

N O R T H  
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October 3, 2019

Mr. Dean K. Moos  
 Director, Reclamation & AML Divisions  
 Public Service Commission  
 600 E Boulevard, Dept. 408  
 Bismarck, ND 58505-0480

Dear Mr. Moos:

Thank you for meeting with the North Dakota Department of Environmental Quality (DEQ) on September 30, 2019.

As discussed, the Division of Air Quality receives citizen complaints in a variety of ways, such as email, phone, or in person. Complaints may be anonymous, or part of a petition. Complaints can be very valuable in our work since they provide our office with increased resources to determine potential compliance issues throughout the state. Therefore, complaints are given top priority. The general process for our air quality work, including complaints, is described below.

Air quality regulations apply to a large variety of source types in North Dakota. Source types range from a small fire pit to a large industrial facility, such as a power plant or refinery.

The Division of Air Quality utilizes numerous approaches to assess compliance and regulate air pollution. Examples include:

- Paper analysis
- Industrial process/equipment reviews
- Reporting
- Continuous emission monitors
- Ambient air quality monitors
- Inspections
- Source emission testing
- Formal and informal discussions with on-site personnel

Each of these approaches has advantages and the synergistics of using all of them is notable. In addition, information received from other agencies and the public can provide an extremely valuable resource for compliance oversight. This is the main reason, as mentioned previously, public complaints are given top priority. Upon receiving a complaint, follow-up typically includes a site inspection, review of permit conditions, file review, contacting local officials for insight, contacting the source, and contacting the complainant for additional information.

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Director's Office  
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Division of  
Air Quality  
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Division of  
Municipal Facilities  
701-328-5211

Division of  
Waste Management  
701-328-5166

Division of  
Water Quality  
701-328-5210

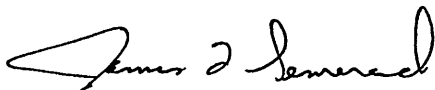
Division of Chemistry  
701-328-6140  
2635 East Main Ave  
Bismarck ND 58501

Effective complaint follow-up is a critical part of the Division of Air Quality's environmental work. In cases where air quality problems are noted, corrective actions are required. Enforcement actions (including penalties) can result. For complaints that are not violations/exceedances of the North Dakota Air Pollution Control Rules, the Division of Air Quality works proactively with the source and the complainant attempting to resolve the issue. Examples include noise, dust from car/truck traffic, and agricultural operations. These cases are often due to zoning/location and can be the most difficult to resolve.

In summary, complaint follow-up can be some of the most important work we do. We have collaborated with many local, state and federal agencies and citizens from all over the State to effectively resolve complaints where possible.

If your office is aware of an air quality complaint that needs to be addressed or would like assistance in resolving one, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "James L. Semerad". The signature is fluid and cursive, with a large initial "J" and "S".

James L. Semerad  
Director  
Division of Air Quality

JLS:saj

**Coyote Creek Mine 2015** *Surface Water Management related portions of inspections reports from 2015.*

**January 13, 2015**

Pond P-30-01 was covered with ice and snow to a level about 4 feet below the permanent pool elevation marker. The substation site was covered with a few inches of snow and there were no signs of recent activity. Straw waddles were noticed in place along the north side of electric substation disturbance boundary which is located in Section 24. It appears that runoff from most of the site will pass to the northwest corner of the site rather than the northeast corner of the site where a sump was constructed. It appears that a sump may be needed in the northeast corner of this disturbance area.

**February 12, 2015**

Pond P-30-01 was covered with ice and snow to a level about 4 feet below the permanent pool elevation marker.

Construction of the MDU electrical substation pad in the SW1/4 of Section 24 in Permit NACC-1302 is complete. Fiber rolls/waddles were installed along the south side of the electrical substation disturbance boundary, along the west side of the topsoil pile, along the north side of the electrical substation disturbance boundary, and around the sump constructed in the northeast corner. The sump was dry.

**February 25, 2015**

Sedimentation pond P30-01 was covered with ice to a level about 4 feet below the permanent pool elevation. Several pieces of large equipment are parked near the south end of the pond in the SE1/4 of Section 30, T143N, R88W.

No changes from the February 12, 2015 inspection report were noted regarding the MDU electrical substation pad and associated sump that are located in the SW1/4 of Section 24 in Permit NACC-1302.

**March 11, 2015**

In Permit NACC-1301, the water level of Pond P-30-01 was estimated at 3½ feet below permanent pool elevation and the pond was ice-covered.

The electrical substation located in the SW¼SW¼ of Section 24, T143N, R89W, was briefly reviewed. A large transformer is on the site, and other miscellaneous electrical parts and wooden power poles are also on-site. The waddles installed on portions of the topsoil stockpile and site perimeter appeared to be in good condition, and the small sump located in the northeast corner of the site was nearly full of water. However, Coyote Creek must mulch and seed (stabilize) the topsoil pile as required by NDAC 69-05.2-15-03.2 when conditions allow.

**March 31, 2015**

**SURFACE WATER MANAGEMENT**

Sediment Pond P-30-01 was holding water 2 to 3 feet below permanent pool elevation (PPE). Flow from a seep was noted in the ditch cut at the southwest corner of the shop office facilities pad area which is directed to sediment pond P-30-01.

#### GENERAL

Coyote Creek was inspected west of the facilities area where Coyote Creek Mining Company is planning to construct an access road across this creek. The corridor for this road and the associated temporary SPGM stockpile sites were staked. Ms. Flath asked if a topsoil berm was necessary around the planned topsoil pile located nearest the facilities area (formerly NACC-1301) as shown in the exhibit included with an email dated March 27, 2015. Mr. Steffan and Ms. Flath said that more room near the creek may be needed to facilitate construction of a crossing over Coyote Creek. This issue was further discussed by PSC staff in the office on April 1st and it was determined that a topsoil berm around the topsoil stockpile located closest to the facilities area was not necessary provided runoff is properly controlled with Best Management Practices (BMP's). Coyote Creek is trying to minimize disturbance along the road corridor which is why the SPGM piles associated with the road corridor are only temporary piles and will be later relocated to a long-term stockpile site.

It was mentioned that two 40+ inch culverts were going to be placed in Coyote Creek and they were going to be covered with overburden material to provide temporary equipment access across the creek. Then, the low-level flow culvert was going to be constructed west of the existing channel. Water will not be allowed to enter this low-flow culvert until after it is constructed. The high water flow box culverts will then be constructed further to the west and the existing channel will be filled with overburden to complete the crossing.

A few trees will be removed from the west side of Coyote Creek for construction of the road. The upland areas adjacent Coyote Creek where the access road is to be constructed is dominated with smooth brome grass and pubescent wheatgrass. Most of this area appears to have been cultivated at one time and is managed as hayland, with cattle aftermath grazing occurring.

Coyote Creek was flowing water at a level higher than expected given the low amount of snow received this past winter. Figure 1 is a picture of Coyote Creek where the temporary crossing will be constructed.

Figure 1. Coyote Creek



**April 13<sup>th</sup>, 16<sup>th</sup>, and 28<sup>th</sup>, 2015 portions of inspection reports attached.**

**INSPECTION REPORT**

DATE OF INSPECTION: April 13, 2015

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mining Company, L.L.C. - Coyote Creek Mine

PERMITS INSPECTED: NACC-1301 and NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Donn Steffen and Brenden Brinkman (Coyote Creek Mining Company, L.L.C.) and Casey Voigt (landowner)

INSPECTION CONDITIONS: The inspection was conducted between 10:00 a.m. and 1:10 p.m. CDT. Sky conditions were clear. The wind was from the west-northwest at 15 to 25 miles per hour and the temperature ranged from the mid 40's to the mid 50's° F as recorded at the Hazen NDAWN weather station. Access was unrestricted to areas of interest.

#### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

This inspection was conducted in response to landowner concerns with suitable plant growth material (SPGM) care and removal within permits NACC-1301 and NACC-1302 at the Coyote Creek Mine. Casey and Julie Voigt (landowners) met Reclamation Division inspectors at the mine's security check-in station shortly after 10:00 a.m. CDT to relate their concerns to the inspectors prior to joining Coyote Creek Mining Company, L.L.C. (CCMC) personnel for the mine inspection. Casey and Julie Voigt own the W<sup>1</sup>/<sub>2</sub> and the W<sup>1</sup>/<sub>2</sub>E<sup>1</sup>/<sub>2</sub> of Section 30, and all of Section 31, T143N, R88W that includes a small portion of the mine office-shop facility that has been under construction since mid-2014 (Permit NACC-1301), and where mine development is beginning in the spring of 2015 with construction of access and haul roads, and sedimentation ponds (Permit NACC-1302). The Voigt farmstead is located near the center of Section 31 adjacent Coyote Creek as pictured in Figure 5. Although Julie Voigt planned to attend the inspection, she chose not to because of CCMC vehicle space limitations.

The inspection began by reviewing an area in the NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> of Section 31 in Permit NACC-1301 where SPGM had not been removed but it was being used for contractor and equipment parking, and also for equipment and material storage as pictured in Figure 1 and outlined on Figure 5. Mr. Voigt expressed his concerns with possible topsoil degradation and erosion caused by vehicle and equipment traffic in the area. Although accelerated erosion or rutting was not evident in the area, the native rangeland vegetation was worn bare in the main traffic path, and it appeared that topsoil degradation and erosion would likely occur if current use of the area continued. SPGM removed from the E<sup>1</sup>/<sub>2</sub>SE<sup>1</sup>/<sub>4</sub> of Section 30 in Permit NACC-1301 in 2014 for the mine office-shop facility and access road was stockpiled north of the facility as depicted on Figure 5, as was SPGM removed from the N<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> of Section 31 for contractor

and equipment parking. Additional SPGM was removed from the contractor and equipment parking area in 2014 and 2015 when expansion became necessary. The August 7, 2014 and October 30, 2014 Coyote Creek Mine inspection reports noted that idle equipment could be stored on areas where SPGM was not removed, but SPGM should be removed from areas where traffic could cause SPGM degradation. Mr. Steffen explained that SPGM removal had not progressed eastward to the area of concern inspected on April 13, 2015 because CCMC desired to minimize disturbance, but he agreed that SPGM should be removed from the area to accommodate the need for expanded parking and equipment and material storage areas. SPGM removal from 0.3 acres in the area was viewed during an April 16, 2015 Coyote Creek Mine inspection and approved on April 20, 2015. Topsoil from the area is stored in a temporary stockpile west and adjacent 65½<sup>th</sup> AVE SW where it is expected to be used for road ditch revegetation of the reconfigured intersection of 65½<sup>th</sup> AVE SW and 17<sup>th</sup> ST SW to be constructed this year. Existing SPGM stockpiles located in NACC-1301 as depicted on Figure 5 are currently inaccessible for additional SPGM storage. Subsoil from the area was stored in a temporary stockpile south of pond P30-01.

SPGM removal for a four acre segment of the Shop Access Road on both sides of Coyote Creek for which construction has just begun was viewed and approved during the inspection. As depicted on Figure 5, the Shop Access Road will extend westward from the mine office-shop facility to a haul road. CCMC had received prior approval to stockpile topsoil and subsoil in the Shop Access Road corridor until SPGM stockpile locations could be developed on the west side of the North-South Haul Road to be constructed in the W½ of Section 30. An overview of the SPGM removal area is pictured in Figure 3. SPGM removal monuments retained in the removal area indicated that subsoil had been removed to the depths indicated on the detailed soil survey map (Section 2.5.6 in Permit NACC-1302). The SPGM removal area included some prime farmland acreage on the west side of Coyote Creek but segregation of the prime and non-prime farmland topsoil and subsoil is not required because the access road corridor constitutes associated disturbance rather than actual mining disturbance. Runoff from the temporary stockpiles that are not located within the watershed of pond P30-01 will be managed with SPGM stripping edges, sumps, silt fences, shallow berms or ditches, or a combination thereof.

## STOCKPILES

SPGM stockpiles located north of the mine office-shop facility in Permit NACC-1301 as depicted in Figure 5 were viewed near the close of the inspection after Casey Voigt had departed. These stockpiles and the surrounding associated disturbance had been seeded and mulched in the late summer and early fall of 2014 but it was evident that maintenance is required to repair and stabilize erosional rilling that had developed on the piles and disturbed areas as pictured in Figure 2. Mr. Steffen indicated that seeding and mulching equipment had been ordered and was expected to be delivered shortly whereupon CCMC personnel would repair the erosion and stabilize the stockpiles by reseeding or mulching.

## SURFACE WATER MANAGEMENT

Pond P30-01 was four feet below permanent pool elevation.

Culvert installation for the Shop Access Road Coyote Creek crossings was also viewed while viewing SPGM removal for a four acre segment of the Shop Access Road on both sides of Coyote Creek as previously described. At the time of inspection, the 36 inch low flow steel culvert was being installed as pictured in Figure 4. It should be noted that the approved design for the 36 inch culvert depicts a slight angle near the culvert's midpoint. The design was revised to depict a straight culvert with the application of Revision No. 1 to Permit NACC-1302 that is under review. The proposed design change was approved by the commission via email correspondence on March 19, 2015 and it received U.S. Army Corps of Engineers concurrence on March 20, 2015. Please refer to Figure 5 for the culvert types and locations for the Shop Access Road Coyote Creek crossings. Installation of the 36 inch low flow steel culvert would need to be completed no later than April 14<sup>th</sup> because CCMC's Regional General Permit from the U.S. Army Corps of Engineers does not allow regulated activity in Coyote Creek from April 15<sup>th</sup> to June 1<sup>st</sup>. Installation of the four 10 foot by 10 foot box culverts will follow but it appears that they will not be installed to divert Coyote Creek flow until after June 1<sup>st</sup>. Mr. Steffen indicated SPGM removal will proceed westward along the Shop Access Road corridor toward the location for pond P31-01 after the 36 inch low flow steel culvert installation is complete. Overburden from pond P31-01 excavation will provide the fill necessary to achieve grade for the Shop Access Road.

Upon returning to the mine office-shop facility near the close of the inspection the Reclamation Division inspectors informed CCMC personnel that the sequence of Shop Access Road Coyote Creek crossing culvert installations appears to be the reverse order of that approved in Permit NACC-1302. As described in the permit, the culvert crossings would proceed eastward in conjunction with excavation of pond P31-01 with installation of the four 10 foot by 10 foot box culverts first followed by installation of the 36 inch low flow steel culvert. Excerpts from Permit NACC-1302 relevant to the Shop Access Road Coyote Creek crossing culvert installations are as follows:

### *“Section 3.2.3 - Shop Access Road*

*... This haulroad will be constructed of overburden removed from the basin of pond P31-01. Because pond P31-01 is the first construction project to begin minesite development and furnishes the majority of the Shop Access Haulroad fill, Coyote Creek Mine plans to use the existing Coyote Creek crossing nearby the Casey Voigt farmstead for access to the haulroad and pond until the installation of the box culvert across Coyote Creek has been completed.*

*... Four 10' by 10' box culverts will be installed adjacent to Coyote Creek. The creek will then temporarily be diverted through the culverts until the road is removed. A diversion channel will need to be excavated to the box culverts on the upstream and down stream sides of the Access*

*Haulroad to connect the creek and allow it to flow freely. A 36" culvert will be placed in the original stream bed location for low flow situations as well as to minimize disruption to the ecosystem in this location. The 36" culvert is not scheduled to be installed until after the concrete box culverts structure is installed. Construction in this manner should minimize adverse impacts to water quality of the stream during construction.*

#### Section 3.2.5 - Haulroad Box Culvert - Diversion Channel

*... The original streambed will flow under the Shop Access Road at approximately Station 6+00. This streambed will remain intact and will be used in low flow situations. The original streambed will have a 36" culvert installation to allow flow under the Shop Access Road. The 36" culvert is not scheduled to be installed until after the concrete box culverts structure is installed. Construction in this manner should minimize adverse impacts to water quality of the stream during construction. The contributing watersheds were modeled with the HEC-HMS to provide peak flow rates to size the culverts. The 36 inch culvert was not included when modeling the safe passage of Coyote Creek under the haulroad. The box culverts are sized to safely pass the peak flow from the 50-year/6-hour precipitation event using available head and storage without the 36 inch culvert being installed. The 36 inch culvert is being installed mainly to keep the original stream channel as unaltered as possible and pass nominal flows."*

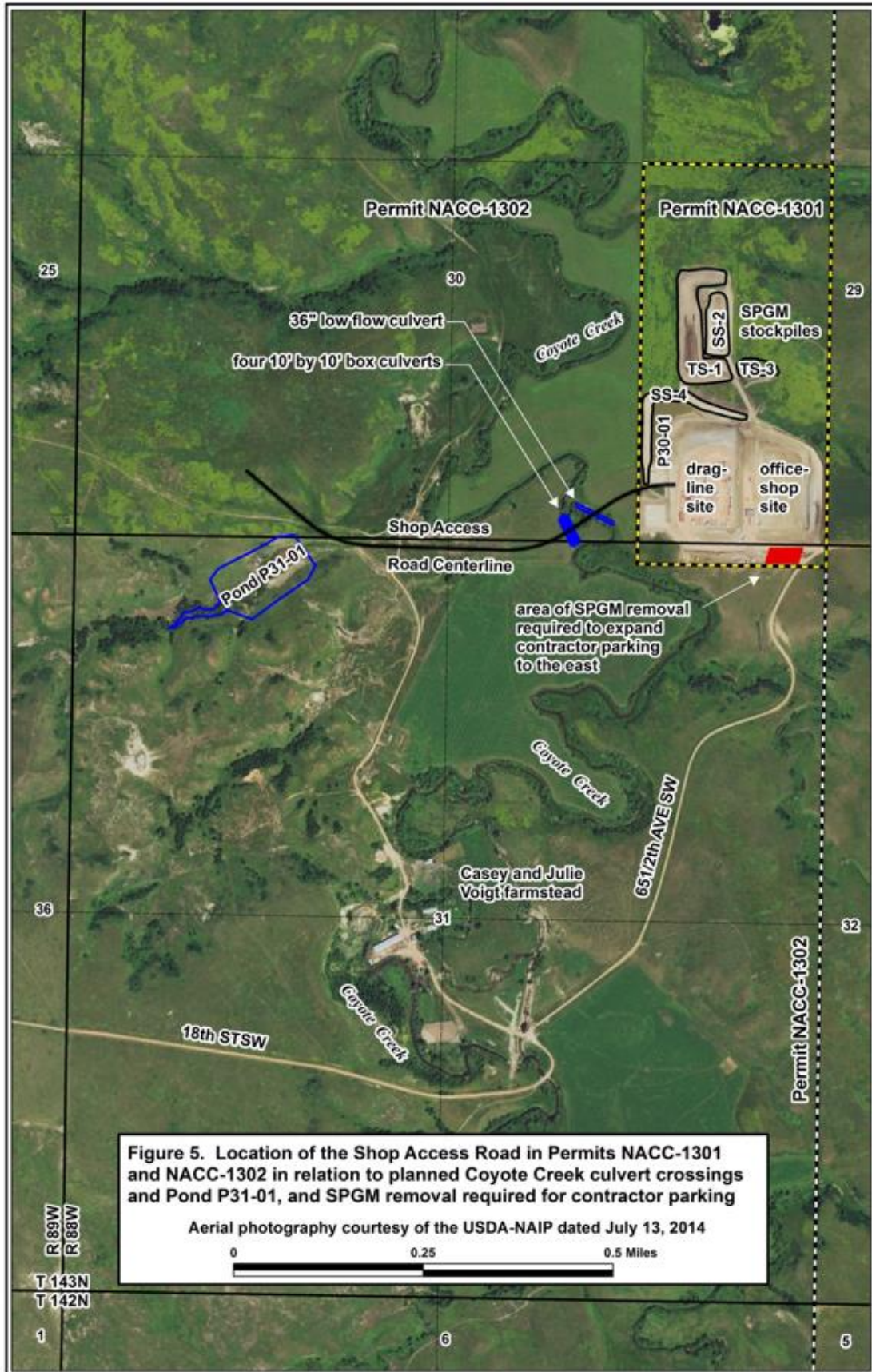
Based on the foregoing permit excerpts and observations from the April 13, 2015 inspection, it appears that CCMC is conducting operations for the Shop Access Road Coyote Creek culvert installations in reverse order of that approved in Permit NACC-1302. CCMC should have requested commission approval to revise culvert installation plans and provided adequate justification for doing so. Furthermore, it appears that potentially serious environmental risks are posed by installing the low flow culvert prior to diverting Coyote Creek flow through the box culverts. The Coyote Creek stream flow is now restricted through the low flow culvert until the box culverts are installed to divert the stream presumably after June 1<sup>st</sup>. High stream flow resulting from a heavy precipitation event may overtop the low flow culvert and cut through culvert backfill and the Shop Access Road corridor causing downstream sediment deposition. CCMC is advised to expedite box culvert installation so Coyote Creek flow can be diverted through the box culverts immediately after the U.S. Army Corps of Engineers spring restriction of regulated activity expires. CCMC is also advised to refrain from building any segment of the Shop Access Road near Coyote Creek that could function as an embankment and cause upstream flooding if stream flow is restricted by the low flow culvert.



**Figure 3. SPGM removal for a four-acre segment of the Shop Access Road on both sides of Coyote Creek with a temporary topsoil stockpile in left background and a temporary subsoil stockpile in middle background – facing west with fence line in center-west marking the section line common to Section 30 on right (north) and Section 31 on left (south) – photograph taken south of large white hoop building pictured in right background in Figure 1**



**Figure 4. Panorama of 36 inch low flow steel culvert installation in Coyote Creek for the Shop Access Road Coyote Creek crossing - facing west on left and rotating to face north on right with temporary culvert in place on center-right for equipment crossing - refer to Figure 5 for culvert location - note temporary topsoil stockpile in left background and a temporary subsoil stockpile in middle background - also note that dozer was in motion when photographs were taken**



## INSPECTION REPORT

DATE OF INSPECTION: April 16, 2015

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mine

PERMITS INSPECTED: NACC-1301, NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Lee Becker

INSPECTION CONDITIONS: The inspection was conducted between 1:45 p.m. and 3:25 p.m. CDT. Skies were clear and the wind was 15-20 mph out of the north. The temperature was near 60° F. Access was good.

### SIGNS & MARKERS

Several mine and permit identification signs have been installed along access points to the permit area from County Road 12 adjacent to the north NACC-1302 permit boundary in the NW1/4 of Section 19. A sign has been installed on the new topsoil stockpile TS-7 southwest of the facilities area in Permit NACC-1301. Runoff from this area is diverted towards Pond P30-01.

### SURFACE WATER MANAGEMENT

Sedimentation Pond P30-01 was approximately 3.5 feet below permanent pool elevation. Portions of the silt fence along the western permit boundary of Permit NACC-1301 and below the spillway of pond P30-01 require maintenance and repair.

The sump northeast of the MDU electrical substation in the SW1/4 of Section 24 in Permit NACC-1302 was dry and water management BMP's appeared to be functioning as intended.

The 36 inch low flow steel culvert was installed for the Shop Access Road Coyote Creek crossing in the SW1/4SE1/4 of Section 30 in Permit NACC-1302. Scrapers were leveling overburden fill material on either side of the crossing. Trucks were dumping sandy overburden near the crossing and a small dozer was leveling the material. The sandy overburden was being hauled from the pile northeast of the shop/office complex. Some rock was installed to stabilize the culvert inlet and outlet, but rip-rapping did not appear complete. Silt fences should be installed along the creek bank in the active work areas to prevent sediment deposition in the creek until dirt work is completed and the creek bank is stabilized. As stated in the April 13<sup>th</sup>, 2015 inspection report, CCMC's Regional General Permit from the U.S. Army Corps of Engineers does not allow regulated activity in Coyote Creek from April 15<sup>th</sup> to June 1<sup>st</sup> and it appears that CCMC is conducting operations for the Shop Access Road Coyote Creek culvert installations in reverse order of that approved in Permit NACC-1302. CCMC is reminded of the risks posed by installing the low flow culvert prior to diverting Coyote Creek flow through the box culverts. CCMC is advised to refrain from building any segment of the access road near Coyote Creek that could function as an embankment and to expedite box culvert installation as described in the April 13<sup>th</sup>, 2015 inspection report.

## INSPECTION REPORT

DATE OF INSPECTION: April 28, 2015

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mine

PERMITS INSPECTED: NACC-1301, NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Sarah Flath

INSPECTION CONDITIONS: The inspection was conducted between 12:45 p.m. and 4:30 p.m. CDT. Skies were sunny. The temperature was near 70° F. Access was unrestricted.

### GENERAL

This inspection was requested by Ms. Flath for the purpose of informing the Reclamation Division of Coyote Creek's plans for avoiding woodlands in and around the sedimentation ponds that they are planning to construct this year. Ms. Flath had maps with aerial photography background showing the locations of sediment ponds and sumps in and near woodlands located in the SE1/4 of Section 24, SW1/4 of Section 30 and NW1/4 of Section 31. The maps also showed the planned SPGM stripping activities in areas around the ponds and in relation to the woodlands. General areas on these maps had been outlined in yellow to identify areas where Coyote Creek was planning to avoid woodlands. Figure 1 is the map that was provided during the review of this area.

Two sumps are planned at the SPGM stripping boundary in wooded drainages above future sediment pond P24-02. The drainage above this pond is quite heavily wooded and the mineral removal boundary affects only the upper reaches of two drainages. The drainage way below the sump located furthest to the west was walked to the pool area of the pond. It was thought that most of this drainage way should not be stripped in an attempt to avoid the woodlands. The possibility of not stripping some of the steeper and narrow wooded drainages was discussed; however, the less steep drainages will require topsoil removal. A fraction of an acre of trees were shown in the pool area of sediment pond P24-02 and it was discussed that SPGM removal should only occur in the pool area of the pond to the permanent pool elevation level (PPE). This may result in avoiding disturbance to these trees. It was discussed that perhaps the eastern sump located above pond P24-02 would be unnecessary if a diversion along the SPGM removal area to the north could be cut to allow runoff to reach pond P24-02. A topographic map was not available on site to allow one to determine if a diversion along the SPGM stripping line was feasible. The watershed above the eastern sump comprises only a few acres while the watershed above the western sump is larger but only a few acres of SPGM are planned for removal in 2015.

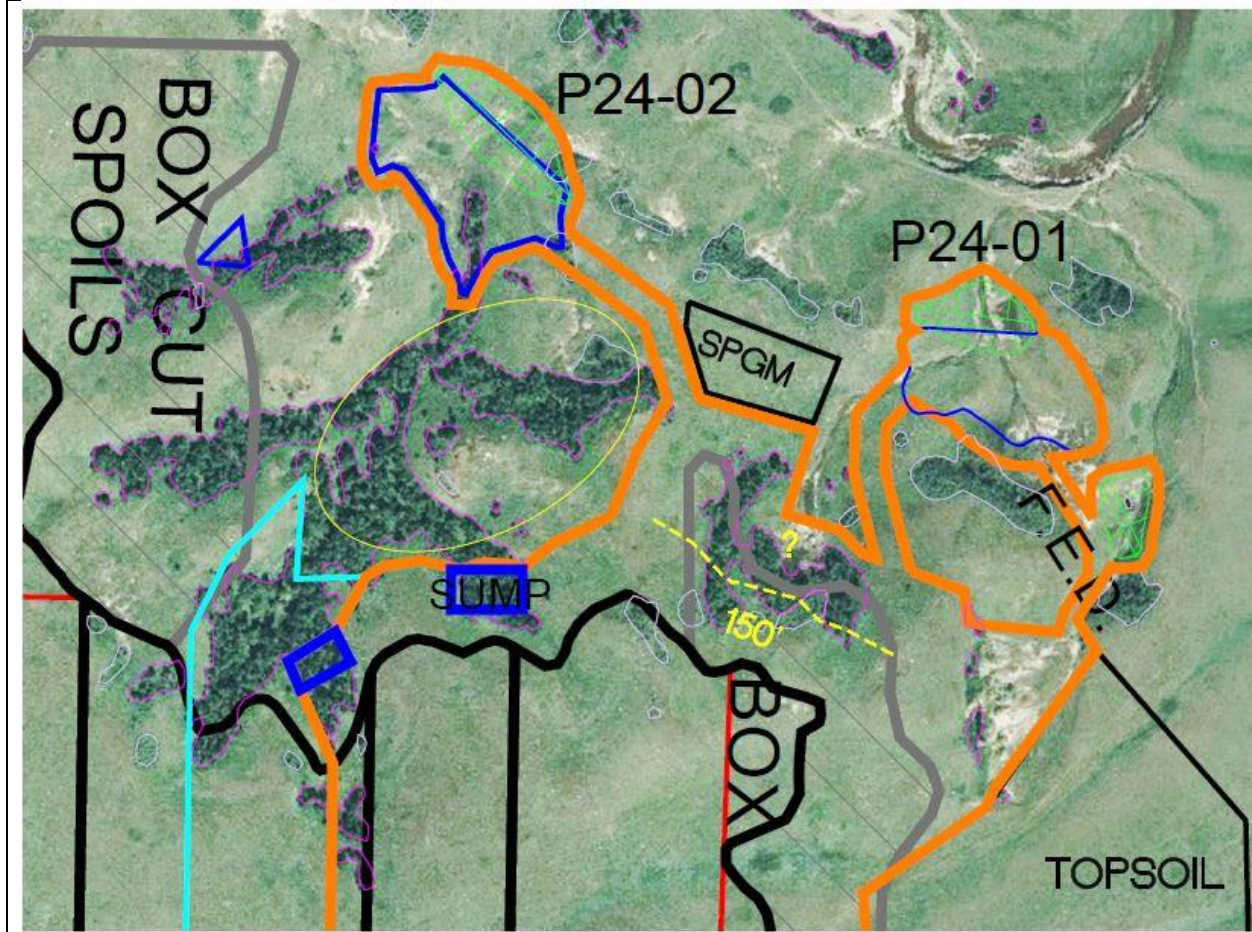
The woodlands within the SPGM removal area located east of the eastern-most sump in the pond P24-01 watershed area are located on a very steep north facing slope that is slumping from ground water seepage. This area has the yellow 150' label on Figure 1. The woodlands associated with this very steep slope

should be avoided and the area is unsuitable for box cut spoil storage. Runoff will need to be diverted around this steep slope.

The woodlands located immediately above sediment pond P24-01 are shown outside of the SPGM removal boundary and runoff will be routed around this area.

It appeared that perhaps an acre or less of woodlands would be disturbed in the SE1/4 of Section 24 if appropriate measures are taken to avoid woodlands in this area in 2015. Numerous photographs were taken and are on file with the Reclamation Division.

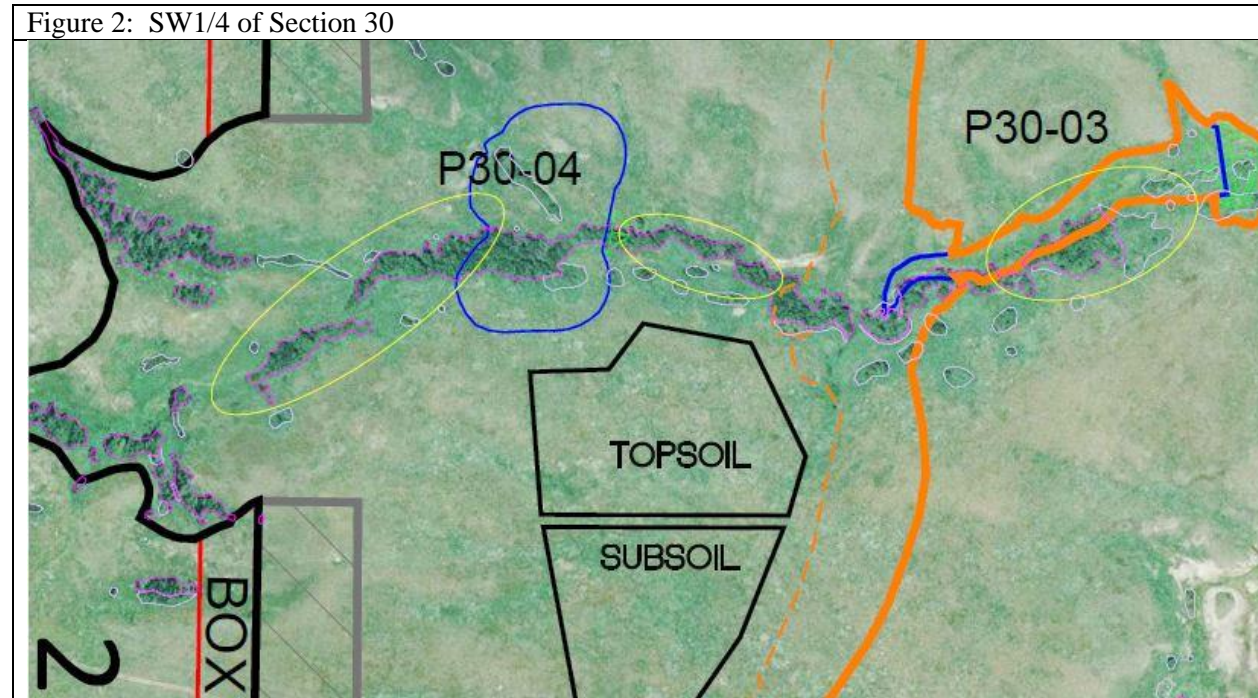
Figure 1: SE1/4 of Section 24



The drainage associated with sediment pond P30-04 was inspected. The embankment and pool area of this pond will disturb approximately 1.4 acres of woodlands according to measurements using ArcGIS but it appears some of this acreage may be above the PPE of the pond so perhaps less than an acre of woodland disturbance may occur at this location. Some of the woodland acreage immediately above this pond is outlined in yellow meaning the trees will be avoided but woodlands west of the avoidance area are eventually going to be disturbed. The haul road is going to cross this woodland lined drainage east of pond P30-04 but woodland acreage between the pond and the road are identified as an avoidance area.

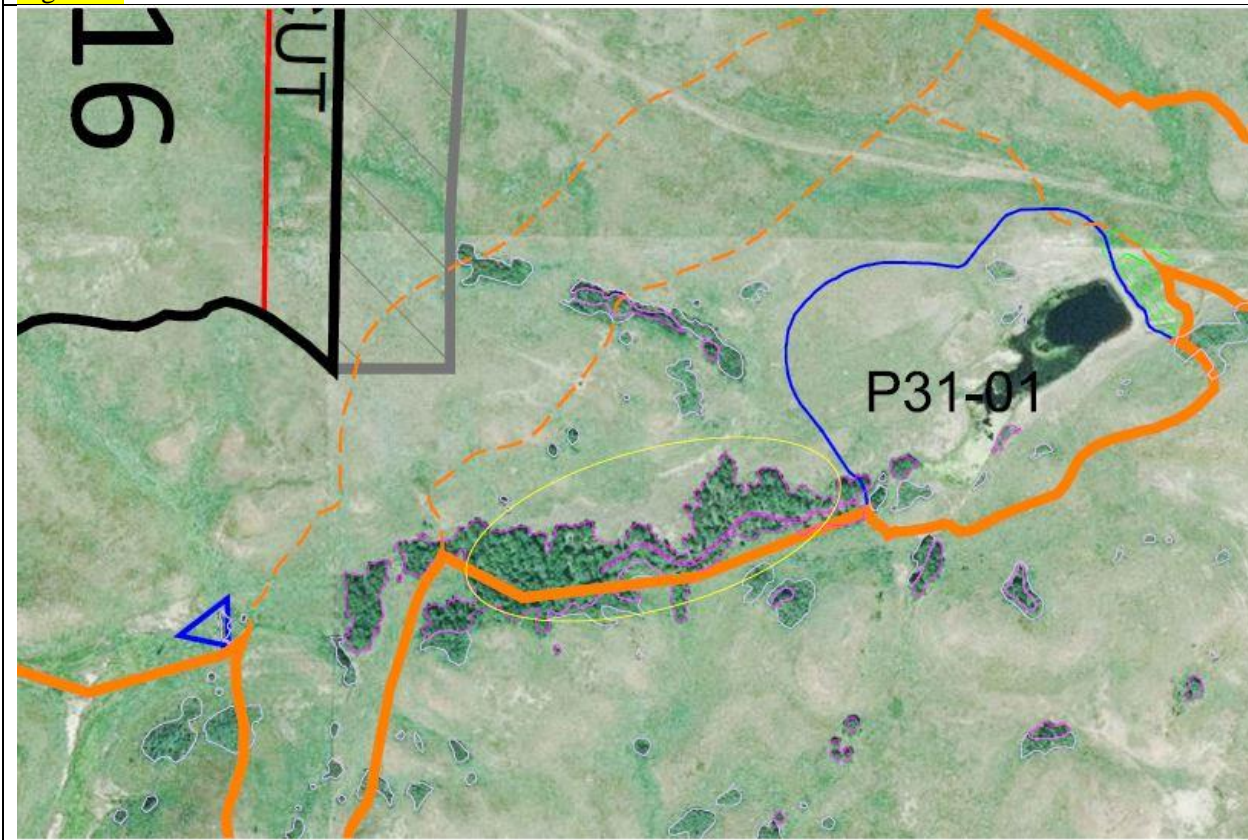
The drainage way between the haul road and pond P30-03 was not inspected. Although not discussed during this inspection, it is not clear to the Reclamation Division if this pond is necessary since the

stockpiles originally planned east of the haul road are no longer going to be placed on that side of the road. In addition, Coyote Creek has verbally indicated that they are no longer planning to mine the federal coal in Section 30 which should free up room for stockpiles. This issue should be further reviewed with pending Revision 1 to NACC-1302. Figure 2 is the map that was provided for the review of this area.



