

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:

400616232

Date Received:

06/06/2014

Oil and Gas Location Assessment

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

Submit signed original form. 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:

Expiration Date:

☐ 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: regulatorypermitting@gwogco.com

RECLAMATION FINANCIAL ASSURANCE

☒ Plugging and Abandonment Bond Surety ID: 20090080 ☐ Gas Facility Surety ID: _____

☐ Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: DeTienne FD Pad Number: 16-022HC

County: WELD

QuarterQuarter: NWSW Section: 10 Township: 6N Range: 67W Meridian: 6 Ground Elevation: 4836

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: 1894 feet FSL from North or South section line

580 feet FWL from East or West section line

Latitude: 40.499319 Longitude: -104.886808

PDOP Reading: 2.1 Date of Measurement: 05/15/2014

Instrument Operator's Name: Chad Meiers

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	<u>14</u>	Oil Tanks	<u>20</u>	Condensate Tanks	<u> </u>	Water Tanks	<u>4</u>	Buried Produced Water Vaults	<u> </u>
Drilling Pits	<u> </u>	Production Pits	<u> </u>	Special Purpose Pits	<u> </u>	Multi-Well Pits	<u> </u>	Temporary Large Volume Above Ground Tanks	<u>1</u>
Pump Jacks	<u> </u>	Separators	<u>14</u>	Injection Pumps	<u> </u>	Cavity Pumps	<u> </u>		
Gas or Diesel Motors	<u> </u>	Electric Motors	<u> </u>	Electric Generators	<u> </u>	Fuel Tanks	<u> </u>	Gas Compressors	<u>2</u>
Dehydrator Units	<u> </u>	Vapor Recovery Unit	<u>2</u>	VOC Combustor	<u> </u>	Flare	<u> </u>	LACT Unit	<u> </u>
								Pigging Station	<u> </u>

OTHER FACILITIES

Other Facility Type

Number

ECD	<u>6</u>
VRT	<u>4</u>

Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

14 – 3" steel line
14 - 3" steel oil line
14 – 3" steel vent line
2 – 3" steel return gas line
2 – 3" poly pipe

CONSTRUCTION

Date planned to commence construction: 10/27/2014 Size of disturbed area during construction in acres: 8.78

Estimated date that interim reclamation will begin: 04/27/2015 Size of location after interim reclamation in acres: 4.62

Estimated post-construction ground elevation: 4838

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? No

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: Marlyn R. DeTienne

Phone: _____

Address: 34180 CR 19

Fax: _____

Address: _____

Email: _____

City: Windsor State: CO Zip: 80550

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 04/15/2014

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

Distance to nearest:

Building: 810 Feet
Building Unit: 918 Feet
High Occupancy Building Unit: 5280 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 574 Feet
Above Ground Utility: 552 Feet
Railroad: 5280 Feet
Property Line: 580 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.

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.

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: 05/29/2014

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: Kim loam, 3-5 percent slopes

NRCS Map Unit Name: Aquolls and Aquepts, flooded

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: 300 Feet

water well: 1296 Feet

Estimated depth to ground water at Oil and Gas Location 6 Feet

Basis for depth to groundwater and sensitive area determination:

Receipt: 9058911
Permit #: 2508-F -

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: _____

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 Building Unit)
- ☐ 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

The surface owner did opt out of receiveing further communications. Opt out request attached. Waivers from surface owners waiving 30 day wait period from pre-application notifications also attached.

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

Signed: _____ Date: 06/06/2014 Email: regulatorypermitting@gwogco.com

Print Name: Callie Fiddes 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: _____

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.

Best Management Practices

No BMP/COA Type

Description

1	Planning	<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. Oil and produced water storage tanks are in lined containment areas. A minimum containment capacity of 110% (150% in Urban Mitigation Areas) of the single largest storage vessel inside the containment is constructed around any storage area. 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>
2	Planning	<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.</p>
3	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>

4	Traffic control	<p>Traffic Plan (Rule 604.c.(2)D.</p> <p>GWOC works closely with all municipalities and the county's as appropriate on traffic, access, maintenance, and road construction issues. Typically, our Conditional Use Grant (CUG) from these agencies will include either a formal roads/traffic/access plan or language referring to specific traffic-related issues. These plans or language may address issues such as; routes, construction specification of access roads, maintenance, dust control, jake brake limits, traffic controls, enforcement, emergency response, etc.</p>
5	General Housekeeping	<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 prompt cleanup is required 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 and promptly.</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	Storm Water/Erosion Control	<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). BMP's will be constructed around the perimeter of the site prior to, or at the beginning of construction. BMP's used will vary according to the location, and will remain in place until the pad reaches final reclamation.</p>
9	Material Handling and Spill Prevention	<p>Spill Prevention Control and Countermeasures (SPCC) plans are 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 storage area shall be covered to prevent contact of precipitation with chemicals, shall be elevated above storm- or standing water, and shall provide sufficient containment to prevent release of spilled fluids or chemicals from impacting soil, surface water or groundwater and will prevent the co-mingling of spilled fluids or chemicals with other E & P Waste.</p>
10	Material Handling and Spill Prevention	<p>Load lines (Rule 604.c.(2)O</p> <p>Load line containment is a necessary part of a complete secondary containment system. 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>

