 11/25/2016

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:	1109 Feet	Feet
Building Unit:	1259 Feet	Feet
High Occupancy Building Unit:	3101 Feet	Feet
Designated Outside Activity Area:	5280 Feet	Feet
Public Road:	1298 Feet	Feet
Above Ground Utility:	1488 Feet	Feet
Railroad:	5280 Feet	Feet
Property Line:	272 Feet	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: Olney loamy sand, 1 to 3 percent slopes #44

NRCS Map Unit Name: Vona loamy sand, 3 to 5 percent slopes #73

NRCS Map Unit Name: Olney fine sandy loam, 1 to 3 percent slopes #47

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: _____ 35 Feet

water well: _____ 1308 Feet

Estimated depth to ground water at Oil and Gas Location _____ 14 Feet

Basis for depth to groundwater and sensitive area determination:

Receipt: 0445505
Permit #: 218426
Depth to water based on Receipt 9063438, permit 29282

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

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 While this pad is outside a desingated setback location, Great Western plans to implement best management practices associated with rule 604.c .

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 four weeks.
4. A Construction Layout Drawing depicting the placement of the MLVT's has been attached.

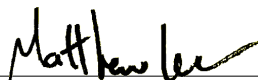
The pre-application notification was hand delivered to the surface owner (who is the only owner located within 1000') and he signed off waiving the 30 day wait to submit permits. This waiver is attached (labeled other) in lieu of the 305.a. certification.

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

Signed: _____ Date: 11/01/2016 Email: regulatorypermitting@gwogco.com

Print Name: Callie Fiddes Title: Regulatory Specialist

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: 3/6/2017

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

	The Approved Form 2A permit will be posted at the location during construction, drilling, and completions operations.
--	---

Best Management Practices

No	BMP/COA Type	Description
1	Planning	<p>Identification of P&A wells (Rule 604.c.(2)U)</p> <p>GWOC shall identify the location of the P&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&A wellbores shall be cutoff well below ground surface in agricultural areas to provide for landowners to safely farm the reclaimed well area.</p>
2	Planning	<p>Development from existing well pads (Rule 604.c.(2)V)</p> <p>Where possible, GWOC shall provide for the development of multiple reservoirs by drilling on existing pads. GWOC strives to utilize multi-well pads wherever technically and economically practicable 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.</p>
3	Planning	<p>Light Mitigation</p> <p>Light sources will be directed downwards, and away from occupied structures where possible. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p>
4	Planning	<p>In order to reduce truck traffic, water will be pumped during the completions phase.</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>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>
7	General Housekeeping	<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>
8	General Housekeeping	<p>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>

9	Storm Water/Erosion Control	<p>Storm Water Management Plans (SWMP)</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). Storm water controls will be constructed around the perimeter of the site prior to construction. 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>
10	Material Handling and Spill Prevention	<p>Material Handling and Spill Prevention</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> <p>In accordance with COGCC Rule 1002.f.(2)A. & B., 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 & P Waste.</p>
11	Construction	<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>
12	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 new 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. Inspections will be recorded and made available to COGCC upon request.</p>
13	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>

14	Construction	<p>Control of Fire Hazards (Rule 604.c.(2)N)</p> <p>GWOC constructs and operates our facilities to meet state and API codes, as appropriate, 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>
15	Construction	<p>Load lines (Rule 604.c.(2)O)</p> <p>In any designated setback zone all loadlines are capped or bullplugged 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>
16	Construction	<p>Guy line anchors (Rule 604.c.(2)Q)</p> <p>Guy line anchors left buried for future use shall be identified by a brightly colored marker at least 4-feet in height and within 1-foot to the east of the anchor.</p>
17	Construction	<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>
18	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. The pad has 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>
19	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. Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings to assist with noise mitigation. These practices will be implanted upon initiation of drilling and production. No noise issues are expected at this site since we are over 1000' away from the nearest building unit. From the floor of the drill pad to top of berm is 32'. This blockade will assist in noise mitigation.</p>