Woodlands associated with the drainage above pond P31-01 were inspected. Very little woodland acreage will be disturbed for construction of the pond (a fraction of an acre), but the drainage above the pond is quite heavily wooded. Most of the woodlands above this pond are identified as an area that will be avoided but the west end of the drainage is to be affected by the haul road. Given the size of the watershed above this pond it was discussed that perhaps runoff should not be allowed to pass through the undisturbed wooded drainage way. It appeared that this could be accomplished by a ditch block and the construction of a diversion that could be located along the north side of the drainage. Figure 3 is the map that was provided for the review of this area.

**Figure 3:** NW1/4 of Section 31.



#### SURFACE WATER MANAGEMENT

Silt fences were in place below the location where sediment pond P31-01 is to be constructed and in places around the SPGM stockpile sites in the SW1/4 of Section 30. The stock dam at the location of pond P31-01 has been pumped down. Water from this pond was pumped to the new dugout located a few hundred yards to southeast. This dugout is quite small and only a trickle of ground water seepage was entering the dugout. Cattle were utilizing the pond which apparently will only be needed for livestock for a few more weeks as the tract apparently is used as a spring calving pasture.

Silt fences were in place adjacent to portions of the disturbance around the Coyote Creek crossing but more are needed. There were no silt fences along the north side of the haul road disturbance at the Coyote Creek crossing. Ms. Flath was advised to install BMP's at this location as soon as possible.

#### April 30, 2015

Permit NACC-1302: Silt fence supported with T-posts and buttressed with rock had recently been installed along the Shop Access Road corridor crossing Coyote Creek.

#### May 13, 2015

Water was being pumped from the stockpond that is located where sediment pond P-31-01 is being constructed in the NW/1/4 of Section 31. A trench was dug in the stockpond to allow water to pool at the northeast corner of the pond where it was then pumped over the embankment. This water flows under the access road to a sump located on the north side of the road. A silt fence is in place adjacent this sump that the water must flow through prior to flowing to Coyote Creek. The last of the water that was being pumped from this pond appeared to be carrying a heavy load of sediment.

Silt fences and sumps were observed to be in place adjacent to the access road along Coyote Creek and east of the topsoil and subsoil stockpiles located in the SW1/4 of Section 30. A topsoil stripping edge was observed between the topsoil and subsoil stockpiles which will direct runoff from the subsoil pile to a sump adjacent the silt fence. There was no evidence that any runoff had occurred from the recent rain events. With the exception of the sump where water was being pumped from the stockpond, all other sumps were dry and there was no evidence that any water had accumulated in these features.

### **May 29, 2015**

The water level in pond P30-01 was approximately 4 feet below permanent pool elevation. A water load-out was set at the south end of pond. At the time of the inspection the Coyote Creek was flowing approximately 18 inches deep in the 60 inch culvert installed at the shop access road. The silt fence installed for temporary sediment control appeared in good condition. A pump was located at the pond P31-01 construction site but was not operating.

### **June 11, 2015**

The P2000 excavator, mud trucks and the 777 fleet were being used to remove material from the basin of sedimentation pond P31-01. A significant amount of wet, sloppy material is being removed from the pool area of the pond and that material was being hauled to a laydown area on the hill to the west in the SW1/4SW1/4 of Section 30. Borrow material was being hauled back to the pond from the laydown area and used to construct ramp extensions required to advance equipment access for removal of the wet material from the pond. A thin, water-bearing coal seam and sand/gravel lenses in the pond containment area are providing ground water seepage into the pond basin, accounting for the wet, sloppy conditions. Additional material from the borrow area was being hauled to the west end of the dragline erection pad to build a grade separation ramp.

Wanzek Construction, Inc. began work this week with installation of box culverts that will cross Coyote Creek west of the shop/office complex in the SE1/4 of Section 30. At the time of inspection an excavator and mud trucks were removing material from the future culvert location area and hauling that material to the laydown area west of Coyote Creek in the SW1/4SW1/4 of Section 30. The box culverts will be pre-cast concrete culverts and installation is expected to be completed within a month.

The water level of sediment pond P30-01 was approximately 5 feet below the permanent pool elevation.

### **June 25, 2015 flyover inspection**

The permits and adjacent areas were flown over and viewed from an elevation of approximately 1400 feet above the ground surface with a 172 Cessna. High water marks indicated that water had backed up adjacent to the access road that is being constructed over Coyote Creek west of the shop office facilities area during a recent runoff event. The water level in Coyote Creek had subsided to the point that all of the water was passing through the 60 inch low flow culvert. Portions of two of the four box culverts have been placed through the access road west of the low flow culvert and there was evidence that water from the runoff event had either backed up or flowed around the box culverts. Wet ground or sediment was

evident in and around the access road and the box culverts and it was evident that equipment had been using the access road south of the box culvert construction site. Coyote Creek appeared to be carrying a heavy load of silt both upstream and downstream of the construction site. High water marks in the stream channel indicated that the original stream channel was able to handle the flow from the runoff event except near the creek crossing near Casey Voigt's farmstead and adjacent to the access road. In other words, there was no evidence that water had overflowed the creek channel to the flood plain except adjacent to the access road and where it passed over the creek crossing near Mr. Voigt's farmstead. The channel that was created a few years ago to divert Coyote Creek from meandering around the Voigt farmstead is a wide eroded channel.

There was no evidence that the permit area had received the same precipitation event that caused Coyote Creek to rise. The pool area of sediment pond P-31-01 was not holding any visible water and equipment was working in the construction of this pond. Equipment was also observed to be working in a drainage way located in Section 30 where a haul road will be constructed and SPGM has been stripped from the coal processing facility area in Section 10. Silt fences were observed in place down-slope around areas where operations were occurring. Equipment was sitting idle in Section 18, north of County Road No. 12.

**June 30, 2015** inspection report attached.

### **INSPECTION REPORT**

DATE OF INSPECTION: June 30, 2015

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mining Company, L.L.C. - Coyote Creek Mine

PERMITS INSPECTED: NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Steve Dub, initially  
Donn Steffen, remainder of the inspection

INSPECTION CONDITIONS: The inspection was conducted between 1:00 p.m. and 3:00 p.m. CDT. Skies were partly cloudy with a few rain sprinkles during the inspection. The temperature was near 75° F. Access was good.

### **GENERAL**

This inspection was a follow-up to the fly-over and on-the-ground partial inspections made at the Coyote Creek Mine on June 25, 2015. The purpose was to review the condition around the culvert installation site following flooding the previous week and the extent of possible damage to the Coyote Creek stream bank at the outlet of a 60-inch culvert installed in April of this year. The aerial photographs and video from the June 25, 2015 flyover inspection show a substantial cut or erosion feature into the Coyote Creek stream bank opposite the low flow culvert outlet discharge. This erosion feature does not appear on photos taken prior to and immediately after the culvert installation.

This inspection confirmed that the stream bank across from the 60-inch culvert is eroded apparently due to high volume discharge flows from the culvert. The culvert is positioned in a manner that it outlets in the stream channel at nearly a right angle to the stream channel. The stream flow from the culvert outlet now flows through an excavated channel cut through a meander point, approximately 100 feet north of the 60-inch culvert, at which point it re-enters the natural stream channel. It appears that flows from the culvert hit the opposite bank of Coyote Creek thus creating the erosion feature. The erosion feature was estimated to be 15 to 20 feet wide and deep into the bank and about 10 feet deep from the natural ground surface. No stabilization or erosion protection or remnants of erosion control measures were observed on the opposite bank. See attached Figures 3 and 4.

The access road crossing bisects Coyote Creek in an area of numerous stream meanders (see Figure 1). The erosion took place on a floodplain "island" surrounded by active stream and oxbow channels. This island is less than an acre in size and is dominated by shrub and natural floodplain vegetation. The permit soil survey indicates that the island is mapped as Straw loam channeled, 1 to 6% slopes with 18" of topsoil and 42" of subsoil. Mine personnel have indicated that this "island" will be removed and the area will be stabilized with concrete matting; however, they indicated that they did not plan to remove the island until the box culvert installation was complete. Since the start of the box culvert installation, the natural channel just downstream of the 60-inch culvert and upstream and downstream of the box culverts has been blocked to allow construction.

As a result of this inspection, Notice of Violation (NOV) 1502 will be issued to Coyote Creek Mining Company, L.L.C. for failure to control erosion at the low flow culvert outlet.

A portable pump for dewatering the sump in the box culvert excavation area did not have adequate energy dissipation at the discharge outlet. The discharge from the pump was discharging to a small eroded area next to a culvert and the discharge was visibly more turbid than the water in Coyote Creek. The pump outlet was moved during the inspection to discharge on large riprap placed along the channel plug.



Figure 1- Coyote Creek at access road crossing site taken during June 25, 2015 flyover inspection



Figure 2 – Low flow culvert installation in progress on Coyote Creek on April 13, 2015



Figure 3- Erosion to stream bank, center. Channel plug and box culvert site to the left.



Figure 4- Closer view of bank erosion feature located across from the 60-inch culvert

## **July 9, 2015**

In Permit NACC-1301, the water level of Pond P-30-01 was estimated to be 4½ feet below permanent pool elevation. The south portion of the embankment of this pond was also reviewed where Coyote Creek Mining has requested to remove approximately 300 cu. yds. of subsoil from the south end of the embankment (the embankment also serves as a subsoil pile and is identified as SS-4). CCM has requested to move the soil because the pond embankment extends into the shop access roadway. The subsoil will be moved to stockpile SS-6. Approval was granted to CCM to move the subsoil from stockpile SS-4 to stockpile SS-6.

Construction is continuing on the box culverts located in the SW¼SE¼ of Section 30 T143N R89W. CCM has also placed large boulders near the outlet of the low-flow culvert on the north side of the haul road to protect the embankment from potential erosion during high flow rates from the outlet. The “island” feature located a short distance downstream from the low-flow outlet has also been removed.

Portions of Pond P31-01 have been constructed. Portions of the pool area have been excavated, and the base of the embankment has been constructed. Construction of pond P10-01 located in the SW¼ of Section 10, T143N, R88W has been completed. Pond P10-01 is part of the water management for the coal handling facility.

## **July 22, 2015**

### **SURFACE WATER MANAGEMENT**

There has been limited surface runoff over the past few weeks. Work was continuing with the construction of sediment pond P31-01. A dozer was operating in the pool area of the pond and the embankment has been constructed to about half its planned height. A few inches of water was ponding in the pool area of this pond in a few places. It appeared that this water was from ground water. Although it appeared that runoff from the overburden removal area located northwest of this pond will drain towards the pond, it was advised that this be looked at more closely to ensure runoff from this area be directed to the pond rather than allowing it to pass down the haulroad corridor where silt fences and sumps function as water management features.

Sediment pond P31-01 is quite deep which has resulted in a steep long slope at the upper reach of the pond where it meets the undisturbed drainage. This interface between the pond and the undisturbed drainage will need to be monitored to ensure that a head cut does not develop at this location. Perhaps this area will need to be temporarily stabilized until such time that the diversion around the tree avoidance area has been constructed.

Sediment Pond P10-02 has been constructed and the embankment and spillway has been seeded and mulched. Fabric was placed in the spillway. The pond was dry and a permanent pool marker stake was noted in place. Apparently this pond has not yet been certified.

Sediment Pond P10-01 is built but the embankment has not been seeded or mulched. This pond was not holding any water. Pond P30-01 was holding water well below spill elevation. A low area exists where subsoil was removed from the south end of the embankment to accommodate construction of the shop-office access road (see email dated July 14, 2015). Construction of the access road at this location should be completed as soon as possible to ensure the integrity of the pond is being maintained. The elevation of this low area adjacent the haul road was not evaluated in relation to the pond’s spill elevation so it was not clear if flow from the pond will pass through the designed spillway or through this low area adjacent the road.

Creflex was being installed on the north side of the box culverts that are located west of the shop office facilities area and fabric was noticed in place on the south side of the box culverts where creflex is to be placed. The "island area" north of the box culverts has been removed. Coyote Creek flow was passing through the 60 inch culvert. The bottom elevation of the north end of the box culverts appeared to be several feet below the elevation of the natural stream channel.

Numerous silt fences were noted adjacent areas of disturbance. In a few instances it appeared that new silt fences will be needed as it appears runoff will no longer pass through pre-disturbance low areas. Shallow SPGM removal depths in pre-disturbance low areas and deep removal depths in other areas will result in runoff flowing differently than it did pre-disturbance. For example, additional silt fences will be needed along the SPGM removal disturbance boundary located north of Coyote Creek in the W1/2 of Section 19 and it was recommended that a sump be placed on the south side of Coyote Creek floodplain in the W1/2 of Section 19. Runoff from the haul road disturbance will pool on the floodplain on the south side of Coyote Creek but additional storage for potential sediment runoff should be made to ensure protection to Coyote Creek waters. There is no silt fence on the south side of Coyote Creek where the landowner access trail crosses Coyote Creek.

It was also recommended that a silt fence be placed along the south side of Brush Creek where the SPGM removal for construction of the box culverts was occurring. Ms. Flath stated that the contractor requested that he be allowed to work in this area without the silt fence. A silt fence was to be constructed along this disturbance when the contractor had completed his work in this area which was to be by the end of the work day.

#### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

A contractor was removing subsoil in Section 10 where the box culverts are to be placed for the Brush Creek crossing. The contractor was having difficulty removing this subsoil with scrapers because of wet conditions. The scrapers were getting stuck and their wheel tracks were not allowing for clean separation between the subsoil and material under the subsoil. The contractor asked Ms. Flath if he could use a backhoe to remove the subsoil in this area and he wanted to remove the overburden from this area at the same time. This removal approach was approved as the soil mapping units were fairly uniform with 35 and 42 removal depths and this approach appeared to be the best way to keep subsoil from being mixed with underlying material due to rutting by driving on the wet material.

**July 31, 2015**- SPGM removal inspection only

**August 5, 2015**- report attached

### **INSPECTION REPORT**

DATE OF INSPECTION: August 5, 2015

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mine

PERMITS INSPECTED: NACC-1301, NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Sarah Flath

INSPECTION CONDITIONS: The inspection was conducted between 10:30 a.m. and 1:30 p.m. CDT. Skies were partly cloudy. The temperature was near 70° F. Access was unrestricted to areas of interest.

### SURFACE WATER MANAGEMENT

The water level in pond P30-01 was well below permanent pool elevation. Pond P31-01 was empty and appeared complete except for seeding and mulching. Recently completed ponds P10-01 and P10-02 located at the coal handling facility were empty.

### ROADS

An end-dump truck was hauling overburden material from a cut segment of haul road in the SW1/4 of Section 30 to the area northwest of the shop building for use as fill material at the future fuel storage area. The cattle guard crossings were installed at approaches constructed to allow landowner access across the mine access road in the SE1/4SW1/4 of Section 30 and the NE1/4NW1/4 of Section 31. The fence had not yet been connected to the crossings.

A seep was encountered in a cut section of north-south haul road in the NW1/4 of Section 30, northwest of future pond P30-02. The drainage from the seep is directed to a series of two silt fences in a slight drainage way at the stripping edge.

The BMPs at the planned Coyote Creek box culvert crossing in the SW1/4 of Section 19 were reviewed and it was requested that gravel/rock be added on the south side of the low water crossing from the existing gravel near the water line to the opening left in the silt fence. The rock or other surface stabilizing method is necessary since the opening in the silt fence will direct some drainage down the disturbed slope to the creek and for potential vehicle crossing use during wet conditions.

A contractor (Baranko Bros. Inc.) scraper fleet was removing overburden from a lift approved area just to the north of County Road 12 and hauling the material to an overburden fill area near the center of Section 18.

In the SE1/4 of Section 10, a contractor (Wanzek Construction Inc.) was installing the box culvert at the Brush Creek haul road crossing. At the time of the inspection it appeared that about half of the precast sections had been set. Large rock had been placed around the low flow culvert outlet and it appeared some additional rock would be placed at the outlet. The inlet and outlet ends of the low flow culvert were completely submerged. A low rate of flow was observed in the Brush Creek channel downstream of the culvert.

## Brush Creek box culvert installation



**August 12, 2015 NA**

**August 18, 2015**

### **SURFACE WATER MANAGEMENT**

Sediment pond P30-01 was approximately 5 feet below the permanent pool elevation and appeared almost dry. A portable water pump was stationed at the south end of the pond and water from the pond is being used for dust suppression. Sediment pond P31-01 was collecting some water in its containment area and the depth was estimated at 6 inches. Side slopes of sediment pond P10-02 were being mulched at the time of inspection.

CCMC will be relocating a stock tank that is now located in the NW1/4 of Section 31 to about ¼ mile to the southeast (still in the NW1/4 of Section 31) for landowner Casey Voigt. Associated with moving the stock tank will be installation of a small diameter water supply line from the new stock tank location to the Fox Hills stock well located about ½ mile north of the mine haulroad near the center of Section 30 which has prompted a discussion with the Reclamation Division regarding the installation techniques that will be used. A water distribution system is in place that provides water from two deep Fox Hills wells on Voigt property to several stock tanks across the ranch. The previous water lines were trenched in and the remnants or scars of previous trenching operations were observed and it appeared that an average of about 1-2 inches of settling had occurred in some areas and those areas were most recognizable because the vegetation growing in the trench appeared to be more green and lush than surrounding vegetation, likely due to increased water retention in the shallow, subsided areas. However, vegetation in other areas appeared somewhat sparser than surrounding areas. The supply well location near the center of Section 30 was also inspected and the previously flowing artesian well had been modified and a hand pump installed. It appeared a submersible pump was installed in the well and will be wired to power that will come from the new stock tank location area in the NW1/4 of Section 31. The length of the water line and associated power line from the stock tank to the well is approximately 2/3 of a mile.

The PC-2000 excavator and trucks were constructing sediment pond P30-02 in the NW1/4 of Section 30 and hauling that material to a nearby haulroad fill area also located in the NW1/4 of Section 30.

Wanzek Construction was finishing up the box culvert installation at the Brush Creek crossing and the stream was flowing through the newly constructed culverts. Some dress up work remains around the inlet and outlet of the box culverts and areas downstream. Work on the second Coyote Creek crossing that will be located in the SW1/4 of Section 19 has already begun. A large hole approximately 10 feet deep and located on the south side of the creek has already been excavated and seepage water from the hole was being pumped directly into a water truck to be used for dust suppression.

**August 25, 2015**- portions of report attached

#### **SURFACE WATER MANAGEMENT**

Permit NACC-1302: The PC400 shovel was excavating the box culvert trench along the south side of Coyote Creek for the north-south haulroad creek crossing in the SW¼ of Section 19 as pictured in Figure 1.



**Figure 1. PC40 shovel excavating the box culvert trench along the south side of Coyote Creek for the north-south haulroad creek crossing in the SW<sup>1</sup>/<sub>4</sub> of Section 19 – facing west-southwest.**



**September 4, 2015**- Portions of report attached

## SURFACE WATER MANAGEMENT

The water level of sediment pond P30-01 was approximately 3 feet below PPE. As noted in the records review above, CCM has acquired a temporary water use permit to withdraw 20 ac/ft. of water from Coyote Creek through December 31, 2015. Because of discharge rate restrictions, water from Coyote Creek is being pumped for storage to pond P30-01 at a low rate. As needed, water from the pond is pumped into a water truck for dust suppression at the mine. Separately, sediment pond P31-01 was mostly dry and ponds P10-01 and P10-02 were completely dry.

A loader and trucks were removing overburden for construction of sediment pond P30-04 in the SW1/4 of Section 30 and that material was being transported to a haulroad fill area in the NW1/4 of Section 30. Construction of sediment pond P30-02 is nearly complete. Survey stakes around the embankment and open channel spillway indicated remaining cut and fill depths varying from 0.1 to 0.3 feet. Other areas required some clean-up work as well as outflow channel stabilization. Several inches of water has collected in the containment area at the north end of the pond.

Wanzek Construction, Inc. has nearly completed the box culvert installation at the second Coyote Creek crossing in the SW1/4 of Section 19. A shallow sump pump was placed on the downstream (west) side of the culvert installation area and was discharging an estimated 8-10 gpm to Coyote Creek and an energy dissipater was in place at the discharge outfall.

### **Coyote Creek culvert installation – SW1/4 of Section 19 (looking northeast)**



A minor amount of sediment-laden water had passed about 30 feet beyond/through a silt fence (but still within the permit area) on the west side of the haulroad in the SW1/4 of Section 18 forming a silt-laden crust on the surface. It did not appear the sediment-laden water went around or undercut the silt fence, but rather went through the silt fence. Most of the plunge pool downstream of the culvert outlet had filled with the silty/sandy sediment. CCM was instructed to clean up the sediment beyond the silt fence as soon as possible and Baranko's construction supervisor was notified of the required clean-up work. A skid steer was to be mobilized immediately and clean-up was expected to be done within the hour. Several areas of deep fill along the haulroad corridor will likely experience similar issues prior to final soil stabilization with seeding, mulching, erosion control fabric installation and other BMP's. Prior to final haulroad corridor reclamation processes for those areas in loose soil conditions, it is recommended that CCM install double silt fences down-gradient of deep fill drains if operationally feasible to minimize the potential for a similar situation in the future.

### **Minor sediment-laden deposition through haulroad corridor silt fence**



The Brush Creek crossing project is completed and only some minor clean-up and BMP installation items remain. At the time of inspection, CCM was installing silt fence along the south side of the box culvert and additional plans were to adjust silt fence locations in other areas around the crossing.

**Completed Brush Creek crossing in the SE1/4 of Section 10  
View is toward the northeast – Coyote Station in the background**



The Brush Creek crossing project is completed and only some minor clean-up and BMP installation items remain. At the time of inspection, CCM was installing silt fence along the south side of the box culvert and additional plans were to adjust silt fence locations in other areas around the crossing.

**REVEGETATION**

Coyote Creek Mine has been seeding, mulching, and installing erosion control fabric at sediment ponds as they are being constructed and other disturbed areas as required

## September 15, 2015

In Permit NACC-1301, the water level of Pond P-30-01 was estimated at 2 feet below permanent pool elevation. Construction is completed on the shop access road box culverts located in the SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> of Section 30 and the landowner access - haulroad crossing located in the NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> of Section 31. Haulroad ditches are mulched and seeded and are showing some emergence of vegetation.

Construction of Pond P31-01 has been completed. The side-slopes around the pool area have been mulched, the spillway has been curlexed, and a channel that drains into the pond from the west has been riprapped. The pond was certified on July 31, 2015. The pond was holding a small amount of water, estimated at approximately a foot deep in the pool area. An excavator and several trucks were removing overburden from the pool area of pond P31-04 and hauling the overburden to an overburden stockpile located in the NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> of Section 30. Pond P30-02 was also reviewed. The pond is located in the NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> of Section 30 and construction is nearly complete. Berms and silt fence control drainage on the east side of the pond. Spring flow on the west side of the basin has caused some instability of the side slopes. Ms. Flath commented that the spring flow areas may be excavated and backfilled to try to stabilize the side slopes.

A contractor was working on the installation of the North Coyote Creek box culverts. The culverts have been installed and crews were backfilling the sides and top of the culverts. A large overburden pile has been placed on the north side of Coyote Creek that will be used for haulroad construction once the culverts are completed.

The West Brush Creek box culverts located in Section 10 were reviewed. The culverts have been installed and rock riprap and concrete matting have been placed on the upstream side to stabilize the channel and inlet to the low - flow culvert. Curlex, concrete matting and boulders have been used to stabilize the channel and embankment on the downstream side.

Ponds P10-01 and P10-02 were reviewed and both ponds were nearly dry. The ponds are located in the SW<sup>1</sup>/<sub>4</sub> of Section 10 and the ponds control runoff from the coal handling facility. Pond P10-01 was certified on August 14, 2015 and pond P10-02 was certified on July 10, 2015. The pond embankments and surrounding areas that were disturbed during construction have been mulched and seeded.

## September 23, 2015

### SURFACE WATER MANAGEMENT

The completed sedimentation ponds at the facility were essentially dry with the exception of pond P30-01 which was being used as containment for dust suppression water. The water level in pond P30-02 appeared to be about 2 feet below the permanent pool elevation. A small pump was set at the access road crossing over Coyote Creek to intermittently pump water to pond P30-02 for dust suppression under the temporary water use permit. The pump was not operating at the time of the inspection and as provided by Mr. Steffen the pump has a 300gpm capacity. Ponds P10-01, P10-02, P31-01 and P30-02 were dry or had small pools of water remaining in the pond.

### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

The truck/shovel fleet was loading topsoil in the SE<sup>1</sup>/<sub>4</sub> of Section 25 and hauling the material to stockpile number 9 in the SW<sup>1</sup>/<sub>4</sub> of Section 30. The topsoil had been dozed into small piles for loading and was dry and powdery. Two scrapers were hauling the sod and topsoil from a drainage mapped as 0/0 lift in the NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> of Section 30 to a temporary overburden stockpile area in the SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> of Section 30 for eventual use as topdressing material on the side slopes and ditches along the haul road or other mine features.

An area of SPGM removal located west of pond P31-01, primarily in the NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> of Section 31, was inspected for lift approval. A large percentage of the area consisted of the side slopes of drainages leading to the pond. The area along the southern stripping edge will be used to divert mine area runoff around the wooded area in the bottom of the natural

drainage. Soils were mostly shallow to bedrock or coarse textured material and it appeared that the available SPGM had been salvaged. A map of the lift area and other required information was provided after the inspection.

The SPGM lift approval request area submitted on September 22nd for the pond P19-01 construction area was inspected and verbally approved during the inspection. Soils on the approximately 5 acre area were mostly shallow to bedrock materials on the side slopes with some deeper soils in the pond bottom. All available SPGM had been salvaged from the area.

A portion of Baranko Brothers' scraper fleet appeared to be completing subsoil removal on an area in the haul road corridor near the quarter-line in the S1/2 of Section 8. The soils in the area are sandy and the mapped soil removal thicknesses were 15/45 on the north and 12/0 on the southeast near the drainage where a culvert was being backfilled with the subsoil material.

In the SW1/4 of Section 9, the topsoil appeared to have been removed from the haul road route up to the Tesoro crude oil pipeline. Mr. Steffen noted that they will be working with Tesoro on building the road over the pipeline and that a representative from Tesoro will be onsite when fill material is placed over the pipeline. In the discussion that followed, Mr. Steffen explained that they plan to use a low ground pressure dozer to push the topsoil from on top of the pipeline to the east for a distance of about 50' or as needed to place the required amount of subsoil fill over the pipeline. The depth of fill and distance over the pipeline required to allow heavy equipment traffic would be specified by Tesoro. As discussed the subsoil fill operations would need to start shortly following the removal of topsoil and that the dozer pile of topsoil would remain for a short period until construction equipment could cross the pipeline. I requested that the Reclamation Division be notified when the arrangements were made to begin work on the access over the pipeline and was notified later on the day of the inspection that the crossing work would begin on the next day.

## ROADS

The multi-plate structures for the haul road underpass at County Road 12 were assembled and set in place. Mr. Steffen indicated that in the next week they expected to begin receiving the retaining wall block material needed to complete the backfill for the structure.

In the W1/2 of Section 30, a contract crew was installing a 3-inch water line along the east side of the haul road. The waterline will carry water from the Coyote Station power plant to the shop office complex for use in dust suppression and other industrial purposes. Excavators belonging to contractors were observed in the W1/2 of Section 30 and SW1/4 of Section 8 working on the plunge pool area down gradient of haul road culverts.

## October 6, 2015

### SURFACE WATER MANAGEMENT

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation.

<u>Pond ID</u>	<u>Water Elevation</u>	<u>Comment</u>
P30-01	2' Below PPE	Certified on July 17, 2014
P30-03 NA	Under Construction	
P30-04 Dry	Certified on Sept. 23, 2015	
P30-02 Dry	Certified on Sept. 11, 2015	
P31-01 Nearly Dry	Certified on July 31, 2015	
P19-01 Dry	Under Construction	

P10-01 Dry Certified on Aug. 14, 2015

P10-02 Dry Certified on July 10, 2015

Coyote Creek personnel reported that construction had begun on Pond P30-03 on October 5, 2015. The pond is located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 30. Construction is nearly complete on Pond P19-01 located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 19. Cleanup work needs to be done on the inlet of the pond as well as the down-stream side of the embankment. Mulching and seeding has been completed on Ponds P30-01, P30-04, and P30-02.

Construction of the North Coyote Creek box culverts has been completed. Rock riprap and concrete mat have been placed on both sides of the box culverts and along portions of the haulroad and stream channel. Ms. Flath reported that the small portion of cropland located on the west side of the haulroad and north of Coyote Creek had been worked and seeded to native grass. The cropland area is estimated to be less than  $\frac{1}{2}$  acre in size.

### October 14, 2015

#### SURFACE WATER MANAGEMENT

Pond P30-01 was holding water about two feet below PPE. The south end of the embankment that was affected during construction of the road has been reshaped to join the shop office access road at its designed elevation. Pond P30-02 was dry. The embankment of this pond has been mulched. Pond P19-01, which was recently constructed, was dry and the embankment was not mulched. SPGM was being stripped at the locations where ponds P24-01 and P24-02 are to be built. Silt fences were in place in the drainages below the planned disturbance boundary of these ponds.

The topography around topsoil stockpile 33 which is located north of Pond P19-01 was inspected in follow-up to an email request to use a silt fence to manage surface water runoff from the pile rather than a diversion as originally planned. This request was approved as it will minimize disturbance to lands where coal is not going to be removed as required by NDAC 69-05.2-13-05.

Pictures were taken of nearly every drainage way that was being affected by the haul road constructed located north of County Road No. 12, and of the two Coyote Creek crossings located south of County Road No. 12. A silt fence was in place in the drainage bottom at each location where road construction disturbance had occurred. Rock has been placed along the disturbance boundary where runoff from undisturbed lands will flow into the haul road ditch to prevent head cutting, and energy dissipating rock has been placed at the outlets of culverts under the road. Road construction work was proceeding eastward and in a couple of instances, berms had been installed at the upstream disturbance boundary to keep water from entering the drainage way work site where culverts were being installed. A pump was set up at one of these sites to discharge the water that was accumulating.

Haul and access roads have been constructed in Sections 31, and portions of Sections 19 and 30 and the ditches have been mulched and were greening up with vegetative growth. Mulch was being applied to the haul road ditch north of Coyote Creek in Section 19 and it was being crimped in place.

A drop structure control system has been installed in the east side of the haul road in Section 19 to prevent erosion in the haul road ditch. This feature is east of subsoil stockpile 10. Runoff from both sides of the road north of this stockpile is routed to the drop culvert inlet where runoff flows through the culvert under the east haul road ditch where the slope is steep. This culvert discharges in the ditch at the bottom of the slope where the topography is less steep.

It was noted that runoff from the haul road adjacent to the south side of the Coyote Creek crossing in Section 19 will flow over a steep un-armored slope upon entry into Coyote Creek. Ms. Flath was advised to place riprap at these runoff entry points to ensure protection from erosion as required by NDCC 38-14.1-24(15).

A silt fence located in the south road ditch adjacent to a drainage way in SW $\frac{1}{4}$ NE $\frac{1}{4}$  of Section 18 was observed to be in need of maintenance. Runoff had flowed under a silt fence at this location. A sump located west of the haul road in the

first drainage north of County Road No. 12 appeared to have filled with sediment and deposition was noticed adjacent to the three silt fences at this location.

Water in Coyote Creek and Brush Creek was flowing through the box culverts at all three road crossings. Water was not flowing through the small culvert associated with the original Brush Creek stream channel. This small culvert may be set at a higher elevation than the box culverts.

A diversion has been constructed north of the natural drainageway or stream channel located above sediment pond P31-01 in the NW1/4NW1/4 of Section 31. This diversion was constructed to avoid disturbing woodlands and the stream channel. Runoff from the drainageway in Section 36 is routed through this diversion. Ms. Flath stated that the SPGM stripping plan in Section 24 is being reviewed to minimize disturbance to the woodlands associated with drainages above sediment ponds P24-01 and P24-02.

#### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

A fleet of scrapers were removing topsoil and subsoil from the haul road corridor in Section 10. The topsoil was being hauled to a stockpile located south of the road and the subsoil was being placed on stockpile No. 8, which is a portion of the haul road located over Brush Creek. Soil monuments were in place showing SPGM removal depths.

A dozer was pushing what appeared to be salvageable soil up a slope near a drainageway located in the SE1/4SE1/4 of Section 9. It was not obvious what exactly was occurring with this material but arrangements were made to ensure that it would be salvaged. It appeared that this material might have been removed from a drainageway south of where a culvert was recently installed. Sumps lined with fabric and covered with rock are being installed at each culvert inlet and outlet end.

A few inches of windblown sand was observed on undisturbed native grassland located south of the haul road disturbance area located in the SW1/4SE1/4 of Section 8. This presumably occurred a few days ago when winds up to 60 mph were recorded in central North Dakota. The sand appeared to have blown from the adjacent haul road ditch which is being constructed. Coyote Creek was advised to be very careful when removing this material to ensure there is no disturbance to the in-situ topsoil in this area.

A contractor was installing a three inch water line in the east haul road ditch in Section 19. This water line will provide water from the Coyote Station to the shop/office site and it is to be placed in the east and south sides of the haul road ditch. The installation of the waterline may be delaying the installation of silt fences, seeding and mulching along the haul road ditch.

#### GENERAL

The corridor where a livestock water line was recently installed north of the access road in Section 30 was inspected. The corridor was previously the route of a prairie trail that was used by the landowner to access a well and stock tank. Construction of the haul road eliminated use of the stock tank so a replacement tank is needed south of the access road located in Section 31. As previously approved, topsoil from this trail was salvaged and hauled to a stockpile, the water line was installed and subsoil was then hauled to fill the corridor. The topography of the corridor blends well with the adjacent undisturbed land and some gravel has been placed on this pipeline corridor/access road. A small cut was made in a slight ridge located southeast of the well, otherwise no topographic changes were apparent. Coyote Creek should update the permit to classify this corridor as a postmine road if the subsoil in this road is a permanent feature.

An undisturbed drainageway located in the SW1/4 of Section 1 was inspected to determine if it was exhibiting wetland characteristics and should be classified as a wetland. This issue was identified during the technical review of the permit application late last fall but weather conditions and other issues prevented an on-site inspection. Thus it was agreed that this area would be inspected in the future. The drainageway had surface water beginning near the fence line between Sections 1 and 12 and water was flowing a few hundred yards downstream. The bottom of this drainage was supporting hydric vegetation, namely prairie cordgrass but some slough sedge and a few isolated single plants of cattail were also present. Foxtail barley, inland saltgrass and nuttall alkaligrass were growing at the edges of the drainageway. Thus, a

portion of this drainageway should be classified as a wetland and the permit should be updated accordingly. This ephemeral drainageway is not saturated or ponding water over its entire reach so only a portion of this drainage would be considered wetland. Shrubs, believed to be hawthorn were growing in the bottom of this drainageway near the area where saturated soil conditions and hydric vegetation ceases to exist. Photographs of this drainage were taken and are on file with the Reclamation Division.

