PUBLIC SERVICE COMMISSION
Reclamation Division
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Memorandum

TO: Commissioners Kalk, Cramer and Fetch

FROM: Guy Welch, Dean Moos and Jim Deutsch

DATE: August 24, 2012

SUBJECT: Bond Release No. 5 to Surface Coal Mining Permit NACT-9101 held by the Coteau Properties Company, Case No. RC-11-599

Summary

On August 31, 2011, The Coteau Properties Company filed Final Bond Release Application No. 5 to Surface Coal Mining Permit NACT-9101 requesting release of all reclamation liabilities on 1000.951 acres of land located in portions of Sections 16, 17 and 18, T145N, R86W, at the Freedom Mine. The reclaimed lands are subject to our current reclamation law and rules and Coteau has demonstrated that the reclaimed lands have met all applicable final bond release performance standards. The Reclamation Division recommends approval of this bond release application based on the findings discussed below.

Discussion

This bond release application consists of three tracts of land. The tract in Section 16 (Tract 1) is owned by the ND Department of Trust Lands (formerly known as State Land Department), the tract in Section 17 (Tract 2) is owned by Coteau, and Basin Cooperative Services and Coteau own the tract in Section 18 (Tract 3). The proposed bond release tract contains approximately 237.2 acres of cropland, 313.2 acres of hayland, 145.7 acres of native grassland, 2.9 acres of wetlands, 1.5 acres of developed water resource, 6.9 acres of roads and right-of-ways, 31.2 acres of re-disturbed orphan spoil and 4.7 acres of conservation tree plantings. The bond release area also includes 257.7 acres of land that were not affected by Coteau's mining activities.

The cropland contains 132.4 acres of prime farmland soils, of which 24.3 acres were affected by associated disturbance and not actually mined. The breakdown of the postmine land use acreage by tract is shown in the Land Use Summary Table below.

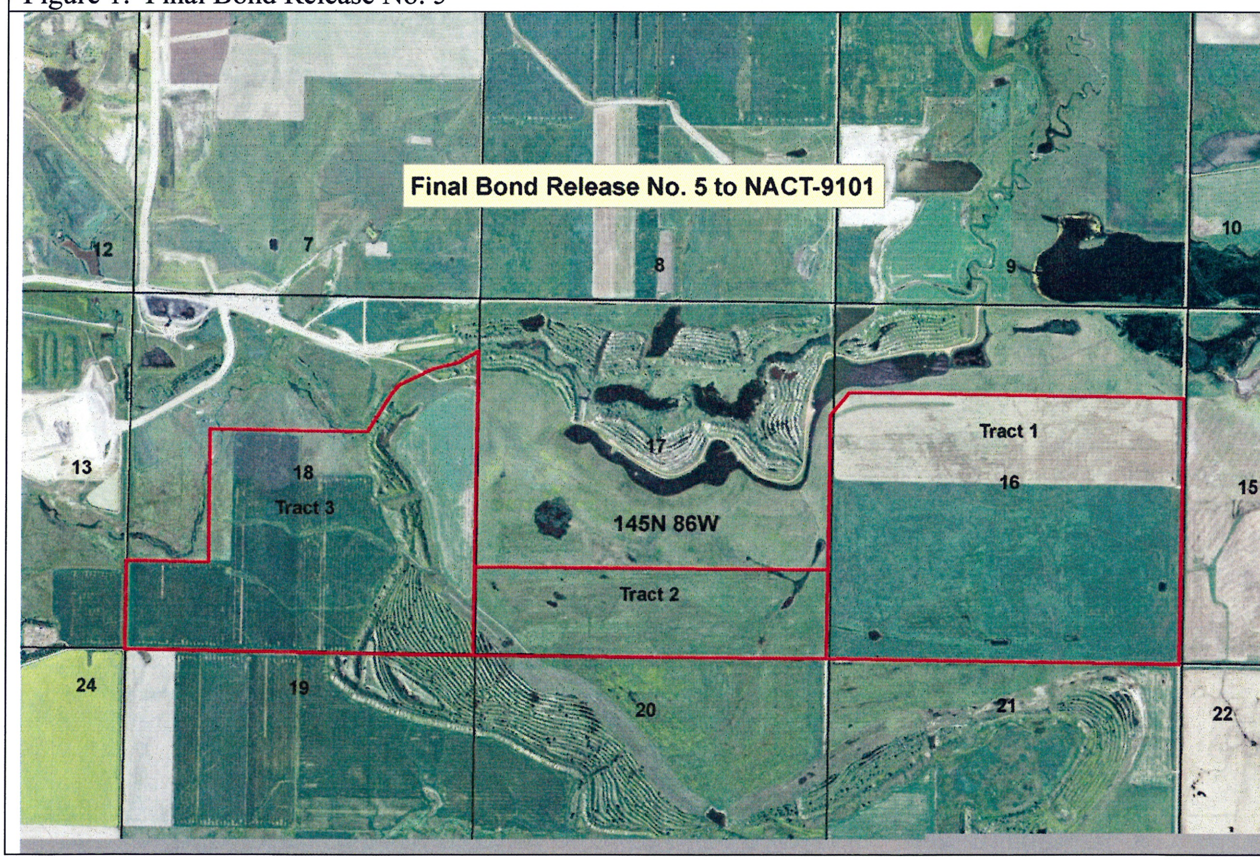
Land Use Summary Table										
Tract No.	Ownership	Cropland	Hayland	Native Grassland	Wetland	DWR	Orphan Spoil	Cons. Tree Planting	Right of Way	Undisturbed Land
1	NDDTL	156.4	313.2		0.4	1.0	0	0	6.9	0
2	Coteau	0	0	145.7	2.5	0.5	6.3	1.0	0	2.6
3	Coteau & BCS	80.8	0	0	0	0	24.9	3.7	0	255.1
Totals Acres		237.2	313.2	145.7	2.9	1.5	31.2	4.7	6.9	257.7

