

STATE OF
COLORADO

Andrews - DNR, Doug <doug.andrews@state.co.us>

COGCC Form 2A review of Great Western's Teakwood Off-site Tank Battery location - Doc #400586308

5 messages

Andrews - DNR, Doug <doug.andrews@state.co.us>
To: Regulatory Permitting <regulatorypermitting@gwogco.com>

Wed, May 7, 2014 at 11:43 AM

Callie,

I have reviewed the referenced Form 2A Oil & Gas Location Assessment and have the following comments.

- 1) A review of your Location Drawing indicates an existing production facility (a tank, burner, and separator) immediately adjacent to and south of this proposed oil and gas location. Who is the operator of this existing production facility?
- 2) In the Construction section you have indicated the date planned to commence construction is 5/11/14. As the earliest this Form 2A can be approved is after the Public Comment period, which ends on 5/19/14, Great Western should not commence construction on the oil and gas location on 5/11/14. Please provide me with a revised date that construction will commence that will allow time for our review and approval of this Form 2A first.
- 3) Due to the proximity of surface water features and possible shallow groundwater in the area of this oil and gas location, I will change the Sensitive Area designation from NO to YES in the Water Resources section.
- 4) Due to the proximity of Surface water features to this oil and gas location, I would like to add the following Condition of Approval:
"Operator must implement site-specific best management practices in accordance with good engineering practices, including, but not limited to, construction of a berm or diversion dike, site grading, or other comparable measures, sufficient to protect the ditch located 134 feet east of the oil and gas location from a release of drilling, completion, produced fluids, and chemical products."
- 5) While you have included several Best Management Practices (BMPs) concerning the construction and operation of this oil and gas location, you have also identified this location to be within the Buffer Zone of the nearest Building Unit (677 feet). Therefore as required, please provide **site specific** BMPs addressing the following additional mitigation measures:
Rule 604.c.(2)C - Green Completions Emission Control Systems
Rule 604.c.(2)D - Traffic Plan
Rule 604.c.(2)F - Leak Detection Plan
Rule 604.c.(2)G - Berm Construction
Rule 604.c.(2)M - Fencing Requirements
Rule 604.c.(2)N - Control of Fire Hazards
Rule 604.c.(2)R - Tank Specifications
Rule 804 - Visual Impact Mitigation
Rule 805 - Odors and Dust

Please respond to this correspondence with the requested items by June 7, 2014. If you have any questions, please feel free to contact me. Thank you.

—
Doug Andrews

Oil & Gas Location Assessment Specialist - Northeast Area



1120 Lincoln St., Suite 801
Denver, CO 80203
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303-894-2100 Ext. 5180

Regulatory Permitting <regulatorypermitting@gwogco.com>
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>

Wed, May 7, 2014 at 2:24 PM

The existing tank, burner, and separator belong to Bill Barrett.

Can we please change the date of construction to 5/16/14?

BMP's

Green Completions (Rule 604.c.(2)C.

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 ...

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 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.

604. SETBACK AND MITIGATION MEASURES FOR OIL AND GAS FACILITIES, DRILLING, AND WELL SERVICING OPERATIONS

a. **Setbacks.** Effective August 1, 2013

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.

(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:

C. Green Completions – Emission Control Systems.

- 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.
- ii. Uncontrolled venting shall be prohibited in an Urban Mitigation Area.
- iii. Temporary flowback flaring and oxidizing equipment shall include the following: 600-7 As of August 1, 2013
 - aa. Adequately sized equipment to handle 1.5 times the largest flowback volume of gas experienced in a ten (10) mile radius;
 - bb. Valves and porting available to divert gas to temporary equipment or to permanent flaring and oxidizing equipment; and
 - cc. Auxiliary fuel with sufficient supply and heat to sustain combustion or oxidation of the gas mixture when the mixture includes non-combustible gases.

805. ODORS AND DUST

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.

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.

b. (3) Well completions.

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.

B. Green completion practices shall include, but not be limited to, the following emission reduction measures:

- 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.
- 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.
- 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.
- 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 valves, 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.
- 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.

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.

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.

Traffic Plan (Rule 604.c.(2)D.

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.

Leak Detection Plan (Rule 604.c(2)F.

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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.

Berm Construction (Rule 604.c.(2)G.

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.

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.

Fencing requirements (Rule 604.c.(2)M

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.

Control of Fire Hazards (Rule 604.c.(2)N

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.

Tank specifications (Rule 604.c.(2)R

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.

Visual Impact Mitigation (Rule 804.)

Production facilities, regardless of construction date, which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to but slightly darker than the surrounding landscape.



Regulatory Technician

Direct: [303.398.0550](tel:303.398.0550)

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From: Andrews - DNR, Doug [mailto:doug.andrews@state.co.us]

Sent: Wednesday, May 07, 2014 11:44 AM

To: Regulatory Permitting

Subject: COGCC Form 2A review of Great Western's Teakwood Off-site Tank Battery location - Doc #400586308

[Quoted text hidden]

Andrews - DNR, Doug <doug.andrews@state.co.us>
To: Regulatory Permitting <regulatorypermitting@gwogco.com>

Tue, May 13, 2014 at 8:33 AM

Callie,

You asked to change the date of construction start to 5/16/14. This date is still before both the Public Comment period ends after which this Form 2A can be approved. The earliest this Form 2A will likely be passed is sometime in late May. Please provide me with a revised construction start date.

[Quoted text hidden]

Regulatory Permitting <regulatorypermitting@gwogco.com>
To: "Andrews - DNR, Doug" <doug.andrews@state.co.us>

Tue, May 13, 2014 at 9:22 AM

[I'm sorry Doug, I meant 5/19/14 when the comment period is up. Does that work?](#)



Callie Fiddes

Regulatory Technician

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From: Andrews - DNR, Doug [mailto:doug.andrews@state.co.us]

Sent: Tuesday, May 13, 2014 8:34 AM

To: Regulatory Permitting

Subject: Re: COGCC Form 2A review of Great Western's Teakwood Off-site Tank Battery location - Doc #400586308

[Quoted text hidden]

Andrews - DNR, Doug <doug.andrews@state.co.us>

Tue, May 13, 2014 at 9:34 AM

To: Regulatory Permitting <regulatorypermitting@gwogco.com>

That will work. Be advised that this 2A may not get Final Approval from the Director until sometime later that week at the earliest.

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