**October 29, 2015**

**SURFACE WATER MANAGEMENT**

The runoff from recent rains did not substantially increase the water level in the ponds. Seeding and mulching had been completed at all of the ponds constructed this year except for ponds P24-01 and P24-02. The following is a list of ponds viewed with approximate water levels and other information:

Pond	Elevation	Comments
P30-01	4 Feet below PPE	
P31-01	Empty	Water not covering bottom
P30-03	6 Feet below PPE	
P30-02	6 Feet below PPE	
P19-01	Empty	PPE marker not observed
P24-01	Empty	Construction near complete
P24-02	Empty	Construction near complete
P10-01	Empty	Water not covering bottom
P10-02	Empty	Water not covering bottom

The installation of erosion and sediment controls was continuing. Crews were installing an erosion control blanket above the rip-rap along Coyote Creek at the N-S haul road crossing. Most completed features south of County Road 12 appeared to have been seeded and mulched. Ms. Flath did point out some segments of haul road ditch in the NW1/4 of Section 30 and SW1/4 of Section 19 that they intend to install erosion control blanket in addition to the mulch that was already in-place.

North of County Road 12, sediment control for most drainage outlets consists of rock at culverts with silt fences down gradient of the rock. In addition, silt fence sediment traps are typically installed at the base of fill section ditches, above the rock outlets. Several silt fences need additional maintenance or adjustment as a result of the recent rain events as noted in the following table. At locations where silt fences were full of sediment, it appeared that erosion features had formed in the contributing fill slope ditch. When grading is complete, these fill slope ditches will have erosion control fabric and/or a pipe slope drain to carry runoff from the road ditches down the slopes.

**Haulroad North of County Road 12 – Drainage discharge points**

Discharge Point	Condition	Notes
1	ok	Brush Creek area
3	Under Construction	Water flow being routed to temporary culvert crossing
4	ok	
5	ok	
6	Maint. Req.	Outlet silt fence partly detached. Sediment clean-out required
9	ok	
10	Maint. Req.	Sediment clean-out required, slope erosion feature
11	Maint. Req.	Sediment clean-out required, slope erosion feature

13	Maint. Req.	At permit boundary
14	ok	Slope drain outlet installed

## November 4, 2015

### SURFACE WATER MANAGEMENT

Sediment pond P30-01 was 4 feet below PPE; pond P31-01 was holding 1 foot of water in the east end of the containment area; and pond P30-02 was holding 1 foot of water in the north end of the containment area. Sediment ponds P10-01 and P10-02 are located near the coal handling facility in Section 10 and both ponds were dry.

A Coyote Creek dozer was backfilling a new culvert installation that will allow drainage underneath a recently-constructed access road that was built across the stripped diversion north of the shop/office area. The road was constructed to allow equipment access to the lagoon that is being excavated north of sediment pond P30-01 in the SE1/4 of Section 30. It appeared the dozer may have inadvertently crushed a portion of the culvert at the outfall. If a flared end section is proposed to be installed at the culvert outlet, some repair work will be required.

Installation of the water supply line from Coyote Station to the Coyote Creek Mine shop/office complex is progressing along the south side of the haulroad in the NW1/4 of Section 17. The poly pipe being installed appeared to be 3 inch diameter, schedule 40 PVC.

Repair work or bank stabilization work was being conducted along the east side of Coyote Creek in the SE1/4 of Section 31. It was assumed the work was related to previous surface water issues at the Coyote Creek crossing near the Voigt residence and was likely being conducted by a Mercer County contractor. Road closure barricades were in place and even though this area is located within the permit, a closer inspection of the work was not conducted.

### GENERAL

Best management practices along the entire haulroad route were inspected. Silt fences, rock checks and rip-rip, sumps and erosion control fabric areas all appeared to be functioning as intended at this time. Many of the seeded areas within the haulroad slopes and ditches from the shop/office location to the Coyote Creek crossing in the SW1/4 of Section 19 were emerging.

## November 12, 2015

The sedimentation ponds were for the most part empty. While all ponds constructed this year are operational, erosion control items remain such as seeding and mulching at ponds P24-01 and P24-02. The company also plans to stabilize steep pond inlets with rock or other materials at several ponds. The following is a list of ponds viewed with approximate water levels and other information:

Pond	Elevation	Comments
P30-01	5 Feet below PPE	
P31-01	Nearly Empty	Water not covering bottom
P19-01	Empty	PPE marker not observed, inlet rip-rapped
P24-01	Nearly Empty	Accumulating ground water seepage
P24-02	Empty	
P10-02	Empty	Inlet erosion present and noted on CCM's quarterly pond inspection report

The installation of surface water drainage and erosion controls for the haul road north of Mercer County Road 12 was proceeding. A slope drain pipe was being installed at haul road discharge point 6 in the SE1/4 of Section 9. Recently installed slope drain pipes were observed at discharge points 9 through 14. Other features being installed along the haul

road route included sumps typically at slope drain inlets, additional silt fence and rock ditch checks. Finish grading was in progress that will allow for the installation of erosion control blanket in steep ditch sections and the application of straw mulch.

**November 24, 2015**

**SURFACE WATER MANAGEMENT**

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4' Below PPE	Certified on July 17, 2014
P30-03	Nearly Dry	Certified on October 15, 2015
P30-04	Nearly Dry	Certified on Sept. 23, 2015
P30-02	Nearly Dry	Certified on Sept. 11, 2015
<b>P31-01</b>	Nearly Dry	Certified on July 31, 2015
P19-01	Dry	Certified on October 21, 2015
P10-01	Dry	Certified on Aug. 14, 2015
P10-02	Dry	Certified on July 10, 2015
P24-01	Dry	Certified on November 10, 2015
P24-02	Dry	Certified on November 10, 2015

Coyote Creek has installed rock riprap in the inlet portions of ponds P30-02, P30-03, P30-04, P24-01, and P19-01. Construction has been completed of the sewage lagoon located just north of sedimentation pond P30-01 in the SE¼ of Section 30; however, the embankment of the lagoon has not yet been seeded or mulched. Ponds P24-01 and P24-02 also have not yet been seeded or mulched. Construction was recently completed on the landowner stock pond located in the NW¼ of Section 31.

**ROADS**

Construction is continuing on the County Rd. 12 crossing. The crossing is located in the NE¼NW¼ of Section 19 and SE¼SW¼ of Section 18, T143N, R88W. The two multiplate structures have been assembled and crews were backfilling behind the retaining walls near the structures. Construction of the North Haulroad has progressed to the coal handling facility located in Section 10, T143N, R88W. Construction crews with scrapers and trackhoes were working on a portion of haulroad on the west side of the West Brush Creek crossing in the S½ of Section 10. Trucks were hauling rock that was being used for the haulroad construction. Crews were also mulching the topsoil stockpiles located along the haulroad.

Coyote Creek has installed sumps and culvert drains along the haulroad where large fills were constructed. The sumps and drains are to convey surface water runoff down the steep portions of ditch through the culvert. Numerous rock check dams have been installed along the haul road.

**December 2, 2015**

**SURFACE WATER MANAGEMENT**

Silt fences have been installed to capture runoff from disturbed areas located around both Coyote Creek crossings and the Brush Creek crossing. Runoff along the north side of the access road is being routed to the Coyote Creek crossing near the shop office facilities area. A berm was in place at one location along this access road to prevent runoff from flowing to Coyote Creek through a secondary drainage way located in the southeast corner of the SW1/4 of Section 30.

The ponds listed in the table below were briefly inspected. There has been very little runoff the past few months and all new ponds and sumps were dry except those ponds where ground water seeps exist.

<b>Water Management Feature</b>	<b>Comment</b>
P-30-01	Ice about 5 feet below PPE.
P-19-01	Essentially dry
P-24-01	Ice level greater than 10 feet below PPE
P-24-02	Essentially dry
P-10-02	Ice level greater than 10 feet below PPE
<b>P-31-01</b>	Some ice from ground water in pool area

Corrugated poly pipe that is either 15 or 18 inches in diameter has been installed in the haul road ditches along every significant drainage way located north of County Road No. 12 and a pipe has been installed along the east side of the haul road located in the W1/2 of Section 19 in an area with a steep long slope. Sumps have been placed at the inlet of each of these pipes and silt fence has been installed in the haul road ditches at strategic locations. Rock berms have been placed in the haul road ditch in Section 8 where long slopes exist. Fabric has been installed in the haul road ditches adjacent to most drainage ways and fabric installation work was proceeding at the time of this inspection. The haul road ditches south of County Road 12 have been mulched except where construction work is occurring near the underpass and mulch has been applied along most of the north and west sides of the haul road located north of County Road No. 12. Straw bales that are being used for mulch were observed to be stacked at several locations on the mine. Ms. Flath stated that frozen soil conditions were hindering fabric application so this work was being completed when temperatures warm in the afternoon and the crew was applying mulch during those portions of the day when the ground was froze. It appeared that the balance of the areas needing fabric and mulch could be applied with a week of good weather conditions.

A two-cell lagoon has been constructed northwest of the shop office site. The access corridor used to construct this lagoon has been respread with topsoil. At a minimum, this corridor needs to be mulched as the area also functions as a drainage way and it appeared that a silt fence should be installed at the disturbance boundary located near the southwest corner of the lagoon.

**MISCELLANEOUS**

A new stockpond has been constructed in NE1/4NW1/4 of Section 31 at the landowner’s request. This small dugout-like pond was constructed with moderate side slopes and it is not very deep, approximately 6 feet. A newly constructed road approach was noted in the SE1/4NW1/4 of Section 18 off of an old farmstead road. Coyote Creek LLC was authorized by the PSC to have their contractor build this road for the landowner even though the approach is off-permit. This is not a mining related activity.

A proposed Coyote Creek crossing site as requested by the landowner and located in the NE1/4SW1/4 of Section 19 was inspected. The landowner requested that Coyote Creek LLC construct this crossing for him to allow access to his land on both sides of the creek. The landowner used to cross this creek west of this site in the area where the new haul road has been constructed. The landowner, Casey Voigt, and Coyote Creek LLC, are proposing this crossing at a sharp angle across the stream. The proposed site appeared to be the best location available in the area and the angle is desirable in that neither side of the crossing will be exposed to stream bank erosion during high flows and the natural gravel/rock deposition in the stream bottom should facilitate vehicular travel. Coyote Creek LLC and the landowner are proposing to remove topsoil and subsoil from the slopes of the creek channel to create this crossing and this SPGM is to be hauled to an existing SPGM stockpile. Access to the site during construction would be across a stubble field located north of Coyote Creek. Coyote Creek LLC personnel said that 6-wheeled trucks would be used to haul the soil over undisturbed cropland under frozen surface conditions. One or two trees may be disturbed by construction of this crossing.

Old four wheeler tracks on undisturbed lands in Permit NACC-1301 indicated that much of this area was probably sprayed to control noxious weeds.

**December 15, 2015**

**SURFACE WATER MANAGEMENT**

The sedimentation ponds were empty throughout the permitted area. The following is a list of viewed ponds with approximate water levels and other information:

<b>Pond</b>	<b>Elevation</b>	<b>Comments</b>
P30-01	4 Feet below PPE	
<b>P31-01</b>	Empty	Water not covering bottom
P19-01	Empty	
P24-01	Empty	Accumulating ground water seepage
P24-02	Empty	
P30-02	Empty (>10' below PPE)	
P10-01	Empty	
P10-02	Empty	Rock had been placed at pond inlet recently to prevent erosion

**ROADS**

The low water crossing recently built across Coyote Creek to provide landowner access in the SW1/4 of Section 19 was inspected. The crossing was constructed in a manner to minimize the disturbance to the stream banks necessary to shape the approach ramps to the creek. CCMC had not yet completed the planned addition of gravel sized rock, similar to that in the stream channel, to the lower portion of the stream crossing.

The County Road 12 haul road crossing was nearing completion. A scraper and dozer were shaping the ditch and road just to the north of the multi-plate structure in the SW1/4 of Section 18. Crews from Wanzek construction were completing finish details on the retaining wall. A contract crew with Dakota Fence was installing the guard rail on the section of County Road 12 built over the multi-plate grade separation structure.

Gravel was being delivered by a commercial supplier and was being stockpiled near the coal crushing facility in Section 10 for eventual use on the haul road.

**MISCELLANEOUS**

It was observed that a new crossing (large concrete box culvert) has been constructed over Coyote Creek south of the Voigt farmstead. This crossing is located just south of the original crossing that was in poor condition. This crossing was installed by Mercer County and is not a mining related activity.



## 2016

### 160106

#### SURFACE WATER MANAGEMENT

Water elevations in only a couple of sediment ponds were inspected. There have been no significant precipitation or runoff events since construction of the ponds, and water levels of all of the ponds have been significantly below permanent pool elevations up to this point in time. The water level of P30-01 was approximately 5 feet below PPE and pond P19-01 was dry, or about 10 feet below PPE.

Rip rap was recently placed within the inlets of sediment ponds P10-1 and P10-2.

### 160120

#### ROADS

The Mine Office Shop Facilities Access Road was classified as a Primary Haul Road on the 2015 Haul Road Certification Map. The entire lengths of the Shop Office Access Road and the Primary Haul Road were certified as having been completed in December of 2015. The haul road underpass under County Road No. 12 has been built and County Road No. 12 has been reconstructed over the haul road and is available for public use.

#### SURFACE WATER MANAGEMENT

Only a few of the sediment ponds were inspected since there has been no runoff in recent months and those that were observed during the inspection were either dry or holding very little water.

Numerous silt fences, sumps and rock berms were observed to be in place adjacent to the haul road ditches. Ice from ground water discharge was noted in the west ditch of the haul road in the NW1/4 of Section 30 and ice buildup was observed in some of the drainages on the south side of the haul road located north of County Road No. 12.

It appears that water may pond on the east side of topsoil stockpile pile no. 15, which is located along the east edge of the NW1/4 of Section 19. If this were to occur it may affect lands located outside of the permit boundary. Mr. Becker was advised to review this situation and to take measures to ensure undisturbed lands located outside of the permit area are not affected by mining related activities. Sarah Flath of CCMC called regarding this issue a few days after this inspection and said that they investigated this issue last summer and had the contractor cut a ditch to ensure water does not pond at this site.

The new Coyote Creek box culvert under the road leading to the Voigt residence was briefly inspected. This culvert is 5 x 14 feet and a short reach of the road located northeast of this culvert has been reconstructed.

### 160204

#### SURFACE WATER MANAGEMENT

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4' Below PPE	Certified on July 17, 2014
P30-02	Nearly Dry	Certified on Sept. 11, 2015
<b>P31-01</b>	Nearly Dry	Certified on July 31, 2015
P19-01	Nearly Dry	Certified on October 21, 2015
P10-01	Nearly Dry	Certified on Aug. 14, 2015

P10-02	Nearly Dry	Certified on July 10, 2015
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## ROADS

Construction is completed for the haulroad that begins near the shop office complex and ends at the coal handling facility in Section 10. Mr. Becker reported that only minor items remain to be completed on the County Rd. 12 crossing. The haulroad has been surfaced with scoria from near the shop/office complex to near the center of Section 18, to approximate haulroad Station 30+00.

### 160217

#### SURFACE WATER MANAGEMENT

The water levels in the sedimentation ponds continue to be well below permanent pool elevation. The ponds observed during the inspection were P30-01, P31-01, P19-01, P30-02 and P10-02. The erosion and sediment controls used along the haul roads, stockpiles and other associated disturbance areas appeared to be in good condition.

### 160304

#### SURFACE WATER MANAGEMENT

No ponds were discharging off-permit at the time of inspection. Sedimentation ponds P10-01, P10-02, P24-01, and P24-02 were holding approximately 1 foot of water/ice in their containment basin or were dry. Where observed, Coyote Creek and Brush Creek were still iced-over.

### 160322

#### SURFACE WATER MANAGEMENT

With the exception of the haul road and shop/office access road, runoff from all disturbed areas is being directed to sediment ponds. There has been very little runoff this spring and all of the ponds and sumps inspected are either dry or holding a shallow amount of water. Spring/seeps where ice had built up over the winter were noted and ground water was pooling at the east end of the ramp that is being constructed in the NW1/4 of Section 30. A pump was setting near this ponded water and there was evidence that water had been pumped just a few feet to the culvert under the haul road where it then flows to sediment pond P30-02.

The ponds listed in the table below were briefly inspected. They are listed in the order inspected.

<b>Sediment Pond</b>	<b>Comments</b>
P30-01	Water 5-6 feet below Permanent Pool Elevation (PPE)
P31-01	Water > 6 feet below PPE
P30-03	Water about 15 feet below PPE
P10-02	Dry
P10-01	Water about 6 feet below PPE

A permanent water loadout facility has been constructed immediately east of sediment pond P10-01. This water is coming from the Coyote Plant and spilled water flows to sediment pond P10-01. This water will obviously be used for dust suppression purposes and a truck was watering the haul road during this inspection.

Silt fence, sumps, fabric, rock and mulch have been strategically placed along the haul road and shop office access road to minimize erosion. Ms. Flath said that all non-active topsoil stockpiles and over half of haul road ditches were seeded last fall.

## ROADS

Scoria has been spread on the entire length of the haul road and access road and gravel was noted as having been stockpiled in Sections 10 and 30.

## GENERAL

A few inches of wind-blown sand deposition was noticed on a very small area of undisturbed native grassland adjacent the haul road in the southwest corner of Section 8. Ms. Flath said that Coyote Creek LLC was planning to have this material removed in the very near future to ensure that the vegetation under this deposition is not affected. The coarse sandy deposition material appeared to be of good quality so it will not have detrimental effects to the underlying soil but Coyote Creek LLC must take extreme caution to insure that the vegetation and topsoil under this deposition is not affected by removal operations.

It was recommended that Coyote Creek LLC consider also planting native warm season species of grass on sandy portions of haul road ditch cuts to ensure vegetation establishment since tall and western wheatgrasses are not necessarily well suited to sandy, droughty soils. The permit indicates that seed mixture that will be used on stockpiles and road slopes and ditches will consist of slender, western and tall wheatgrasses.

## 160405

### SURFACE WATER MANAGEMENT

There has been very little surface water runoff this spring due to the lack of snowfall this past winter and continued dry conditions this spring. Thus, surface water management was not the focal point of this inspection. With the exception of the haul road and access road, it appeared that all runoff from disturbed areas is being directed to a sediment pond. Silt fences, sumps, fabric and rock were noted in place to minimize erosion. The ponds listed below were viewed during this inspection.

<b>Water Management Feature</b>	<b>Comments</b>
P30-01	Water 4 to 5 feet below PPE.
<b>P31-01</b>	A few feet of water in pond, which is well below PPE.
P30-03	Water 10 to 12 feet below spill elevation.
P30-04	Water about 10 feet below PPE.

A silt fence located in the road ditch adjacent to a disturbance area southwest of the County Road No. 12 overpass needs maintenance. It appears runoff will pass under this silt fence rather than through it as intended.

**It appears that riprap or other armor should be placed at the west end of sediment pond P31-01 where runoff from disturbed areas will enter the pond. This entry point is very close to the location where clean water enters this pond.**

## ROADS

Coal haul trucks were hauling scoria from the northeast corner of Section 36 to the haul road north of County Road No. 12.

## GENERAL

The MDU substation in the NW1/4 of Section 25 has been fenced. Vegetation is beginning growth on areas disturbed for the construction of this facility.

A steep slope supporting native trees and shrubs located near the section corner common to Sections 19, 24, 25 and 30 was inspected. Ms. Flath stated that the mine was trying to avoid disturbing these trees and the steep slope but that coal was under a portion of this area and with a buffer area, the whole site might be disturbed. The drainage below the trees and shrubs is mostly barren with evidence of spring seeps but the soil map identifies the area as mapping unit 128F with 8 inches of topsoil and 28 inches of subsoil. Photograph [img\\_0355.jpg](#) shows this area.

## 160420

### SURFACE WATER MANAGEMENT

The runoff from recent rains did not substantially increase the water level in the ponds. Light to moderate rains occurred from April 15<sup>th</sup> to April 18<sup>th</sup> with the total rainfall amount estimates in the area ranging from 1.0 to 1.5 inches. The following is a list ponds viewed with approximate water levels and other information:

<b>Pond</b>	<b>Elevation</b>	<b>Comments</b>
P30-01	5 Feet below PPE	
<b>P31-01</b>	1 Foot below PPE	Obscured view of marker. Water covering bottom pond.
P30-02	6 Feet below PPE	
P19-01	Empty	PPE marker not observed
P10-01	Empty	Water not covering bottom
P10-02	Nearly empty	Water level was more than 10 feet below PPE marker.

A contractor was repairing a water line leak near the water load-out station at the coal handling facility. The drainage channel from the water load-out station to pond P10-01 will need to be reshaped and stabilized. The erosion and sediment controls along the haul road were reviewed and appeared to be mostly unaffected by the recent low intensity rains. A few areas requiring maintenance or adjustment of the control measures (BMP's) were identified and discussed. A small rill was forming in the ditch up gradient of the erosion control blanket near haul road discharge #11 in the SW1/4 of Section 8. Sediment removal was needed from the sump outlet at haul road discharge #12 in the NE1/4 of Section 18. A small area below the silt fence outlet needs to be revegetated at haul road discharge #14 in the SW1/4 of Section 18.

#### **Haul road and drainage ditch in the NE1/4 of Section 18 looking to the southwest**



### ROADS

The coal hauling operations had been shut down due to the soft saturated running surface caused by recent precipitation events and to repair soft spots in the road bed. The initial hauling operations were conducted late in the week prior to the inspection. During the inspection at least two scrapers, a motor grader and the PC2000 excavator were working on road repairs.

Substantial settling along most of the haul road route was observed where the industrial water line had been installed last fall. The settling alters the designed drainage shape and in some cases, compromises erosion and sediment control installations such as erosion control blanket, sumps and rock checks. Ms. Flath did indicate that they have a contractor hired for repairing the waterline backfill and that repair work will resume once field conditions improve.

The subsoil grading was reviewed on portions of the former south county road bypass for eventual topsoil respread. The portions of the bypass route located just to the east and west of the multi-plate crossing are not needed for long term operation of the haul road. Some minor finish grading will be needed prior to replacing topsoil. The northwest and southwest corners of the west bypass appeared too steep for a short distance near the stripping edge, possibly the remnants of the temporary bypass road grade. A small area of ponded water was noted on the east bypass area. It was agreed that

the Reclamation Division would be allowed an opportunity to field review the grading adjustments prior to replacing topsoil on the areas.

## **160427**

### **SURFACE WATER MANAGEMENT**

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4' Below PPE	Certified on July 17, 2014
P30-02	4' Below PPE	Certified on Sept. 11, 2015
<b>P31-01</b>	3' Below PPE	Certified on July 31, 2015
P10-02	10' Below PPE	Certified on July 10, 2015

Even though the mine has received a significant amount of rainfall this past week (estimated at nearly 3 inches), runoff appeared to be minimal.

### **ROADS**

Some subsidence has occurred in portions of the haulroad ditches where a water line from the Coyote Station to the mine shop has been buried. Some grading of the haulroad ditch bottoms will also be necessary as several portions of ditch were not draining properly and were ponding water.

## **160504**

### **SURFACE WATER MANAGEMENT**

Even after several precipitation events in the local area within the last couple of weeks with a combined total of more than 3 inches of rain, sedimentation ponds at the mine remain at low levels. Sediment pond P30-01 was 5 feet below the permanent pool elevation, **P31-01 was 2 feet below PPE** and the coal handling facility ponds P10-01 and P10-02, were dry.

Several small areas along the haulroad ditches are holding standing water as a result of recent rain events. At the time of inspection, a backhoe and loader were excavating a sump in front of the silt fence along the south side of the haulroad in the SE1/4 of Section 9. A short trench was excavated between the nearby standing water and the sump, and the water was allowed to trickle at a slow rate down the ditch slope, into the sump and through the silt fence. A minor amount of localized ditch re-grading work will be required in the future to assure positive drainage for those areas of standing water along the haulroad.

### **BACKFILLING AND GRADING**

A skid steer loader was being used to backfill and repair areas along the haulroad ditch that have settled or subsided above the installed water line that runs from the Coyote Station to Coyote Creek Mine's shop/office complex. Subsidence repair has begun near the Coyote Station in Section 10 and is progressing to the west and south toward the shop/office facility.

### **ROADS**

A dozer was cleaning scoria at the in-situ outcrop deposit in the NE1/4 of Section 36. This material is being used as road armor for the haulroad, pit ramps, and shop/office area.

Separately, another loader and trucks were hauling spoil material from the NE1/4 of Section 25 to areas along the haulroad to repair soft spots in the road. Soft spots along the road have become apparent since coal hauling operations began, particularly during and after the recent precipitation events. Currently, road repair work was being conducted in

the NE1/4 of Section 18. Areas along the haulroad that serve as subsoil fill areas have been surveyed and staked to ensure that the road repair work does not disturb the subsoil.

A water truck was spreading water for dust suppression along the haulroad.

## REVEGETATION

Coyote Creek Mine has recently purchased a new Truax™ seed drill and mine employees were calibrating the drill for seeding oats. Seeding and re-seeding operations will begin on haulroad slopes, ditches, and topsoil stockpiles along the haulroad, and other miscellaneous areas within the mine as deemed necessary. Those areas will be seeded to Coyote Creek Mine's stockpile seed mix that consists of slender wheatgrass, western wheatgrass, and tall wheatgrass, and incorporating an oats cover crop. Ms. Flath estimated that seeding operations will be ongoing for the next week or so, weather permitting.

Previously seeded areas from last fall on stockpiles, haulroad and pond slopes, ditches, diversions, etc., can best be described as spotty. Some areas appeared to have taken very well, while in other areas the growth was limited.

## 160517

### SURFACE WATER MANAGEMENT

The ponds listed in the table below were briefly inspected. As indicated in table, most of the ponds were holding water well below permanent pool elevation (PPE). No discharges were occurring at the time of this inspection.

<b>Sediment Pond</b>	<b>Comments</b>
P30-01	Water about 5 feet below PPE
<b>P31-01</b>	Water about 3 feet below PPE
P30-03	Water a couple of feet below PPE
P30-04	Water about 7 feet below PPE
P24-02	Very little water in pond, level about 8 feet below PPE
P24-01	Water about 8 feet below PPE
<b>Sediment Pond</b>	<b>Comments</b>
P30-02	Water about 5.5 feet below PPE
P10-01	Water about 10 feet below PPE
P10-02	Dry

It appeared that additional rock had been placed at the west end of sediment pond P31-01 where runoff from upstream disturbed areas enter this pond. The sumps and silt fences installed at this mine all appeared to have functioned as intended during the precipitation events that occurred during the last two weeks of April. High water marks could be seen on some of the silt fences and in the pool area of the sumps in front of the drop-down structures along the haul road. Very few rills or gullies were noticed on the steep slopes associated with the haul road, although some repair work had occurred along this road where the water line was installed. Fabric had been removed in some areas to accommodate the pipeline repair work.

Water was noted as having flowed under a silt fence located in the south haul road ditch in Section 9. Apparently water ponded in the ditch above this silt fence and it failed when a shallow ditch was dug to allow this water to move down stream. Ms. Flath said Coyote Creek Mine was waiting for the area to dry sufficiently prior to repairing the silt fence. It should be pointed out the another silt fence was in place down stream of this silt fence and that it functioned as intended. It was also noted that a silt fence in a drainage way located in the NE1/4 of Section 18 had been repaired.

A short rill/gully was noted in the haul road ditch above the rock adjacent to Coyote Creek in the SW1/4 of Section 19. Some runoff deposition was noted along a SPGM stripping edge located west of sediment pond P24-01. This SPGM stripping edge is functioning as a diversion and runoff from the south needs to make a direction change to the east along this stripping edge. The SPGM stripping edge is only a foot high and it appeared the runoff could pass over this stripping

edge at this location if a lot of water was moving this direction. It was recommended that a silt fence be installed along this stripping edge to further ensure that runoff from affected areas does not flow over undisturbed land.

The mulch that was placed along the haul road ditch last fall/winter appears to have been effective in reducing surface water runoff.

## ROADS

Loaded coal haul trucks have created numerous soft spots in the primary haul road, especially along the haul road north of County Road No. 12. Work was occurring to repair these soft spots. Spoil was being hauled in to fill low areas associated with the soft spots. The subsoil portions of the haul road were marked with stakes to allow the operators to determine where subsoil was present in this road.

A contractor, Dug Rite Excavation, was working in the haul road ditch in Section 30 repairing areas where settling had occurred along the water line that was installed last fall/winter. It appeared that most of the repair work had been completed.

Knife River Construction was reshaping County Road 25 in Permit NACC-1301. It was reported that this road will be paved this summer.

## REVEGETATION

The haul road ditch was in the process of being seeded at the time of this inspection. Seeding had occurred along most of the north and west side of the road and seeding was occurring on the south side of the haul road in Section 10. Ms. Flath indicated that areas around sumps and silt fences that could not be accessed with the drill would be hand broadcast seeded. The entire length of this haul road was being seeded including areas that had been seeded last fall.

Grass seedling and the small grain cover crop was emerging on pond embankments and other areas that were seeded last fall. Emergence was better where mulch remained on the surface. The area north of the shop office facilities that was seeded in 2014 appeared to be supporting a decent stand of vegetation.

Natural vegetation was growing on the area where wind-blown deposition had occurred south of the haul road in the SW1/4SW1/4 of Section 8. Threadleaf sedge, prairie rose and Prairie Junegrass, were the dominant species observed and Kentucky bluegrass was noted further down the slope at the east end of this site. There was a very small area present where the vegetation was less dense and it appeared that a few inches of deposition remained on the surface.

## 160525

### SURFACE WATER MANAGEMENT

The water level was several feet below permanent pool elevation in sedimentation ponds P30-01, P31-01, P30-03, P30-02 and P10-01. Ponds P19-01 and P10-02 were essentially dry. A contractor crew was placing riprap on geotextile at the inlet to pond P30-02 down gradient of the haul road culvert outlet.

The erosion and sediment controls along the haul road were reviewed and appeared to be mostly in good condition. We noted that maintenance and sediment removal had been completed recently at the haul road drainage outfall 12 in the NE1/4NE1/4 of Section 18. A few areas requiring maintenance or adjustment of the control measures (BMP) were identified and discussed. At the Coyote Creek haul road crossing in Section 19, the downstream side of silt fences placed in the road ditches need to be stabilized in the area between the silt fence and the rock lined channel transition into the creek. Maintenance and grading adjustments are needed on the upstream side of the haul road drainage crossing in the SW1/4SE1/4 of Section 8 where sandy materials are susceptible to erosion. The downstream sump and silt fence at the haul road drainage outfall in the SW1/4SW1/4 of Section 8, just east of subsoil fill stockpile 18, was in need of sediment removal.

**160602****SURFACE WATER MANAGEMENT**

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. None of the inspected ponds were being discharged.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4' Below PPE	
P30-03	3' Below PPE	
<b>P31-01</b>	3' Below PPE	
P10-02	Nearly Dry	
P10-01	10' Below PPE	
P30-04	4' Below PPE	
P24-01	8' Below PPE	
P24-02	6' Below PPE	
P30-02	3' Below PPE	

**160613****SURFACE WATER MANAGEMENT**

The permit area received over an inch of rain a few weeks ago, prior to the last inspection, and there was evidence that runoff had flowed to most sediment ponds and sumps. The sumps located in the drainages above the natural woodlands in the NE1/4 of Section 24 were noted as having been cleaned out and one of the silt fences adjacent to one of these sumps was in need of repair. It appeared that the soils at the bottom of one of these silt fences had been affected during the act of cleaning so this silt fence will need to be moved downstream a few feet to ensure the integrity of the BMP. The Reclamation Crew was in the process of placing fabric in a drainage way along the north side of the haul road in the southwest corner of the SE1/4 of Section 8. A few rills were noticed having had formed along steeper slopes adjacent to the haul road and a gully was observed in the bottom of haul road ditch at one location. All observed disturbed areas at this mine appeared to have water management features in place. **Erosion and BMP repair work was noted and as previously mentioned was occurring at the time of this inspection.** Fabric was observed as having been recently laid in a drainage way adjacent to the haul road in the SW1/4SE1/4 of Section 8 and an additional silt fence was also installed on this slope. An additional rock berm was noted in the haul road ditch and new rock was observed at the bottom of a silt fence to ensure runoff does not pass under the silt fence. A silt fence adjacent to the haul road near Coyote Creek in Section 19 has been extended.

The sediment ponds listed in the table below were briefly inspected.

<b>Sediment Pond</b>	<b>Comment(s)</b>
P30-01	Water 3 to 4 feet below PPE
<b>P31-01</b>	Water 3 to 4 feet below PPE
P30-03	Water about 4 feet below PPE
P30-04	Water about 4 feet below PPE
P30-02	Water about 3 feet below PPE
P10-02	Was holding water at a shallow depth

It was recommended that Coyote Creek explore whether diversions could be placed on each side of the zero lift drainage way above sediment pond P19-01 to keep the bottom of this drainage from being affected by surface water runoff erosion

and deposition. This drainage way is located north of subsoil pile SS-20. It was mentioned that SPGM will need to be respread in this zero lift drainage if it is affected.

## REVEGETATION

Volunteer or planted wheat was growing on SPGM stockpiles and areas mulched last fall and grasses were emerging along the haul road ditch in areas that were seeded a few weeks ago. The seeded vegetation is thin along the north-south haul road ditches that were broadcast seeded to permanent vegetation last fall where mulch is not present. Ms. Flath said that seeding was not occurring at the time of this inspection because the crew was repairing areas prior to seeding. A few inactive SPGM stockpiles were noted as supporting a dense stand of annual weed growth.

A small pile of material that appeared to be topsoil was noted along the road south of the shop-office facility. Mr. Steffen stated that this was topsoil that was labeled zero lift topsoil according to the detailed soil survey. Apparently Coyote Creek has stockpiled some of this zero lift topsoil and is using it to stabilize temporary slopes where they want vegetation to establish. Although this is a good use of this resource, the permit should clarify how this zero lift topsoil pile is going to be tracked to ensure that a clear distinction can be made in the field regarding zero lift topsoil piles.

## 160623-flyover

### GENERAL

The permit and adjacent areas were flown over and viewed from an elevation of approximately 1200 feet above the ground surface with a Cessna 172 high winged plane. No operational or reclamation concerns were identified that required immediate attention or action. It appeared that the permitted areas had received limited precipitation prior to this flyover. Water was observed in the sediment ponds but appeared low in relation to the pond's spill elevation. The water in the Knife River was carrying a heavy sediment load and looked dirty compared than the water in the sediment ponds.

The haul road ditches, piles and pond embankments that were seeded last fall were not yet supporting much vegetative growth. Seeding was noted occurring on an area southeast of the County Road underpass.

Topsoil was being stripped in the S1/2NE1/4 of Section 36, image IMJ\_4536. It appeared that a scraper was cutting the stripping limit outline while dozers were pushing topsoil into piles. The scrapers were stockpiling topsoil on a site within the stripping limit.

Water appeared to be pooled west of the disturbance boundary in the SE1/4 of Section 31 and it was noted that a trench had been cut to allow this water to flow to sediment pond P30-04 (IMG\_4540). That portion of the drainage above pond P30-04 adjacent to the woodlands may require inspection to determine how runoff is entering this pond without affected undisturbed land. The Reclamation Division's soil removal log indicates that SPGM removal approval was granted in these areas February 4, 2016.

The drainage east of sediment pond P24-01 should also be inspected to determine how runoff from affected areas is entering the pond and to ensure that a silt fence has been placed below the berm in the drainage east of pond P24-01.