Affected areas in these bond release tracts were initially disturbed in 1992 and coal removal was completed from 1993 through 1998. Backfilling and grading was completed from 1994 through 2000 and soil respreading activities and initial seedings were completed from 1994 through 2000. Topsoil and subsoil stockpiles and re-disturbed orphan spoil sites were reclaimed in 2000 as was most of the cropland located in the N1/2 of Section 16, Tract 1. The reclaimed lands were respread with 8.0 to 13.3 inches of topsoil and subsoil respread depths ranged from 21.8 inches to 40 inches. County Road 27 was reclaimed on the east side of Tract 1 and statutory section line trails were reclaimed where affected.

There have been no previous partial bond releases on this property. Therefore, first (backfilling and grading), second (soil respreading), third (vegetation establishment) and fourth (vegetation performance standards) stage bond release are being requested at this time.

Coteau has demonstrated that the revegetation performance standards have been achieved for the reclaimed land as discussed below and described in the bond release application. Figure 1 below is a small scale map of the bond release area.

Figure 1: Final Bond Release No. 5



Revegetation Performance Standards

Our revegetation success standards require that each land owner's property be evaluated independently for the purposes of demonstrating revegetation success. However, Coteau has purchased much of the land included at the Freedom Mine and they have developed regional standards for the lands that they own. Basin Cooperative Services has agreed to include their land in this regional standard. Local farmer cooperators have farmed, hayed and grazed all of this reclaimed land during the 10-year revegetation responsibility period.

Cropland

The revegetation performance standard for cropland is simply crop yield or productivity. The cropland productivity or yield standard is based on the pre-mine productivity values of the soils that existed prior to mining. Three years of yield data is needed to demonstrate revegetation success of prime farmland while only two years of data is needed for non-prime farmland beginning after year six of the 10-year revegetation responsibility period. Coteau developed a single yield standard (combined prime and non-prime) so three years of cropland yield data is needed to demonstrate revegetation success beginning no sooner than the seventh year of the responsibility period. All of the cropland in Tract 1 was mined and reclaimed while some of the cropland in Tract 3 was only affected by associated disturbance. In other words, the area was affected by a soil stockpiles and a sediment pond but not actually mined. The revegetation success standards are the same regardless of the type of disturbance.

The unadjusted yield standard for the cropland in Tract 1 was calculated to be 29.8 bushels of wheat per acre while the unadjusted standard for the cropland in Tract 3 is 30.0 bushel of wheat. A cropland control area was established on undisturbed lands in the area to allow for an annual climatic adjustment of the cropland yield standard for Tract 1 while ND Agricultural Statistics Annual County yield data was used to climatically adjust the standard for Tract 3. The control area was established on soils representative of the disturbed area and was managed the same as the reclaimed land during the revegetation responsibility period. Tables 1 and 2 show the adjusted yield standard and the actual yield of the reclaimed cropland in Tracts 1 and 3.