20	Emissions mitigation	<p>Green Completions (Rule 604.c.(2)C.</p> <p>As applicable, per COGCC Rule 805, GWOC will utilize all reasonable and cost-efficient best practices, including but not limited to those listed in Rule 805, to maximize resource recovery and mitigate releases to the environment.</p> <ul style="list-style-type: none"> • Initial frac and drill out effluent is routed through a sand catcher/trap and a junk/sand tank to remove sand and well frac debris. • Once any hydrocarbons are detected but prior to encountering salable quality combustible gas or significant volumes of liquid hydrocarbons (condensate or oil) (greater than 10 barrels per day average) the effluent is routed through a high-pressure separator and closed-top tanks to minimize emissions to the environment. Hydrocarbon liquids, produced water, and sand are separated utilizing the high-pressure separator. • The quality (combustibility) of the gas is typically monitored directly at the high-pressure separator. When salable (combustible) quality gas is measured/detected the gas stream is immediately diverted to the sales pipeline or the well is shut in. • The separated produced water and hydrocarbon liquids (condensate/oil) are directed to specific tanks for storage until being unloaded and hauled to disposal or sales as appropriate.
21	Odor mitigation	<p>Odors Mitigation</p> <p>Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings to assist in mitigating potential odors. Sealed tanks with pressure relief valves and emissions controls will be utilized for the production phase.</p> <p>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>
22	Drilling/Completion Operations	<p>Closed Loop Drilling Systems - Pit Restrictions (Rule 604.c.(2)B.</p> <p>GWOC is utilizing a Closed Loop Drilling System on the subject facility. No open pit storage of water will be used for this facility.</p>
23	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 technically and economically practicable to minimize potential impacts to neighbors and the environment. The pad has all weather access roads to allow for operator and emergency response.</p>
24	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 & 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>

25	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>
26	Drilling/Completion Operations	<p>Drill stem tests (Rule 604.c.(2)L)</p> <p>Conventional drill stem tests will not be conducted on DJ Basin horizontal wells currently being executed or planned by GWOC. If plans change in the future a well specific drill stem testing plan will be prepared for that particular well. Note that GWOC may elect to use one of several available wireline deployed tools for the purpose of measuring downhole formation pressures and/or collecting downhole fluid samples from the target formation(s) of a particular well.</p>
27	Drilling/Completion Operations	<p>Bradenhead Monitoring</p> <p>GWOC will comply with the "COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area", dated May 29, 2012</p>
28	Drilling/Completion Operations	<p>Multi Well Open Hole Logging</p> <p>One of the first wells drilled on the pad will be logged with open-hole Resistivity Log and Gamma Ray Log from the kick-off point into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measured-while-drilling gamma-ray log. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs shall clearly state "No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run.</p>
29	Drilling/Completion Operations	<p>Stimulation Setback (Rule 317.r)</p> <p>Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottomhole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment.</p>
30	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>
31	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 the vendor who originally supplied the mud. Transportation will occur on a daily basis as required to facilitate 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 is 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>

Total: 31 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2316043	NRCS MAP UNIT DESC
2316044	ACCESS ROAD MAP
2316057	CONST. LAYOUT DRAWINGS
401128265	FORM 2A SUBMITTED
401136831	HYDROLOGY MAP
401136839	LOCATION PICTURES
401136840	FACILITY LAYOUT DRAWING
401136842	MULTI-WELL PLAN
401136843	NRCS MAP UNIT DESC
401136844	NRCS MAP UNIT DESC
401136845	WASTE MANAGEMENT PLAN
401137206	LOCATION DRAWING
401140422	OTHER
401161739	SURFACE AGRMT/SURETY

Total Attach: 14 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Off hold--APDs have been corrected.	03/06/2017
Permit	Placed on hold--APDs need corrections to distance to nearest well permitted.	02/27/2017
Permit	Final Review Completed.	02/24/2017
OGLA	Public comments were from the neighboring municipality regarding traffic concerns. Operator changed the access route to the location and is having water pumped for completions to reduce the amount of truck traffic to the location. The LGD for the area was contacted by one individual regarding more information on the location. The LGD also commented on Weld County requirements for building the location. CPW added a comment, but the location did not trigger a CPW consultation. The Operator was aware of CPWs comment and concerns. OGLA review complete and task passed.	02/23/2017
OGLA	This location is not in a designated setback location area. Based on the information provided by the Operator, COGCC has determined that this proposed Oil and Gas Location meets the requirements for conditional approval based on compliance with COGCC Rules, including, but not limited to; Rule 604 Series Setback and Mitigation Measures. The Operator has provided Best Management Practices that adequately address site specific environmental, health, safety and welfare concerns.	02/23/2017
OGLA	Operator provided information regarding water being pumped to the location for completions using the MLVTs.	02/23/2017
OGLA	Operator sent additional information regarding noise mitigation and berms via email. COGCC added information to the noise BMP provided.	02/17/2017
OGLA	Operator provided a new construction layout drawing. COGCC replaced the construction drawing and MLVTs meet the COGCC policy.	02/16/2017