## 170712

### SURFACE WATER MANAGEMENT

The recent rain events resulted in a substantial increase in the water levels of the sedimentation ponds. Several thunderstorms occurred in the area during the week prior to the inspection. The most recent events occurring over the July 9<sup>th</sup> and 10<sup>th</sup> weekend were brief intense storms with estimated rainfall totals ranging from 1.5 to 2.5 inches (NOAA, RFC estimates). The flow in Coyote Creek was low, perhaps 1 to 2 cfs as a visual estimate. The following is a list ponds viewed with approximate water levels and other information:

Pond	Water Level	Comments
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P30-01	4 Feet below PPE	
P31-01	3 Feet above PPE	Slightly below prior to weekend rains
P30-03	3 Feet above PPE	Slightly above prior to weekend rains
P30-04	4 Feet above PPE	About 9 feet below spill, was pumped to P30-01, below PPE prior to rains.
P30-02	4 Feet above PPE	About 4 feet below spillway
P19-01	2 Feet below PPE	
P24-01	2 Feet below PPE	
P24-02	4 Feet below PPE	
P10-01	8 Feet below PPE	
P10-02	5 Feet below PPE	

The sumps along the SPGM removal edge up gradient of ponds P24-01 and P24-02 were inspected. The three sumps and silt fence sediment traps located above P24-02 appeared to function as intended to minimize the sediment load carried in runoff through the wooded portion of the drainages leading to the pond but each require sediment removal. We noted that the silt fence at the east sump was beginning to undercut and a portion of the middle fence partially fallen. The sediment control sump and silt fence in the east haul road ditch appeared to function as intended and is one of several sediment controls where crews were able to remove sediment following the July 3<sup>rd</sup> storm event. The material was excavated from the sump and temporarily placed nearby at the toe of the road slope but outside the main flow path to the sump. A crew was repairing silt fences and installing additional ones along the haul road northeast of the Coyote Creek crossing in Section 19.

The erosion and sediment controls along the haul road north of County Road 12 took heavy damage from the recent rain events. At several locations it appeared that significant erosion occurred at discharge outlets during the runoff events resulting in the loss of material from erosion at pipe outlets and the loss of silt fences and sumps located near the outlet. We reviewed and extensively photographed the erosion at haul road storm water discharge point 6 in the SE1/4 of Section 9. Similar damage was observed at storm water discharge points 4, 8 and 9. The other storm water discharge points were affected but to a lesser degree. A contract crew was removing sediment at discharge point 3 in the SW1/4 of Section 10.

## ROADS

Erosion and sediment damage was reviewed along the north haul road with observations made at each haul road discharge point. Crews were in the process of making an initial round of maintenance and repairs to sediment controls along the north haul road. We discussed the ongoing erosion and sediment control activities and possible plans, materials and equipment to maintain and stabilize the haul road slopes. The two main challenges for managing runoff from the haul road corridor are the lack of vegetation or other cover on cut and fill slopes along with stabilizing the discharge outlets.

The overburden materials comprising the finished grades and serving the growth media to establish vegetation are poor or marginal in agronomic qualities. The vegetation that has grown this year is too short and thin to provide erosion protection on the constructed slopes of the haul road. We discussed the possibility of purchasing topsoil material or obtaining organic matter such as manures or commercial humic product to construct a topsoil like material to help establish vegetation. Mulch and other ground covers will need to be used extensively to protect the slopes until vegetation establishes.

The design, arrangement and erosion protection armoring used at the culvert and slope drain outlets must be reevaluated and improved to provide a stable transition for water from the outlets to the undisturbed channel downstream of the haul road. The discharge points that appeared to experience the most off-site sediment deposition also had substantial erosion damage at the outlets. We discussed several possible modifications to be made at discharge point 6 and others with similar damage.

## OFF-SITE REVIEW

We walked two areas outside the permit boundary to evaluate the extent of sediment deposition below discharge points that blew-out during a recent rain event. We followed sediment deposition from Discharge Point 6 to an area near Brush Creek in the SE1/4 of Section 9 on land owned by Otter Tail Power Company and partners. A low area possibly a former

oxbow channel on the Brush Creek flood plain appeared to have detained flows from Discharge Points 4, 5 and 6 allowing sediment to deposit on the area. The area appeared to drain to Brush Creek via a small well-vegetated channel. No visible sediment deposits were observed in this small channel or Brush Creek.

We walked a portion of the drainage below Discharge Points 8 and 9 located on State land in the SE1/4 of Section 8. The sediment material in this area is very sandy in texture and appeared to settle-out mostly upstream of the point where the drainage from point 8 joins the drainage below point 9. About 150 to 200 yards downstream of where point 8 joins the drainage below point 9, the sediment deposits appeared to be minimal.

Sediment deposits were observed beyond the permit boundary at discharge points 12, 13 and 14 on land owned by Ronald and Janice Gunsch. We did not walk the areas below these discharge points. The areas of deposition were observed and photographed from the haul road. Notice of Violation 1601 was subsequently issued for the sediment deposition that occurred on these off-permit areas.

## **170718**

### **SURFACE WATER MANAGEMENT**

The mine area received heavy rain on July 16<sup>th</sup> resulting in substantial runoff. The NOAA, RFC rainfall estimate total for the weekend rains in the area ranged from 1.5 to 2.5 inches. Coyote Creek was waiting on results of water sample analysis so none of the sediment ponds that were above permanent pool were being discharged. The following is a list ponds viewed with approximate water levels and other information:

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-01	3 Feet below PPE	
P31-01	4 Feet above PPE	Above marker
P30-03	2 Feet above PPE	
P30-04	4 Feet above PPE	Above marker
P30-02	4 Feet above PPE	Above marker, about 2 feet below spill
P10-02	4 Feet below PPE	

Areas of sediment deposition were observed in Coyote Creek and Brush Creek just below the haul road ditch outlets at the crossings in Section 19 and 10. Mr. Grossman requested that the sediment be recovered from the creek once conditions allow for access to the areas. He indicated that leaving sediment in-place is viewed as disposal of a waste material to waters of the state or waters of the US and is identified in the conditions in the storm water discharge general permit pertaining to off-site sediment deposition.

### **ROADS**

The primary purpose of this inspection was to conduct a follow-up inspection of the erosion and sediment deposition that occurred along the north haul road as noted in the July 12<sup>th</sup> inspection. The conditions along the north haul road were much the same as the July 12<sup>th</sup> inspection. It was apparent that sediment had been removed from sumps and silt fences along with initial repairs/replacements to sediment controls at discharge points. The weekend rains refilled most of the sediment controls and at many locations knocked down or undercut silt fences. The rill erosion on the side slopes appears to be a continual problem. A thin lift of topsoil materials salvaged from 0-lift SPGM removal areas had been applied to a portion of the cut slope in the S1/2 of Section 8 (upstream side of storm water discharge point 9) prior to Saturday's rains. As one would expect the thin topsoil placement area held up better to the runoff event than the very sandy materials. However, the topsoil material did show signs of sheet erosion and initial rill formation indicating that the material would

still need cover of some sort to prevent erosion in this application. At the time of the inspection equipment and personnel were working on removing sediment from silt fence installations. Areas inspected along the haul road were near the Coyote Creek crossing in the NW¼ of Section 19, the West Brush Creek crossing in the SE¼ of Section 10, and discharge points 3, 6, 8, 9, 11, 12, 13, and 14 as shown on the Pit Layout and Facilities Map in Section 3.1.3 of Permit NACC-1302. The use of other and more intensive sediment control measures along this road were discussed with M. Steffen.

As a result of this and the July 12<sup>th</sup> inspection, Notice of Violation (NOV) 1601 was issued to Coyote Creek Mining Company for sediment deposition on undisturbed off-permit areas downstream of the haul road.

## **160726**

### **REVEGETATION**

The area west of the haul road immediately south of where the County Road 12 underpass was constructed last year has not yet been reclaimed. Ms. Flath stated that Coyote Creek Mining Company (CCMC) was planning to reclaim this area this year. Section 3.2.4 – North-South Haulroad, of the permit states that “The south temporary detour will be removed and reclaimed by the end of 2016”. Since Mr. Voigt, the surface owner, asked about reclamation of this area during a recent phone call and given the requirements of NDCC 38-18-08(2), CCMC should plan on reclaiming this site as soon as possible.

### **SURFACE WATER MANAGEMENT**

The primary emphasis of this inspection was to review water management and follow-up abatement and remedial action required by NOV-1601. NOV-1601 required that CCMC apply mulch to haul road cut and fill slopes by July 25<sup>th</sup> and stabilize the cut and fill slopes of Discharge Point No. 9 with erosion control blanket or other materials as appropriate by July 27<sup>th</sup>, 2016.

CCMC has applied mulch to both sides of the haulroad in Sections 7, 8, 9 and 18 and work was proceeding with the installation of erosion control fabric along the north side of the haulroad adjacent to Discharge Point No. 6, which is located in the SW1/4SE1/4 of Section 8. Erosion control fabric has been placed in the drainages where water will concentrate along both sides of the haulroad adjacent to Discharge Point No. 9 and topsoil was being hauled from Coyote Station Property located in Section 10 and this material was in the process of being spread out in the haulroad ditches and slopes near Discharge Point No. 9. CCMC was granted approval to utilize this off-permit material by the Reclamation Division on July 22<sup>nd</sup> (personal communications between Director James Deutsch and Donn Steffen). Ms. Flath stated that CCMC was planning to apply a thin veneer of topsoil on all slopes susceptible to erosion along this haul road and that this was going to be part of their long term plans for stabilizing the area, which was part of the remedial action required by the NOV. Applying topsoil to the haulroad ditch should greatly improve the chances of getting vegetation to establish.

Erosion control blanket was in the process of being installed along the north side of the haulroad adjacent to Discharge Point No. 6 and erosion control blanket had already been installed in the drainages on the south side of the road. There was a discussion about whether the erosion control fabric work that had been done on the south side of the road was adequate. It was suggested that an additional silt fence be placed at the bottom of this drainage around the culvert. Ms. Flath was considering having additional erosion control fabric placed along the bottom two-thirds of the slope associated with this drainageway and it was suggested that perhaps erosion control logs could be placed along this slope after the site was reseeded. There was evidence that repair work had recently occurred on most of the sumps and silt fences associated with the drainages along this haul road, and work was occurring at Discharge Point No. 8. Ms. Flath stated that their priorities for water management repairs and stabilization was along the haulroad north of County Road No. 12 and that repair work needed elsewhere would be completed after this work was done north of County Road No. 12. It was mentioned that perhaps sediment should be removed from the bottom of the haulroad slope on the south side of the haulroad in the southwest corner of Section 10 to ensure that runoff from this road embankment does not affect undisturbed lands. The soils in this drainage are heavily affected by salts.

It was observed that mulch had been applied to a portion of the haul road north of Coyote Creek in Section 19. All of the mulch that had been applied was also crimped and seed was being hand broadcasted under areas where erosion control fabric was being applied.

The drainageways downstream of Discharge Points 4 through 13 were inspected, including areas beyond the permit boundary in instances where there was an indication that sediment deposition might have occurred downstream. The most serious sediment deposition was observed in the drainages below Discharge Points 4, 5 and 6. These drainages come together on the Brush Creek flood-plain a few hundred yards north of the permit boundary and there were accumulations of sediment in low areas on the flood plain. It appeared that the sediment might be one to two feet deep in some of these low areas. Sediment accumulations in the drainages above the floodplain is variable, in some instances very little deposition was apparent while in other areas a crust or perhaps a few inches of material were apparent. In most instances the vegetation in the drainages is beginning new growth. Smooth brome grass is the dominant species established on the floodplain where the deposition occurred along patches of buckbrush and Canada thistle. The drainage below Discharge Point No. 6 had sections that appeared to be spring fed and these areas were dominated with Carex, presumably Carex athrodes, and prairie cordgrass. It is believed that these species will be very tolerant of a limited amount of deposition. The drainageway below Discharge Point 4 is dominated with big bluestem.

The drainageway below Discharge Point No. 7 was not walked as there was very little evidence of any deposition beyond the permit boundary. Only a few cubic feet of deposition was observed near the fence at the permit boundary in this drainageway.

The drainages below Discharge Points 8 and 9 were walked. The drainageway below Discharge Point 8 is a wetland and is supporting wetland species, such as Carex athrodes, prairie cordgrass, creeping spikerush, Baltic rush, with river and softstem bulrushes and cattails in places. There are a few inches of sediment deposition in portions of each of these two drainages beyond the permit boundary. The drainage below Discharge Point No. 8 becomes narrow before it joins the wider drainageway associated with Discharge Point No. 9. There are points below this intersection where a few inches of sediment deposition has occurred but this drainageway is supporting some trees and shrubs and the sediment deposition tends to be limited to pool areas in the drainageway. There are a few inches of sediment deposition in portions of the upper reaches of the drainage associated with Discharge Point No. 9.

There was limited evidence of sediment deposition in the drainageway beyond the permit boundary of Discharge Point No. 10 and it did not appear that the vegetation was severely affected. This drainage was not walked but was viewed from the permit boundary.

The drainage below Discharge Point No. 11 is heavily wooded and quite narrow. Very little sediment deposition was noticed in this drainageway beyond the permit boundary but the view was obscured with trees and shrubs.

The drainage below Discharge Point No. 12 is a series or system of linear drainage wetlands that transitions to a deeply incised stream channel on the Knife River flood plain. Deposition of coarse sediment, several inches thick extended about 100 yards beyond the permit boundary. Near the section line between Sections 7 and 18, T143N, R88W, the sediment deposition was variable and mostly a very thin coating of fine sediment at the base of established vegetation. A few small isolated deposits of coarser sediment were observed near the fence between Sections 7 and 18. Three small water pools located in the incised channel portion of the drainage in the SW1/4SE1/4 of Section 7 did not appear to be distinctively affected by recent flow events but were photographed for future reference.

The drainageway below Discharge Point No. 13 has a few inches of sediment deposition in places beyond the permit boundary. This drainageway is dominated with smooth brome grass and the water pooled up adjacent to a culvert under an old road to an abandoned farmstead. There is an accumulation of mulch where water pooled around the culvert under this road. Very little sediment deposition was noted downstream of this road. Wormwood and Canada thistle are secondary species to the smooth brome grass in this drainageway.

The drainageway below Discharge Point No. 14 was not walked. It did not appear that there was a significant amount of sediment deposition in this drainageway. It was suggested that an additional sump be constructed above a culvert under an approach in the west side of the haulroad south of this drainageway.

Figure 1 shows the discharge points mentioned above in relation to the haulroad.

The sediment ponds listed in the table below were briefly observed during this inspection. Pond P31-01 was being discharged via a poly pipe that was discharging to the rocks adjacent to Coyote Creek in the SE1/4 of Section 30. The discharge and the water in the pond appeared to be clean and clear and the pond was about 2 feet below PPE. Pond P30-02 had been discharged via a poly pipe placed along the haul road to direct the discharge to the rocks adjacent to the Coyote Creek culvert crossing in the SW1/4 of Section 19. Pond P19-01 was reportedly discharged for a period of time on July 25<sup>th</sup> but erosion occurred where the discharge enters haulroad ditch so discharge operations were discontinued. Ms. Flath stated that CCMC was going to discharge this pond with the use of poly pipe so that the discharge could be taken to the rock adjacent to the haulroad Coyote Creek crossing in Section 19.

Water Management Feature	Comments
P30-01	Water about 2 feet below PPE
P31-01	Water about 3 feet above PPE
P30-02	Water about 0.5 feet below PPE
P30-03	Water 2-3 feet below PPE, water entering from P30-04
P10-02	Water about 8 feet below PPE
P24-02	Water a few inches above PPE
P24-01	Water a foot or two below PPE

The primary drainageway above sediment pond P24-02 was inspected. This drainageway was not stripped of SPGM because of the woodlands in this area. Three sumps, which were noted as having been recently cleaned, and silt fence are catching runoff from disturbed areas above the unstripped drainageway. There were a few small areas in this drainageway where sediment deposition occurred. These areas tend to be adjacent to something that slowed the runoff down, such as a thicket of shrubs or a fallen log. CCMC will need to review this area and remove sediment accumulations where it appears it will affect vegetative growth. A silt fence below the middle sump above this drainage is in need of repair and a silt fence in a drainage east of sediment pond P24-01 will need to be repaired. This drainage was inspected in follow-up to the mine flyover of June 23<sup>rd</sup>.

A drainage way above sediment pond P30-04 was also inspected in follow-up to the mine flyover. The south leg of the drainageway above this pond is listed as having been stripped of all available SPGM but that was not evident during the mine flyover. SPGM was not stripped from this drainageway because the detailed soil survey classifies this drainage way as a zero lift SPGM area.

## **160809**

### **SURFACE WATER MANAGEMENT**

Two sedimentation ponds were discharging off permit at the time of inspection. Information regarding those discharges as well as other sediment pond water level information is contained in the table below:

Pond	Water Level	Comment(s)
P31-01	6 inches below PPE	Discharging through poly pipe to Coyote Creek discharge point at approximately 1000 GPM, discharge water was clear
P30-04	4 inches above PPE	Poly pipe being assembled to pump pond water to P30-03
P30-02	2 feet below PPE	



**Figure 1. Sump clean-out at Discharge Point No. 6**

**View is toward the northeast**

## REVEGETATION

Coyote Creek Mine has acquired the services of a private contractor, Dug Rite Construction Company of Hazen, to help with sediment removal from sumps, as well as other dirt work and BMP installation work associated with NOV-1601. Additionally, Coyote Creek has hired several new employees to supplement their Rec-2 crew for reclamation and revegetation efforts at the mine. At the time of inspection, Dug Rite Construction was using an excavator, skid steer, and D6-LGP dozer (**Figure 1**) to clean out a sump at discharge point No. 6 that is located in the SE1/4 of Section 9. All filled sumps along the haulroad are being cleaned of sediment and in some cases enlarged. Additionally, drain pipe sumps are being excavated deeper or the embankment height of those sumps is being increased, or a combination of both in order to increase their capacity.

All areas along the haulroad requiring erosion repair have been graded, seeded and mulched as necessary. In a couple of instances, steep slope areas were seeded and mulched prior to July 25th, and then after approval was given to spread a veneer of topsoil to promote vegetative growth, were respread with topsoil and re-seeded and re-mulched. In addition to the reclamation efforts described, crews were repairing and replacing silt fence, installing erosion control blanket in critical areas, and installing straw wattles in series adjacent to, and perpendicular with the haulroad on steep in-slopes areas (**Figure 2**) as well as cleaning and augmenting rock checks along steep haulroad drains.



**Figure 2. Installation of straw wattles at Discharge Point No. 9 in the SE1/4 of Section 8  
View is toward the west**

## **160817**

### **SURFACE WATER MANAGEMENT**

Pond P30-04 was being discharged at about 1100 gpm through polypipe which ended at the base of the embankment of Pond P30-03. In other words, P30-03 was being bypassed and the discharge pipe was passed through the culvert under the haulroad. The discharge was stained but clean and no sample was taken. The water elevation of pond P30-04 was about 12 feet below spill elevation. The permanent pool elevation (PPE) marker was not seen and presumed to be under water. Pond P30-03 had been recently discharged and the water level was about 3 feet below PPE.

Pond P30-01 was several feet below PPE while the water level in pond P31-01 was about 6 inches below PPE. Pond P24-01 had water about 2 feet below PPE and P24-02 was about 1 foot below PPE. It was reported that polypipe was going to be fused to the discharge pipe of P19-01 in a day or two to allow discharges from this pond to be routed to the rock in the haulroad adjacent to Coyote Creek in Section 19. Erosion occurred in the haul road below this pond when it was discharged a week or two ago so this pond was not going to be discharged until this polypipe was installed. Pond P30-02 was holding water about 1½ feet below PPE.

Sediment needs to be removed from the north shop-office access road ditch in the SE1/4SW1/4 of Section 30 to ensure runoff will not flow over undisturbed land. Runoff from this ditch is designed to pass through a culvert under a Voigt approach after which it should discharge into Coyote Creek.

It was recommended that the sumps at the disturbance boundary above pond P24-02 be made larger to ensure there is enough storage capacity in them to allow sediment to settle out prior to flowing over undisturbed land prior to entering into pond P24-02. It was noted that some sediment had been cleaned from these sumps and that an additional small sump

was constructed above one of these sumps but it appears more could and should be done to ensure that all sediment is captured prior to flowing through the undisturbed drainages. Runoff from dragline spoil will be flowing through the eastern-most drainage and it appeared that more could be done with terraces and diversions to minimize the amount of runoff from the watersheds above these sumps. The silt fences adjacent to each of these sumps at the disturbance boundary are in need of repair. It appeared that runoff will flow under the silt fence located adjacent to the eastern sump and the silt fence below the middle sump is partially down. It was recommended that woven wire or hog panels be installed with these silt fences to help them better withstand runoff events.

Erosion control fabric has been installed in most locations in the haulroad north of County Road 12 where runoff will concentrate. This includes areas above and below the sumps where polypipe has been installed to transport runoff down steep slopes where the haulroad crosses significant drainages and the lower reaches of the haulroad sideslopes where culverts are installed to allow runoff to flow under the haulroad. Fabric was in the process of being installed along the south side of the haulroad in the SE1/4 of Section 9, Discharge Point 6, at the time of this inspection. The sumps in the haulroad ditch have all been cleaned out and new silt fences have been installed in many locations. The old sumps that washed out below the polypipe discharge points have been eliminated so that erosion does not occur at these locations. These pipes now discharge onto the rock located below the culverts which act as energy dissipaters.

A thin veneer of topsoil has been placed on many of the steeper slopes associated with the haul road north of County Road No. 12 and this activity has covered the straw mulch that was recently spread on these areas. Work is continuing to get these areas seeded and re-mulched. Ms. Flath said they have been waiting for more straw wattles to arrive, which were being placed parallel on haulroad slopes in the drainages, but that she was done waiting and had instructed her crew to apply mulch to all remaining bare areas by the end of the day. A tractor with a bale processor was seen traveling along this haul road and some recently applied mulch was being crimped in the ditch adjacent to Discharge Point 6.

Ms. Flath said that Coyote Creek Mining Company’s goal was to try to prevent erosion from occurring along the haulroad ditch and they were trying to treat all runoff with BMP’s prior to it entering the clean water that will pass through the drainages under the haul road.

Portions of this haul road corridor is becoming established with vegetation, namely western and tall wheatgrass. It does not appear that slender wheatgrass is establishing as well or as quickly as normally observed.

The sediment deposition that occurred in the drainage ways located north of the haulroad located north of County Road No. 12 has dried out and is more visible or apparent then when these drainages were inspected a few weeks ago.

**160830**

**SURFACE WATER MANAGEMENT**

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. None of the inspected ponds were being discharged.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4’ Below PPE	
P30-03	4’ Below PPE	
<b>P31-01</b>	1’ Below PPE	
P10-02	8’ Below PPE	
P10-01	8’ Below PPE	
P30-04	5’ Below PPE	
P24-01	3’ Below PPE	
P24-02	1’ Below PPE	
P30-02	2’ Below PPE	

**ROADS**

Coyote Creek has begun construction for a portion of haulroad proposed to be located in the NE¼ of Section 36. The haulroad crosses a drainage and Coyote Creek had proposed to construct the road embankment of subsoil. However, Coyote Creek was not allowed to use subsoil for construction of the haulroad in this area due to concerns of possible contamination with spoil and compaction concerns. The Reclamation Division notified Coyote Creek by email on August 29, 2016 that subsoil would not be allowed for construction. Mr. Steffen stated that because subsoil would not be allowed for construction, the alignment and profile of the road will need to be changed. The changes will be submitted as part of Revision No. 4 to Permit NACC-1302 which is currently under review. Photos of the area were taken.

Crews and equipment were working on the portion of haulroad located north of County Road 12 in Sections 8, 9, 10, and 18. A skid-steer loader and small track hoe were putting rock at culvert outlets and crews were installing erosion matting in portions of the ditches and side-slopes of the road. The stabilization work is part of the remedial action required by NOV-1601. Most of the work has been completed but removal of sediment and deepening of several sumps located in the ditches of the haulroad remain to be completed. A small dozer was also spreading topsoil of the west haulroad outslope south of the County Road 12 crossing in the NW¼ of Section 30 and SW¼ of Section 19. Other portions of the haulroad have also been respread with a thin veneer of topsoil to facilitate vegetation growth and to stabilize the slopes. The topsoil was purchased from Coyote Partners and originated from outside the permit boundary of Permit NACC-1302. Photos were taken.

**160907**

**SURFACE WATER MANAGEMENT**

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. None of the inspected ponds were being discharged.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4' Below PPE	
P30-03	3' Below PPE	
<b>P31-01</b>	½' Below PPE	
P10-02	8' Below PPE	
P10-01	8' Below PPE	
P30-02	2' Below PPE	

An area located in the SE¼ of Section 24 upstream of sediment pond P24-02 was reviewed. This area had been stripped of SPGM and sumps and silt fence have been installed at the north edge of the SPGM removal. The sumps should be cleaned of sediment and the silt fence in one of the drainages is in need of maintenance.

**A skid steer loader was removing sediment from the north ditch bottom of the shop/office access road in Section 30**

**ROADS**

The haulroad located north of County Road 12 in Sections 8, 9, 10, and 18 was briefly reviewed. Most of this portion of haulroad has been stabilized with mulch and erosion matting. Several of the ditch sumps remain to be cleaned and have erosion control mat installed on the outflow side of the sump. The stabilization work is part of the remedial action required by NOV-1601.

A thin veneer of topsoil has been respread on the west haulroad outslope south of the County Road 12 crossing in the NW¼ of Section 30 and SW¼ of Section 19. The outslope has been mulched and seeded and erosion mat has been installed in the ditch bottom. Photos were taken.

## 160920

### SURFACE WATER MANAGEMENT

No ponds were being discharged at the time of this inspection. Polypipe has been placed such that sediment ponds P30-02 and P19-01 can be discharged into Coyote Creek adjacent to the haul road box culverts in Section 19. Discharges from Pond P30-02 would otherwise flow over undisturbed cropland located downstream from the pond and the discharge pipe from Pond P19-01 alleviates any concern about discharges creating erosion on undisturbed land below the pond. Pond P31-01 polypipe discharges into Coyote Creek in the south ditch of the shop-office access road adjacent to the Coyote Creek crossing. In all of these instances, the riprap between the road ditch bottom and the creek channel functions as an energy dissipater. The ponds listed in the table below were briefly inspected and the water elevation was noted in relation to the ponds permanent pool elevation (PPE) marker.

<b>Sediment Pond</b>	<b>Comments</b>
P30-01	Water about 6 feet below PPE. Water reportedly recently pumped to lagoon.
P30-03	Water about 2 feet below PPE.
P30-04	Water about 2 feet below PPE.
P30-02	Water about 8 feet below PPE.
P10-02	Water about 8 feet below PPE.
P10-01	Water about 6 feet below PPE.

Erosion control fabric was in the process of being placed on the slope associated with County Road No. 12 and the haul road underpass. It appeared that all repair work, including mulching and seeding has been completed along the haul road located north of County Road No. 12 and work was continuing in places along the haul road south of the county road. Reshaping of the east haul road ditch was noted north and south of Coyote Creek in Section 19. Sumps in the ditch north of the creek have been cleaned and the ditch bottom south of the creek was shaped to ensure runoff will flow into Coyote Creek as planned and does not flow to adjacent undisturbed lands. These areas need to be mulched and seeded and fabric will probably be placed in portions of the ditch bottom.

An annual grain cover crop is growing on the haul road ditches that were repaired north of County Road 12 and a few grass seedlings were observed where closely inspected. It appears that enough growth has occurred to help protect the sites from wind and water erosion but a few more weeks of growth will be beneficial. One could tell where topsoil from the Coyote Station had been placed in the haul road ditch as the vegetation appeared thicker and greener in these areas. The seeded wheatgrasses have generally established sufficiently on those sections of the haul road ditches not re-disturbed during the current growing season.

The polypipe discharge point for sediment pond P31-01 appears to have been recently moved. It appears some smaller rock is needed with the existing large rock below the silt fence where pond P31-01 has been discharged to ensure site stability. Sediment deposition was noticed in the stream channel immediately above the access road box culverts; however, it is not clear where this sediment came from.

CCMC was strongly encouraged to clean and enlarge the sumps adjacent to the disturbance boundary above sediment pond P24-02 prior to additional rain. The existing sumps were pooling some water and Ms. Flath said that wet conditions prevented sump maintenance last week, which apparently was planned. The construction of an additional sump on a less steep slope in the watershed above one of these sumps was discussed and encouraged and it appeared that runoff from a portion of the upper reaches of this watershed could be routed towards the pit with minor surface shaping.

### GENERAL

CCMC was reminded of the need to reclaim the associated disturbance located west of the County Road No. 12 underpass. The surface owner has asked the Reclamation Division about reclamation of this area and CCMC states in the permit that it will be reclaimed in 2016.

## **161005**

### **SURFACE WATER MANAGEMENT**

The mine area received approximately 0.6 inches of rain on October 3<sup>rd</sup>, about two days prior to the inspection. Mr. Steffen noted that the rains were light in intensity and resulted in only slight water level increases in the sediment ponds. While the rain did not result in much runoff, conditions were still wet particularly in drainage ways. Ongoing erosion and sediment control repair and improvement activities were mostly suspended due to wet conditions. A crew was installing new erosion control blanket in the east ditch of the haul road near subsoil fill stockpile SS-10 in the NE1/4SW1/4 of Section 19.

The erosion and sediment controls along the north haul road were briefly reviewed. Along most of the haul road the side slopes have ground cover consisting of straw mulch and early stage vegetation growth. Areas that did not have cover were mostly small and were attendant to areas of follow-up repair or other improvements to the erosion controls and drainage features.

The east haul road ditch and side slope extending about 400 to 500 feet north of the Coyote Creek crossing in Section 19 needs to be stabilized to prevent erosion. The ditch segment in this area has been cleaned and reshaped recently. Similar surface grading and sediment removal work will likely be completed this year on the south side of the haul road extending from the Brush Creek crossing to the coal handling facility in Section 10. The mulch cover appeared thin and deteriorated on portions of south facing slopes on the north side of the haul road in Sections 9 and 10. At some locations Mr. Steffen pointed out small areas where additional erosion control blanket may be installed instead of mulch due to difficulties in maintaining mulch until adequate vegetation can be established. Small transition areas between erosion control blanket or rock armoring and SPGM removal edges should be rechecked and additional ground cover materials, possibly erosion control blanket, should be applied where ground cover is inadequate. The sumps at the upper end of the pipe slope drains appeared in good condition and Mr. Steffen indicated that they intend to install concrete matting to the inlet side of the sumps to prevent head-ward erosion into the road ditches.

**No ponds were being discharged** off-permit on the day of the inspection. The following ponds were viewed with approximate water levels and other information noted:

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-01	8 feet below PPE	Recently pumped to lagoons to maintain adequate water level for winter operation.
<b>P31-01</b>	6 inches below PPE	Pumping to water load-out station.
P30-02	6 inches below PPE	
P30-03	1 foot below PPE	
P19-01	4 feet below PPE	
P24-01	3 feet below PPE	
P24-02	2 feet below PPE	
P10-02	8 feet below PPE	
P10-01	8 feet below PPE	

## **161010**

### **SURFACE WATER MANAGEMENT**

The ponds listed in the table below were briefly inspected. **No ponds were being discharged** at the time of the inspection although water was being pumped from P31-01 to a truck that is used for dust suppression.

<b>Pond</b>	<b>Comment(s)</b>
P30-01	Water 6 to 8 feet below PPE.
<b>P31-01</b>	Water about 1 foot below PPE. Embankment becoming vegetated.
P30-03	Water about 1½ feet below PPE.
P30-02	Water about 1 foot below PPE
P19-01	Water level was about 10 feet below top of the riser. Pond viewed from a distance.
P24-01	Water was about 1½ feet below PPE
P24-02	Water was about 2 feet below PPE
P10-02	Water was about 8 feet below PPE
P10-01	Water was greater than 8 feet below PPE

Mr. Steffen indicated that the ponds that were only a foot or two below PPE will be pumped lower this fall to maximize available storage for spring runoff.

Erosion control fabric was being placed in the bottom of the haul road ditch located north of Coyote Creek in Section 19. It appears that fabric has been placed along nearly all areas where water might flow or concentrate in the haul road ditches and slopes located north of County Road No. 12; however, a couple of small drainages were noted where it appeared additional fabric should be installed, for example discharge point 8. Mr. Steffen said that additional matting (flex-o-mat) might be placed adjacent to the sumps in the haul road ditches to prevent head cutting and erosion. It appeared that additional rock is needed in some of the sumps in the drainages associated with the haul road north of County Road No. 12, and in at least one instance, additional rock is needed below a culvert to function as an energy dissipater (north side of the road in SE1/4 of Section 9). It appeared that some of the silt fences below the culverts on the north side of the haul road were in need of repair. It is questionable whether silt fences are appropriate BMP's in drainages with larger watersheds since they are not designed to handle large volumes of flow. The focus has to be stabilizing the disturbed area with matting and mulch until vegetation establishes adequately to prevent soil erosion from occurring, and for the most part it appears Coyote Creek Mining Company has accomplished this and has installed water management features and practices to prevent erosion on disturbed areas and to treat the runoff from these areas prior to entering the large main drainages.

**Mulch was noted as having been recently spread along a few sections of the haul road ditches in Sections 19 and 30.**

Apparently these areas had been reshaped and reseeded. A road ditch slope southeast of the County Road No. 12 underpass was in the process of being tilled.

## **161027**

### **SURFACE WATER MANAGEMENT**

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	6' Below PPE	
P30-03	3' Below PPE	
<b>P31-01</b>	1' Below PPE	
P10-02	8' Below PPE	
P10-01	8' Below PPE	
P30-04	4' Below PPE	
P24-01	8' Below PPE	
P24-02	4' Below PPE	Embankment needs stabilization
P30-02	2' Below PPE	

The embankment of pond P24-02 is nearly void of vegetation. The embankment needs to be seeded and mulched. Photos were taken.

Mr. Becker reported that Ponds P-30-04 and P30-03 had been pumped to get the water elevations below the discharge pipe to prevent damage to the discharge pipe from anticipated ice during the winter months.

Pond P31-02, located in the SW $\frac{1}{4}$  of Section 32, has been recently constructed. Some work remains for the emergency spillway, dewatering pipe and dewatering valve. Photos were taken.

## ROADS

Coyote Creek has constructed portions of the haulroad located in the NE $\frac{1}{4}$  of Section 36, and have installed a 60" CMP (corrugated metal pipe) culvert under the road. The outlet of the culvert was reviewed and Coyote Creek should consider some type of armouring of the channel that takes the water to Pond P31-04. Photos of the area were taken.

It appears that most if not all of the stabilization work required by the remedial action specified in NOV-1601 has been completed. Large portions of the ditch and sideslopes along the haulroad north of County Road 12 have vegetation establishment.

Several areas along the road were reviewed in response to a phone call from a landowner. The landowner had concerns about the haulroad box culverts and creek crossing in Section 19, and that stream flow was not passing through the low-flow culverts adjacent to the box culverts. The areas were reviewed, and the box culverts and low-flow culverts appeared to be functioning as intended. Some sediment deposition was visible on the south side of the Section 31 Access Road box culverts.

## 161102

### SURFACE WATER MANAGEMENT

The water levels in sedimentation ponds remain well below permanent pool elevation (PPE) and **no ponds were being discharged off-permit on the day of the inspection**. The following is a list ponds viewed with approximate water levels and other information:

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-01	6 Feet below PPE	
<b>P31-01</b>	2 Feet below PPE	
P31-02	Dry	Finish grading embankment
P30-03	3 Feet below PPE	
P30-04	8 Feet below PPE	
P30-02	4 Feet below PPE	
P06-03	N/A	Under construction

Erosion damage was observed along the edge of the rock rip-rap in the southwest quadrant of the haul road crossing in the SW $\frac{1}{4}$  of Section 19 in the vicinity of the poly-pipe discharge line outlet from pond P19-01. Sediment deposition was noticed in the stream channel immediately below the haul road box culverts; however, the source of the sediment could not be attributed to a single source. The erosion channel that formed alongside the rock in this area will need to be filled and stabilized. The sediment deposited in the flow path of the of the box culvert outlet should be removed from the

stream channel. Also, the addition of smaller rock should be considered to make the transition from grassed areas draining to the rock covered slopes and at the discharge pipe outlet to ensure the flows remain on stabilized surfaces.

The erosion and sediment controls along the north haul road were reviewed. Surface grading and sediment removal were completed recently on the south side of the haul road extending from the Brush Creek crossing to the coal handling facility in Section 10. Sediment had not been removed from the low flow channel on the upstream side of the Brush Creek crossing. The repaired area had been mulched and crimped but the mulch appeared thin in spots. Ms. Flath pointed out that the soil material was quite sandy in texture resulting in mulch being covered during the crimping operation. It was suggested that additional mulch could be applied shortly before a rain or snow event and let the straw anchor itself or freeze to the soil material. Reducing the depth that the coultter implement is lowered in the soft sandy areas and lifting the implement when turning may also increase the amount of straw retained on the surface. We noted a few areas along the haul road where additional mulch should be applied, mainly on portions of the south facing slopes along the haul road in Sections 9 and 10. A few small areas associated with recent repairs or improvements along the road remained to be stabilized with mulch or erosion control blanket including areas near discharge points 6, 8, 10, 11, 12 and 13. We discussed the possibility of adding smaller sized rock or other materials at the drainage transitions to the rock lining installed at culvert and slope drain outlets at a few locations including road discharge points 5, 6, 7 and as part of future improvements a discharge points 9 and 12. At discharge point 6 in the SE1/4 of Section 9, it was recommended that the silt fence installed nearest to the culvert and slope drain outlets be removed and the drainage transition be stabilized with blanket or other material.

