INTRADEPARTMENTAL MEMORANDUM

FILE: Basin Electric – Leland Olds Station – Closed Special Waste Surface Impoundments (New Permit)

TO: Charles R. Hyatt, Director
Division of Waste Management

FROM: Diana A. Trussell, Manager
Solid Waste Program
Division of Waste Management

SUBJECT: Permit Application Review

DATE: September 19, 2022

Introduction

On September 6, 2022, the North Dakota Department of Environmental Quality (Department) received a permit application for the renewal for the Basin Electric Power Cooperative – Leland Olds Station’s (Basin Electric) closed special waste surface impoundments facility.

Basin Electric currently owns and operates a closed special waste surface impoundments facility, currently regulated under Permit 0038 on approximately 236.26 acres located in the Section 22, Township 144 North, Range 84 West in Mercer County, ND. Basin Electric is proposing to renew their permit to continue post-closure care of the closed special waste surface impoundments and to split these closed ponds from their existing permit into a separate permit as they are non-CCR surface impoundments. The facility was first permitted in 1982.

Operation

Fly ash and bottom ash were sluiced to the pond complex (Ponds 1 through 5) east of the plant. Pond 1 and Pond 4 were alternately used as the primary settling pond for the sluiced ash. When ones of the ponds reached capacity, the discharge was then diverted to the other pond. The ash was allowed to settle, and the standing water was evaporated or pumped to the water return pond, Pond 2 (Permit 0038). The settled and dewatered ash from the out of service pond was then dredged or hauled by scraper to Pond 5, also known as the Special Use Disposal Area or SUDA.

The majority of the pond complex was permanently closed between 1992 and 2011. Pond 2 and Pond 3 (Permit 0038) remained operational and were used for bottom ash management at the facility until both ponds were inactivated in October 2015 and closed in 2020.
Closure

The ponds were closed in accordance with the approved closure plan and included with a four-foot thick, uncompacted clay-rich soil cap and six inches of additional cover material (vegetative layer). The final cover slopes are less than 15% which is in accordance with the Department’s requirements.

Compliance History

The facility has not had any compliance issues and no formal notices of violations have been issued to the facility.

Solid Waste Management Rules (NDAC Article 33.1-20)

NDAC Section 33.1-20-02.1-05. Record of notice.

Basin Electric is updating the record of notice to show the units that will be covered under the new permit, and they will provide the notarized affidavit from the County Recorder once it has been completed. The requirements of this section are addressed in the permit as Condition E.18.

NDAC Section 33.1-20-02.1-06. Property rights.

Basin Electric owns the property and provided a survey of the property as part of the application.

NDAC Section 33.1-20-03.1-01. Preapplication procedures.

The construction of the site in the 1960s predates the Department’s location standards and site characterization requirements including preapplication procedures.

NDAC Section 33.1-20-03.1-02. Permit application procedures.

NDAC Subsections 33.1-20-03.1-02(1) – (3)

A permit application, including supporting documents were submitted to the Department. The digital copy was received by the Department on September 2, 2022. The hard copy was received by the Department on September 6, 2022. An application processing fee of $3,000 was received by the Department on September 6, 2022.

NDAC Subsection 33.1-20-03.1-02(4)

A public notice by the facility is not required for a permit renewal and no major modifications are being proposed.

NDAC Subsection 33.1-20-03.1-02(5)

Notification to the North Dakota Public Service Commission is not required as the facility is not proposing to dispose of coal processing wastes in a mining permit area.
Applications for a solid waste management unit or facility permit must include the following information where applicable:

a. A completed application form, subsection 1;

A permit application, including supporting documents were submitted to the Department. The digital copy was received by the Department on September 2, 2022. The hard copy was received by the Department on September 6, 2022. An application processing fee of $3,000 was received by the Department on September 6, 2022.

b. A description of the anticipated physical and chemical characteristics, estimated amounts, and sources of solid waste to be accepted, including the demonstration required by North Dakota Century Code section 23.1-08-14;

Fly ash and bottom ash were sluiced to the pond complex (Ponds 1 through 5) east of the plant. Pond 1 and Pond 4 were alternately used as the primary settling pond for the sluiced ash. When one of the ponds reached capacity, the discharge was then diverted to the other pond. The ash was allowed to settle, and the standing water was evaporated or pumped to the water return pond, Pond 2 (Permit 0038). The settled and dewatered ash from the out of service pond was then dredged or hauled by scraper to Pond 5, also known as the Special Use Disposal Area or SUDA. The ponds are now closed and no longer accept any waste.

c. The site characterization of section 33.1-20-13-01 and a demonstration that the site fulfills the location standards of section 33.1-20-04.1-01;

The construction of the site in the 1960s predates the Department’s location standards and site characterization requirements including preapplication procedures. However, site hydrology and geology was characterized in a 1982 report by Water Supply, Inc and it was further characterized in a 1990 Hydrologic and Geotechnical report prepared by Braun.

