

PUBLIC SERVICE COMMISSION

Reclamation Division

Memorandum

Julie
Danah

TO: Commissioners Fedorchak, Christmann, and Kalk
Darrell Nitschke, Executive Secretary
Illona Jeffcoat-Sacco, General Counsel

FROM: Jim *JD* Deutsch, Dean Moos and Randy Kowalski *RK*

DATE: February 5, 2015 *Danah*

SUBJECT: Bond Release No. 7 to Permit No. KRGC-8101 held by Knife River Corporation
for the Gascoyne Mine, Case No. RC-13-714 *Danah*

Summary

On July 25, 2013, Knife River Corporation (KRC) filed Bond Release Application No. 7 to Surface Coal Mining Permit KRGC-8101. This application requests final bond release on 640.9 acres of land at the former Gascoyne Mine. The bond release areas contain approximately 519.4 acres of reclaimed cropland/hayland, 13.2 acres of developed water resource, and 0.8 acres of reclaimed township road. The bond release area also includes 107.5 acres of land that was not disturbed by mining activities. A map of the bond release tracts is attached. Knife River Corporation has demonstrated that all applicable bond release standards have been met. The Reclamation Division recommends approval of this bond release application based on the findings discussed below.

Discussion

Bond Release Application No. 7 to KRGC-8101 contains two tracts of land located in portions of Sections 29 and 33, T131N, R99W. A third tract of land (9.5 acres) located in the S $\frac{1}{2}$ of Section 26, T131N, R99W was deleted from the original bond release application after the Reclamation Division staff raised concerns regarding compaction and vegetation sampling on this tract. Disturbed areas in the bond release tracts were affected by mining as early as 1950 (by a previous operator) and under various reclamation law periods, including post 1975 reclamation laws where postmining production standards must be met. The 10-year revegetation liability period applies to the entire area since it was permitted or re-permitted under the current (1979) reclamation law.

Section 29 – Reclamation and Productivity

The tract in Section 29 contains 559.2 acres of land. Coal removal began on the west side of the Section 29 tract, near Gascoyne Lake in 1976 and ceased near the east section line in 1995. The land in Section 29 was reclaimed to cropland/hayland from 1983 to 2000. The topsoil respread thickness ranged from 0.5 feet to 0.93 feet and the subsoil thickness ranged from 0 to 3.25 feet. The property was owned by Mr. Steve Reimer during the reclamation and revegetation period. During the revegetation period the western half of the tract was used for annual crops until 2009 when it was seeded to hayland by the land owner. The land was fenced for grazing in 2012 and was used for grazing in 2013. The land was sold in the fall of 2013 and the ownership is now listed as Troy Pierce. The majority of the reclaimed cropland was planted to corn in 2014. The corn crop appeared to do well on the tract but several small wet areas were not planted as observed during regular inspections.

Knife River Corporation was required to demonstrate that the productivity of the reclaimed cropland in Section 29 has been restored to the pre-mine level. Productivity must meet the pre-mine levels for at least two years after the sixth year of the ten-year liability period. A single unadjusted yield standard was developed for all of the reclaimed cropland in this tract. The unadjusted productivity standards were calculated using Natural Resource Conservation Service (NRCS) productivity indices based on the pre-mine soil types. The unadjusted spring wheat standard was calculated to be 19.4 bushels/acre and the unadjusted hayland standard was calculated to be 1.03 tons/acre. Annual county yield data reported by the North Dakota Agricultural Statistics Service was used to adjust the yield standard to account for seasonal variability.

Knife River proved reclamation success on the Section 29 in the following years with the listed crops: 2006 (spring wheat and hay), 2008 (hay on the E# ½ of Section 29 only including the reclaimed pond site), and 2010 (hay). Three years of data was used to demonstrate that the cropland/hayland productivity standard was achieved with two years (2006 and 2010) of data for the entire tract. The additional year (2008) was used for the site of a former sediment pond and adjacent area (basically the E½ of Section 29). The 19.6 acre pond site area was reclaimed in 2000 and was only in the sixth year of reclamation at time of the 2006 sampling; therefore, an additional year of sampling data after year six was needed for the pond area.