OFF-SITE REVIEW

As part of the NOV-1601 remedial action, sediment had been removed recently from the old oxbow located north of the permit boundary in the SE1/4 of Section 9 where sediment deposition occurred earlier this year down gradient of the north haul road. The dry conditions were favorable for sediment removal from this area with minimal disturbance to existing vegetation. Ms. Flath provided that arrangements were made with Ottertail Power Company to have a contractor crew and equipment remove the sediment that accumulated in the oxbow area. It appeared that sediment was removed to the base of the pre-existing vegetation and it is expected that vegetation would re-establish on the area from the remaining in-situ plant stems and root mass.

**161115**

SURFACE WATER MANAGEMENT

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	6' Below PPE	
P30-03	3' Below PPE	
<b>P31-01</b>	1' Below PPE	
P10-02	Nearly dry	
P10-01	10' Below PPE	
P30-04	8' Below PPE	
P24-01	10' Below PPE	
P24-02	6' Below PPE	Embankment needs stabilization
P30-02	4' Below PPE	

The embankment of pond P24-02 is nearly bare of vegetation. As noted in the October 27, 2016 inspection report, the embankment needs to be seeded and mulched. Mr. Steffen stated that Coyote Creek mine would get the embankment mulched either that day or the next.

Pond P31-02, located in the SW¼ of Section 32, has been recently constructed. The embankment has been mulched and stone riprap placed at the dewatering pipe outlet. The emergency spillway is complete except for riprap to be placed on

the downstream side of the spillway. The diversion that directs flows to the pond has also been mulched. Photos were taken.

## ROADS

Coyote Creek has continued to work on stabilizing areas along the portion of haulroad located north of County Road 12. Portions of the haulroad ditch have had additional erosion fabric installed and additional riprap has been installed at outfall #12 located in the NE¼ of Section 18, and at other locations. Several pieces of equipment were removing sediment from a drainage downstream of discharge point # 9 located in the SE¼ of Section 8. The sediment removal is being done at the request of the landowner (State Department of Trust Lands).

## 161208

### SURFACE WATER MANAGEMENT

Ponds observed during the inspection were frozen and portions were snow-covered. The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. **None of the ponds were being discharged.**

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' Below PPE	
P30-03	Nearly Dry	
<b>P31-01</b>	6" Below PPE	
P10-02	Nearly Dry	
P10-01	Nearly Dry	
P30-04	8' Below PPE	
P30-02	4' Below PPE	Snow Covered
P31-02	Dry	Recently constructed
P6-02	Dry	Under Construction
P6-04		Under Construction

## 161216

### SURFACE WATER MANAGEMENT

**No water discharges were** occurring at the time of the inspection. It was apparent that some recent water had entered sediment pond P30-01, which was snow covered and about 5 feet below PPE. Mr. Freuer indicated that runoff from the wash bay enters this pond. **Sediment pond P31-01 was snow covered at an elevation below PPE.** Sediment ponds P10-02 and P31-02 were dry. A PPE stake was not seen in sediment pond P31-02. The embankment for sediment pond P06-04 has been constructed and rock and creflex has been placed in the emergency spillway. Two silt fences were noted in place in the drainageway below the spillway. Coal was exposed in the northern portion of the pool area of this pond and it appeared that the southern portion of this pond had been excavated to a deeper depth. Mr. Freuer indicated that this portion of the pond was dug deeper to get to a hard bottom. It appeared that some ground water had entered the pool area of this pond and a pump was setting on the embankment.

Diversions were noted in place around the north and east sides of new SPGM stockpiles TS-39 and SS-36 which are located in the SW1/4 of Section 31. These diversions carry runoff to sediment ponds P31-02 and P06-04. An 18" culvert was placed in the public road located in the SW1/4 of Section 31 so that runoff from topsoil stockpile TS-39 could flow to pond P31-02. These diversions were full of snow. Coyote Creek Mine will need to monitor these diversions, and other diversions and stripping edges during snow melt periods to ensure that snow drifts do not impede runoff to flow as planned.

## REVEGETATION

The embankment of sediment pond P31-02 and the diversions associated with SPM piles TS-39 and SS-36 have been seeded and mulched. Fabric has reportedly been placed in portions of the bottoms of the diversions with steeper slopes.

## 2017

### 170112

#### SURFACE WATER MANAGEMENT

Construction activities were continuing in the pool area of pond P06-03. The truck/shovel fleet was removing material from the incised portion of the pond. The northern portion of the pond had been excavated down to the top of the coal seam. Following coal removal, overburden material will be used to cover the exposed coal seam and complete the pond side slope.

### 170125

#### SURFACE WATER MANAGEMENT

There were no surface water discharges occurring at the time of the inspection. Sediment ponds P10-01 and P10-02 located near the coal processing facility in the SE1/4 of Section 10 were very low and likely dry. Sediment pond P31-02 was certified on November 16, 2016, and had been receiving a nominal amount of pumped ground water (Figure 1) through poly pipe from Pit 12 located in the NE1/4 of Section 36. The water/ice level of P31-02 was about 1 foot above the permanent pool elevation.

It was noted that the diversion leading to the west end of pond P31-01 near the NW1/4NW1/4 of Section 31 and NE1/4NE1/4 of Section 36 will require some grading and cleanup work in the near future, prior to snowmelt runoff.

### 170207

#### SURFACE WATER MANAGEMENT

No pond discharges were occurring at the time of this inspection. The ponds listed in the table below were briefly inspected. There has been very little runoff during the past two months due to continuous below freezing temperatures.

<b>Sediment Pond</b>	<b>Comment</b>
P30-01	Ice level well below PPE
P06-03	Pond partially constructed. Coal partially removed. Ground water dewatering trench along south side and sump near embankment.
P31-02	Recently dewatered to a level about 8 feet below PPE. Old ice level indicates the pond was at or slightly above PPE at some point prior to dewatering.
P30-02	Ice was 2 to 3 feet below PPE.
P31-01	Ice about 2 feet below PPE.
P30-03	Well below PPE.
P10-02	Well below PPE.

Coal has been removed from the eastern portion of sediment pond P6-03 and it appears coal is exposed over most of the balance of the pool area of the pond. A dewatering trench has been constructed along a portion of the south side of this pond and a sump has been dug in the pool area of the pond adjacent to the embankment. Ground water was reported to have been pumped to sediment pond P31-02 a week or two ago and this pond was discharged into Coyote Creek via poly pipe. The pipe was placed such that the discharge flowed into the riprap along the south side of the Coyote Creek bridge/culvert located southeast of the Voigt farmstead.

## 170223

### SURFACE WATER MANAGEMENT

Ponds observed during the inspection were frozen and portions snow-covered. The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. **None of the ponds were being discharged.**

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	3' Below PPE	
P30-03	At PPE	
<b>P31-01</b>	1½' Below PPE	
P10-02	8' Below PPE	
P10-01	8' Below PPE	
P30-02	2' Above PPE	
P31-02	6' Below PPE	
P6-04	Dry	Under Construction

A small amount of coal remains in the basin of pond P6-03. A dozer was operating on the side-slopes of the pond.

## 170309

### SURFACE WATER MANAGEMENT

**There were no surface water discharges** occurring today from Coyote Creek Mine operations. There was a Dakota Westmoreland Company (DWC) sedimentation pond discharging through a portion of Coyote Creek Mine's permitted area. DWC's Pond 93 was discharging from its location in the SW1/4 of Section 17 in Permit KRSB-8603 through the large drainage that crosses under Coyote Creek Mine's haulroad, through a rock-lined sump, and eventually through a 36-inch culvert under the haulroad in the NE1/4 of Section 18 (Discharge Point 12) as can be viewed in Figure 1. The discharge volume appeared to be several hundred GPM as viewed from a short distance away and the discharge water was clear.

The following sedimentation ponds were inspected today and all of the ponds at the mine remain iced-over. The following table provides the water level of those ponds inspected in relation to the permanent pool elevation (PPE).

<b>Sediment Pond ID</b>	<b>Water/Ice Level</b>
P30-02	3 feet above PPE
P10-01	Approximately 7 feet below PPE
P10-02	Approximately 8 feet below PPE
<b>P31-01</b>	3 feet above PPE
P30-01	3 feet below PPE

All coal from the containment area of sediment pond P06-03 has been removed. The pond is constructed; however, some dirt work cleanup remains in the pond basin; the permanent pool elevation needs to be surveyed and the marker set; and some riprap work remains at the inlets to the pond. After these and a couple of other items are completed, the pond will be ready for certification.



**Figure 1. DWC discharge through Section 18 drainage**

Ditch clean-up work with the LGP dozer was conducted within the past couple of weeks in the NW1/4 of Section 31, east of sediment pond P31-01.

**170328**

**SURFACE WATER MANAGEMENT**

No ponds were being discharged at the time of this inspection. Mr. Freuer stated that Coyote Creek was planning to collect water samples this afternoon and that they had plans to begin discharging when the results were known. The ponds listed in the table below were briefly reviewed during this inspection.

<b>Water Management Feature</b>	<b>Comments</b>
P30-01	Water about 3 feet below PPE.
<b>P31-01</b>	<b>Water about 12 feet below spill elevation. PPE stake not observed and presumed to be under water.</b>
P06-03	Water about 4 feet below spill elevation. Runoff entering the pond from two streams.
P31-02	Water about 4 feet below PPE. Water in pond appeared clean.
P30-03	Water at PPE. Water appears clean.
P30-02	Water about 2.5 feet above PPE.
P19-01	Water about 8 feet below PPE.
P10-02	Dry
P10-01	Water about 10 feet below PPE.

Runoff from two ephemeral streams was entering sediment pond P06-03 at the southwest corner of the pool area of the pond, which was reportedly designed to hold 156-acre feet of water. Concrete matting or creflex was installed at the interface between the larger stream and the pool area of the pond but water has undercut the lower section of this matting.

There is about 15 feet of elevation drop between the streambed and the current water elevation in the pond. This creflex best management practice needs to be repaired and matting needs to be placed at the end of the other stream to prevent head cutting from occurring. Pond P06-03 has not yet been certified and Mr. Freuer indicated that completing this repair work and getting this pond certified is a high priority.

Water was noted as having passed under the silt fence located in the ditch southwest of the box culverts under the access road in Section 30. This silt fence needs to be repaired as soon as possible since it is adjacent to Coyote Creek, and the rock riprap below this silt fence needs to be altered as it appears water passed under the larger rocks used as riprap. Minor rills from water erosion were noted along the east and west sides of this box culvert crossing.

All diversions observed during this inspection appear to have functioned as planned and no significant erosion was noted in the bottoms of these diversions where fabric had been placed. Likewise, the slopes and ditches associated with the haul road from the Coyote Station to the first Coyote Creek crossing in Section 19 appeared stable and very little erosion appears to have occurred during this springs snowmelt runoff event. However, a sump in the east haulroad ditch between sediment ponds P30-02 and P30-03 was noted to be full of sediment.

Piles of snow were observed in the upper reaches of a diversion located east of the southeast corner of topsoil stockpile TS-39 but no erosion or deposition was noticed in this area. Silt fences were noted in place in the drainage ways located north of this topsoil pile.

Runoff from undisturbed land is ponding in a drainage way west of the dragline bench in the SE1/4 of Section 25. This water is periodically pumped over the bench to the pit and/or to sediment pond P30-04.

## **170405**

### **SURFACE WATER MANAGEMENT**

Sedimentation ponds P30-02 and P30-04 were discharging off-site during the inspection. The discharge from each pond appeared clear. The following is a list ponds viewed with approximate water levels and other information:

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-01	4 Feet below PPE	
<b>P31-01</b>	4 Feet above PPE	
P30-03	1 Foot below PPE	
P30-04	3 Feet above PPE	Pump discharge at about 400 gpm, discharge was clear
P30-02	1.5 Feet below PPE	Pump discharge at about 300 gpm, discharge was clear
P24-02	1 Foot below PPE	Upstream sumps at the SPGM edge need cleaning and repair
<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P10-01	6-8 Feet below PPE	Sediment deposits in diversion southeast of the pond need removal. Crews were onsite to locate and repair a leak in the water line from Coyote Station to the water load out station near the pond.
P10-02	6-8 Feet below PPE	Dry
P06-03	1.5 Feet above PPE	Temporary PPE marker in NE corner, finishing spillway transition
P31-02	5 Feet below PPE	

The woodland portion of the drainage way leading to pond P24-02 was inspected. The sump and silt fence sediment controls located at the SPGM removal edge were in need of sediment removal and repair. The eastern most of the sumps was completely full of sediment and it was apparent water and sediment had been flowing under the silt fence. There were a few small areas in the drainage way where sediment deposition occurred. While the drainage way contained natural items that slowed the runoff down such as fallen logs, a flatter portion of the drainage located about 200 feet upstream of the pond had accumulated sediment. Mr. Freuer indicated that they will be cleaning the sumps and will consider removing sediment accumulations where it appears it will affect vegetative growth.

The erosion and sediment controls along the north haul road were briefly reviewed. Along most of the haul road, the side slopes have ground cover consisting of straw mulch or erosion control blanket. At haul road discharge point 6 in the SE1/4 of Section 9, a deposit of sandy sediment was contained in the riprap area below the culvert and slope drain outlets. The sediment deposit appeared to be mostly attributable to erosion at the transition to rock riprap near the slope drain outlet for haul road drainage ditch from the west. We noted a few areas along the haul road where additional mulch should be applied once conditions allow, mainly on portions of the south facing slopes along the haul road in Sections 9 and 10. A reapplication of mulch along the road shoulders should also be considered to slow road runoff while vegetation is establishing in the road ditches.

## **170418**

### **SURFACE WATER MANAGEMENT**

There were no sediment ponds discharging off-permit at the time of inspection. Several repair, maintenance, and best management practice installation projects regarding surface water management have been conducted within the last couple of weeks. Several of these projects were in response to Reclamation Division inspection recommendations and others were initiated by Coyote Creek Mine.

The discharge point of sediment pond P31-01 is located on the west side of the Coyote Creek crossing in the NE1/4 of Section 31 and the silt fence that was located directly adjacent to the rock riprap was replaced and moved about 15 feet further to the west, upgradient.

Both inlets to sediment pond P31-01 have been reshaped, separated, and repaired with additional rock riprap. A diesel-powered water pump is staged along the west side of the pond, which was discharged last week. Mr. Freuer said the diesel pump would soon be replaced with an electric pump.

The sump located along the east side of the haulroad between sediment ponds P30-02 and P30-03 in the NW1/4 of Section 30 is filled with sediment from spring runoff and reportedly will be cleaned out, enlarged, and moved a short distance to the west, closer to the haulroad.

A double silt fence, in series, was recently installed along the east side of the haulroad and south of the Coyote Creek crossing in the NE1/4SW1/4 of Section 19.

Three sumps located north of active pit operations in the SE1/4 of Section 24 and near the center of Section 24 have been cleaned out and enlarged. These sumps are catching contact water from steep slope disturbed areas prior to entering the large wooded draw near the center of Section 24 and entering sediment pond P24-02 to the north. These sumps will need to be monitored closely, particularly following precipitation events.

A couple of erosion issues were noted near the coal processing facility in the SE1/4 of Section 10. A buried water line originating from Coyote Station that provides water to the water truck loadout facility directly west of the coal stockpile had burst. A local excavating contractor, Dug Rite Excavating, has exposed the pipe so that it can be repaired. Gully erosion was evident along the side slopes of sediment pond P10-01, which is located directly west of the water loadout. Once the pipe is repaired, the eroded area will be backfilled and reshaped. The affected area was stripped of SPGM during construction of the sediment pond and coal processing facility and there was no loss of topsoil or subsoil. The breakage is being attributed to water hammering issues, and Mr. Freuer indicated that additional protections are being installed to the system so that this occurrence does not happen in the future.

Separately, and approximately 50 feet south of the burst water pipe is the water truck loadout. While a worker was filling a water truck, the water was left running for an undetermined amount of time after the truck was filled and caused erosion that originates at the concrete pad beneath the loadout facility and down to sediment pond P10-01. Similar to the burst water pipe described above, the affected area had been stripped of SPGM during construction of the sediment pond and coal processing facility and there was no loss of SPGM associated with the erosion. Erosion associated with this occurrence will be repaired once the burst water line is repaired and the system is again operational. Mr. Freuer indicated Coyote Creek Mine was investigating an erosion control product called Enviromat to help in minimizing erosion of this area in the future.

Runoff from the south and west end of the coal stockpile area is diverted into sediment pond P10-01 through a field-engineered diversion. However, it appeared that the berm of the diversion should be built up an additional 6 inches or more to minimize the chance of contact water breaching the diversion and entering a tributary to Brush Creek, north of the haulroad. Separately, it was suggested that a silt fence be installed upgradient of the undisturbed drainage in the event the diversion is breached during a storm event.

Repair work is required to the south and west inlets to sediment pond P06-03. The west inlet requires reshaping and resetting of the Creflex matting and the south inlet requires some slope repair and additional Creflex installation work. Mr. Freuer said these projects are expected to occur in the near future. Directly north of sediment pond P06-03, Perrault Construction of Beulah, was breaking up large rock with a rock hammer and this material will be used throughout the mine for areas requiring riprap for erosion control and energy dissipation.

Water levels from other ponds were noted and are recorded in the table below:

Pond	Water level
P31-01	At permanent pool elevation (PPE)
P30-03	1.5 feet below PPE
P30-02	4 feet below PPE
P10-01	8 feet below PPE
P10-02	Dry
P06-03	9 feet below spill elevation

#### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

Erosion control blanket was recently installed along the haulroad inslope south of the County Road 12 crossing along the east side of the haulroad. This installation was required to repair a small amount of rilling west of topsoil stockpile 15 that is located in the NE1/4NW1/4 of Section 19.

Topsoil from stockpile 33 was respread within the County Road 12 road right-of-way south of the county road and on both sides of the haulroad. This respread operation will now allow the fences to be moved closer to the haulroad on both sides so that cropland tracts on both sides of the haulroad can be farmed this year. The total area of respread was estimated at less than .5 acres. Some clean-up work remained along the edges of the respread area; however, near the end of the inspection a skid steer had already begun that work. Respread areas that will not be cropped will be seeded to Coyote Creek's stockpile seed mix.

**170427**

#### SURFACE WATER MANAGEMENT

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. None of the ponds were being discharged.

Pond ID	Water Elevation	Comment
P30-01	4' Below PPE	
P30-03	2' below PPE	
P31-01	½' Below PPE	

P10-02	Dry	
P10-01	8' Below PPE	
P30-02	5' Below PPE	
P6-03	No marker	Under Construction
P24-01	3' Below PPE	
P24-02	3' Below PPE	

Inlets into pond P6-03 have been ripped, and the spillway of the pond is near completion. Coyote Creek has installed a wooden lath that is being used as a temporary estimate of PPE. The water elevation was at the estimated PPE level when observed during the inspection.

The area where sedimentation ponds P24-03 and P24-04 are to be constructed were briefly reviewed. The pond designs are included in Revision No. 6 to Permit NACC-1302 which is currently under review.

**170504**

**SURFACE WATER MANAGEMENT**

The water levels in sedimentation ponds were at or below permanent pool elevation (PPE) throughout the permit area. The relatively slow spring melt and mostly dry weather allowed for ponds to be dewatered in April, where necessary. The following is a list ponds viewed with approximate water levels and other information:

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-01	4 Feet below PPE	
P06-03	At PPE	Temporary PPE marker in NE corner
P31-02	5 Feet below PPE	
<b>P31-01</b>	At PPE	
P31-02	4' Feet below PPE	
P30-03	1 Foot below PPE	
P30-04	5 Feet above PPE	
P19-01	Low/near empty	Viewed from a distance
P24-01	1.5 Feet below PPE	
P24-02	1.5 Feet below PPE	
P10-01	6-8 Feet below PPE	Recently removed sediment and installed erosion control blanket in diversion southeast of the pond.
P10-02	6-8 Feet below PPE	Empty

The erosion and sediment controls along the north haul road were briefly reviewed. Erosion control is mostly reliant on straw mulch or erosion control blanket. New plant growth was starting but the plants were still very small on most areas. We reviewed the culvert outlet area at haul road discharge point 8 in the SE1/4 of Section 8 and noted that the silt fence should be replaced, possibly with a wire-backed reinforced version. The sediment deposits present between the silt fence at discharge point 8 and the permit boundary fence did not have appreciable vegetation emerging but it was not discernable if additional sediment had deposited on the area this spring. At the Coyote Creek culvert crossing in Section 19, some rock had been removed from the road ditch in the southwest quadrant in advance of work to adjust the rock lining and transition at this location. **At the Coyote Creek culvert crossing in Section 30, sediment had been removed and**

silt fence replaced in the southwest quadrant. The erosion protection in the ditch bottom between the replaced silt fence and rock transition to the creek was not present and remained to be completed.

## **170516**

### SURFACE WATER MANAGEMENT

There has been very little precipitation over the past month and no sediment ponds were being discharged at the time of the inspection. The sediment ponds listed in the table below were briefly inspected. As indicated in the table, most of the sediment ponds inspected were well below permanent pool elevation (PPE).

<b>Water Management Feature</b>	<b>Comments</b>
P30-01	5 feet below PPE
P06-03	Near PPE; riprap in place at two locations where water enters pond; perimeter of pool area mulched; embankment seeded; recently certified.
P31-02	5 feet below PPE
P24-01	3 to 4 feet below PPE
P24-02	3 to 4 feet below PPE
P30-02	5 feet below PPE
P10-02	Dry
<b>P31-01</b>	6 inches above PPE; riprap work was done at pond inlet to reduce erosion/head cutting.

At the Coyote Creek culvert crossing in Section 30, silt fence in the south ditch (west side of Coyote Creek) had been moved west about 15 feet and fabric was installed between the silt fence and rock adjacent to the stream channel. Riprap adjacent to the stream channel and the road ditch was replaced with smaller rock and the area affected by the repair work was broadcast seeded.

At the Coyote Creek culvert crossing in Section 19, some of the riprap in the west ditch was replaced with smaller rock to prevent head cutting into Coyote Creek. At the culvert crossing of Brush Creek in Section 10, the south ditch was reshaped to reduce the slope and the slope was riprapped. Ms. Unruh was advised to have silt fences installed at both sites as soon as possible and she indicated they would be installed. A silt fence should also be installed in the south ditch on the east side of Brush Creek since runoff from a small portion of the haulroad enters the stream at this location. These silt fences will need to be maintained until vegetation establishes in the associated road ditches.

A rubber-like matting was being installed in the steeply sloped west ditch of the access road located northeast of the coal stockpile in Section 10. The soil at this site appears very sandy and is prone to water erosion. New fabric was observed in a portion of the diversion above sediment pond P10-01 and in a drainage located immediately north of topsoil stockpile TS-33. A diversion on the north side of topsoil pile TS-33 was recently constructed.

Sumps located at the disturbance boundary above the undisturbed woodlands in the SE1/4 of Section 24 were recently cleaned, and two silt fences were installed recently in a drainage north of the haul road in the SW1/4SE1/4 of Section 8.

The site where sediment pond P24-04 will be built was inspected. Stakes showing soil removal depths were in place. Rock piles in this area indicate that portions of this tract were cultivated many years ago, but native species have re-invaded the site. No issues with the location of this pond were noted. This pond will be a few hundred yards southeast of a high voltage overhead power line.

Ms. Unruh mentioned that Coyote Creek Mining Company (CCMC) is evaluating the need for armoring or stabilizing the Coyote Creek stream bank located immediately north of the haul road box culverts in Section 30 because water leaving the east side of the box culvert may erode the bank during periods of high flow. The creek bank is steep and currently not well vegetated and it appears some bank sluffing is occurring.

## REVEGETATION

The reclaimed cropland located southwest of the County Road 12 underpass has been tied into the existing field to the west but the field had not been seeded yet.

Grass was emerging in the ditches and on the primary haul road slopes but vegetation establishment appeared variable. The seeded vegetation was fairly well established in some areas but seedling establishment did not look promising on areas that were re-disturbed. Ms. Unruh indicated that CCMC was planning to reseed portions of this haulroad in the very near future.

## 170525

### SURFACE WATER MANAGEMENT

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. **None of the ponds were being discharged.**

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' Below PPE	
P30-03	2' Below PPE	
<b>P31-01</b>	At PPE	
P10-02	Dry	
P10-01	8' Below PPE	
P30-02	5' Above PPE	
P6-03	1' Below PPE	Certified on May 9, 2017
P24-01	3' Below PPE	
P24-02	3' Below PPE	
P19-01	8' Below PPE	

Coyote Creek recently did some minor repair work on the inlet of pond P31-04. Ms. Unruh stated that water had begun to flow around riprap that was put into a relatively steep portion of the inlet. Photos were taken.

As noted on previous inspection reports, the inlets into pond P6-03 have been ripped, and the spillway of the pond appeared complete. Coyote Creek certified this pond on May 9, 2017. New silt fence has been installed at the North Box Culverts on Coyote Creek in Section 19, and the box culvert on West Brush Creek in Section 10.

The area where sedimentation ponds P24-03 and P24-04 are proposed to be constructed were briefly observed from a distance. The soil stripping area for the ponds was staked. The pond designs are included in Revision No. 6 to Permit NACC-1302 which is currently under review.

## 170606

### SURFACE WATER MANAGEMENT

There has been very little runoff, if any, over the past couple of weeks and **no water was being discharged at** the time of the inspection. The sediment ponds listed below were briefly viewed during the inspection.

<b>Sediment Pond</b>	<b>Comment(s)</b>
P30-01	Water was about 5 feet below PPE
<b>P31-01</b>	Water level was at PPE. Inlets have been repaired and ripped.
P06-03	Water about 2 feet below PPE
P30-04	Water about 5 feet below PPE
P30-02	Water 5 to 6 feet below PPE
P10-02	Dry

The stream banks of Coyote Creek downstream of the box culverts in the access road located west of the shop office facilities area in Section 30 of Permit NACC-1302 were inspected. During previous inspections, it was noted that a small reach of the stream bank located north of the riprap on the north side of the box culverts was barren and this area might erode during high flows in the stream channel. Coyote Creek is a steeply incised channel meandering through a broad flat flood plain. Side slope sloughing has occurred throughout this channel and most areas are vegetated but bare areas exist that are too steep for vegetation to establish. Recent sloughing was observed adjacent to the bare area located north of the access road box culverts and Coyote Creek Mining Company wanted to know if they should riprap or otherwise stabilize this area. It was observed during the inspection that all runoff flowing through the 4 box culverts is directed to the north side of the stream bank that has been armored with riprap so the portion of the stream bank that is steep and barren north of the riprap will not be taking direct flow from the box culverts. Armoring the barren slope north of the existing riprap would require reshaping the bank to reduce slope steepness and this would cause quite a bit of disturbance in the area. Old aerial imagery appears to show that water was redirected in the stream channel at this location prior to construction of the access road. It may be premature to riprap the barren bank at this time, but the site should be monitored and riprapped in the future if necessary. Figure 1 below shows the riprap and outlet end of the box culverts in Section 30.

Figure 1: North end of the box culverts in Coyote Creek in Section 30



Smaller rock may need to be added to the riprap associated with the box culvert in Section 30 since there are gaps between the large rocks and the underlayment material is visible in spots.

A diversion has been constructed and mulched north of topsoil stockpile TS-39. The north segment of this diversion will divert runoff from the pile to the haul road or ramp located to the west and runoff from this area will flow to sediment pond P31-01.

## REVEGETATION

A portion of the south haul road ditch in Section 18 was being reseeded with the seed mixture that was approved via email a few weeks ago. This seed mixture contains two species of wheatgrass, western and slender switchgrass, and sand dropseed. No nurse or cover crop was being planted with this seeding since this is a re-enforcement seeding and some of

the previously planted vegetation is growing. The previously approved seed mixture consisting of tall wheatgrass, western wheatgrass and slender wheatgrass has established along the haul road with variable success. Perhaps the warm season species that are being planted at this time will have better success establishing on the sandy droughty soils along the haul road.

It does not appear the permit area has received much rain this spring and native grassland and hayfields in the area are not yielding well. Vegetative growth has ceased on areas with poor soils, such as claypan sites, shallow hilltops and south facing slopes.

A few plants of Canada thistle were observed in the haulroad ditch near the box culvert in Section 30 and on undisturbed land in the field located to the north.

### 170627- flyover

### 170630

#### SURFACE WATER MANAGEMENT

There were **no ponds discharging off-permit** at the time of inspection. Areas along the north haulroad received approximately 0.15 inch of rain from a passing thunderstorm and the remainder of the mine received approximately double that amount. It appeared there was minimal runoff and most of the rain soaked into the ground. The table below lists the sediment ponds inspected and the water level of those ponds relative to the Permanent Pool Elevation (PPE).

<b>Sediment Pond</b>	<b>Water Level</b>
P10-01	7 feet below PPE
P10-02	Dry
P06-03	2 feet below PPE
<b>P31-01</b>	2 feet below PPE
P30-01	5 feet below PPE

Sediment pond P24-04 was being constructed at the time of inspection. Construction information and design details of this pond, which is located in the SE1/4 of Section 24, was approved with Revision No. 6 to Permit NACC-1302 on June 20, 2017. Two scrapers were removing subsoil from the pool/containment area of the pond and that material was being used to construct the embankment at the northwest end of the pond. A Bismarck Engineering firm, Terracon Engineering, was providing embankment construction inspection and material density testing of the embankment fill. The surveyed elevations indicated that approximately three feet of embankment fill is needed to bring the top of the embankment to the design elevation.

A loader and the 777 fleet were removing subsoil from the pool area of pond P24-04 and that material was being hauled to subsoil stockpile SS-20 located in the SW1/4 of Section 19 and NW1/4 of Section 30. Mr. Barth indicated pond construction would likely be completed this weekend. Several photographs were taken of the subsoil removal area and Coyote Creek is expected to submit a SPGM removal approval request within the next couple of days. The PC 2000 was parked near the sediment pond construction project, but was idle at the time of inspection.

#### REVEGETATION

Coyote Creek's tractor and drill were parked along the haulroad in the SW1/4 of Section 10. Many areas along the haulroad corridor have been interseeded with the native grass mixture that includes slender wheatgrass, sand dropseed, western wheatgrass, and switchgrass. Reseeding efforts have been ongoing for a week or more and that work is expected to continue for several more days in areas where vegetative growth from initial seeding efforts have been less than desirable.

## 170712

### SURFACE WATER MANAGEMENT

The permit area has received very little precipitation this spring/summer and there was very little evidence of any runoff having occurred. The sediment ponds listed below were briefly inspected. **No ponds were being discharged** at the time of this inspection.

<b>Water Management Feature</b>	<b>Comments</b>
P30-01	Water was about 4.5 feet below PPE
<b>P31-01</b>	Water was about 2 feet below PPE. Water looked very clean.
P06-03	Water was well below PPE. No water coming into the pond from the undisturbed ephemeral stream located above the pond.
P31-02	Water was about 7 feet below PPE
P30-02	Water was 3 to 4 feet below PPE
P10-02	Dry
P24-04	Recently constructed, pool area dry. Not certified.

The west sump above the undisturbed woodlands in Section 24 was recently cleaned. A berm adjacent to the access trail around the north end of the pit is also functioning as a water management feature.

Mr. Freuer indicated that Coyote Creek Mining Company was planning to move the silt fences in the drainages below sediment pond P24-04 closer to the actual disturbance boundary at some point in the near future. He also asked about removing some of the silt fences located along the disturbance boundary of the haul road in Section 10. These silt fences were installed as construction BMP's but runoff from disturbed areas is now designed to pass down the road ditch to Brush Creek. Therefore, it was agreed that these silt fences could be removed. It was suggested that the silt fence below the embankment of sediment pond P10-02 be retained until the vegetation on the embankment is adequate to control erosion.

### REVEGETATION

Slender, tall, western and pubescent wheatgrasses have established with variable success on the haul road ditches and slopes. Other species, such as foxtail barley and sweet clover, have also established in places

but the grass stand is thin even where establishment is the best. Most of the ditches and slopes associated with the haulroad north of County Road No. 12 were reseeded with a mixture of slender wheatgrass, sand dropseed, western wheatgrass and switchgrass and seeding was nearly complete. The ditches and slopes were seeded perpendicular to the previous seeding and the road rather than parallel. The operation did not appear to have affected or drastically disturbed the soil surface and the established vegetation was continuing to grow as shown in Figure 1.

**Figure 1: Haul road reseeding operation**



## 170720

### SURFACE WATER MANAGEMENT

Dry conditions exist at the Coyote Creek mine. The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. **None of the ponds were being discharged.**

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' Below PPE	
P30-03	3' below PPE	
<b>P31-01</b>	3' below PPE	
P10-02	Dry	
P10-01	8' Below PPE	
P30-02	Dry	
P6-03	2' Below PPE	
P19-01	Nearly Dry	
P24-04	Dry	Newly Constructed

Construction is complete on pond P24-04, located in the SW $\frac{1}{4}$  of Section 24. The embankment and surrounding area has been seeded, and crews were installing erosion fabric in the open channel emergency spillway. Mr. Freuer stated that the certification for the pond would be submitted to the Reclamation Division in the near future. Photos were taken.

Zero-lift topsoil material that had been salvaged from a drainage in Section 25 has been respread on portions of several pond embankments. The salvage and respread of the topsoil is to facilitate vegetation growth on the pond embankments and on an area near the fuel farm.

## 170728

### SURFACE WATER MANAGEMENT

The mine area received a total of about 0.25 to 0.50 inches of precipitation from rain showers the day prior to the inspection. The mine area remains extremely dry and the recent rain wet only the top 2 inches of soil. **The water levels in sedimentation ponds remain well below permanent pool elevation (PPE) and no ponds were being discharged** off-permit on the day of the inspection. Recently constructed pond P-24-04 had been seeded and mulched and erosion control blanket had been installed in the emergency spillway.

The erosion and sediment controls along the north haul road were briefly reviewed. Vegetation is beginning to establish along the corridor. The inter-seeding in the road ditches and side slopes with a modified seed mix was complete. At haul road discharge point 6 (subsoil stockpile SS-26) the repairs and removal of the small amount of sediment at the outlet had not yet started. Erosion protection has been installed on the recently repaired areas on the upstream side of haul road discharge point 7 (subsoil stockpile SS-24). Mulch had been added recently to portions of the road corridor where vegetation has not established, particularly the south facing slopes in Sections 9 and 10.

## 170808

### SURFACE WATER MANAGEMENT

Even though Coyote Creek Mine received slightly under 2 inches of rain within the last week or so, minimal runoff was generated from the precipitation that was received and water levels in sedimentation ponds remain low. The following is a short list of ponds viewed with approximate water levels in relation to the permanent pool elevation (PPE).

<b>Pond</b>	<b>Water Level</b>
P31-02	5 feet below PPE
P06-03	3 feet below PPE

P24-02	4 feet below PPE
P24-01	6 feet below PPE
P30-01	4 feet below PPE

Construction of sediment pond P24-04 has been complete for a couple of weeks. The embankment and side slopes have been seeded and mulched and the emergency spillway has been protected with erosion control blanket. The PPE marker has been placed at the same elevation as the pond-dewatering pipe. Water level of the pond was approximately 8-10 feet below the permanent pool elevation. The impoundment certification form was submitted to the Reclamation Division on July 18, 2017.

A couple of containment sumps were constructed last year along the north end of active operations in the SE1/4 of Section 24 in an effort to protect the wooded draw leading to sediment pond P24-02. During permit review and at the request of the Reclamation Division, Coyote Creek Mine agreed to not remove any SPGM or trees or otherwise disturb the wooded draw. The stripped areas south of the headwater drainages to pond P24-02 had also been reinforced with silt fences behind the sumps. A thunderstorm during the past week had provided enough water to overwhelm the furthest east sump and a small amount of sediment-laden water had breached the silt fence, resulting in basically a thin crust of sediment as can be viewed in **Figure 1**. Coyote Creek Mine was unaware of the minor breach prior to today and Mr. Barth said that clean-up operations would commence immediately, likely with wheelbarrows. If operationally feasible within the tight working quarters of the sump locations, Coyote Creek should make an additional effort to increase the size of the sumps and reinforce the existing silt fence, possibly with two rows of silt fence.