The facility is underlain by an upper clay unit with a thickness of 0 to 26 feet, with an average of 8 feet; a silt and sand unit ranging in thickness from 2 to 25 feet (averaging about eight feet thick); and a lower sand and gravel unit containing detrital lignite. The second unit, the silt and sand unit, appears to be the uppermost aquifer and has hydraulic conductivity values ranging from \(3.8 \times 10^{-8}\) cm/sec to \(1.5 \times 10^{-4}\) cm/sec. Groundwater flow direction is generally northeast, toward the Missouri River.

d. Soil survey and segregation of suitable plant growth material;

The construction of the site in the 1960s predates the Department’s soil survey and soil segregation requirements. However, Ponds 1, 4 and 5 have been capped and closed since 2011 and in accordance with the Department’s rules and the permit.
e. Demonstrations of capability to fulfill the general facility standards of section 33.1-20-04.1-02;

Ponds 1, 4 and 5 have been capped and closed since 2011. The site is no longer operational. Routine inspection and monitoring, including contingency planning, has been addressed through the post-closure plan. The post-closure plan addresses the requirements of this section.

f. Facility engineering specifications adequate to demonstrate the capability to fulfill performance, design, and construction criteria provided by this article and enumerated in this subdivision;

1) Transfer stations and drop box facilities, section 33.1-20-04.1-06.

The requirements of this section are not applicable as the facility is not proposing a transfer station or a drop box facility.


The requirements of this section are not applicable as the facility is not proposing to manage any waste piles.

3) Resource recovery, section 33.1-20-04.1-08.

The requirements of this section are not applicable as the facility is not proposing any resource recovery activities.

4) Land treatment, section 33.1-20-04.1-09 and chapter 33.1-20-09.

The requirements of this section are not applicable as the facility is not proposing a land treatment facility.

5) Non-CCR surface impoundments, section 33.1-20-04.1-09 and chapter 33.1-20-08.1.

The requirements of this section are not applicable as the facility is not proposing any surface impoundments.

6) Any disposal, section 33.1-20-04.1-09.

The requirements of this section are not applicable as the facility is not proposing any disposal activities.

7) Inert waste landfill, chapter 33.1-20-05.1.

The requirements of this section are not applicable as the facility is not proposing an inert waste landfill.
8) Municipal waste landfill, chapter 33.1-20-06.1.

The requirements of this section are not applicable as the facility is not proposing a municipal waste landfill.

9) Industrial waste landfill, chapters 33.1-20-07.1 or 33.1-20-10.

The requirements of this section are not applicable as the facility is not proposing an industrial waste landfill.

10) TENORM waste landfill, chapters 33.1-20-07.1 or 33.1-20-10 and 33.1-20-11

The requirements of this section are not applicable as the facility is not proposing a TENORM waste landfill.

11) Special waste landfill, chapter 33.1-20-07.1;

Ponds 1, 4 and 5 have been capped and closed since 2011. The site is no longer operational. Routine inspection and monitoring, including contingency planning, has been addressed through the post-closure plan. The post-closure plan addresses the requirements of this section.

12) CCR unit, chapter 33.1-20-08;

The requirements of this section are not applicable as the facility is not proposing a CCR unit.

13) Municipal solid waste ash landfills, chapter 33.1-20-10;

The requirements of this section are not applicable as the facility is not proposing a municipal solid waste ash landfill.

14) Regulated infectious waste unit, chapter 33.1-20-12;

The requirements of this section are not applicable as the facility is not proposing a regulated infectious waste unit.

g. The plan of operation of section 33.1-20-04.1-03;

Ponds 1, 4 and 5 have been capped and closed since 2011. The site is no longer operational. Routine inspection and monitoring, including contingency planning, has been addressed through the post-closure plan. The post-closure plan addresses the requirements of this section.

h. Demonstration of the treatment technology of section 33.1-20-01.1-12;

The requirements of this section are not applicable as the facility is not proposing to treat waste.
i. The place where the operating record is or will be kept, section 33.1-20-04.1-04;

The operating record is kept at Basin Electric Power Cooperative’s Bismarck Office.

j. Demonstration of capability to fulfill the groundwater monitoring, sections 33.1-20-08-06 or 33.1-20-13-02;

A revised groundwater monitoring plan was submitted as part of the application and specifically addresses the closed special waste surface impoundments. The groundwater monitoring program currently consists of 11 wells which are screened in the upper (silt and sand unit) or lower (sand and gravel unit) water bearing strata. Sampling and analysis are conducted on an annual basis. An annual report will be submitted to the Department by April 1st of each year.

k. Construction quality assurance and quality control;

Ponds 1, 4 and 5 have been capped and closed since 2011. The site is no longer operational. The requirements of this section are not applicable as no additional construction will occur.

l. Demonstrations of capability to fulfill the closure standards, section 33.1-20.1-04.1-05 and otherwise provided by this article;

Ponds 1, 4 and 5 have been capped and closed since 2011. The site is no longer operational. The requirements of this section are not applicable as no additional closure will occur.

m. Demonstrations of capability to fulfill the postclosure standards, section 33.1-20-04.1-09 and otherwise provided by this article; and

The facility will continue conducting post-closure care for 30 years. Inspections of the final cover system will be conducted at least annually. Additional inspections may be conducted following major storms or other significant events potentially affecting the final cover system. Inspections will focus on the overall condition of the final cover, including vegetation, erosion, drainage features, and other site infrastructure. Routine post-closure maintenance activities will be completed as need and may include mowing, noxious weed control, and maintaining access control.

The current cost estimate for the 30-year post-closure care period is $1,245,000 and it is updated annually for inflation.

n. A disclosure statement as required by North Dakota Century Code section 23.1-08-17.

A disclosure statement that meets the requirements of this section was submitted to the Department on September 6, 2022.
Conclusion

Based on the submitted application and items discussed above, Basin Electric Power Cooperative has shown that the renewal meets the requirements of the North Dakota Solid Waste Management Rules. It is proposed that the Department grant Basin Electric Power Cooperative a permit with the conditions listed in the draft permit. The proposed permit length is for a period of 10 years because the facility has not had any compliance issues and the facility is in post-closure care.

CRH:DAT
Attachment