

Garrett, Betty

From: John Schmuck [John_Schmuck@Cameco.com]
Sent: Sunday, June 10, 2012 4:29 PM
To: Burrows, Ronald; Lancaster, Thomas
Cc: Rhonda Grantham; Larry Teahon
Subject: North Trend Expansion Area License Amendment Application Page Changes
Attachments: NTEA Disposal Well Track Changes.pdf; NTEA Disposal Well Clean Copy.pdf

Ron- Cameco Resources is submitting the attached page changes to the North Trend Expansion Area License Amendment Application. The changes are intended to clarify our commitment to utilize a deep well at North Trend and to document that the well is targeted for completion in the same formations as those utilized for the current Crow Butte deep disposal well.

I have attached both a track changes version and an clean copy for your convenience.

If you have any questions or comments, please do not hesitate to call.

Thanks. .john

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Technical Report North Trend Expansion Area

- Domestic Liquid Waste

Domestic liquid wastes from the restrooms and lunchrooms will be disposed of in an approved septic system that meets the requirements of the State of Nebraska. These systems are in common use throughout the United States and the effect of the system on the environment is known to be minimal when the systems are designed, maintained, and operated properly. CBR currently maintains a Class V UIC Permit issued by the NDEQ for operation of the septic system at the current license area. A similar permit will be required for the North Trend Satellite Facility.

- Laboratory Waste

Liquid waste from the laboratory will be disposed of in either the evaporation pond or the deep disposal well.

4.2.1.1 Liquid Waste Disposal :

Two methods of disposal are proposed for the North Trend Satellite Facility and are already permitted for use at the Crow Butte Central Plant:

- Deep disposal well injection; and
- Evaporation via evaporation ponds.

In addition to these two disposal methods, the NDEQ has issued CBR a NPDES Permit for the current licensed area that allows land application of treated wastewater. CBR has not used this waste disposal method at the current operation. At this time, CBR does not intend to apply for an NPDES permit to allow land application at the North Trend Satellite Facility. It is expected that liquid waste generated in the North Trend Expansion Area will be managed in the same manner as at the existing Crow Butte Central Plant (i.e., by evaporation and deep well injection).

4.2.1.1.1 Deep Disposal Well

CBR currently operates two non-hazardous Class I injection well in the current license area for disposal of wastewater under Permits #NE0206369 and #NE0210825 (Well #1 and Well #2 respectively. The wells are permitted under NDEQ regulations in Title 122 (NDEQ 2002) and operated under a Class I UIC Permit. Well #2 was incorporated into the license by action of the CBR Safety and Environmental Review Panel on November 18, 2011.

The wells are completed in the portions of the Morrison and Sundance Formations. The NDEQ permits for both wells allow unlimited flow and a maximum operating pressure of

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650psi. To preserve optimum performance, Well #1 has typically been operated at up to 40 psi with a 200 gpm flow. CBR has operated Well #1 at the current license area for over ten years with excellent results and no serious compliance issues. As a practical matter, the maximum disposal capacity for Well #1 is not known; it is currently limited by the diameter of the tubing that introduces water into the well. Since the installation of larger 4 1/2 inch diameter tubing approximately three years ago, the average flow has been 152 gpm. For the seven years prior to that, with smaller 2 3/8 inch diameter tubing, the flow averaged 82 gpm.

CBR will install a deep disposal well at the North Trend Satellite Facility as the primary liquid waste disposal method. Similar to the current license area, CBR expects to target completion of the deep disposal well in portions of the Lower Dakota, Morrison and Sundance Formations. The deep disposal well will be constructed and operated in the same manner as the current license area. All compatible liquid wastes at the North Trend Satellite Facility will be disposed of in the planned deep disposal well. At the time of preparation of this amendment request, an application is under preparation for submittal to the NDEQ for a Class I UIC Permit for the North Trend Satellite Facility.

4.2.1.1.2 Evaporation Pond

Evaporation pond design, installation and operation criteria are those found in USNRC Regulatory Guide 3.11⁵. The evaporation pond configuration at the North Trend Satellite Facility will be similar to the existing ponds at the current CBR license area. The exact number and capacity of the ponds will depend upon the results of the determination of the performance of the deep disposal well as far as waste water disposal rate. In addition, final pond design cannot be completed until completion of the site geotechnical assessment. This information is currently not available due to the stage of project development. A license amendment application with pond design and specifications, which meet the requirements of the most current pond design and construction Regulatory Guides, will be submitted to the NRC prior to pond construction. In addition, plans for monitor wells used to demonstrate compliance with 10 CFR 40, Appendix A, Criterion 7a, will be submitted as part of the license amendment.

Each pond will have the capability of being pumped to a water treatment plant before disposal. A variety of treatment options exist depending upon the specific chemical contaminants identified in the wastewater. In general, a combination of chemical precipitation and reverse osmosis is adequate to treat the water to a quality that falls well within NPDES criteria.

CBR maintains three commercial and two R & D evaporation ponds in the current license area. The ponds are constructed with a primary and secondary liner system. An underdrain system consisting of perforated piping between the primary and secondary

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~~Deleted: has found that permanent deep disposal is preferable to evaporation in evaporation ponds.~~

~~Deleted: October 22~~

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