**Figure 1.**  
**Drainage above sediment pond P24-02, view is to the northwest**



## REVEGETATION

Area cropland, pastures and hayland, including the lowland alfalfa field in the NE1/4 of Section 31, are noticeably affected by the continuing drought that is being experienced in this area of the state. Recent precipitation from this past week will be helpful, particularly for pastures; however, even the recent rains have not changed the extreme drought condition advisory in this area of Mercer County.

## 170822

### SURFACE WATER MANAGEMENT

The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. **None of the ponds were being discharged.**

Pond ID	Water Elevation	Comment
P30-01	5' Below PPE	
P24-01	4' Below PPE	
P24-02	2' Below PPE	
P30-03	At PPE	
P30-04	3' Above PPE	
<b>P31-01</b>	6" Below PPE	
P31-02	3' Below PPE	
P10-02	Dry	
P10-01	8' Below PPE	
P30-02	At PPE	
P6-03	3' Below PPE	
P19-01	5' Below PPE	
P24-04	5' Below PPE	

Mr. Freuer reported that Coyote Creek was waiting on the results of water samples from Pond P30-04 before dewatering of the pond could begin.

A scraper was cleaning sediment from a diversion that drains to Pond P6-03 located in the SW<sup>1</sup>/<sub>4</sub> of Section 31.

## 170907

### SURFACE WATER MANAGEMENT

**No sediment ponds were being discharged** off-permit at the time of inspection. The Reclamation Division's August 22, 2017 inspection report recorded water elevations of thirteen of the permit sediment ponds and all were dry, at permanent pool elevation, or below PPE. Consequently, only a couple of pond water levels were checked today. Sediment pond P30-01 was approximately 6-7 feet below PPE, P10-01 was 8 feet below PPE, P10-02 was dry, P24-04 was 6 feet below PPE, **P31-01 was 1-1.5 feet below PPE**, and P06-03 was 3 feet below PPE.

The eastern-most sump located in the SE<sup>1</sup>/<sub>4</sub> of Section 24 has been cleaned out and enlarged. Ms. Unruh indicated some local grading was conducted to reduce the watershed size of the east sump and transfer some of that watershed acreage to the middle sump. A pipe has been placed along the safety berm located above the eastern sump and the pipe outfall is located directly above the sump.

## 170914

### SURFACE WATER MANAGEMENT

Dry conditions exist at the Coyote Creek mine. The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. **None of the ponds were being discharged.**

Pond ID	Water Elevation	Comment
P30-01	6' below PPE	
P30-03	2' below PPE	
<b>P31-01</b>	3' below PPE	
P31-02	6' below PPE	

P10-02	Dry	
P10-01	10' below PPE	
P30-02	½' below PPE	
P6-03	4' below PPE	
P19-01	6' below PPE	
P30-04	2' above PPE	
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P24-01	6' below PPE	
P24-02	3' below PPE	

A culvert has been installed at the end of diversion D06-2 in the NW¼ of Section 6. The culvert allows access across the diversion and was approved with Revision No. 6 to Permit NACC-1302.

The sumps located north of the pits in Section 24 were briefly inspected. The sumps were dry and the silt fence at the outlets of the sumps appeared to be in good condition.

## **170928**

### **SURFACE WATER MANAGEMENT**

The water levels in sedimentation ponds were mostly below permanent pool elevation (PPE) throughout the permit area. The mine area did receive about 0.50 to 0.75 inches of rain from events occurring on September 22<sup>nd</sup> and 23<sup>rd</sup> (NOAA, RFC estimates). Following is a list of the ponds viewed and approximate water levels and other information.

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-01	5 feet below PPE	
<b>P31-01</b>	<b>1.5 feet above PPE</b>	Water source for dust suppression
P31-02	7 feet below PPE	Recent erosion repairs at inlet. Settling/slumping at west end of pool area. Vegetative cover establishing on embankment.
P06-03	3 feet below PPE	
P30-03	1.5 feet below PPE	
<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P30-04	4 feet below PPE	
P19-01	Nearly dry	
P24-01	3 feet below PPE	
P24-02	2 feet below PPE	The wooded portion of the drainageway from the sumps to the pond area did not appear to be affected by recent rains.
P24-04	8 feet below PPE	
P30-02	½ foot above PPE	
P10-01	8 feet below PPE	
P10-02	Dry	

The erosion and sediment controls along the north haul road were briefly viewed. Vegetation is beginning to establish along the corridor. The precipitation received since August has promoted plant growth to improve erosion control. In several areas small grass plants were noted in the rows of the inter-seeding completed earlier this year along the road corridor.

## 171012

### SURFACE WATER MANAGEMENT

No discharges were occurring at the time of this inspection. The sediment ponds and sumps listed in the table below were briefly inspected and the water level in relation to the permanent pool elevation (PPE) marker was noted.

<b>Water Management Feature</b>	<b>Comment(s)</b>
P30-01	Water level about 4 feet below PPE
<b>P31-01</b>	Water level slightly above PPE
P06-03	Water at least 2 feet below PPE
<b>Water Management Feature</b>	<b>Comment(s)</b>
P31-02	Water level about 4 feet below PPE
P24-04	Water level about 6 feet below PPE
P24-03	Dry. In the process of being constructed
P24-02	Water level about 2 feet below PPE
P24-01	Water level about 4 feet below PPE
P19-01	Water level about 6 feet below PPE
P30-02	Water level slightly above PPE
P10-02	Essentially dry
P10-01	Water over 8 feet below PPE

The sumps at the disturbance boundary above sediment pond P24-02 were holding some water. Wire mesh has been installed adjacent to the silt fence below one of these sumps to help keep the silt fence upright and allow it to function as intended. Trees have been removed in a secondary drainage west of sediment pond P24-02 where surface disturbance is planned.

A small tree pile was observed in the pool area of sediment pond P24-03. The embankment of this pond has been constructed but the pool area has not been excavated. A silt fence was in place below the embankment and it appeared topsoil has been stripped from most of the watershed immediately above the pool area of the pond.

Vegetation is becoming established on the embankment and side slopes of recently constructed sediment pond P24-04 and on the embankments and side slopes of other ponds such as P19-02 and P23-02. The veneer of zero lift soil that was spread on the embankments and side slopes of some of the sediment ponds appears to have helped vegetation establishment, but not in all instances, such as pond P24-01.

Ms. Unruh indicated that smaller rock had been placed in the gaps of the riprap along Coyote Creek adjacent to the box culvert in the access road in Section 30. This action was recommended by the Reclamation Division during an inspection last June.

Vegetation is becoming established in the haul road ditches and on the side slopes, although there are a few areas where vegetation has not established. Ms. Unruh noted that vegetation was generally not establishing very well where matting was placed in the road ditches. Portions of the haul road ditches south of County Road 12 in the NW1/4 of Section 19 were disked and reseeded. A few patches of Russian thistle were observed in the haul road ditches and CCMC was advised to rotary mow these sites to keep these thistles from blowing off-permit.

## 171018

### SURFACE WATER MANAGEMENT

No sediment ponds were discharging off-permit at the time of inspection. Water from sediment pond P31-01 was being pumped to the water truck loadout and used for dust suppression of haulroads. Water levels of sediment ponds remain low at the mine as can be viewed in the table below.

<b>Sediment Pond</b>	<b>Water Level and Comments</b>
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P30-01	5 feet below PPE (permanent pool elevation)
P06-03	4 feet below PPE
P10-01	8 feet below PPE
P10-02	Dry
<b>P31-01</b>	At PPE

A couple of sumps along the north haulroad in the S1/2 of Sections 8 and 9 were noted as needing to be cleaned out and Mr. Freuer stated that project is already on their list of things to do in the near future.

Sediment pond P24-03 located predominantly in the NW1/4SE1/4 of Section 24 has been constructed and only a few clean-up items remain. A 5-foot deep key was cut into the base of the embankment, which is constructed of subsoil and will be inventoried as subsoil stockpile SS-44. A pile of felled trees need to be removed from the pond basin and the permanent pool marker needs to be surveyed and set. The containment area of the pond has not been incised and consists of in-situ materials and subsoil that will be waived, a large portion of which consists of a scoria knob that will remain in the basin. The outfall of the pond is located at the headwater of a tributary to Coyote Creek and consists of a rock-filled plunge pool with a silt fence on the downstream side of the plunge pool. The pond was dry and no concerns were noted with waiving of the small volume of subsoil within the pond basin, most of which is 0-lift. All available topsoil had been removed from the slopes, basin and disturbed areas associated with the pond construction and CCMC will submit a formal request for topsoil removal approval and subsoil removal waiver for this area. CCMC was given approval to remove the topsoil monuments and salvage the material as subsoil.

### REVEGETATION

An approximate 1/4-mile length of side slopes along the west haulroad ditch in the NW1/4 of Section 19 was recently reseeded, mulched and the mulch was mechanically anchored.

## **171024**

### SURFACE WATER MANAGEMENT

The ponds listed in the table below were briefly inspected and the water level in relation to permanent pool elevation (PPE) was noted. **No discharges** were occurring at the time of the inspection but sediment pond P31-02 had been recently discharged.

<b>Sediment Pond</b>	<b>Comment(s)</b>
P30-01	Water about 5 feet below PPE
<b>P31-01</b>	Water about 1 foot above PPE
P06-03	Water about 2 feet below PPE
P31-02	Water was about 10 feet below PPE. Recently discharged.
P10-02	Dry

Three new sumps have been installed along the topsoil stripping edge located a few hundred yards west of sediment pond P24-02. Topsoil was being stripped from the watershed above these sumps. Silt fences have been installed along the stripping edge below each sump. These sumps appear to have been constructed with a backhoe and were approximately 6 to 8 feet deep and 12 to 15 feet in diameter. Additional sumps could be constructed in the drainages above these sumps after all available topsoil has been salvaged from the watersheds. Approval to waive the subsoil from this 6.2-acre watershed was granted via email October 20, 2017.

Coyote Creek Mining Company (CCMC) recently inspected all of the discharge points along the haulroad located north of County Road 12 and some silt fences will be repaired.

Sediment pond P24-03 was recently constructed and field engineered diversions are in place to ensure runoff from the adjacent affected areas will enter the pond. A portion of the watershed southeast of the pool area of the pond has been mulched. It was not clear if this area was mulched to reduce susceptibility to wind erosion or for other reasons.

The east haul road ditch and associated side slopes north of Coyote Creek in Section 19 were recently mulched.

## 171101

### SURFACE WATER MANAGEMENT

The water levels in sedimentation ponds were mostly below permanent pool elevation (PPE) throughout the permit area. The mine area has not received runoff producing rainfall during the past few weeks. The approximate water level was noted at the following ponds: P30-01 was 5 feet below PPE, P31-01 was at PPE, P06-03 was 2 feet below PPE and P30-02 was at PPE.

The erosion and sediment controls along the north haul road were briefly reviewed. A contractor was scheduled to be on-site during the next week to make adjustments to erosion and sediment controls along the haul road in preparation for winter.

## 171114- am

### SURFACE WATER MANAGEMENT

No sedimentation ponds were discharging at the time of inspection. All sediment ponds observed as well as Coyote Creek and Brush Creek were iced-over at the time of inspection. The water levels in sedimentation ponds were at or below permanent pool elevation (PPE) throughout the permit area. Following is a list of some of the ponds viewed with approximate water levels.

<b>Sedimentation Pond</b>	<b>Water Level</b>
P30-01	5 feet below PPE
P31-01	At PPE
P30-02	3 feet below PPE
P30-03	4 feet below PPE
P10-01	8 feet below PPE
P10-02	Dry
P24-01	8 feet below PPE
P24-02	4 feet below PPE

Sumps located along the north haulroad in Sections 9 and 10 have been cleaned and appeared to be in good shape going into the winter months.

## 171129

### SURFACE WATER MANAGEMENT

Dry conditions persist at the Coyote Creek mine and there was no snow-cover. The following ponds were viewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. No ponds were being discharged.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' below PPE	
P31-01	At PPE	
P31-02	15' below PPE	
P10-02	Nearly Dry	
P10-01	Nearly Dry	
P30-02	Nearly Dry	
P6-03	Nearly Dry	
P30-04	2' above PPE	
P24-03	Dry	

A culvert installed in September at the end of diversion D06-2 in the NW¼ of Section 6 was viewed. Subsoil has been respread in the area adjacent to the outlet and the culvert outlet has been ripped. The culvert was approved with

Revision No. 6 to Permit NACC-1302. Waived subsoil (not salvaged or stockpiled) had been respread on the sideslopes of pond P6-03.

The sumps located at the north end of the pits in Section 24 were briefly inspected. Several new sumps have been dug and silt fence has been installed on the downstream side of the sumps. The sumps were dry at the time of the inspection, and the silt fence at the outlets of the older sumps located to the east appeared to be in good condition.

#### MISCELLANEOUS

The portion of haulroad ditches beginning in Section 19 and continuing to the Coal Handling Facility in Section 10 were mulched, crimped, and seeded

### 171205

#### SURFACE WATER MANAGEMENT

The mine area has not received runoff producing precipitation during the past few weeks. The water level in pond P31-01 was at to slightly below permanent pool elevation (PPE). The water level (frozen) was well below PPE at the following ponds: P30-01, P06-03, P24-03, P24-04, P19-01, P30-02 and P10-02.

The erosion and sediment controls along the north haul road were briefly viewed. Some work had been done recently at haul road discharge point six located at the base of subsoil fill stockpile SS-26 in the SE1/4 of Section 9. The side slopes south of the multi-plate structure in the NW1/4 of Section 19 had been reseeded and mulched.

### 171219-Am

#### SURFACE WATER MANAGEMENT

Dry conditions exist at the Coyote Creek mine and there is no snow-cover. The following ponds were viewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. No ponds were being discharged.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	6' below PPE	
P31-01	At PPE	
P10-02	Nearly Dry	
P10-01	8' below PPE or Nearly Dry	
P30-02	3' below PPE	
P6-03	2' below PPE	
P30-04	10' below PPE	
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P24-01	10' below PPE	
P24-02	3' below PPE	
P24-03	Dry	
P24-04	5' below PPE	
P19-01	10' below PPE	

The sumps at the northeast end of the pits in Section 24 were briefly inspected. The sump was dry and the silt fence appeared to be in good condition.



## 2018

### 180109

#### SURFACE WATER MANAGEMENT

No sediment ponds were discharging at the time of this inspection. The ponds listed in the table below were briefly observed and their water (ice) levels were estimated in relation to the permanent pool elevation (PPE).

Water Management Feature	Comment(s)
P30-01	5 to 6 feet below PPE.
P31-01	At PPE. Riprap in place on inlet.
P06-03	Several feet below PPE.
P24-03	Dry. Embankment mulched, diversion in place to transport runoff from affected areas to the pond.
P30-02	3 feet below PPE.
P10-02	Dry
P10-01	6 feet below PPE

Runoff from an affected area northeast of sediment pond P10-01 might flow over undisturbed land prior to entering the pond. The soil stripping edge is about the same elevation as the undisturbed land in a low area. Ms. Unruh was advised to look at this area closely to ensure the stripping edge is adequate to route runoff to the pond as intended.

Deposition was observed in front of a silt fence on the south side of the haul road immediately east of Brush Creek in Section 10. The material needs to be removed to ensure the silt fence functions as intended. A sump may be necessary adjacent to the silt fence.

SPGM was recently removed from the drainage west of sediment pond P06-03. The bottom of this drainage blends appropriately with the adjacent undisturbed land so it does not appear head cutting will occur when water flows through the drainage. The north slope of sediment pond P06-03 has been covered with a veneer of waived subsoil to aid vegetation establishment.

An initial box cut pit was excavated by the dragline in the NW1/4SE1/4 of Section 24. The spoil was placed on the west side of the pit so runoff will flow back to the pit or westward to sediment pond P24-03. The pit reduces the size of the watershed of the sumps in the secondary drainages at the disturbance boundary east of the pit.

The ditches of the relocated farm access road in the SE1/4 of Section 36 appear to be designed to function as diversions for water management.

#### OFF-SITE REVIEW

Construction to relocate County Road 12 between Sections 29 and 30 affected land in Section 30 of Permit NACC-1302. The construction of this road was not a mining related activity and the work was not performed by, or for, the Coyote Creek Mine. Some of the slopes are quite steep.

The surface of the haul road, ramps and facilities access road appear to be in good wintertime condition. Vegetation is becoming established in the ditches of the haul and access roads. A portion of the haul road ditches south of the County Road 12 underpass was heavily mulched.

## 1180124

### SURFACE WATER MANAGEMENT

Scrapers assisted by a motor grader were shaping a drainageway along the south SPGM removal edge in the NW1/4 of Section 6. The SPGM, including deep lift material, was removed from this area late last year. The area also contained a segment of the pre-mine meandering drainage channel located upstream of pond P06-03.

### ROADS

The haul road had been treated with a calcium chloride solution to reduce fugitive dust emissions. There was little to no visible dust emissions from vehicle traffic on the road during the inspection.

The box culvert crossings over Coyote Creek in Sections 19 and 30 were inspected. No issues were noted at the crossing in Section 19. At the equipment access culvert crossing in Section 30 we noted small areas of rill or gully erosion at the corners of the box culverts just above the rock and cable concrete aprons on both the upstream and downstream sides of the road crossing. The erosion appeared to be related to the transition in slope and materials rather than sustained water flows from a drainage conveyance such as a ditch or pipe outlet. We agreed the repair and adjustment of erosion controls at these transition areas should be made at a time when ground conditions are not frozen and reasonably dry to minimize damage to vegetation on the surrounding area.

## 180207

### SURFACE WATER MANAGEMENT

Dry conditions exist at the Coyote Creek mine and there is little to no snow-cover. The following ponds were reviewed and the water levels noted in relation to permanent pool elevation (PPE) or spillway elevation. None of the ponds were being discharged.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' below PPE	
P31-01	At PPE	
P10-02	Nearly Dry	
P10-01	8' below PPE or Nearly Dry	
P30-02	3' below PPE	
P6-03	2' below PPE	
P19-01	8' below PPE	

One of the sumps at the northeast end of the pits in Section 24 was briefly inspected. The sump was dry and the silt fence appeared to be in good condition.

## 180222

### SURFACE WATER MANAGEMENT

There has been limited surface water run-off during the past few weeks and no ponds were being discharged. The sediment ponds listed in the table below were briefly observed. The water (ice) elevation was estimated in relation to the permanent pool elevation (PPE).

<b>Sediment Pond</b>	<b>Comment(s)</b>
P30-01	Water elevation 3 to 4 feet below PPE.
P06-03	Water elevation about 1.5 feet below PPE.
P-30-02	Water elevation 2 feet below PPE.
P10-02	Essentially dry.
<b>P31-01</b>	Water elevation at PPE.

An access road around the north end of the dragline pit in the SE1/4 of Section 24 has reduced the size of the watersheds above two sumps located adjacent the woody draw in Section 24. Run-off from a portion of the access road is being routed to the east sump.

A drainage way has been created south of the initial pit in the NW1/4 of Section 6 to allow run-off from undisturbed lands to the west to pass around the pit. Run-off from this drainage way enters sediment pond P6-03.

### **180308**

No sediment ponds were being discharged at the time of the inspection. There has been very little surface water runoff during the past few months and there is very little groundwater associated with coal removal at this mine. The sediment ponds listed in the table below were briefly inspected and their water (ice) levels were estimated in relation to permanent pool elevation (PPE).

<b>Water Management Feature</b>	<b>Comment(s)</b>
Pond P06-03	Water about 1.5 feet below PPE.
Pond P24-03	Dry
Pond P24-04	Essentially dry, snow covered pool area 5 to 6 feet below PPE.
<b>Pond P31-01</b>	Snow covered; ice at or slightly above PPE.

Coyote Creek Mining Company LLC has properly transitioned the creek bed at the disturbance boundary west of sediment pond P6-03 as shown in Figure 1 below.

### **180322**

#### **SURFACE WATER MANAGEMENT**

The weather has been mild recently and the remaining snow is mainly in shaded areas with trees. Runoff has occurred and water levels in Coyote Creek and Brush Creek have risen and both creeks were flowing. No ponds were being discharged at the time of the inspection, but some sumps were being pumped to ponds and the 351 excavator was digging a new sump in the NW1/4 of Section 36 to control surface water runoff. The following ponds were briefly viewed and their water levels were noted in relation to permanent pool elevation (PPE).

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	4' below PPE	90% frozen
<b>P31-01</b>	2' above PPE	Frozen
P10-02	Low	1' of water in basin
P10-01	4' below PPE	
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-02	At PPE	
P06-03	1' above PPE	

As noted in previous inspections, the topsoil edge near pond P10-01 still needs to be cut to control surface water runoff. The topsoil edge does not appear adequate to prevent coal stockpile runoff from flowing onto undisturbed land.

Several areas along the haul road in Sections 8, 9, and 10 need maintenance. An area along the north side of the haul road in Section 9 had ponded water and does not appear to be draining correctly. Sediment needs to be removed from the sumps and silt fences repaired at several locations along the haul road in Sections 8, 9, and 10.

**180403**

**SURFACE WATER MANAGEMENT**

Coyote Creek, Brush Creek, all sediment ponds and sumps in the permit remain frozen. There were no Coyote Creek Mining Company sedimentation ponds discharging off-permit at the time of inspection and no natural surface water runoff from snowmelt was documented. However, the large drainage passing underneath the north haulroad in the SW1/4 of Section 10 was flowing a significant volume of water, which was attributed to active discharge from Dakota Westmoreland Company’s (DWC) Permit KR5B-8603 sediment ponds in the W1/2 of Section 15 on tributaries to the main drainage running beneath Coyote Creek’s haulroad in the SW1/4 of Section 10. A portable water pump was staged on the embankment of one of the DWC ponds. The discharge rate passing through a culvert underneath the haulroad was estimated at about 500 GPM.

Water elevations in relation to the permanent pool elevation (PPE) of the following sedimentation ponds were noted during the inspection.

<b>Sediment pond</b>	<b>Water Level</b>
P30-01	1.5 feet below PPE
P30-02	1 foot above PPE
P30-03	At PPE
P10-01	2 feet below PPE
P10-02	Essentially dry, approx. 6 inches of ice in basin
P06-03	3 feet above PPE
<b>P31-01</b>	4 feet above PPE

**180419**

No sediment ponds were being discharged at the time of the inspection. The following ponds were briefly viewed and their water levels were noted in relation to permanent pool elevation (PPE).

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	3’ below PPE	
P30-03	1’ below PPE	
P30-02	1’ above PPE	Geese utilizing pond
P10-02	Dry	
P10-01	2’ below PPE	Ducks utilizing pond
P19-01	6’ below PPE	

P24-01	6' below PPE	
P24-02	2' below PPE	
P30-04	2' above PPE	
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P06-03	3' above PPE	
P31-02	11' below PPE	
P31-01	4' above PPE	

## REVEGETATION

Very little vegetation established on the south slope of a segment of haul road designated as subsoil stockpile SS-24 in the SW<sup>1</sup>/<sub>4</sub> of Section 9. Some erosion has occurred and it appears some of the vegetation washed out. The slope needs to be re-seeded and stabilized to prevent subsoil loss.

## 180508

### SURFACE WATER MANAGEMENT

Sediment ponds P06-03, P30-02 and P31-01 were being discharged with pumps and polypipe at a rate estimated to be about 1,000 gallons per minute (gpm). The discharges from sediment ponds P30-02 and P31-01 looked clean and clear. The discharge from sediment pond P06-03 was clean but the water looked stained. Sediment pond P06-03 was being discharged onto riprap in the ponds emergency spillway. Fabric under the riprap was providing additional protection from erosion. Sediment pond P31-01 was being discharged on riprap adjacent to Coyote Creek on the south side of the access road in the SW<sup>1</sup>/<sub>4</sub> of Section 30. This riprap is associated with the box culverts under the access road. Sediment pond P30-02 was being discharged on riprap adjacent to Coyote Creek on the east side of the haul road in the SW<sup>1</sup>/<sub>4</sub> of Section 19. This riprap is associated with the haulroad box culvert and runoff from the east haulroad ditch enters the creek at this location. The water in Coyote Creek looked clean and clear, except for areas adjacent to the haul road ditches on the south side of the box culverts in the SW<sup>1</sup>/<sub>4</sub> of Section 19 where the water looked to be carrying silt. It was not clear why the water looked dirty at this location, but after the inspection CCMC was asked to make sure erosion was not occurring under the riprap between the discharge point of P30-02 and the creek channel. The sediment ponds listed in the table below were viewed during this inspection and their water elevations were noted relative to Permanent Pool Elevation (PPE).

<b>Sediment Pond</b>	<b>Comment(s)</b>
P30-01	Water 4 to 5 feet below PPE.
P31-01	Discharging. Water about 2 feet above PPE.
P31-02	Water about 7 feet below PPE. Embankment becoming established with vegetation.
P06-03	Discharging. Water about 2 feet above PPE.
P30-02	Discharging. Water about 1.5 feet below PPE.
P10-02	Dry. Embankment established with vegetation.
P30-03	Water about 1.5 feet below PPE.

A silt fence located along the disturbance boundary on the west side of the haulroad in the SW<sup>1</sup>/<sub>4</sub> of Section 19 was partially down and needs to be repaired. The silt fence along the north side of the haulroad in the SW<sup>1</sup>/<sub>4</sub> of Section 10 was partially down and the silt fence could be removed at the

locations not associated with a discharge point. Runoff from the haul road in this area travels eastward in the road ditch until it enters Brush Creek. Sediment needs to be removed from a sump located in the south haulroad ditch on the east side of Brush Creek.

## 180510- NA

## 180522

### SURFACE WATER MANAGEMENT

Ms. Unruh reported that rain gauges at Coyote Creek Mine recorded an average of 0.17 inches of rain last week. Additional rain is expected throughout most of North Dakota this week. Sedimentation pond P06-03 was discharging to a tributary of Coyote Creek at 800 GPM. The pond discharge has been ongoing for two weeks. The discharge water was stained, but clear and the outfall is located at the southeast corner of the pond terminating in a rock-lined channel. The water level of sedimentation pond P06-03 was at the permanent pool elevation (PPE).

Sediment pond P10-02 located south of the coal handling facility in the SE1/4 of Section 10 was dry and nearby pond P10-01 that is located on the west side of the coal handling facility was not inspected, but Mr. Freuer stated that recent quarterly pond inspections indicated the water level of the pond was 3 feet below PPE. The water in sediment pond P31-01 was approximately 6 inches below the PPE.

## 180606

Rain gauge data at the mine recorded precipitation amounts from late last week that varied between 2.8-3.6 inches, depending on the specific location at the mine. In general, no major issues or concerns were noted at the mine as a result of the significant rainfall event(s) experienced last week. The precipitation amount came very close to meeting and/or exceeding the 10 year/24 hour (design) storm event of 3.12 inches in 24 hours for this area of Mercer County. The precipitation received at the mine was reportedly spaced over an approximate 26-hour period. No sediment ponds had overflowed and the surface water management facilities and BMP's in place at the mine had functioned as intended. Sediment came close to over-topping silt fences in a couple of locations, such as the east sump located in the SE1/4 of Section 24 on the headwater tributary to sediment pond P24-02, and the sediment buildup at the silt fence in that location had already been removed by mine employees with the use of shovels and wheelbarrows.

There were a half-dozen or so areas along the north haulroad, particularly in the south ditch, that were holding several inches of standing water. Constructed sumps along both sides of the north haulroad were in good shape and had appeared to function as intended. Some stretches of silt fence requiring maintenance were noted in the south road ditch of the north haulroad west of pond P10-02 in the SE1/4 of Section 10. Ms. Unruh stated that silt fence maintenance work at that location was already on their list of things to do once the area dries up enough for equipment to access the location.

The water level of several ponds was inspected in relation to the Permanent Pool Elevation and that data and other relevant information is provided in the table below:

Sediment Pond	Water Level	Comment(s)
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P10-01	6 feet below PPE	
P10-02	Significantly below PPE	6 inches of water in the pond basin.
P30-02	3 feet above PPE	Pre-discharge sample indicated additional settling was required prior to discharge.
P30-03	1 foot below PPE	24-hour discharge event was terminated yesterday. Some sediment deposition was noted in the stripped drain of west pond inlet.
P06-03	3 feet above PPE	Discharging 800 GPM at 1500 RPM. Discharge water was stained but clear. Creflex at west inlet requires some maintenance work.
P31-01	PPE marker was not visible	Discharging at 800 GPM and the water was clear

The tributary drainage to Coyote Creek that is located downstream of sediment pond P06-03 was inspected. The drainage confluences with Coyote Creek in the SE1/4 of Section 31 and several hundred yards of the drainage downstream of the pond discharge outfall was walked while water from the pond was being pumped into the drainage. No issues or concerns were noted with the stream channel and there were no indications of erosion or sediment deposition anywhere along the inspected route.

The buried water line running in an east-west direction and located in the SW1/4SW1/4 of Section 31 (west of pond P06-03) has settled in several areas along the water line route. At least one observed area had settled approximately 1-foot, likely resulting from the recent precipitation event of this past week. Settling repair work will be required as the subsidence features that have developed could cause a leg injury to cattle, particularly to calves.

Rock riprap that was located on the east side of the haulroad on the south side of Coyote Creek in the SW1/4 of Section 19 (east side of haulroad) has been removed and replaced with Creflex concrete matting. The riprap located across the haulroad (west side) along the south side of Coyote Creek on the west side of the haulroad was undergoing the same type of maintenance work. Ms. Unruh stated that the large riprap used in these areas did not hold up to the peak flow and runoff volume of surface water flows experienced during significant precipitation events. The existing riprap had been removed from the outfall area to Coyote Creek and new Creflex was on location and ready for placement.

### REVEGETATION

Previous revegetation efforts along the north haulroad are beginning to show signs of success and good establishment of grasses. The north-facing slopes (south side of the haulroad) are revegetating noticeably better than south facing slopes on the north side of the haulroad. Ms. Unruh indicated that a couple of select areas will be closely monitored for vegetation establishment this summer and will be respread with additional subsoil or transitional material if deemed necessary and/or reseeded if needed.

**180620**- flyover

**180627**

### SURFACE WATER MANAGEMENT

Sediment pond P30-03 is located on the east side of the main haul road in the NE1/4SW1/4 of Section 30. The pond receives discharge water from sediment pond P30-04 located on the west side of the haul road and surface water runoff from the east side of the haul road that was constructed from overburden. Some

sediment has accumulated at the inlet into P30-03, but the stripping edge and other BMP's appear to be functioning as intended and no sediment was observed on the adjacent undisturbed land. Figure 1. The source of some of the sediment at the inlet to pond P30-03 appears to be two gullies that have formed in the east haul road ditch drains that slope to the inlet of the pond. Figures 1 and 2. The gully on the south side of the inlet is significantly smaller than the gully on the north side. The deepest portion of the gully on the north side of the pond inlet is approximately 18 to 24 inches deep and 12 inches wide. These gullies need to be repaired and stabilized.

Sediment is nearly to the top of the silt fence located south of the haul road and adjacent to Brush Creek in the SE¼ of Section 10. The sediment must be cleaned out before the next major rain event.

A long reach excavator was cleaning sediment out of the ditches of Ramp 1 in the NW¼ of Section 30.

The sumps at the northeast end of the pits in the SW¼ of Section 24 were briefly inspected. The sumps were holding some water and a large sediment load, but still had some capacity. Figures 3, 4 and 5. The sumps need to be monitored and cleaned regularly to ensure the sumps function as intended during major rain events.

The following ponds were briefly inspected and their water levels were noted in relation to permanent pool elevation (PPE).

Pond ID	Water Elevation	Comment
P30-01	4' below PPE	
P31-01	At PPE	Discharging approximately 800 GPM; discharge appeared stained, but clear and free of suspended solids
P30-03	1' above PPE	
P30-02	1' above PPE	
P10-02	Nearly Dry	Less than 6" of water in basin
P10-01	8' below PPE	
P30-04	5' above PPE	
P06-03	6" below PPE	
P24-01	4' below PPE	
P24-02	At PPE	

## REVEGETATION

The haul road ditch drains at the Coyote Creek crossing in SW¼ of Section 19 were recently improved with the installation of Creflex concrete matting and grass is starting to emerge between the blocks.

## 180710

### SURFACE WATER MANAGEMENT

No sedimentation ponds were discharging off-permit during the inspection. The following ponds were briefly inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation.

Pond ID	Water Elevation	Comment
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P30-01	3' below PPE	
P31-01	4.5' above PPE	
P30-03	1.5' above PPE	
P30-02	3' below spill	Will be treated then discharged
P10-02	Nearly Dry	Less than 1' of water in basin
P10-01	6' below PPE	Coal deposition at inlet
P06-03	2' above PPE	

Pond P30-02 will be treated with a flocculant and discharged when suspended solids are within the acceptable range.

The Reclamation-2 crew has been cleaning and repairing silt fences across the mine site. They were observed working on a silt fence north of the haul road on the east side of Brush Creek in the SE¼ of Section 10.

It was evident that a lot of water recently flowed through the large drainageway passing underneath the north haul road in the SW1/4 of Section 10. See Figure 1 for location. The grass in the drainageway was laid over where water had flowed and the ponded water that remained on the north side of the haul road at the culvert outlet and on the south side of the haul road at the culvert inlet appeared dirty. Some sediment deposition was observed in the haul road ditches near the culvert inlet and outlet within the permit area. Sediment deposition had also occurred in portions of the drainageway upstream (south of haul road) and downstream (north of haul road) that are outside the permit area. The deposition in the ditches did not appear to be coming from the haul road slopes, but from further up the watershed and outside the permit area. The haul road slopes appeared to be fairly well vegetated. No erosional rilling was observed on the haul road slopes and silt fences were in place at the permit boundary to prevent sediment deposition off-permit. Ms. Unruh stated that Coyote Creek staff had observed 3000 gallons per minute flowing through the drainage and culvert during the last 1-inch rainfall event on July 3<sup>rd</sup>. Staff has also observed that more water flows through this culvert than any of the other culverts in the north haul road. This may be due to active discharges from Dakota Westmoreland Company's (DWC) Permit KRSB-8603 sediment ponds in the W1/2 of Section 15 on tributaries to the main drainage running beneath Coyote Creek's haul road in the SW1/4 of Section 10.

## 180725

### SURFACE WATER MANAGEMENT

Sedimentation pond P24-02 was discharging off-site at approximately 450 gpm and the discharge from the pond appeared clear. The National Weather Service graphic precipitation estimates for the 7-days prior to the inspection ranged from 1.5 to 2.5 inches in the vicinity of the mine (NWS website). The following ponds were viewed and their approximate water levels were noted in relation to Permanent Pool Elevation (PPE).

Pond	Water Level	Comments
P30-01	4 feet below PPE	
P30-03	2 foot above PPE	
P30-02	5 feet above PPE	

P10-01	8 feet below PPE	Silt fence being installed below work area for diversion D10-01.
P10-02	8 feet below PPE	
<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P24-02	At PPE	Discharging at approximately 450gpm, water appeared clear.
P24-01	4 feet below PPE	
P19-01	2 feet below PPE	
P24-04	5 feet below PPE	
P24-03	4 feet below PPE	
P06-03	0.5 feet below PPE	
P31-02	1 foot above PPE	
<b>P31-01</b>	6 feet above PPE	Watershed partly cut-off by mine pits, dust suppression water source.

The erosion and sediment controls along the haul road north of the Coyote Creek crossing in Section 19 were briefly viewed. The combination of established plant cover and other erosion and sediment controls along the haul road appeared mostly effective in controlling erosion from recent rain events. However, sediment clean-out and other adjustments are now needed at several locations. Coyote Creek crews had started clean-out and silt fence repairs near the Brush Creek box culvert area. Sediment removal is needed at silt fences and sumps in the following locations: the south side of the haul road at the tributary crossing in the SW1/4 of Section 10, the western-most of the three culverts in the SE1/4 of Section 9, the culvert outlet area in the SW1/4SW1/4 of Section 8, and the culvert outlet in the SW1/4NE1/4 of Section 18. In addition, the cable concrete mat installed in the southwest quadrant of the Section 19 culvert crossing had settled and an erosion rill had formed along the east side of the mat. The erosion appeared to have been partly the result of water flowing around the silt fence installed above the erosion control matting. We agreed that the repairs and erosion control installation should be completed as soon as possible at this haul road ditch outlet to Coyote Creek.

