



DEPARTMENT OF NATURAL RESOURCES
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March 12, 2012

Mr. Russell Knight
Principal Hydrogeologist
Rule Engineering, LLC
1055 Kipling Street
Lakewood, CO 80215

Re: Review of Form 28 Centralized E&P Waste Management Facility Permit Application
Facility ID #426582
NPR Solidification Facility
SENW Section 29, T5S, R95W, 6th PM, Garfield County, Colorado

Dear Mr. Knight:

The Colorado Oil and Gas Conservation Commission (COGCC) has completed this initial review of Encana Oil and Gas (USA), Inc. (Encana) November 17, 2011, submittal of the above referenced permit application, for COGCC Facility ID #426582. On future submittals as it relates to this facility, please reference this Facility ID. Following are the primary deficiencies, organized by the order in which they appear on the subject Form 28 and Form 28 Supplement, which may require revision and/or additional information:

Form 28, Attachment Checklist.

Local government zoning compliance permits and notice will be required to be submitted to the COGCC prior to approval of the application and commencing construction of the proposed facility. Please provide any permits or notifications to and from, the Colorado Department of Public Health and Environment (CDPHE), the Colorado Division of Water Resources (DWR), and any other agencies, if required.

Form 28, Question 2. What are the average annual precipitation and evaporation rates for this site?

Please explain or revise the response to question 2 on the Form 28 to be correct. The submitted Form 28 identifies 14.34 inches/year of precipitation. However, the information in the narrative and Attachment B identify the precipitation for Rifle, CO to be 11.61 and the precipitation for Altenbern Ranch, CO to be 16.34. The COGCC will accept either precipitation rate; however the information provided on the permit, narrative, attachment and drainage calculations must be consistent.

Form 28, Question 6. Has a site plan showing drainage patterns, diversion or containment structures, roads, fencing, tanks, pits, buildings and any other pertinent construction details been attached? Answer: Yes.

As discussed in our January 19, 2012, meeting, construction details of the mixing bin should be provided as well as containment details of the saw dust storage area.

Form 28, Question 7. If site is not owned by the operator, is written authorization of the surface owner attached? Answer: No checked box.

However, it is stated in the Supplemental Information that Encana is the surface owner.

Form 28, Question 8. Has a scaled drawing and survey showing the entire sections(s) containing the proposed facility been attached? Answer: Yes.

Exhibit A located in Attachment A, provides the legal description and survey plan, referencing the Northwest corner and Northeast corner of Section 29. Please provide a scaled drawing per Rule 908.b.(5).B.

Form 28, Question 12. Have surface water diversion structures been constructed to accommodate a 100-year, 24-hour event? Answer: Yes.

See comments to Rule 908.b.(5).E. below.

Form 28, Question 13. Has a waste profile been calculated according to Rule 908.b.6? Answer: Yes.

See comments to Rule 908.b.(6). Below.

Form 28, Question 14. Has facility design and engineering been provided as required by Rule 908.b.7? Answer: Yes.

Design and engineering has been provided, but there are deficiencies. Please see comments addressed throughout this letter below.

Form 28, Question 15. Has an operating plan been completed as required by Rule 908.b.8? Answer: Yes.

An operating plan has been provided, but some clarifications are required. Please see comments to Rule 908.b.(8).below.

Form 28, Question 17. Has financial assurance been provided as required by Rule 704? Answer: Yes.

Please see comments to Rule 908.g.below.

Form 28, Question 18. Has a closure plan been provided? Answer: Yes.

A reclamation plan has been provided. Please provide a more detailed general closure plan per Rule 908 g. (1) A.

Form 28, Question 19. Have local government requirements for zoning and construction been complied with? Answer: Yes.

Please see comments to Rule 908.h.

Form 28, Question 20. Have permits and notifications required by local governments and other agencies been provided? Answer: Yes.

Please see comments to Rule 908.h.

Form 28 Supplement

Please provide the proposed life of the facility.

Please include in the supplement details of the treatment process.

Please include the proposed permitted exploration and production (E & P) waste disposal identified for final disposition.

Form 28 Supplement, Rule 908.b.(4).

See response to Form 28, Question 2 above.

Form 28 Supplement, Rule 908.b.(5).B.

Exhibit A located in Attachment A, provides the legal description and survey plan, referencing the Northwest corner and Northeast corner of Section 29. Please provide a scaled drawing per Rule 908.b.(5).B.

Form 28 Supplement, Rule 908.b.(5).C.

Please revise the response title “Rule 908.b.5.D” to “908.b.5.C” for accuracy.

The manned guard station should be identified on Figures 1 and 4.

Form 28 Supplement, Rule 908.b.(5).D.

Identify on the construction plans the surfacing material to be used for the “Buffer Area” and “Fire Access.” Please also include the proposed thickness of this material.

Form 28 Supplement, Rule 908.b.(5).E.