Because two different crops (spring wheat and hay) were grown on the bond release tract in 2006 an average weighted productivity ratio was used to determine whether productivity requirements for the entire tract were met for the year 2006. The productivity ratio was calculated by dividing the actual yield of each crop by its adjusted standard for that year, multiplying that ratio by the acres actually planted to that crop, and then summing those production ratio acres for all crops. If the total sum of the production ratio acres exceeded the actual number of acres harvested, then the productivity requirement was deemed to have been met for that year. As can be seen by the Table 1(a) below, the productivity ratio (595.8) significantly exceeds the actual acres (455.7) indicating that the required productivity standard has been achieved. The productivity ratio is approximately 1.3 times higher than the standard in this instance. This methodology was

presented to OSM previously when it was proposed to be used in a bond release at the Center Mine and they determined it was an acceptable methodology.

**Table 1(a) – Productivity for Reimer Property, Section 29, KRGC-8101
2006 Crop Year Production Ratio Calculations**

Year	Crop	Reclaimed Yield ¹	Adj Std ¹	Production Ratio	Actual Acres	Production Ratio Acres ²
2006	Sp Wheat	9.7	16.2	0.60	207.7	124.6
2006	Hay	1.82	0.96	1.90	248.0	471.2
				Total	455.7	595.8

¹ Spring wheat in bu/ac, and hayland in t/ac

² Equal to the production ratio times actual acres

It should be noted that although the reclaimed spring wheat yield in 2006 (9.7 bushels/acre) is lower than the adjusted standard for that year (16.2 bushels/acre), but it was very close to lower average spring wheat yield for Adams County for that year (14.2 bushels/acre) as reported by the North Dakota Agricultural Statistics Service. The bond release tract is located in Bowman County but is located a few miles east of the Adams/Bowman County border.

For the other years (2008 and 2010) when only hay was grown, the direct comparison between the actual yield and adjusted standard was appropriate for demonstrating productivity. The following table shows that the overall production met or exceeded the standard in 2008 and 2010. The 2008 data meets the standard but only the east half, including the pond area, was sampled as described above.

**Table 1(b) – Productivity for Reimer Property, Section 29, KRGC-8101
2008 and 2010 Crop Years**

Sample Year	Crop Grown	County Average Yield	Unadjusted Standard	Adjusted Yield Standard	Reclaimed Actual Yield
2008 ¹	Hay	1.20 t/ac	1.03t/ac	0.94 t/ac	1.00 t/ac
2010	Hay	1.85	1.03	1.42	2.16

¹ Data for E1/2 of Section 29 only - included for the pond reclamation area

In summary, we have concluded that the required productivity requirements have been met for the entire tract in 2006 and 2010. In addition, the E½ of Section 29 also met the standards in 2008.

Section 33 Reclamation and Productivity

This bond release tract, located in the NE1/4 of Section 33, contains 81.7 acres and is owned by Robert Perkins. Mine disturbance occurred at different times in the tract from pre-law (prior to 1969) until 1986. The land was reclaimed to cropland/hayland and a developed water resource from 1980 to 2002. The tract includes small areas of pre-law disturbance and 1969 law disturbance that were reclaimed and are currently hayed with the other reclaimed hayland in the tract. With the exception of the area with pre-law disturbance, the hayland area received 0.8 to 1.22 feet of topsoil and 0.78 to 1.6 feet of subsoil. The southern end of tract was disturbed under

the 1973 law and is in crop production. The area was respread with 0.8 feet of topsoil and no subsoil. The 1973 reclamation law was the first to require salvage and respread of topsoil material.

Knife River was required to demonstrate that the productivity on the northern part of this tract (post-1975) has been restored to the pre-mine level. A single unadjusted yield standard was developed for all of the reclaimed cropland in this tract. The unadjusted productivity standards were calculated using Natural Resource Conservation Service (NRCS) productivity indices of the pre-mine soil types. The unadjusted hayland standard was calculated to be 1.13 t/ac. Annual county yield data reported by the North Dakota Agricultural Statistics Service was used to adjust the yield standard for seasonal variability.