**Haul road outlet to Coyote Creek in the SE1/4 of Section 19**



**180808**

**SURFACE WATER MANAGEMENT**

The following sediment ponds were briefly inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' below PPE	
<b>P31-01</b>	5' above PPE	
P10-02	Nearly Dry	
P10-01	8' below PPE	
P30-02	1' above PPE	Needs sediment removed
P6-03	At PPE	
P19-01	8' below PPE	
P31-02	5' below PPE	
P30-03	At PPE	
P24-03	4' below PPE	
P24-04	6' below PPE	
P30-04	10' below PPE	Discharging at 700 GPM

Pond P30-04 was being discharged at approximately 700 gallons per minute. The discharge water being pumped from pond P30-04 was inspected where it outlets below the embankment of Pond P30-03. The water appeared clear.

Pond P30-02 is located on the east side of the haulroad in the NW¼ of Section 30 and a significant amount of sediment has built up in the pond. Mr. Freuer indicated the sediment will be removed in the near future.

The sumps located at the north end of the active mining pits in Section 24 were inspected. It appeared that water laden with sediment had overtopped the silt fence of both sumps during a precipitation event

and sediment deposition occurred on the undisturbed areas downstream from the sumps. See Figures 1 and 2. The two sumps located to the northwest also appeared to have overtopped and there was some sediment deposition. The silt fences on all but the middle sump were in poor condition and all of the sumps were full or nearly full of sediment. Coyote Creek Mining must repair the silt fences and remove the sediment from the sumps. Sediment Pond P24-02 is located downstream of these sumps and serves as the discharge point. The water management plan for this portion of the mine should also be reviewed to determine if portions of surface water runoff can be directed elsewhere or back to the pits.

Silt fences along the downstream side of the haulroad in Sections 8, 9, 10 and 18 were reviewed. Many of the silt fences need repair. Coyote Creek Mining Co. had already repaired several of the fences, and a trackhoe and truck were removing sediment from a ripped area of the haulroad ditch located in the SE $\frac{1}{4}$  of Section 9.



**Figure 1. East sump north of the 2017 pit in the SE $\frac{1}{4}$  of Section 24**



**Figure 1. Sediment on undisturbed area downstream from sump north of the 2017 pit in the SE/14 of Section 24**

## **180810**

### **SURFACE WATER MANAGEMENT**

The purpose of this inspection was to photograph and document the extent of sediment deposition downstream of the five Section 24 sumps located in the SE<sup>1</sup>/<sub>4</sub> of Section 24, at the north end of the 2017 and 2018 pits. These field engineered sumps were constructed to contain sediment above undisturbed woody draws between the active pits and the sediment pond. The water that outflows from all 5 of the sumps is ultimately controlled by sediment pond P24-02 also located in the SE<sup>1</sup>/<sub>4</sub> of Section 24.

The drainages of the two eastern-most sumps were traversed on foot from the outflow point of the sumps to approximately 350 feet upstream of pond P24-02 where the drainages merge together in a relatively flat, grassy area. Sediment deposition took place in the entire reach of the drainage, and in the flat, grassy area where the drainages merge. Sediment deposition ranged from less than an inch to several inches. There was also intermittent areas of pooled sediment in the drainage where it appeared that significant erosion had occurred, cutting a channel in several portions of the drainage 1 to 2 feet deep. At the time of the inspection, sediment had been removed from all of the sumps; however, it appeared that during the cleaning of sediment from the eastern-most sump, additional sediment slurry was discharged into the woody draw drainage from the sump. The two sumps located farthest to the northwest had sediment removed to the extent possible, but were about half full of water-sediment slurry.

Follow-up discussions with mine personnel indicated that these sumps and silt fences had been cleared and maintained in mid to late July. Additional heavy rains were received in early August and it's from

these events that the sumps overflowed. These rains had filled the sumps to capacity. The water management plan for this area should be re-evaluated.



Figure 2: Sumps in SE 1/4 Sec. 24



Figure 3: Sediment downstream of Sump 2

**180821**

**SURFACE WATER MANAGEMENT**

No sediment ponds were being discharged at the time of inspection. A recent PSC inspection documented erosion and sediment deposition below constructed sumps in the drainage leading to sediment pond P24-02 and those sumps were inspected today. All of the sumps had been cleaned of sediment. Silt fences behind all of the sumps were either repaired or replaced, and most of those were reinforced with wire backing. Sediment deposition below sumps No. 1 and 2 had been cleaned up and respread with topsoil. It appeared that most of the sediment deposition clean-up efforts concentrated between 10-20 feet downstream of the sumps. Sump No. 2 had erosion control blanket installed downstream of the sump and silt fence. A new sump was excavated about halfway between sumps No. 1 and 2. As can be viewed in **Figure 1**, the new sump had been excavated into a scoria/clinker outcrop.

Additional sumps around the mine had been recently cleaned of sediment and silt fence was repaired or replaced such as along the south side of the haulroad in the S1/2 of Section 10. In addition, the south haulroad ditch in the S1/2 of Section 10 was cleaned of sediment and that material had been pushed into piles and will be removed by equipment soon. Another sump located along the west side of the haulroad in the NW1/4 of Section 18 had been cleaned out as suggested in a previous PSC inspection.

A new sump had been excavated upgradient of the Creflex® and Flexamat® concrete erosion control structure located along the west haulroad ditch directly in front (to the south) of the outfall at the Coyote Creek crossing in the SW1/4 of Section 19. Installation of the sump at this location will likely reduce or eliminate sediment accumulation within or on top of the concrete erosion control products that are located closer to the creek, making sediment clean up quicker and easier. It was noted that areas within the haulroad ditch that were disturbed during sump excavation work had been seeded.

Future sediment pond P25-01 will be located in the NW1/4NW1/4 of Section 25 and is planned for construction this year. The watershed that will be controlled by this pond encompasses 103.5 acres and the watershed of this future sediment pond was inspected today. SPGM stripping operations (topsoil) has already breached the watershed that pond P25-01 will control. Only a couple of acres within the watershed have been disturbed and water management for those areas now consists of the SPGM stripping edge, silt fence and berm (**Figure 2**). Ms. Unruh was advised to extend the silt fence that is currently installed further to the north to provide adequate retention of all surface water runoff from disturbed areas entering the P25-01 watershed.

**Figure 1. Newly constructed sump between existing sumps No. 1 and 2  
View is toward the east**



The water level of a small handful of sediment ponds in relation to the permanent pool elevation (PPE) were inspected and those water levels are provided in the table below:

Sediment Pond	Water Level
P10-01	10 feet below PPE
P10-02	Dry
P24-03	4 feet below PPE
P06-03	2 feet below PPE
P30-04	4 feet above PPE
P31-01	2.5 feet above PPE
P30-01	6 feet below PPE

### **180905**

#### **SURFACE WATER MANAGEMENT**

No sedimentation ponds were being discharged. The National Weather Service (NWS website) graphic precipitation estimates for the 2-days prior to the inspection ranged from 0.75 to 1.5 inches in the vicinity of the mine. Mine personnel indicated that preliminary rainfall measurements at the mine for rains occurring September 3-4 ranged from 0.5 to 0.8 inches. The following ponds were viewed and their approximate water levels were noted in relation to Permanent Pool Elevation (PPE).

Pond	Water Level	Comments
P31-01	2 feet above PPE	Watershed partly cut-off by mine pits, dust suppression water source.
P06-03	2 feet below PPE	
P31-02	5 feet below PPE	
Pond	Water Level	Comments
P30-02	2 feet above PPE	Sumps recently added upstream of pond along haulroad ramp 1.
P24-02	Not observed	Sumps upstream of steeply sloping wooded draw recently enlarged.
P10-01	8 feet below PPE	Silt fence being installed below work area for diversion D10-01.
P10-02	8 feet below PPE	

Sediment control sumps located at the north end of the active mining area in Section 24 within the drainage area of pond P24-02 were inspected. Each of the sumps were clean and had improvements to the silt fences installed at the sump outlets during August. Except for the western-most sump, the recent rains did not result in runoff flowing thru the sumps. Two additional sumps were added within the rough graded areas draining to the two eastern-most sumps to provide additional runoff detention and sediment capacity. Mr. Donn Steffen joined us for the inspection to describe water management and reclamation plans for the drainage areas leading to ponds P24-02 and P30-02.

The erosion and sediment controls along the haul road north of the Coyote Creek crossing in Section 19 were briefly viewed. The silt fences on the south side of the Brush Creek crossing in the SW1/4 of Section 10 were clean and appeared fully functional. A small pile of removed sediment located along the

ditch upstream of the silt fence in the southeast quadrant of the crossing remained to be hauled out of the area. The silt fence in the northeast quadrant of the crossing appeared to have sediment accumulated to 1/3 to 1/2 the height of the silt fence and should be cleaned. Ms. Unruh indicated that a contractor is scheduled to be on-site next week to clean and adjust temporary sediment controls along the haul road. The adjustments made to the haul road ditch outlet at the southwest quadrant of the Coyote Creek crossing in the SW1/4 of Section 19 were viewed. The rill along the east edge of the flexible and articulating concrete block products lining the bottom of the ditch had been repaired and erosion control blanket had been installed on the affected area. The silt fence that was previously installed above the concrete block products had been replaced with a sump and straw wattles. It appeared recent flows had remained on the concrete matting as intended; however, the sump outlets just a short distance from the leading edge of the flexible concrete matting, making the leading edge vulnerable to undercutting. This transition area from the sump to the concrete lining material needs erosion protection.

**180919**

**SURFACE WATER MANAGEMENT**

No sediment ponds were being discharged at the time of the inspection. The predischarge sample results for pond P30-02 have not been received yet so the pond will be pumped to pond P19-01 in preparation of potential rains tomorrow. The following ponds were briefly viewed and their water levels were noted in relation to Permanent Pool Elevation (PPE).

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5' below PPE	
P30-03	At PPE	
P30-02	3.5' above PPE	
P10-02	Nearly dry	
P10-01	8' below PPE	
P19-01	4.5' below PPE	
P24-03	3.5' below PPE	Ducks utilizing pond
P06-03	At PPE	
<b>P31-01</b>	3' above PPE	

Pond P25-01 is currently under construction in the NW¼NW¼ of Section 25 and several scrapers and two dozers were operating at the pond site.

All the sumps in Section 24 that drain to ponds P24-01 and P24-02 were inspected. The sumps were dry except for the western most sumps. All had been recently cleaned and enlarged. An additional sump was installed above the two western most sumps. A new sump was also installed in the southwest quadrant of the haul road Coyote Creek crossing in the SW¼ of Section 19.

**180926- inspection with Voigts/ Voigt concerns with access Section 6, fencing TS-39, and reveg of county road.**

**181002**

**SURFACE WATER MANAGEMENT**

No sedimentation ponds were discharging off-permit at the time of inspection. The following ponds were briefly viewed and their water elevations were estimated in relation to Permanent Pool Elevation (PPE).

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P6-03	6 inches above PPE	
P24-03	3 inches below PPE	
P24-02	3.5 feet below PPE	
P24-01	3 feet below PPE	
P30-02	3.5 feet above PPE	
P10-02	Nearly dry	
P10-01	7 feet below PPE	

Construction of sedimentation pond P25-01 is nearly complete. Minor dirt work and seeding/mulching remain to be completed. The pond appeared to conform to the design plan provided in Section 3.3.22 of the permit.

The mine received over 1 inch of rain in the last week. Sumps along the haul road in Sections 19 and 30 and the sumps in the SW¼ of Section 24 were briefly inspected. The sumps appeared to be in overall good shape and had remaining capacity. Some of the sumps upstream from ponds P24-02 and P24-01 were nearly dry and the remaining sumps were holding muddy water.

**181025**

**SURFACE WATER MANAGEMENT**

Sediment pond P06-03 was the only sediment pond discharging off-permit at the time of inspection. Based on the portable pump revolutions per minute (RPM) the pond was discharging at a rate of approximately 700 GPM. The discharge water was clear and the pond was at the Permanent Pool Elevation (PPE).

The water level and other information regarding permit area sedimentation ponds are provided in the table below:

<b>Sediment Pond</b>	<b>Comments</b>
P30-01	5 Feet below PPE
P06-03	Discharging as noted above
P30-02	2 Feet above PPE, water appeared dirty
P19-01	4 Feet below PPE and was recently discharged
P31-01	Recently flocculated. Waiting for dissolved iron content to decrease below regulatory levels prior to discharge of the pond
P10-01	Estimated at 7-8 feet below PPE
P10-02	Dry
P31-01	Pump ramp blocked with berm at request of MSHA

Sediment pond P25-01 construction is complete. Mr. Sailer thought the pond had been certified; however, a check of the Reclamation Division's electronic files indicated the pond certification has not

yet been submitted and filed. The main drainage between disturbed areas to the east and the sediment pond had been stripped of topsoil, but not subsoil. The width of the stripped drain appeared to be about 25 feet and Mr. Steffen indicated that Coyote Creek Mine would likely submit a request to the Reclamation Division regarding subsoil removal from the drain. Landowner concerns regarding cattle crossing over/through the stripped drainage are being taken into consideration by Coyote Creek Mine.

The Reclamation Division's October 2, 2018 inspection photographed erosion along the west end of the multi-plate that crosses underneath Mercer County Road 12 in the NW1/4 of Section 19. Erosion along the north and south edges of the west end were apparent at that time. Coyote Creek Mine has contracted with a local contractor to repair the erosion issues and that work was being conducted at the time of inspection. As can be seen in **Figure 1**, erosion that had occurred adjacent to the panels near the top of the multi-plate was being backfilled and converted into a berm that now routes water away from the panels and to a length of Flexamat® concrete erosion blocks. Work on the south side of the multi-plate was complete and work on the north side (Figure 1) was proceeding at the time of inspection.

**Figure 1. Erosion repair work along County Road 12 crossing**



The same private contractor was also cleaning out sumps and repairing erosion in road ditches along the north haulroad. In some areas additional/new erosion control blanket was being installed in the ditches.

The location of future sedimentation pond P06-02 that will be located in the NE1/4 of Section 6, T142N, R88W was inspected today. The location of a future diversion that will outlet into the pond was also inspected. Silt fence had already been installed in areas that will be downstream of the pond and other associated disturbance areas associated with pond construction. Mr. Steffen indicated that pond construction is scheduled to begin next week.

**181113**

**SURFACE WATER MANAGEMENT**

No sediment ponds were being discharged off-permit at the time of the inspection. All ponds were frozen. The following ponds were briefly viewed and their water elevations were estimated in relation to Permanent Pool Elevation (PPE) or the spillway.

Pond ID	Water Elevation	Comment
P30-01	6 feet below PPE	
P31-01	9 feet below spill	
P10-02	Dry	
P10-01	9 feet below PPE	
P30-02	Nearly dry	Scheduled for sediment removal next week
P19-01	6.5 feet below PPE	
P30-03	1 foot below PPE	
P30-04	11 feet below spill	
P06-02	NA	Construction nearly complete

The drainageways along the haul road in Sections 8, 9, 10, 18 and 19 were observed. The sumps and silt fences in the drainageways were recently cleaned. Some of the silt fences were reinforced with wire and others were repaired or replaced where necessary in Sections 8, 9, 10 and 19. New silt fences were installed in the drainageway on the north side of the haulroad in the SE¼ of Section 9 and on the south side of the haulroad at the Brush Creek crossing in the SE¼ of Section 10. **Figures 1 and 2.**

The erosion along the north and south edges of the west end of the multi-plate that crosses underneath Mercer County Road 12 in the NW1/4 of Section 19 has been repaired by a local contractor. Erosion that had occurred adjacent to the panels near the top of the multi-plate was backfilled and converted into a berm that now routes water away from the panels and to a length of Flexamat ® concrete erosion blocks in the ditch. Dirt work on the south side appeared complete as shown in **Figure 3.** BMP's need to be installed to stabilize the road embankment until perennial vegetation establishes.

## 181127

### SURFACE WATER MANAGEMENT

No sedimentation ponds were being discharged. The following ponds were viewed and their approximate water/ice levels were noted in relation to Permanent Pool Elevation (PPE).

Pond	Water Level	Comments
P30-01	6 feet below PPE	
P31-01	3 feet above PPE	Marker not visible. 10 – 12 feet below spillway.
P30-03	1 foot below PPE	
P30-02	Empty	Sediment clean-out had just begun with an excavator, articulating truck and small dozer.
P10-02	Empty	
Pond	Water Level	Comments

P10-01	8 feet below PPE	
P24-01	2 feet below PPE	
P24-02	3 feet below PPE	
P24-03	6 feet below PPE	
P24-04	8 feet below PPE	
P30-04	Near PPE	Marker not visible. 10 – 14 feet below spillway.
P06-03	½ foot below PPE	
P06-02	empty	Embankment constructed, finish grading and erosion protection yet to be completed.

The erosion and sediment controls along the haul road north of the Coyote Creek crossing in Section 19 were briefly viewed and no issues were noted. The silt fences had been cleaned and repaired recently as noted in the November 13, 2018 inspection report. The eastern-most sumps (Sump 1 and the two upstream sumps) above pond P24-02 were observed and had water/ice levels 2-3 feet below the outlet elevations. The subsoil drainageway leading to sedimentation pond P25-01 has been graded to blend with the topsoil removal edge in order to provide continued access for grazing the undisturbed land in the W1/2 of Section 25. The subsoil removal edge and berm along the mine pit stripping operation currently prevents runoff from the overburden bench from draining directly through the subsoil drainageway to the pond.

**Includes:**

**Follow-up to Voigt concerns TS-39 and Fence around cultural site in Section 3**

**181204**

**SURFACE WATER MANAGEMENT**

No surface or pit water discharges were occurring. The water management features listed in the table below were briefly viewed and the water (ice) level was estimated in relation to Permanent Pool Elevation (PPE).

<b>Water Management Feature</b>	<b>Water/Ice Elevation</b>
Sediment Pond P30-01	Water level approximately 8 feet below spill elevation. PPE marker not clearly observed.
Sediment Pond P06-03	Water approximately 1 foot below PPE.
Sediment Pond P06-02	Dry. Recently constructed.
Sediment Pond P24-03	Water approximately 4 feet below PPE.
Sediment Pond P25-01	Dry. Constructed last summer/fall.
Sediment Pond P30-02	Water/sediment approximately ½ foot below PPE.
Sediment Pond P31-01	Water at least 8 feet below spill elevation. PPE marker not seen.

An excavator was removing sediment from sediment pond P30-02 and 6-wheeled articulated Volvo trucks were hauling this material to the E½ of Section 25 where it was being used for backfilling and grading. This excavator was sitting on dry spoil placed through the center of the pond and the sediment being removed was slurry.

Sumps at the disturbance boundary adjacent the wooded draw above sediment pond P24-02 were observed from a distance. These sumps were not full of water or silt and had capacity to handle runoff. The road and mined area north of these sumps have been altered as mining has advanced and it appears the watersheds draining into the sumps located furthest to the south have decreased in size since initial disturbance occurred. These sumps will need to be continually monitored to ensure they will function as intended.

Sediment pond P06-02 was recently constructed and only finish work remains to be completed. The open-channel spillway needs to be stabilized and a permanent pool elevation marker needs to be installed. A portion of the embankment has been mulched and the bottom portion of the downstream side of the embankment has been armored with flex-a-mat to protect the embankment from a Coyote Creek flood event.

Diversions have been constructed along the disturbance boundary north of sediment pond P06-02 and southeast of sediment pond P06-03. These diversions both intersect their associated sediment pond near the pond's open-channel emergency spillway. Runoff from these diversions could conceivably short circuit the pond's pool area if runoff was entering the pond when the ponds were spilling. These diversions have been stabilized with mulched.

Mr. Barth was advised that Coyote Creek Mine should inspect and perhaps armor or take other measures to ensure head cutting does not occur at the SPGM stripping edge in secondary drainages located south of sediment pond P06-03. Installation of erosion control measures could be delayed until subsoil is removed from the drainages, but appropriate measures should be installed prior to spring runoff.

A silt fence adjacent to an oxbow in the east haul road ditch about 180 feet south of the Coyote Creek haul road crossing in Section 19 should be inspected and maintained until the haul road ditch in this area is vegetated sufficiently to prevent water pollution.

The embankment of sediment pond P25-01 (subsoil pile SS-48) and the drainageway above this pond has been mulched to reduce the potential for erosion.

Runoff north of the farmer access road in the S½ of Section 36 will drain northward towards the pit and the topsoil stripping edge associated with the south ditch appears adequate to contain runoff from associated affected lands, which essentially involves only the south road ditch.

## **181219**

### **SURFACE WATER MANAGEMENT**

The following sediment ponds were briefly inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation. **Water was not being discharged from sedimentation ponds during the inspection.**

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5 feet below PPE	

P31-01	4 feet above PPE	
P10-02	Dry	
P10-01	8 feet below PPE	
P30-02	At PPE	Sediment removal in progress
P30-03	At PPE	
P30-04	Above PPE (estimated)	PP marker assumed under water
P25-01	Dry	
P31-02	5 feet below PPE	
P24-03	4 feet below PPE	
P24-04	5 feet below PPE	

Pond P30-02 is located on the east side of the haulroad in the NW<sup>1</sup>/<sub>4</sub> of Section 30 and prior inspections noted a significant amount of sediment had accumulated in the pond. Coyote Creek Mining Co. was in the process of removing the sediment from pond P30-02. Approximately half of the accumulated sediment has been removed.

The sumps located at the north end of the active mining pits in Section 24 were inspected. The northern-most sump was nearly full of water and the remaining sumps were dry. The silt fences installed at the sump outlets appeared to be in good condition.

## 190115

### SWM

There were no sediment ponds discharging water off-permit at the time of inspection. All inspected ponds were iced-over.

A long-arm excavator and two mud trucks continue removing sediment from pond P30-02 that is located east of the haulroad in the NW1/4 of Section 30. **Figure 1** shows that sediment from approximately 2/3 of the pond had been removed to date. Sediment from the pond is being hauled to a fill area near the center of Section 25.

Only a couple of sediment ponds were checked for water level during the inspection as there has been minimal to no change in water levels compared with the last couple of PSC inspections conducted in December 2018. The water level of sediment pond P10-01 was approximately 8 feet below the permanent pool elevation and sediment pond P10-02 was dry.

## 190130

### SWM

The following sediment ponds were briefly inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation. Water was not being discharged from sedimentation ponds during the inspection.

Pond ID	Water Elevation	Comment
P30-01	6 feet below PPE	
P31-01	8' below spill elevation	
P10-02	Dry	
P10-01	Nearly dry	
P30-02	Dry	Sediment recently removed
P30-03	3' below PPE	Snow covered
P30-04	Above PPE (12' below spill elevation)	PP marker assumed under water
P6-02	Dry	
P6-03	1' below PPE	

Several of the sumps located at the north end of the active mining pits in Section 24 were inspected. The sumps were mainly dry and the silt fences installed at the sump outlets appeared to be in good condition.

## 190212

### SWM

The 4<sup>th</sup> quarter pond inspections and the annual registered professional engineer pond inspection report were completed on December 14, 2018. Since that time, precipitation has been in the form of snow and temperatures have mostly been below freezing as is typical for winter conditions. The water levels (frozen) in the ponds observed during the inspection appeared mostly the same as noted in Coyote Creek Mining Company's annual pond inspection report. Pond P30-01 receives water from the vehicle wash bay and the water level was estimated to be about 4 feet below permanent pool elevation (PPE), which is

about a foot closer to PPE than in December. The sediment removal project that was underway at pond P30-02 during December is now complete and the pond is empty. The water level (frozen) appeared unchanged from that noted in the annual report for the following ponds: P31-01, P30-03 P10-01, P10-02 and P06-03.

**190228**

**SWM**

No sedimentation ponds were discharging during the inspection. The following ponds were briefly viewed and their water elevations were estimated in relation to Permanent Pool Elevation (PPE).

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	3.5 feet below PPE	
P31-01		Post completely covered in snow
P10-02	Dry	
P10-01	9 feet below PPE	
P30-02	Dry	Cleaned recently
P06-03		Post obscured by snowdrift

**190311**

**SWM**

The following sediment ponds were inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation. All of the ponds were frozen and covered with snow. No sediment ponds were being discharged during the inspection.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5 feet below PPE	
P31-01	At PPE	
P10-02	10 feet below PPE	
P10-01	10 feet below PPE	
P30-02	Dry	Sediment recently removed
P30-03	3 feet below PPE	
P24-03	Nearly Dry	
P24-04	Dry	
P24-01	2 feet below PPE	
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P24-03	3 feet below PPE	
P6-02	Dry	
P6-03	1 foot below PPE	

The sumps located at the north end of the active mining pits in the SE<sup>1</sup>/<sub>4</sub> of Section 24 were viewed. The northern most sump was nearly full of water (ice covered). Coyote Creek dug another small sump west of the northern most sump and the new sump was holding a small amount of frozen water. The remaining sumps were mostly dry and the silt fences installed at all of the sump outlets appeared to be in good condition. Photographs of the sumps were taken.

## 190327

### SWM

There were **no sedimentation ponds discharging** surface water today and there is no snow on the ground at Coyote Creek Mine. Ice on most of the sedimentation ponds viewed was beginning to break up and most of the ponds contained at least some open water. Based on the weather forecast, it is likely that most, if not all of the sediment ponds will be open within the next week or two. Coyote Creek was flowing at a relatively low rate for this time of year, but higher than normal during other times of the year. We observed no evidence that Coyote Creek overflowed its banks anywhere within the permit area.

All of the seven excavated sumps located at the heads of the wooded draws above sediment ponds P24-01 and P24-02 in the SE1/4 of Section 24 were inspected and photographed. The water and/or sediment level of five of the sumps (Sumps 1, 3, 4, 5, 6) varied between dry and 2 feet below the elevation of the silt fences. The sediment level of Sump 7, which is located furthest to the west, was at the base of its silt fence and the water level of Sump 2 was at the base of its silt fence. All silt fences located adjacent to, and down gradient of the sumps appeared to be in good, functional condition.

A small portion of the silt fence located north of the haulroad in the SW1/4SE1/4 of Section 8 and identified as Discharge Point 9 on the Pit Layout and Facilities Map was laid over and requires maintenance.

The following sediment ponds were briefly inspected and their water levels noted in relation to the Permanent Pool Elevation (PPE) or spillway elevation where appropriate.

<b>Sediment Pond</b>	<b>Water/Ice level</b>	<b>Comments</b>
P30-01	2 feet below PPE	Open water, Canada geese in the pond
P06-03	2 feet below spill elevation	50% of the pond is open water, unable to view the PPE marker
P06-02	Significantly below PPE	Contained about 1 foot of water in basin
<b>P31-01</b>	<b>4-5 feet below spill elevation</b>	<b>Pump in place to begin discharge on April 1<sup>st</sup></b>
P30-03	1 foot below PPE	
P30-04	Water level was above PPE	Currently setting poly pipe to pump contained water to P31-01
P30-02	2 feet below PPE	Water is turbid
P19-01	3 feet below PPE	
P24-02	At PPE elevation	
P10-01	6 feet below PPE	
P10-02	8 feet below PPE	2 Canada geese in the pond

## 190410

### SWM

**Sedimentation pond P31-01 was discharging off-site but was stopped during the inspection due to increasing wind and displaced riprap at the southwest quadrant of the equipment road culvert crossing at Coyote Creek in the SE1/4 of Section 30. The pond was being pumped at a rate of approximately 800 gpm through poly pipe to the riprap in the road ditch near Coyote Creek. The discharge water appeared**

transparent with a slight tan color. We noted that part of the discharge was flowing between some large rocks to an area where the geotextile had been damaged or separated near the point where the riprap meets the cable concrete armoring. The portion of the water flowing over the bare earthen materials was slightly turbid and gray colored as it mixed with the water in Coyote Creek.

The sediment trap sumps located up gradient of the wooded drainages leading to ponds P24-01 and P24-02 were inspected. The furthest east and west sumps leading to pond P24-02 had water/ice levels at about a foot from the top of the excavated sump upstream of the associated wire backed silt fences. The following ponds were viewed and their approximate water levels in relation to Permanent Pool Elevation (PPE) and other information were noted.

Pond	Water Level	Comments
P30-01	3 feet below PPE	
P06-03	1.5 feet below spill	Working with consultant/supplier for iron removal to meet discharge limits. Water appeared turbid and affected by wind.
P06-02	Empty	
P31-02	0.5 feet below PPE	
P24-01	At PPE	
P30-02	2 feet below PPE	
P10-02	Empty	
P10-01	8 feet below PPE	
P30-04	8 feet below spill	Watershed is partly intercepted by mine pit.
<b>P31-01</b>	<b>3 feet above PPE</b>	<b>Discharge stopped. Watershed is partly intercepted by mine pit.</b>

## MISCELLANEOUS

The county road box culvert crossing at Coyote Creek near the Casey Voigt farmstead had been repaired recently by a Mercer County crew in the SE1/4 of Section 31, T143N, R88W. The earthen material that eroded from the approaches and surface of this low water crossing during spring runoff was replaced with overburden material obtained from the nearby active mining area subsequent to the April 4, 2019 email correspondence between CCMC and the Reclamation Division.

## 190423

### SWM

No ponds were being discharged. There has been very little runoff since snowmelt at the end of March. Water in sediment pond P30-04 was recently pumped to sediment pond P30-01. The water in sediment ponds P30-02 and P06-03 appeared to be holding suspended solids and it was reported that these ponds were high in iron and needed to be flocculated to meet discharge quality requirements. Coyote Creek

Mining Company is awaiting the arrival of a flocculent created specifically for their ponds that will remediate the water quality issues.

The ponds listed in the table below were briefly observed and the water elevation in relation to permanent pool elevation (PPE) was estimated.

Sediment Pond	Comment(s)
P30-01	Water about 4 feet below PPE.
P31-01	PPE marker not seen, presumably under water. Water that appeared dirty was about 10 feet below emergency spill elevation.
P06-03	Water about 1.5 feet below spill elevation. PPE marker not seen, presumably under water. Water not discharged due to high iron.
P06-02	Dry. Spillway not stabilized with fabric, embankment not yet seeded.
P10-01	Dry. Embankment vegetated.

Six sumps at the disturbance boundary in the upper reaches of drainages above sediment pond P24-02 were inspected. Half of these sumps were holding water and half were dry. These sumps all appeared to have capacity for silt deposition and the silt fences adjacent to these sumps were in functional condition. Steel wire fence has been placed along portions of these sumps to help ensure they function as intended. Water from snowmelt runoff was not pumped from these sumps.

Concrete pads, creflex, has been installed above the box culverts of the shop office access road over Coyote Creek. Tree branches and chunks of ice reportedly accumulated at the inlet side of these box culverts during spring snow melt runoff, which created the need for additional armoring above the culverts.

Rock check dams in the ditches of the primary haul road have been repaired. Sediment that accumulated adjacent to silt fences near Brush Creek was removed last fall and these silt fences are in functioning condition.

A silt fence has been installed downslope of diversion D10-01 for reconstruction of the diversion.

The primary and access haul road ditches are becoming established with vegetation, which is the most important best management practice (BMP) for erosion control. The east haulroad side slopes located south of the County Road No. 12 underpass were harrowed to eliminate rills prior to re-seeding this spring.

## **190515**

### **SWM**

No water was being discharged from sedimentation ponds during the time of the inspection. The following ponds are listed in the order inspected and their water elevations are noted in relation to Permanent Pool Elevation (PPE).

Pond ID	Water Elevation	Comment
P30-01	6 feet below PPE	
P31-01	2 feet above PPE	

P24-01	2 feet below PPE	
P30-04	At PPE	
P30-03	3 feet below PPE	
P06-03	Near PPE	PPE stake obscured by dirt piles
P31-02	1 foot below PPE	
P30-02	3 feet below PPE	
P10-02	Dry	
P10-01	Nearly Dry	

Ms. Unruh reported that seeding and mulching had been completed on the pond P06-02 embankment. Pond P6-02 was not inspected because of equipment working on the haulroad and areas leading to pond P6-02. As noted in the table above, pond P31-01 is two feet above PPE. Mr. Steffen stated that Coyote Creek Mine intends to keep pond P31-01 above PPE to provide a water source for haulroad dust control. Portions of the watershed draining to pond P31-01 have been cut-off by mining and is estimated that the pond has more than adequate capacity to hold the required precipitation runoff event.

The sumps located in the SE¼ of Section 24 were inspected. The sumps have been recently cleaned of sediment and were all dry or nearly dry. The silt fences installed at the outlets of the sumps were in good condition. Coyote Creek Mine has also constructed several new sumps at the north end of the mining area in Section 24.

## ROADS

Vegetation appears to be establishing along the portion of the haulroad located north of County Road 12 and extending to the Coal Handling Facility located in Section 10. There are a few small areas of the haulroad ditches where vegetation is sparse. Coyote Creek Mine may want to consider reseeding these areas.

## 190529

### SWM

All of the inspected sumps located in the SE¼ of Section 24 appeared to be in good shape, as did the silt fences located behind the sumps. Coyote Creek Mine has constructed several additional sumps in graded spoil several hundred feet south of (up-gradient) the sumps that are located at the heads of the draws located in the SE¼ of Section 24 and above sediment pond P24-02.

The silt fence on the north side of the haulroad in the drainage located in the SE¼ of Section 9 and identified on the Pit Layout and Facilities Map as discharge point No. 4 requires repair and maintenance as does the silt fence located in the drainage approximately 200 feet to the west of discharge point No. 4, which is identified as discharge point No. 5. Generally, the repair work will entail straightening out the metal fence posts, re-attaching the silt fence to the posts where necessary and a minimal amount of sediment removal.

The following sediment ponds were viewed and their water elevations noted in reference to the Permanent Pool Elevation (PPE) where applicable.

<b>Pond</b>	<b>Water Elevation</b>	<b>Comments</b>
P30-02	6 inches below PPE	

P30-03	2 feet below PPE	
P10-01	8 feet below PPE	Two Canada geese in the pond
P10-02	Dry	
P06-02	6 inches of water in basin	Embankment and diversion seeded and mulched
P06-03	At PPE	Canada geese in the pond

Erosion repair work that was conducted last October along the west and east ends of the multi-plate that crosses underneath Mercer County Road 12 in the NW1/4 of Section 19 and SW1/4 of Section 18 was re-inspected and photographed. The repair project appears to have been successful as no erosion or sediment deposition was evident from snowmelt runoff this past winter or recent precipitation events during May of this year.

The approved diversion realignment project to be conducted near Coyote Creek's coal stockpile and processing facility in the SE1/4 of Section 10 is to begin today. A dozer had just arrived to the location and the plan is to realign the diversion leading into sediment pond P10-01 with the goal of eliminating the sharp turn to/from the coal stockpile that the coal haulage trucks must now navigate. The small amount of dirt work required will act as a safe short-cut around the sharp corner and shorten the access point to/from the haulroad about 30 or 40 feet further to the west. It is expected this small project will be completed by the end of the day.

## 190611

### SURFACE WATER MANAGEMENT

No sedimentation ponds were being discharged during the time of the inspection. The following ponds are listed in the order inspected and their water elevations are noted in relation to Permanent Pool Elevation (PPE).

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	6 feet below PPE	
<b>P31-01</b>	4 feet above PPE	Marker was below water
P30-03	3 feet below PPE	
P30-02	6 inches below PPE	
P10-02	Dry	
P10-01	9 feet below PPE	
P24-03	Nearly Dry	
P25-01	1 foot below PPE	
P06-03	1 foot below PPE	

The realignment of diversion D10-01 that routes water into pond P10-01 was completed. Realignment of the diversion was necessary to eliminate the sharp turn at the coal stockpile. Silt fence was installed on the western edge of the diversion to prevent sediment deposition on the adjacent undisturbed area. The diversion needs to be seeded and stabilized which may prove difficult because portions of the diversion appeared to be hard clay pan. **(Figure 1)**.

### REVEGETATION

Vegetation establishment in the haulroad ditches from Mercer County Road 12 in the NW1/4 of Section 19 and SW1/4 of Section 18 to the coal stockpile in the SE1/4 of Section 10 is improving. Plant density on

some areas, mainly south facing slopes, remains less than optimal, but timely rains this spring have greatly improved vegetation establishment.