Table 1: Tract 1 Cropland Standards (spring wheat), 156.4 acres		
Sample Year	**Adjusted Yield Standard**	**Actual Yield**
2008	7.6 bushels/acre	11.7 bushels/acre
2009	34.1 bushels/acre	43.7 bushels/acre
2010 *	57.1 bushels /acre	57.2 bushels/acre

*flax yields converted to spring wheat yields

Table 2: Tract 3 Cropland Standards (spring wheat), 80.8 acres		
Sample Year	**Adjusted Yield Standard**	**Actual Yield**
2007	27.6 bushels/acre	29.4 bushels/acre
2008	19.0 bushels/acre	20.9 bushels/acre
2010 *	37.8 bushels /acre	50.0 bushels/acre

Some settling occurred on this reclaimed cropland and Coteau repaired these features during the responsibility period. Settling will likely continue to occur as time goes on. Whole field harvesting techniques were used to demonstrate revegetation success in which the reclaimed fields where harvested with a combine and actual yields were obtained rather than hand sample estimates. The fields in Tract 3 where squared up so the area being used to demonstrate revegetation success actually includes some undisturbed cropland (65.2 acres). This was accounted for when determining the yield standard. A conservation tree planting, approximately 2.2 acre in size is growing along the east side of the cropland in Tract 3. Silver buffaloberry is the principal species established.

Hayland

Hayland is essentially a subcategory of cropland so the only revegetation performance standard is productivity. This reclaimed hayland has been managed as hayland during the revegetation responsibility period. Three different farmer cooperators baled hay from this tract annually during the revegetation responsibility period. Hay bales were weighed each year to determine actual yield.

The hayland yield standard is developed from the pre-mine soils that existed prior to mining. The unadjusted yield standard was determined to be 1.33 tons/acre. Yield data beginning after year six of the 10-year revegetation responsibility period is needed to demonstrate revegetation success. The yield standard is climatically adjusted using ND Agricultural Statistics county data. Table 3 below summarizes the adjusted hayland yield standard and actual yield. This demonstrates that the required yield standard has been achieved.

Table 3: Tract 1 Hayland Standards, 313.2 acres		
Sample Year	**Adjusted Yield Standard**	**Actual Yield**
2009	1.63 tons/acre	1.98 tons/acre
2010	1.79 tons/acre	2.34 tons/acre

A variance to the 10-year revegetation period was approved in September of 2011 for 2.5 acres of reclaimed hayland where a settling feature had occurred. Coteau repaired this site and the variance was previously granted in accordance with NDPSC policy memorandum No. 20. Minor repairs were also made to other very small settling features in the fall of 2011 were water had ponded but these minor repairs did not re-initiate the 10-year revegetation responsibility period.

Native Grassland

Mining companies must demonstrate that reclaimed native grasslands yield as good as or better than the expected yields of the pre-mine soils during any two years after year six of the ten-year revegetation responsibility period. The calculated productivity standard is based on the pre-mine soils and is climatically adjusted annually with the use of reference areas. The native grassland ground cover standard is developed using reference areas and a value that the Agriculture Research Service (ARS) determined to be sufficient to control erosion. The species diversity standard requires that at least five native grass species be present on the reclaimed tract and native species must comprise at least 65% of the total vegetative composition. Kentucky bluegrass, a widespread introduced species that some consider a naturalized species, may be counted towards the diversity standard to the extent it is present on the reference area(s). The species seasonality standard requires that warm season grasses comprise be at least 15% of the relative composition. In addition, four native grass species must each contribute at least 3% relative live basal cover or 5% relative composition by weight. Of these four species, at least two must be warm season species and at least one must be a cool season species.

The reclaimed grassland was seeded with seven native species; western wheatgrass, slender wheatgrass, green needlegrass, blue grama, sideoats grama, switchgrass and little bluestem. Vegetation sampling data from years eight and nine of the responsibility period, 2009 and 2010, show that the revegetation standards have been achieved as summarized in Tables 4a b and c below. The productivity and cover standards were developed using the pre-mine soils of the Dakota Star Region of the mine, which includes this proposed bond release area, as indicated in Coteau's Consolidated Vegetation Success Standards (CVSS) document.

The permanence standard is achieved by the established vegetation's continued persistence on the reclaimed area. This reclaimed native grassland was managed with livestock grazing during the revegetation responsibility period. The support facilities necessary to implement the postmine native grassland land use have been installed; i.e., fence and livestock water facility.