Per Rule 908.b.(5).E and 908.b.(7), the facility shall be designed and constructed to divert the storm water from a one hundred (100) year, twenty-four (24) hour event and contain the storm water volume from a twenty-five (25) year, twenty-four (24) hour storm. In addition all appropriate engineering calculations shall be provided. Because the amount of added imperviousness is minimal, a narrative of the proposed storm water diversion and storage in response to the above referenced Rules may be adequate. However, all necessary supporting drainage calculations shall be provided as well to ensure these Rules are being met. Drainage calculation methods should be based upon either Garfield County or Urban Drainage Criteria.

Form 28 Supplement, Rule 908.b.(6).

Please provide process flow charts for the various waste streams including waste origin.

Waste streams to be solidified at the proposed facility are identified in Attachment D. During the January 19, 2012 meeting, it was mentioned that the dissolved air floatation (DAF) waste stream would not be processed at the proposed facility. Please include a statement that the DAF waste streams will not be treated and process at the proposed facility.

Each of the waste streams shall be characterized. Please provide a frequency for characterizing the wastes coming into the proposed facility and after treatment at the proposed facility. Has naturally occurring radioactive material (NORM) been analyzed for in any of the waste streams? If not, NORM shall be sampled and analyzed for in each of the waste streams. Modifications to this requirement can be made during the life of the facility. Please provide proposed disposal facilities identified for final disposal of the treated waste.

Form 28 Supplement, Rule 908.b(7).A.

It is stated that the proposed facility is located on a bench of mining waste rock from the Unocal Oil Shale mine Permit M-1978-263-UG.

Please provide a more detailed discussion of the proposed location include at a minimum:

- existing site conditions;

- what the waste rock consist of;
- stability of the waste rock (will it support the proposed activities?); and
- land use restrictions, if any, of the reclaimed mine.

Form 28 Supplement, Rule 908.b(7).B.i.

Please revise Figure 4 to show surface water features within two (2) miles of the proposed facility.

Please clarify what is meant by -999.90 mg/L in Attachment E.

Please provide the Facility ID numbers for the active and inactive/closed produced water storage pits identified on Figure 4.

Please provide what the spill kits include.

Please provide the construction details for monitoring wells ENPR7MW and ENPR8MW.

Please provide in the text a table of the target analytes that are being analyzed for in the ongoing surface and groundwater monitoring.

It is stated that “The NFS improvements have been designed to include a number of features to significantly reduce the potential for impacts from the facility to nearby surface and groundwater.” Please provide specifics about these features.

It is stated that. “The onsite operators will be trained to respond to any spills or leaks....” How will this be documented? This shall also be included in the annual report.

What type of training will Encana provide to their operators and what audit processes are in place?

Please provide a discussion of the waste characterization prior to offsite disposal and the facilities identified for final disposal of the treated waste.

Form 28 Supplement, Rule 908.b.(7).B.iii.

According to the Division of Water Resources (DWR) there are four (4) permitted water wells or monitoring holes located within approximately one-mile of the proposed facility.

Please include the location of these registered wells/monitoring holes on the site plan. Provide the well depth, depth to groundwater, screened interval, yields, and aquifer name in a tabulated format.

Form 28 Supplement, Rule 908.b.(7).C.

Identify on the construction plans the surfacing material to be used for the “Buffer Area” and “Fire Access.” Please also include the proposed thickness of this material.

Figure C1

Please provide detail of the saw dust storage area.

What type of tracking control of the equipment and trucks moving material in/out/within the mixing bin will be employed at the “truck off-loading area” to ensure that materials are not inadvertently transported off site?

Please provide a general discussion regarding surface. Will there be any surface improvements such as a concrete apron, etc. that the operations will be performed on?

Figure C2

The plan details of the mixing bin shows “open on this end.” During the January 19, 2012 meeting, there was discussion regarding a gate. Please clarify and revise drawing to reflect a gate.

Please provide elevation detail of the mixing bin in relation to the ground surface.

Form 28 Supplement, Rule 908.b.(8).

An operating plan is presented and includes reference to all elements, as required. However, the following clarifications to the operating plan shall be provided:

General:

What is the anticipated duration of the proposed facility?

Please specify that updates to the plan as recorded will be provided to the COGCC with a Form 4, Sundry Notice.

It is stated that “The typical operation of the facility will include solidifying incoming loads of E & P waste.” What other operations will take place at this facility?

A. Method of Treatment and Loading Rates:

The operating plan indicates that approximately 200 cubic yards of material will be generated monthly. Is the 200 cubic yards the volume prior to treatment or after treatment? Please provide the estimated volume of each waste stream to be treated. What volume of water will be produced on a monthly basis?

B. Dust and Moisture Control:

Please provide the source(s) of water that will be used for dust suppression on the access road and loading facility?