11	Dust control	<p>805. ODORS AND DUST</p> <p>Oil and gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or a hazard to public welfare.</p> <p>If fugitive dust becomes a nuisance or hazard the following practices may be applied. Use of speed restrictions, road maintenance, restriction of construction activities during high wind days, and silica dust controls when handling sand used in hydraulic fracturing operations. Additional management practice such as road surfacing, wind breaks and barriers, or automation of wells to reduce truck traffic may also be required if technologically feasible and economically reasonable to minimize fugitive dust emissions.</p>
12	Construction	<p>Berm Construction (Rule 604.c.(2)G).</p> <p>A minimum containment capacity of 110% (150% in Urban Mitigation Areas) of the single largest storage vessel inside the containment is constructed around any storage area. In more potentially sensitive areas such as those with surface waters in close proximity, steel containment with sealed liners are utilized at all storage facilities.</p> <p>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.</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. Fencing is 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>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>
16	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>
17	Construction	<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>

18	Noise mitigation	<p>Noise levels will be maintained at levels not to exceed COGCC specifications currently in existence, measured at a point 350' from the noise source, or as defined by current COGCC regulations. Where possible, drilling rig engine exhaust will be vented away from occupied buildings. Light sources will likewise be directed downwards, and away from occupied structures where possible. No special noise mitigation efforts should be required at this site. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p> <p>Noise (Rule 604.c.(2)A).</p> <p>The subject Great Western Operating Company, L.L.C. (GWOC) location will operate in accordance with maximum permissible noise levels per COGCC Rule 604.c.(2)A. and 802, as applicable. GWOC will utilize reasonable and cost-effective best practices to endeavor to reduce noise levels below these limits in areas where occupied structures occur within a Designated Setback Zone.</p>
19	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 is foreseen for this facility. If open pit storage of fresh water is required, a Form 15 will be submitted and approved prior to use of such pit, and appropriate signage and escape provisions will be provided as required.</p>
20	Drilling/Completion Operations	<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. Well effluent shall be initially routed to tanks prior to encountering combustible gas or significant volumes of liquid hydrocarbons (condensate or oil). Any accumulation of liquid hydrocarbons on the surface of an uncovered tank, greater than a residual amount ...</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"> • Well effluent shall be initially routed through a high-pressure separator, and sand trap to tanks prior to encountering combustible gas or significant volumes of liquid hydrocarbons (condensate or oil). • Any accumulation of liquid hydrocarbons on the surface of an uncovered tank, greater than a residual amount, will be removed within 24 hours as required by Rules 805. • Non-combustible gas is vented to the atmosphere from the tanks (or sent to a flare) for safety reasons. • When salable (combustible) gas is measured/detected at the surface the gas stream is immediately diverted to the sales line or the well is shut in. • Venting or flaring of combustible gases is not performed except in rare 'upset' type situations for safety reasons. • Hydrocarbon liquids, produced water, and sand are separated utilizing the high-pressure separator and sand traps. • 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	Drilling/Completion Operations	<p>604. SETBACK AND MITIGATION MEASURES FOR OIL AND GAS FACILITIES, DRILLING, AND WELL SERVICING OPERATIONS</p> <p>a. Setbacks. Effective August 1, 2013</p> <p>.</p> <p>.</p> <p>604.c. Mitigation Measures. The following requirements apply to an Oil and Gas Location within a Designated Setback Location and such requirements shall be incorporated into the Form 2A or associated Form 2 as Conditions of Approval.</p> <p>.</p> <p>(2) Location Specific Requirements – Designated Setback Locations. Subject to Rule 502.b., the following mitigation measures shall apply to any Well or Production Facility proposed to be located within a Designated Setback Location for which a Form 2 Application for Permit to Drill or Form 2A Oil and Gas Location Assessment is submitted on or after August 1, 2013:</p> <p>.</p> <p>C. Green Completions – Emission Control Systems.</p> <p>i. Flow lines, separators, and sand traps capable of supporting green completions as described in Rule 805 shall be installed at any Oil and Gas Location at which commercial quantities of gas are reasonably expected to be produced based on existing adjacent wells within 1 mile.</p> <p>ii. Uncontrolled venting shall be prohibited in an Urban Mitigation Area.</p> <p>iii. Temporary flowback flaring and oxidizing equipment shall include the following:600-7 As of August 1, 2013</p> <p>aa. Adequately sized equipment to handle 1.5 times the largest flowback volume of gas experienced in a ten (10) mile radius;</p> <p>bb. Valves and porting available to divert gas to temporary equipment or to permanent flaring and oxidizing equipment; and</p> <p>cc. Auxiliary fuel with sufficient supply and heat to sustain combustion or oxidation of the gas mixture when the mixture includes non-combustible gases.</p>