Table 4a: Native Grassland				
Year	Production (lbs/acre)		Ground Cover (%)	
	Standard	Reclaimed	Standard	Reclaimed
2009	2323	2,564	89.5	99.6
2010	2,011	2,894	89.5	99.9

Table 2b: Native Grassland			
Seasonality	Standard	2009	2010
% Warm Season Composition	15	40.2	33.8
Number Cool Season Species >3%	1	2	2
Number Warm Season Species >3%	2	3	3

Table 2c: Native Grassland			
Diversity	Standard	2009	2010
Total Number Species Present	5	7	6
Number Species >3% Composition	4	5	5
% Native Species Composition	65	99.5*	92.0*

*Includes Kentucky bluegrass to the extent present on the native grassland reference areas (19% in 2009 and 24.4% in 2010). Standard achieved without including Kentucky bluegrass

Wetlands

There are two reclaimed seasonal wetlands included in this bond release application. Reclaimed wetland CW-D16-04 is located in Tract 1 and CW-D17-02 is located in Tract 2. CW-D16-02 is approximately 0.4 acres in size, holds about 4 feet of water at its deepest spot and has a contributing watershed of approximately 84 acres. CW-D17-02 is about 2.5 acres in size and holds water to a depth of about 2.5 feet. It has a contributing watershed of about 440 acres and is located downstream of a developed water resource. Coteau has provided information in the bond release application demonstrating revegetation success. These wetlands have developed a shallow marsh, wet meadow and a low prairie vegetation zones. Three years of data regarding these wetlands is included in the bond release application including aerial photography showing the size and vegetation zones, a complete species list of the vegetation established and water quality data.

Although not identified as a separate land use, 2.3 acres of pre-mine temporary and ephemeral wetlands have been replaced on Tracts 1 and 2. These features are small in size and hold water during the early part of the growing season. These temporary wetlands are located on the reclaimed hayland and native grassland in Tracts 1 and 2. There are no specific performance standards for reclaimed temporary or ephemeral wetlands other than that they exist and are functioning as intended, which is the case.

County Roads and Right-of-Ways

County Road No. 27 was reclaimed on the east side of Tract 1 and section line roads or trails have been reconstructed where disturbed on the other section lines included in this bond release application. The Mercer County Road Superintendent has inspected the roads and trails and has provided concurrence that the roads are in satisfactory condition. Coteau has granted a right-of-way easement to Mercer County for an area in the southwest corner of Section 17 where old pre-law spoils prevent section line access to the north-south section line between Sections 17 and 18, and an alternate access is provided in this area.

Redisturbed Orphan Spoil

Approximately 31.2 acres of pre-law orphan spoil (Dakota Star Mine) in Sections 17 and 18 were re-affected by Coteau to accommodate mining operations. No topsoil or subsoil was available for salvaging on the disturbed orphan spoil and therefore, none was respread on the redisturbed area. The affected areas were graded to ensure that runoff would be contained in the pre-law orphan spoil areas and this land was essentially reclaimed to function as fish and wildlife grassland habitat. A permanent spoils pond, SSP-18-01, was created in the disturbed orphan spoil in Section 18 to contain runoff from the redisturbed orphan spoil. The redisturbed orphan spoil was seeded to a diverse mixture of 17 species of native and introduced grasses. Approximately 2.2 acres of conservation tree planting were planted in the redisturbed orphan spoil in an attempt to create wildlife habitat and a couple of low depression areas were created to function as temporary or ephemeral wetlands. These tree plantings are struggling to survive because of the lack of suitable soil but herbaceous vegetation is providing excellent ground cover in these areas and the balance of the re-disturbed spoil.

The revegetation performance standards for the redisturbed orphan spoil is ground cover must not be less than can be supported by the best available plant growth material in the reaffected areas, nor less than the ground cover that existed before redisturbance. Sampling data in the bond release application shows ground cover on that redisturbed spoils (97.7%) is greater than (96.9%) representative areas of adjacent undisturbed spoils.

Developed Water Resources

The three developed water resources included in this bond release application were constructed for the purpose of providing livestock a water source for grazing reclaimed lands. The developed water resource in Tract 2 provides water source for the reclaimed native grassland on this tract and it has functioned as a stockpond during the revegetation responsibility period. This pond is essentially replacing a stockpond that existed on tame pastureland in Tract 3 prior to mining but that area has been converted to cropland. The two developed water resources in Tract 1 have not been used as stockponds during the revegetation responsibility period because the hayland was not grazed. These ponds essentially functioned as semi-permanent wetlands during the responsibility period. All three of these ponds were constructed as dugouts so there are no embankments to maintain. The ND Department of Trust Lands has signed a maintenance agreement for the two ponds in Tract 1 and Coteau is the surface owner of Tract 2 where the other pond is located. The water in these ponds is suitable for livestock consumption according to the results of the water quality sampling data provided in the bond release application.