C. Sampling:

An initial site characterization of the proposed facility shall be completed.

The operating plan states, “no sampling will be conducted at this time.” Encana shall characterize each waste stream coming into the facility, generated at the facility (including excess water), and leaving the facility.

Please provide an analyte list for waste characterization.

What are the waste characterization requirements for the E & P disposal facilities?

D. Inspection and Maintenance:

Please include any upsets, irregularities in the solidification process, spills, etc. in the annual report.

E. Emergency Response:

There is reference to a Contingency Plan provided as Attachment H. Under what category does the proposed facility fall under: Production/Construction; Facilities/Pipeline; or Drilling & Completions?

The plan was last revised in December 2010. Is all of the contact information up to date?

F. Record Keeping:

Please state that all records will be made available to COGCC upon request.

G. Site Security:

Please describe both the measures and the facilities that will ensure the proposed site's security. This shall include drawings of all related security facilities and all devices used to eliminate undesired vehicular traffic and to control/limit wildlife access.

Please provide the distance from the manned guard shack at the entrance of the property to the proposed facility.

H. Hours of Operation:

It is stated that the water impoundment will operate 24 hours a day, 365 days a year. Is there any concern due to potential inaccessibility of the facility in the winter?

I. Noise and Odor Mitigation:

The "Operating Plan" shall address how any potential noise and odor issues will be addressed.

J. Final Disposition of Waste:

The "Operating Plan" shall address the final disposition of any wastes.

Please provide a list of anticipated E & P disposal facilities for the solidified waste.

Please provide a list of identified water treatment facilities, including injection wells for the excess water.

Form 28 Supplement, Rule 908.b.(9).A.

According to the Division of Water Resources (DWR) there are four (4) permitted water wells or monitoring holes located within approximately one-mile of the proposed facility. Please discuss all registered groundwater wells or monitoring holes within 1 mile.

Water samples shall be collected from water wells known to the operator or registered with the Colorado State Engineer within a one (1) mile radius of the proposed facility and shall be analyzed to establish baseline water quality.

Analytical parameters shall be selected based upon the proposed waste stream and shall include, at a minimum:

- all major cations and anions,
- total dissolved solids,
- iron;
- manganese,
- nutrients (nitrates, nitrites, selenium),
- benzene,
- toluene,
- ethyl benzene,
- xylenes,
- pH,
- and specific conductance.

Operators shall use reasonable good faith efforts to identify and obtain access to such water wells for the purpose of collecting water samples. If access cannot be obtained, then the operator shall notify the Director of the wells for which access was not obtained and sampling of such wells by the operator shall not be required. Not conducting sampling because access to water wells cannot be obtained shall not be grounds for denial of the proposed facility.

Please provide a proposed schedule and justification for the sampling frequency of monitoring and sampling wells within an one (1) mile radius of the facility.

Form 28 Supplement, Rule 908.b.(9).B.i.

The COGCC does not feel that the proposal by the applicant to install ground water monitoring wells at the proposed facility is warranted at this time. However, based upon review of information (construction details of existing monitoring wells, depth to groundwater, operational history, etc.), the COGCC may elect to have Encana install monitoring wells at a later date.

Form 28 Supplement, Rule 908.b.(10)

Please provide in the text a table of the target analytes that are being analyzed for in the ongoing surface water monitoring.

Form 28 Supplement, Rule 908.b.(11)

Please provide a site-specific Contingency Plan as an appendix to the Operating Plan that addresses the following elements:

- Provide a flowchart illustrating/outlining responsibilities under a joint operating agreement for maintenance, closure, and monitoring at the facility;
- Please include a list of types, volumes and locations of specific chemicals in the Contingency Plan. Please also include emergency response procedures for each chemical/material to be stored at the proposed facility.;
- The Contingency Plan should include specific response activities to address materials which will be stored at the facility, amendment chemicals, or unusable waste water.

Form 28 Supplement, Rule 908.g.(1).A & B

A more specific cost estimate for the closure and reclamation plan is required to confirm that the provided costs are accurate and adequate. This should include line items estimates for removal of the bins, the number of soil samples to be collected and locations (focusing on areas of activities), etc.

Indicate the expected life of the facility.

Form 28 Supplement, Rule 908.h.

Documentation showing that local government requirements for zoning and construction have been complied with shall be provided to the COGCC prior to approval of the application and construction of the proposed facility.

Please provide any permits or notifications to the Colorado Department of Public Health and Environment (CDPHE), Department of Water Resources (DWR), and any other state or Federal agencies.

Should you have any questions, please contact me at 303-894-2100 extension 5138.

Sincerely,

Alex Fischer, P.G.
Environmental Supervisor-Western Colorado

Cc: Brett Middleton, Environmental Field Coordinator, Encana Oil and Gas (USA), Inc.
Ryan Hollinshead, P.E., Petroleum Engineer, COGCC