OGLA	<p>Requested information on MLVT location as it appears to be closer than 75 feet from the well based on the construction drawing scale. Confirmed noise information and Operator responded with:</p> <p>"So while the construction layout depicts two MLV tanks with the northern one looking like it almost touches the wellheads, the plan is to only have two while we drill the western row of wells. Once we start drilling the southeast row of wells we will not be utilizing that second tank – just the southern one.</p> <p>Being over 1000' away we do not expect any noise complaints and plan to operate within permissible noise levels. The berming and the tanks will help block out some of the noise and so will 168th Avenue to the south."</p> <p>Construction drawings show approximately a 32' high berm from the cut and fill for the location.</p> <p>Further email correspondence with the Operator regarding the MLVT, that the MLVTs will not be used for the southwest wells.</p>	02/10/2017
OGLA	The CPW comment is a public comment due to there is not a mapped sensitive or restricted wildlife area in the area of the proposed location.	01/25/2017
OGLA	Operator responded via email correspondence: OK to change distance to HOBUE to 3101, Added NRCS#47 and attached, OK to change water resources to sensitive area and depth to water at 14 feet. Nearest well is permit 218426, but depth to water based on permit 218426 to the northwest. Operator is aware of CPW comment and City of Brighton comments. Operator provided new access road map - replaced.	01/10/2017
LGD	This proposed oil and gas well pad is located in unincorporated Weld County. The COGCC Form 2A for this location was submitted on or before February 1, 2017 and the proposed location is considered a Use by Right in the Agricultural Zoned District with no Weld Oil and Gas Location Assessment (WOGLA) required. A building permit is required for the production facilities (tank battery, separators, pump jacks, compressors, generators, etc.) from the Department of Planning Services. The Weld County Oil and Gas Liaison/LGD was contacted on January 2, 2017 by a resident living on Kelly Lane approximately ½ mile WSW of the proposed production facility who asked to be informed of when there would be a public meeting for the proposed location. The caller was sent an e-mail with drawings of the proposed production facility and well pad, the operator's contact information, and information regarding public comment. As of today's date, the caller has not contacted the Weld County Oil/Gas Liaison/LGD or the operator with any comments. The proposed access is off a section of Weld County Road 31 that is maintained by the City of Brighton. The operator and the city have had discussions regarding access. Troy Swain, Weld Oil/Gas Liaison and LGD (970) 400-3579.	01/06/2017
OGLA	OGLA review: location is not in a designated set back location, check with reclamation on location photos, Check with Operator on distance to nearest HOBUE and depth to water, NRCS add - #47,	01/05/2017
OGLA	<p>CPW does not have a consultation but added the following comment:</p> <p>This site is located in a known prairie dog town. If initial site disturbance occurs during the burrowing owls nesting period (March 15 to October 31), then CPW recommends a burrowing owl survey (protocol located here - https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/RecommendedSurveyOwls.pdf). If a burrowing owl is observed, then CPW recommends a 150-ft buffer from the main nesting or loafing burrows. CPW also recommends sending the GPS units of the burrowing owl nesting burrow. If no burrowing owls are present, then construction can proceed with site disturbance. If the Operator has any questions, please contact Brandon Marett at (303) 291-7327.</p>	01/04/2017
Permit	Permitting Review Complete.	12/20/2016
OGLA	Comment period extended from 12/27/16 to 1/6/17 at the request of the Weld County LGD	12/15/2016

Permit	Passed completeness.	12/07/2016
Permit	Returned to draft for operator to attach SUA and correct right to construct to SUA.	11/30/2016

Total: 18 comment(s)