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22	Drilling/Completion Operations	<p>b. (3) Well completions.</p> <p>A. Green completion practices are required on oil and gas wells where reservoir pressure, formation productivity, and wellbore conditions are likely to enable the well to be capable of naturally flowing hydrocarbon gas in flammable or greater concentrations at a stabilized rate in excess of five hundred (500) MCFD to the surface against an induced surface backpressure of five hundred (500) psig or sales line pressure, whichever is greater. Green completion practices are not required for exploratory wells, where the wells are not sufficiently proximate to sales lines, or where green completion practices are otherwise not technically and economically feasible.</p> <p>B. Green completion practices shall include, but not be limited to, the following emission reduction measures:</p> <p>i. The operator shall employ sand traps, surge vessels, separators, and tanks as soon as practicable during flowback and cleanout operations to safely maximize resource recovery and minimize releases to the environment.</p> <p>ii. Well effluent during flowback and cleanout operations prior to encountering hydrocarbon gas of salable quality or significant volumes of condensate may be directed to tanks or pits (where permitted) such that oil or condensate volumes shall not be allowed to accumulate in excess of twenty (20) barrels and must be removed within twenty-four (24) hours. The gaseous phase of non-flammable effluent may be directed to a flare pit or vented from tanks for safety purposes until flammable gas is encountered.</p> <p>iii. Well effluent containing more than ten (10) barrels per day of condensate or within two (2) hours after first encountering hydrocarbon gas of salable quality shall be directed to a combination of sand traps, separators, surge vessels, and tanks or other equipment as needed to ensure safe separation of sand, hydrocarbon liquids, water, and gas and to ensure salable products are efficiently recovered for sale or conserved and that non-salable products are disposed of in a safe and environmentally responsible manner.</p> <p>iv. If it is safe and technically feasible, closed-top tanks shall utilize backpressure systems that exert a minimum of four (4) ounces of backpressure and a maximum that does not exceed the pressure rating of the tank to facilitate gathering and combustion of tank vapors. Vent/backpressure values, the combustor, lines to the combustor, and knock-outs shall be sized and maintained so as to safely accommodate any surges the system may encounter.</p> <p>v. All salable quality gas shall be directed to the sales line as soon as practicable or shut in and conserved. Temporary flaring or venting shall be permitted as a safety measure during upset conditions and in accordance with all other applicable laws, rules, and regulations.</p> <p>C. An operator may request a variance from the Director if it believes that using green completion practices is infeasible due to well or field conditions, or would endanger the safety of wellsite personnel or the public.</p> <p>D. In instances where green completion practices are not technically feasible, operators shall employ Best Management Practices (BMPs) to reduce emissions. Such BMPs shall consider safety and shall include measures or actions to minimize the time period during which gases are emitted directly to the atmosphere, and monitoring and recording the volume and time period of such emissions.</p>	
23	Drilling/Completion Operations	<p>Multi-well Pads (Rule 604.c.(2)E).</p> <p>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>	

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 Great Western onsite representative will be certified in Well Control Operations by a Well-Cap certified training service.</p> <p>Pit level indicators (Rule 604.c.(2)K)</p> <p>GWOC does not typically utilize pits in any of its operations. If a pit was to be used proper pit Level indicators would be installed to indicate pit levels and compliance with pit volume rules.</p> <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>	
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Total: 24 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
400616232	FORM 2A SUBMITTED
400616427	NRCS MAP UNIT DESC
400616428	NRCS MAP UNIT DESC
400619252	ACCESS ROAD MAP
400619257	HYDROLOGY MAP
400619260	LOCATION PICTURES
400619261	FACILITY LAYOUT DRAWING
400619263	MULTI-WELL PLAN
400619270	TOPO MAP
400619271	SURFACE AGRMT/SURETY
400619274	WASTE MANAGEMENT PLAN
400622471	CONST. LAYOUT DRAWINGS
400622559	LOCATION DRAWING
400623192	OTHER
400623193	OTHER
400623195	OTHER
400623196	OTHER
400623197	OTHER
400623199	OTHER

Total Attach: 19 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Return to draft. Missing buffer zone notification letter and waivers for the 30 day rule.	6/9/2014 10:01:36 AM

Total: 1 comment(s)