The bond release area in Section 33 (Tract 2) met the applicable production standards. The northern portion of the tract met the hayland standard for the required two years as demonstrated by sampling completed in 2006 and 2007. The hay yields were determined from hand sampling techniques. Sampling did not include clippings from the pre-law disturbance or 1969 law areas located within the reclaimed hayland tract. There are no specific production standards for the pre-1975 disturbance area. The two areas are managed as hayland and appeared to have adequate cover to control erosion. The hay yield information for the reclaimed land in Section 33 is provided in Table 2 below:

Table 2: Perkins Property, NE1/4 Section 33, Bond Release No. 7 to KRGC-8101

Sample Year	Crop Grown	County Average Yield	Unadjusted Standard	Adjusted Yield Standard	Reclaimed Actual Yield
2006	Hay	1.19 t/ac	1.14 t/ac	1.06 t/ac	1.57 t/ac
2007	Hay	1.79	1.14	1.54	1.74

Pond 23 located in the NE1/4 of Section 33 is a permanent impoundment that is an enhancement for wildlife habitat. The pond is constructed in a former final pit area and intersects the local water table thus providing a near continuous water supply. There were no pre-mine developed water resources in the bond release areas that required replacement. A post-mining hydrologic assessment that was added to Permits KRGC-8101 and KRGC-8404 in 2005 provides additional information on the quantity and quality of surface water and groundwater at the Gascoyne Mine. This assessment determined that no adverse impacts occurred outside the mine permit area.

General Information

The formal final bond release inspection was conducted August 21, 2013. The surface owners, Bowman County Commissioners and several state and federal agencies were invited to participate in the inspection. Representatives from the Reclamation Division and Knife River Corporation were present for the inspection. Surface owners participating in the inspection were Steve and Tabitha Reimer and Allen Anderson (Mr. Anderson is the owner of the tract in Section 26 that was eventually deleted from the bond release request). Bowman County Commissioner and Fischbein Township Board Chairman, Kenneth Steiner also attended the inspection. The Reclamation Division also inspected the bond release tracts with John Sieving from OSM's Casper Field Office on November 5, 2013 along with representatives from Knife River

Corporation. The initial bond release application included a tract with federal coal; however, no coal removal took place on the tract and the tract was later withdrawn from the application during technical review.

With regard to the 0.8 acre of reclaimed township road, Kenneth Steiner (representing both Bowman County and Fischbein Township) expressed some concerns during the field inspection regarding the sight distance of a segment of the reclaimed township road. Even though the design plans were previously approved by the township, Knife River proposed a plan to modify the road to improve the sight distance and minimize re-disturbance to the area. The Reclamation Division determined that the proposed modification would not affect the 10-year liability period or the pending bond release so long as the Township Board was agreeable to the proposed plan and the activity was limited to the road right-of-way. It was also agreed that the proposed modifications could take place after approval of the pending bond release. To date, the modifications have not been made but an agreement was entered into between Knife River and Fischbein Township to complete the work in the future.

The newspaper notice for this bond release application was published in the Bowman Pioneer, the official county newspaper. It was published once a week for four consecutive weeks from August 16, 2013 to September 6, 2013. No objections or written comments were received on the bond release application.

The bond release application requests bond release for vegetation establishment and demonstrating reclamation success (bond release phase 3 and 4) on 576.5 acres. Phase 1 and 2 bond release for the completion of backfilling and grading was previously approved for these 576.5 acres in Bond Release No. 3 to Permit KRGC-8101. All four phases of bond release (100%) are being requested on the remaining 16.9 acres of reclaimed land that was not included in Bond Release No. 3. The application also includes 47.5 acres that were not disturbed and were not included in the Bond Release No. 3 area, primarily the undisturbed areas along the east side of Section 29. The remaining undisturbed land includes some of the area covered by Bond Release No. 3, such as the west side of Section 29 along Gascoyne Lake and the west edge of the tract in Section 33.

Approval of the bond release will allow a monetary release of \$ 374,117.17. An adequate amount of bond will remain to cover any liabilities for the remaining acreage at the Gascoyne Mine. If approved at the February 11, 2015 Commission meeting, the bond release will become effective March 13, 2015.

Attached are the motion and award form for your consideration.

Attachment 1: Final Bond Release No. 7 to Permit KRGC-8101 at the Gascoyne Mine