Hydrologic and Wildlife Assessments

Coteau has completed surface and ground water postmine hydrologic assessments for the bond release and adjacent area. These reports show that there was no material damage to the hydrologic balance outside the permit area and no significant unmitigated negative impact to the surface and ground water resources within the bond release area. The bond release application contains a wildlife report that concludes that habitat on this area has not been diminished. Collectively, there are fewer acres of native grassland on these tracts than were present prior to mining but mine-wide, the premine acreage is similar to the post mine acreage. Conservation tree plantings and additional wetlands on the redisturbed orphan spoil improve the wildlife habitat value of the bond release area. Biennial wildlife monitoring reports shows that a variety of wildlife utilize the area and that a sharp-tailed grouse lek has established on the reclaimed native grassland in Tract 2.

Soil Repread Depth Verification

The actual soil respread thicknesses on Tract 1 were verified by the Reclamation Division staff with a truck mounted soil probe at 59 locations on October 21, 22, and November 4, 2010. The subsoil thickness was noted as short at several locations that may have resulted from repair of differential settling features, or the quantity of salvageable subsoil in these areas may have been considerably less than what was projected to be available in the detailed soil survey completed for the permit application. Follow-up verification of subsoil thickness was conducted with soil probes at five additional locations on September 27, 2011. Subsoil thickness observations from the additional probe locations indicated that the subsoil respread thickness was adequate. The actual soil respread thicknesses on Tract 2 were verified by the Reclamation Division staff with a truck mounted soil probe at 20 locations on September 27 and 28, 2011 and no concerns were noted. The actual soil respread thicknesses on Tract 3 were verified by the Reclamation Division staff with a truck mounted soil probe at 15 locations on September 28, 2011 and no concerns were noted.

General Information

The formal bond release inspection was conducted on September 29, 2011. Michael Haupt and Diane Nelson from the ND Department of Trust Lands, Donn Steffen and Jessica Unruh from Coteau and several Reclamation Division staff participated in the bond release inspection. Other representatives from various county, state and federal agencies were invited to participate in the inspection.

The reclaimed cropland in Tract 1 was chemically fallowed in 2011 while the cropland in Tract 3 was supporting wheat stubble (harvested earlier in the year). One settling depression was noticed on the cropland in Tract 3 and this feature has been repaired. The reclaimed hayland in Tract 1 had been harvested and the number of bales present on the east portion of the tract indicated the reclaimed land had yielded well. A number of small settling features were identified on the reclaimed hayland and these features were repaired. The reclaimed native grassland was established with a good mixture of native cool and warm season species and plant vigor was high. Kentucky bluegrass was present throughout, but more prominent in the area seeded in 1995. Smooth bromegrass was present but not in quantities detrimental to the postmine land use. Native forbs and western snowberry were observed on the reclaimed native grassland. The established vegetation was providing excellent ground cover and protection from erosion. The redisturbed orphan spoil was supporting a diverse mix of native and introduced species that was providing adequate protection from erosion. The spoils pond in Tract 3 was nearly dry. The reclaimed wetlands and developed water resources were holding water.

Patches of Canada thistle were noted during the inspection and this noxious weed was controlled with a herbicide application in the fall of 2011. Rocks were placed below a culvert on the section line road between Sections17 (Tract 2) and 20 to stabilize the site.

Notice of the bond release application was published in the official county newspaper, the Hazen Star, and the Beulah Beacon once a week from September 29th through October 20, 2011. No objections to this bond release application were received.

Coteau is not requesting any reduction in the bond amount since this area is currently covered by a worst-case reclamation condition that still exists at the Freedom Mine. This area is part of a consolidated bond area that includes Permit NACT-9101 and others at the Freedom Mine. If Bond Release No. 5 to Permit NACT-9101 is approved, Coteau Properties Company will be released from all reclamation liabilities on the 1000.951 acres of land. Assuming August 29nd approval, the bond release will become effective October 1, 2012, unless a formal hearing is requested.

Attached are the proposed motion and bond release award form for consideration at the August 29th Commission meeting.