**190618**

SURFACE WATER MANAGEMENT

No sedimentation ponds were being discharged during the time of the inspection. During the week preceding the inspection, the Beulah area received about 0.29 inches of rainfall (NDAWN Hazen Station). The following ponds were viewed and their approximate water levels in relation to Permanent Pool Elevation (PPE) and other information were noted.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	7 feet below PPE	
P31-01	4 feet above PPE	Marker was below water. Watershed partly intercepted by pits.
P06-03	At PPE	
P06-02	Dry	Vegetation was starting to establish on embankment area.
P30-03	2 feet below PPE	
P30-04	8 feet below spillway	Marker was not observed/visible.
P30-02	0.5 feet below PPE	Sump near the northeast corner of the overburden stockpile in the NW1/4 of Section 30 had approximately 2 feet sediment storage below the outlet pipe.
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P24-01	5 feet below PPE	
P24-02	At PPE	
P19-01	3 feet below PPE	
P10-01	8 feet below PPE	Diversion D10-1 constructed, not yet seeded.
P10-02	Dry	

The sediment control sumps located up gradient of the southern wooded drainage leading to pond P24-02 were inspected. The wooded portion of the drainage between the mine disturbance area and the pond was also walked during the inspection. The two eastern-most sumps located at the disturbance edge are within grade approval request area COY-008 and are identified as sumps #3 and #5 on the erosion and sediment control plan for the graded area. The furthest east sump (sump #3) and wire-backed silt fence appeared to be in serviceable condition and the sediment level appeared to be about two feet below the outlet of the sump. At the second sump from the east (sump #5) a small scour-hole was observed along the wire-backed silt fence near the lowest point of the fence at the sump outlet. The sediment level in sump #5 was below the surface of the water contained in the sump and not visible. Sediment control sump #6 (identified in COY-008 erosion and sediment control plan) located up gradient of sump #5 was full of sediment. The two sumps located west of grade approval area COY-008 were in good condition. The two sumps located on the northern wooded drainage to this pond were not inspected.

The erosion and sediment controls along the haul road north of the Coyote Creek crossing in Section 19 were briefly viewed. The vegetation along the haul road is becoming established and able to provide erosion control on most areas. We did not identify any sediment controls requiring immediate attention. Areas that may require maintenance following additional rainfall would include the silt fence in the north ditch near discharge point 6 in the SE1/4 of Section 9 where the accumulated sediment was near the

recommended clean-out level and the outlet of discharge point 9 in the SE1/4 of Section 8 where a small erosion feature was present at the toe of the silt fence.

**ROADS**

Water trucks were observed watering the haul route from the pre-benching operation in Section 36 and the haul roads in Sections 19, 30, 31 and 36. A dozer and grader were building the new haul road in the SW1/4 of Section 31 and another small dozer was shaping the drainage along the new haul road in the NW1/4 of Section 6. A corrugated poly pipe slope drain was recently installed in the east ditch of the haul road in the NE1/4 of Section 36. Also in NE1/4 of Section 36, a crew with a track-hoe were installing creflex mats at the 60-inch culvert outlet in the stripped drainage leading to pond P31-01.

**190625-flyover inspection**

**190709**

**SURFACE WATER MANAGEMENT**

Coyote Creek Mining Company (CCMC) personnel reported that the permit area received approximately 2.5 inches of rain during the 24-hours preceding the inspection, the majority of rainfall occurred during an intense rain event during the afternoon hours of July 8<sup>th</sup>, and no sediment ponds had overflowed. Wet, muddy conditions severely limited vehicular access throughout the mine.

There was evidence of surface water runoff across the permit area, and all observed sumps and rock check dams were holding water. Recent sediment deposition was observed behind some silt fences, including silt fences located in the north ditch of the haul road in the SE1/4 of Section 9 where vegetation has generally established. Ms. Unruh was advised to inspect and conduct maintenance and repair as necessary on all silt fences and sumps at the mine. The sediment ponds listed below were observed during the inspection. No discharges were occurring because of turbidity, or high total suspended solids (TSS), in sediment ponds. The following ponds were inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation.

<b>Sediment Pond</b>	<b>Pond Level</b>	<b>Comment(s)</b>
P30-01	Water 3.5 feet below PPE	Subsoil embankment well vegetated
<b>P31-01</b>	<b>4 feet below spill</b>	<b>Water turbid, PPE marker under water</b>
<b>Sediment Pond</b>	<b>Pond Level</b>	<b>Comment(s)</b>
P30-03	Water 3 feet above PPE	Water turbid
P30-02	Water 3 feet below spill	PPE marker not visible
P10-02	Holding about 1 foot of water	12 feet below spill
P10-01	Water 5 feet below PPE	New diversion SE of embankment
P06-03	Water 2 feet above PPE	Majority of watershed not disturbed
P06-02	Holding a few inches of water	Embankment becoming vegetated

Turbid water flowing several hundred gallons per minute was observed flowing through the culvert under the haulroad in the southwest corner of the SW1/4 of Section 10. This culvert is located in an unnamed intermittent stream located south of the haulroad. A portion of the watershed associated with the intermittent stream is affected by mining activities at the Dakota Westmoreland Company Beulah Mine. No surface water runoff was observed entering the intermittent stream from CCMC’s haulroad ditches.

A diversion along the SPGM stripping edge north of sediment pond P06-02 forces runoff into the pond. Similarly, the SPGM stripping edge south of this pond conveys surface water runoff to the pond.

CCMC reported that new fabric was placed under the riprap where runoff from the south access road ditch enters Coyote Creek in the SE1/4 of Section 30.

## ROADS

Vegetation has generally established quite well in the ditches associated with the primary haulroad except for a few areas with southern slope aspect, such as the portion of the southern haulroad ditch located east of Brush Creek in Section 10 near the coal handling facility. Areas with sparse vegetation should be reseeded. Vegetation is establishing on the overpass embankment and in the ditches of the haulroad located south of the County Road No. 12 underpass that was reshaped and reseeded this past spring. New mulch was observed on the east haulroad ditches in Sections 31 and 36.

## 190724

### SURFACE WATER MANAGEMENT

The following sediment ponds were inspected and their water levels were noted in relation to Permanent Pool Elevation (PPE) or spillway elevation. Sediment ponds P6-03, P24-02, and P31-01 were being discharged during the inspection. The discharged water from the three ponds was clear, colorless and appeared to be of good quality. No samples were taken.

<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P30-01	5 feet below PPE	
<b>P31-01</b>	4 feet above PPE	Discharging about 600 gpm
P10-02	Nearly dry	
P10-01	6 feet below PPE	
P30-02	4 feet below PPE	
P30-03	1 feet below PPE	
P24-03	5 feet below PPE	
P24-04	4 feet below PPE	
<b>Pond ID</b>	<b>Water Elevation</b>	<b>Comment</b>
P24-01	5 feet below PPE	
P24-02	At PPE	Discharging about 600 gpm
P6-02	Nearly Dry	
P6-03	1 foot above PPE	Discharging about 2,000 gpm

Several of the sumps located at the north end of the active mining pits in the SE1/4 of Section 24 and within the COY-008 grade approval area were viewed. The upstream sumps had been cleared of sediment as well as the sumps at the north border of the grade approval area. The silt fences at the north border of the grade approval area appeared to be in good condition. Photographs of the sumps were taken.

The drainage below pond P6-03 was viewed. Pond P6-03 is located in the NW1/4 of Section 6 and the downstream drainage leads to Coyote Creek. A concrete crossing with a culvert is located within the drainage approximately 400 feet upstream from where it enters Coyote Creek in the SE1/4 of Section 31. The landowner has stated concerns that water discharged from pond P6-03 has caused the crossing to be submerged. At the time of the inspection, three 6-inch centrifugal pumps were dewatering Pond P6-03 at an estimated rate of 2,000 gallons/minute. The crossing is made of concrete with an embedded culvert

(estimated to be a 24-inch CMP (corrugated metal pipe)). Water was flowing about half full out the culvert exit, and the water level was about a foot below the top of the concrete on the upstream side of the crossing.

## **190814**

No water was being discharged from sedimentation ponds at the time of inspection. The following ponds are listed in the order inspected and their water elevations are noted in relation to the permanent pool elevation (PPE).

<b>Pond Identification</b>	<b>Water Level/Comments</b>
P30-01	6 feet below PPE
P30-02	1 foot below PPE, water was turbid
P10-02	1 foot of water in basin
P10-01	6 feet below PPE
P24-03	7 feet below PPE
P06-03	6 inches below PPE
P06-02	Approximately 8 feet below PPE
<b>P31-01</b>	Above PPE, marker was below water level

A skid steer loader was being used to remove a culvert (**Figure 1.**) along the south side of Ramp 1 in the NE1/4 of Section 25. The culvert was placed to drain water from a constructed sump to the haul road ditch, which eventually drains to sediment pond P30-02. The culvert had been undercut by water and basically washed out. The culvert will be reinstalled and properly backfilled and compacted.

Construction of engineered diversion D10-01 has been completed for a couple of months, but it appeared that none of the disturbance areas had been seeded or mulched.

Most of the constructed sumps and silt fences at the heads of the wooded draws in the SE1/4 of Section 24 above sediment ponds P24-01 and P24-02 were inspected and found to be in good shape. The sump identified as sump #6 had water/mud within about 8 inches of the top of the silt fence and Mr. Sailer noted the sump would be cleaned out in the near future.

A couple of deep (3-4 feet) erosional head cuts were observed and photographed along the east slope that drains into sediment pond P10-01 and these should be repaired.

August 28, 2019,

## INSPECTION REPORT

DATE OF INSPECTION: August 28, 2019

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mining Co. – Coyote Creek Mine

PERMITS INSPECTED: NACC-1302

PERSON ACCOMPANYING INSPECTOR: Jason Sailer

INSPECTION CONDITIONS: The inspection was conducted between 9:00 a.m. and 2:40 p.m. CDT. Skies were sunny. The temperature reached 75° F. Access was unrestricted.

### OVERBURDEN/COAL REMOVAL

The dragline was removing overburden from the west end of the second box cut pit in the NW1/4 of Section 6. Coal was being hauled out of the east end of the second box cut pit in Section 6. The PC 2000 was prebenching overburden near the center of Section 25 and this material was being hauled to the NE1/4 of Section 25.

### SURFACE WATER MANAGEMENT

**No ponds were being discharged.** The sediment ponds listed in the table below were observed and their water elevation was estimated in relation to the Permanent Pool Elevation (PPE) marker.

<b>Sediment Pond</b>	<b>Comment(s)</b>
P30-01	Water about 5 feet below PPE.
<b>P31-01</b>	Water about 5 feet below spill elevation. PPE marker under water.
P06-03	Water at PPE.
P30-03	Water 5 to 6 feet below top of riser. PPE marker not observed.
P24-02	Water slightly below PPE.
P30-02	Turbid water about 0.5 feet below PPE.
P10-02	Nearly dry.
P10-01	Water about 6 feet below PPE.

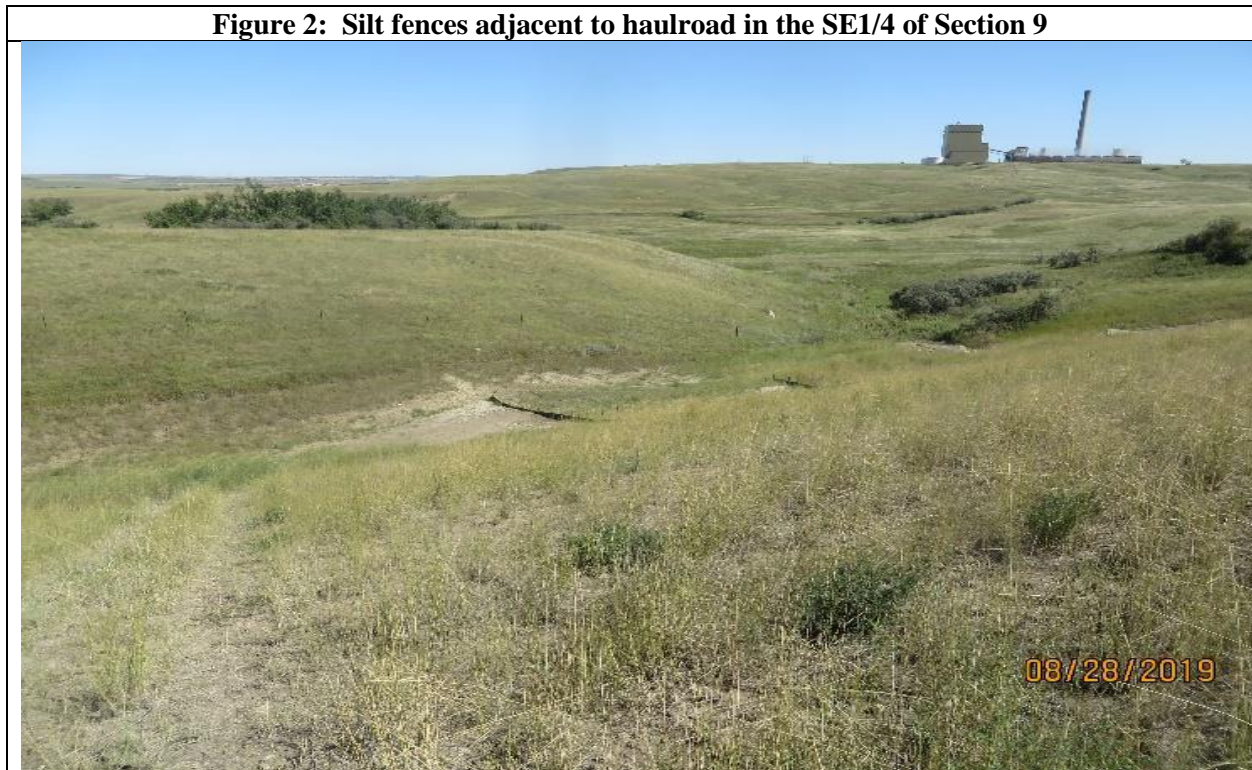
Two sumps adjacent to Grade Approval Request COY\_GA\_008 were holding water. This grade-approved area borders an undisturbed wooded draw in the E1/2 of Section 24. The silt fences adjacent to

the two inspected sumps at the disturbance boundary need maintenance. Sediment has accumulated in these sumps and the silt fence of one sump is bent over from the force of water from a runoff event.

**Figure 1**



Several silt fences associated with the haul road ditch north of County Road No. 12 are holding silt that should be removed to allow the silt fences to function as intended. This includes silt fences in the south ditch of the haul road near Brush Creek and silt fences on the north side of the haul road in the SE1/4 of Section 9, discharge point No. 6, as depicted in **Figure 2**.



A thin layer of light colored soil was observed in portions of the bottom of the undisturbed wooded draw in the E1/2 of Section 24 and runoff is channelizing in areas where water concentrates in segments of the drainageway. Vegetation in this drainageway has been flattened by runoff, but it continues to grow

through the thin layer of deposition. Two natural headcuts exist at the lower end of the drainageway. Mr. Sailer (CCMC) was advised to take measures to prevent erosion in this undisturbed drainageway.

The interface of the road ditches and Coyote Creek at the box culvert crossings were inspected to determine stability. The haul road ditches adjacent to the north side of Coyote Creek in Section 19 appear stable, as does the east ditch on the south side of the stream. Concrete matting in the west ditch on the south side of Coyote Creek in Section 19 transitions runoff from the ditch into the stream. A small delta of sediment has formed in the stream channel beyond the end of this concrete matting as depicted in **Figure 3**. The sump above the concrete matting is full of water. CCMC should further inspect and monitor this site to ensure erosion is not occurring in the stream channel at the end of the concrete matting.

**Figure 3: Interface of west haul road ditch and Coyote Creek in Section 19**



The interface of access road ditches adjacent to the south side of Coyote Creek in Sections 30 and 31 appear stable, as does the east ditch on the north side of the access road. A delta has formed in front of the west box culvert on the south side of Coyote Creek in Sections 30 and 31 and is becoming stabilized with vegetation as depicted in **Figure 4**. The delta is diverting stream flow to the eastern box culverts. CCMC placed fabric or blanket material under the riprap where runoff from the access road enters Coyote Creek at this location last spring and there was no evidence of any active erosion occurring. Concrete armor is in place above the rock riprap and a silt fence is in place in the road ditch immediately west of the concrete and rock armor. A pond dewatering polypipe at this site was placed so that discharges hit the concrete matting above the rock riprap adjacent to the stream channel.

**Figure 4: Delta adjacent to west box culvert, south side of the haul road in Sections 30 and 31**



A small delta of sediment is present in the stream channel north of the west box culvert on the north side of the Section 30 and 31 access road crossing, as depicted in **Figure 5**. This delta is beyond the riprap that is being used to stabilize the stream bank. The riprap being used to stabilize the creek bank consists of very large rock and it is possible erosion could occur under this rock. CCMC should further inspect and monitor this site to ensure erosion does not occur under the riprap. A silt fence is in place in the road ditch immediately west of this site and the ditch is becoming well vegetated.

**Figure 5: Small delta in stream channel north of the west of box culvert,  
north side of Sections 30 and 31 access road**



Diversion D10-01 has been constructed. No vegetation was emerging on the diversion but it has been partially mulched and the mulch has been crimped into the soil.

#### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

Scrapers were stripping topsoil south of the farmer access road in the S1/2 of Section 36. The soil was being hauled to topsoil pile TS-39. Stakes on the soil monuments in the removal area listed the topsoil removal depth as 21 to 35 inches, but the soil monuments indicated that about 24 to 30 inches of topsoil was actually available from the areas mapped as 35 inches. It appeared CCMC had taken all available topsoil from most of the area, but the soil monument associated with the 21 inch soil-mapping unit was only about 10 inches tall and it did not appear that all available topsoil had been removed. CCMC was asked to salvage additional topsoil from this area, to 21 inches or to color change.

#### STOCKPILES

SPGM stockpile SS-42 was mulched and seeded and the inactive portion of topsoil pile TS-41 was supporting vegetative growth. These piles were observed from a distance.

#### BACKFILLING AND GRADING

Backfilling and grading appeared contemporaneous or within reclamation time-periods stated in the permit. Much of the E1/2 of Section 25 and SE1/4 of Section 24 has been rough graded and portions of these areas have been finish graded and grade approved.

### REVEGETATION

Reclaimed cropland located west of the haul road in the NE1/4NW1/4 of Section 19 was planted to winter wheat this year and the crop has been harvested. It was difficult to determine the mining related associated disturbance boundary within this field. CCMC and the Reclamation Division will need to monitor this area and other areas of reclaimed cropland to ensure compaction is not an issue.

Grade approved areas in Section 25 that were respread with topsoil have been seeded to a cover crop of oats. A temporary green manure crop initiates the 10-year revegetation period on reclaimed cropland, but this temporary cover crop does not initiate the revegetation responsibility period of native grassland. Pigeon grass, kochia, Russian thistle and other annual weeds are growing on grade approval COY-003, which is located south of CCMC's shop office complex in Section 31. This area was respread with topsoil in 2018 according to the 2018 Annual Mine Map. With the exception of some drainages and an access corridor, grade approvals COY-004, COY-005 and COY-006 have been respread with SPGM and were seeded to a cover crop of oats this summer, which is providing protection from erosion. Grade approval COY-008 in the SE1/4 of Section 24 has not yet been respread with subsoil or topsoil. Revegetation language in the permit does allow CCMC to delay initiation of the 10-year revegetation responsibility period in some areas.

### ROADS

Primary and ancillary haul roads were being watered to suppress dust. The ditches associated with the primary and ancillary haul roads are becoming established with vegetation. Tall wheatgrass appeared to be the principle species established. There was evidence that portions of the haul road north of County Road No. 12 might have been recently reseeded. A tractor with a grass drill attached was observed parked along the north side of this road.

### WILDLIFE

A coyote and a deer were observed on permitted lands during the inspection. Several carp were observed in Coyote Creek near the box culvert in Section 19.

### MISCELLANEOUS

Scattered small patches of Canada thistle were observed during this inspection. Canada thistle was present on an area where SPGM has been stripped northwest of sediment pond P31-01, in the undisturbed wooded draw in Section 24, along the road ditch northwest of the County Road No. 12 underpass, and adjacent to silt fence near the northern permit boundary in the S1/2 of Section 9. Absinth wormwood was observed on topsoil piles TS-11 and TS-19 and scattered plants were observed in the haul road ditches north of County Road No. 12. This species was also observed in the undisturbed wooded draw in Section 24. Mr. Sailer indicated that CCMC hired a contractor to spray noxious weeds on the mine.

A GPS tracklog showing the route traveled during the inspection is on file with the Reclamation Division as are photographs taken during the inspection.

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Guy A. Welch  
Environmental Scientist

cc: Jessica Unruh  
OSM Casper Field Office  
Mercer County Auditor

Minedata/CoyoteCreek/InspectionReports/2019/190828

## INSPECTION REPORT

DATE OF INSPECTION: September 11, 2019

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mining Co. – Coyote Creek Mine

PERMITS INSPECTED: NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Jason Sailer

INSPECTION CONDITIONS: The inspection was conducted between 10:30 a.m. and 2:00 p.m. CDT. Skies were overcast and the wind was from the east at 15-25 mph. The temperature was near 55° F. Access was generally restricted to haulroads and main access roads due to muddy conditions caused by recent precipitation.

### OVERBURDEN/COAL REMOVAL

The 101 dragline was idle in the NW1/4 of Section 6. An excavator and front end loader were being used to load two Kress coal haulage trucks in the NW1/4 of Section 6. No other mining or reclamation operations were ongoing at the time of inspection.

### SURFACE WATER MANAGEMENT

No sedimentation ponds were being discharged off-permit at the time of inspection. Coyote Creek Mine had received approximately 2.2 inches of rain over the course of three separate precipitation events within the past 5 days (1.6 inches on September 7, 0.5 inches on September 9 and 0.10 inches this morning).

The silt fences located in the prominent drainage north of the haulroad in the SE1/4 of Section 9 had been cleaned of sediment and the silt fence posts had been straightened out. Mr. Sailer reported that two sumps (No. 5 and No. 6) and their corresponding silt fences located at the head of the undisturbed drainage in the SE1/4 of Section 24 had been cleaned and repaired about 10 days ago, but those were not inspected today.

The water level of sediment pond P31-01 was above the permanent pool elevation and the PPE marker was not visible. In preparation for expected rain in the next couple of days, water from P31-01 was being pumped through overland poly pipe about 1/3 mile to the west into the south end of the short stagger pit located in the SE1/4 of Section 25. In an attempt to clean the water of P31-01 to required NDPDES water quality parameters, Mr. Sailer stated that coagulant (to reduce iron) and flocculent (to reduce turbidity) were circulated in the pond, but subsequent rain showers delayed efforts for a planned discharge.

The following sediment ponds were inspected and their water levels were noted in relation to the Permanent Pool Elevation (PPE), spillway elevation or base of pond as appropriate.

<b>Pond</b>	<b>Water Level</b>	<b>Comments</b>
P31-01	Above PPE	Discharging to Section 25 pit as noted above
P30-01	3 Feet below PPE	
P30-03	4 Feet below top of drop inlet	
P30-02	3 Feet above PPE	Canada goose in pond, water was turbid
P10-01	5 Feet below PPE	
P10-02	1 Foot of water in pond basin	
P06-03	6 Inches above PPE	

### STOCKPILES

The north slope of topsoil stockpile TS-39 was observed as having been mulched recently. Mr. Sailer indicated the mulching operation was conducted approximately one week ago.

### SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

An associated disturbance area consisting of two cropland tracts totaling 3.61 acres in the S1/2 of Section 19 was respread with topsoil in November 2016. The tracts are located on both sides of the north haulroad directly south of the multi-plate that was constructed to allow County Road 12 to pass over the haulroad. Topsoil was stripped and stockpiled in these areas and the equipment working on construction of the multi-plate parked on the stripped areas. After construction was complete, topsoil was respread on these associated disturbance areas and returned to active cropland. A small grain crop was planted this year and was previously harvested.

A penetrometer was used today to determine relative compaction or bulk density of soils to provide a comparison between the respread tract located along the west side of the haulroad and the adjacent undisturbed cropland. The penetrometer used was the DICKEY-john brand compaction tester that is commercially available. This device measures relative compaction by displaying the down-pressure required to push the probe into, or through the soil profile and registers that pressure as pounds per square inch (PSI) on the gauge. The west tract consists of about 2.2 acres and is approximately 700 feet in length and 140 feet wide. A total of three probes were conducted within the stripped and respread portion of the tract and three probes were conducted in the undisturbed portion of the adjoining cropland. The average penetration depth for all areas was 20 inches and the difference in depth penetrated before pegging out at 300 psi between the respread areas and the undisturbed areas averaged one inch, meaning the penetrometer pegged out at 300 an average of one inch shallower on the respread area versus the undisturbed area, demonstrating very similar soil bulk density conditions between the respread tract and the undisturbed tract.

### GROUND WATER

The water levels from a small handful of ground water monitoring wells screened in Coyote Creek alluvium and other lower hydrostratigraphic units/aquifers paired with the alluvial monitoring wells were recorded using the Reclamation Division's Solinst water level meter. Mr. Sailer was instructed to bring along Coyote Creek's water level meter to compare their readings with the Reclamation Division's. In all cases, the two water level meters measured to within .01 feet (.12 inches) of each other. Well ID, location information, water level depth below measuring point, water table depth below ground surface and other

germane information regarding the Coyote Creek alluvial ground water monitoring wells measured with the Reclamation Division's water level meter are provided in the following table.

Well ID	Location	Depth to water from measuring point	Measuring point height above ground surface	Actual depth to water table below ground surface	Screened Unit	Comments
CM12-08B	Section 31 NE1/4	11.94 feet	1.68 feet	10.26 feet	Coyote Creek Alluvium	North alfalfa field-northeast corner
CM12-20B	Section 31 SE1/4	12.96 feet	2.24 feet	10.72 feet	Coyote Creek Alluvium	South alfalfa field-west side

The two Coyote Creek alluvial monitoring wells nearest the Voigts alfalfa fields (CM12-08B and CM12-20B) had water level measurements of .11 feet (1.32 inches) and .16 feet (1.92 inches), respectively, higher than Coyote Creek's 2<sup>nd</sup> Quarter 2019 water level measurements taken on June 25 and June 13, 2019, respectively.

Pit water inflow into the Section 6 pit in the NW1/4 of Section 6 was observed to be minimal and basically appeared to be little more than seepage. A trench was excavated along the east side of the pit and Mr. Sailer said that the small amount of ground water retained in the sump was pumped to sediment pond P06-03, which will eventually be released to Coyote Creek once the water attains NDPDES discharge quality parameters.

**ROADS**

Travel by vehicle was restricted to main haul roads and access trails surfaced with gravel or scoria due to over 2 inches of rain received within the last several days. Two motor graders were observed blading the haulroad throughout the day.

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Bruce Beechie  
Environmental Scientist

cc: Jessica Unruh  
OSM Casper Field Office  
Mercer County Auditor

## INSPECTION REPORT

DATE OF INSPECTION: October 1, 2019

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coyote Creek Mining Co. – Coyote Creek Mine

PERMITS INSPECTED: NACC-1302

PERSONS ACCOMPANYING INSPECTORS: Donn Steffen and Tyler Barth representing CCMC; Casey Voigt, Julie Voigt, JJ England, and Mark Anderson representing the Voigt's

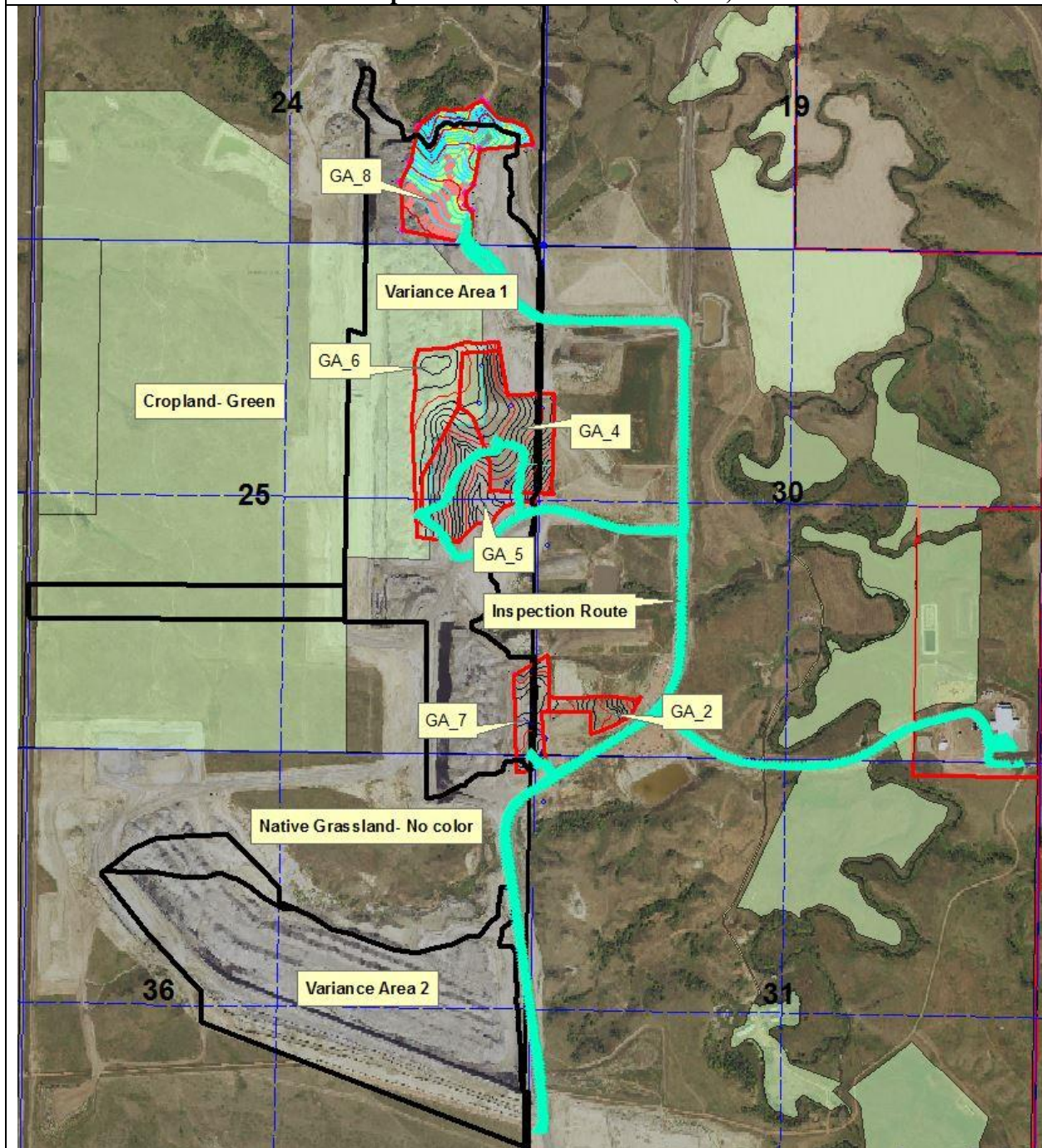
INSPECTION CONDITIONS: The inspection was conducted between 11:00 a.m. and 2:00 p.m. CDT. Skies were overcast. The temperature was near 40° F. Access was limited due to muddy conditions.

### GENERAL

The purpose of this inspection was to accompany Casey and Julie Voigt, and their representatives, to lands within Variance Areas 1 and 2 in Permit NACC-1302 that have been respread with topsoil as ordered by Timothy J. Dawson, Administrative Law Judge (ALJ) in PSC Case No. RC-19-189 and RC-19-190. The Voigt's expressed concerns with CCMC's reclamation and requested access to these areas to gather information in advance of an informal conference.

Grade approved areas that have been respread with subsoil and topsoil in the E1/2 of Section 25 and the SE1/4 of Section 24 were inspected. This included portions of grade approvals COY\_004, COY\_005, COY\_007 and COY\_008. Grade approval COY\_004 was respread with topsoil in 2018 and the other grade approvals were respread with topsoil in 2019. Rocks are generally picked after topsoil-respreading operations have been completed and the approved seed mixture or a temporary cover crop is then planted to protect the soil from erosion. Mulch may be applied and crimped into the soil surface if topsoil-respreading operations are completed outside of the growing season. The post-mining land uses within these grade approvals are cropland and native grassland. Narrative in Permit NACC-1302 allows CCMC to delay planting native grasslands for a year or more to control invasive non-native perennial grasses. Figure 1 below, depicts the grade approval areas and the route traveled during this inspection.

**Figure 1: Variance Areas 1 and 2 (outlined in Black), grade approvals (outlined in Red) and inspection route on 10/1/2019 (Blue)**



Oats as broadcast seeded on grade approval COY\_005 after topsoil was respread in the summer of 2019. Portions of this area were subsequently tilled to eliminate rills that formed, and the entire tract was drill reseeded to oats along with grade approval COY\_006. Oats established earlier in the growing season has grown much taller and is more mature than the oats that was planted later, so the oats stand within this field was not uniform in height or maturity. The oats cover crop may be considered a green manure crop that initiates the 10-year revegetation responsibility period on the cropland portion of these grade approvals, but a cover crop does not initiate the 10-year revegetation responsibility period on land to be

reclaimed to native grassland. The approved native grassland seed mixture must be planted on reclaimed native grassland to initiate the 10-year responsibility period.

Grade approval COY\_004 has not yet been seeded to the approved native grassland seed mixture. Annual weed growth consisting primarily of barnyard grass, pigeongrass, Russian thistle, western ragweed, American vetch, black medic, wavyleaf thistle and other species are protecting the soil from erosion. A few native species, such as western wheatgrass, prairie sandreed, blue grama and purple prairie clover, were observed growing on this grade approval, presumably from topsoil direct respreading operations. A single plant of crested wheatgrass was observed and it had formed seed heads. Mr. Steffen indicated that this grade approval tract had been mowed earlier in the growing season and that it may be sprayed with a herbicide yet this year if weather conditions allow.

Grade approval COY\_007, which is located in the southeast corner of Section 25, was growing a cover crop of oats that was only a few inches tall. This site will need to be monitored to ensure cover is adequate to control erosion. Grade approval COY\_008, which is located in the SE1/4 of Section 24, was respread with topsoil last week. This grade approval will need to be mulched to protect the soil from erosion over the winter months. Rocks have not yet been picked from grade approval COY\_008.

None of the land in Variance Area 2, which is located in Section 36, has been grade approved or respread with subsoil or topsoil.

#### MISCELLANEOUS

A GPS tracklog of the route traveled during this inspection and photographs taken are on file with the Reclamation Division.

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Bruce Beechie  
Environmental Scientist

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Bruce A. Johnson P.E.  
Environmental Engineer

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Guy A. Welch  
Environmental Scientist

cc: Jessica Unruh  
OSM Casper Field Office  
Mercer County Auditor

# ALLUVIAL VALLEY FLOOR IDENTIFICATION AND STUDY GUIDELINES



U.S. DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

August 1983

history, court decisions, regulations, and ongoing administrative decisions, can result in incomplete or misdirected studies. The SMCRA defines alluvial valley floor as:

the unconsolidated stream-laid deposits holding streams with water availability sufficient for subirrigation or flood irrigation agricultural activities but does not include upland areas which are generally overlain by a thin veneer of colluvial deposits composed chiefly of debris from sheet erosion, deposits formed by unconcentrated runoff or slope wash, together with talus, or other mass-movement accumulations and windblown deposits.

The term is, therefore, an integration of concepts in geology, hydrology, and agricultural land use (fig. 2). Alluvial valley floors are not merely those valleys filled with alluvium.

"Alluvial valley floor" is a term that was first mentioned in the context of coal mining by the National Academy of Sciences (1974) in a report concerning reclamation of Western lands. The Academy noted the susceptibility to erosion of unconsolidated alluvial deposits and the relationship of gullying to declining ground-water levels and lost productivity of affected lands. The Academy suggested that "alluvial valley floors and stream channels be preserved" (p. 45). The Academy used the term as would a geologist and did not distinguish types of valleys or their relative importance to agriculture.

During congressional debates concerning coal mine reclamation in the mid-1970's, focus turned to protection of certain types of valleys--those of most importance to agricultural operations:

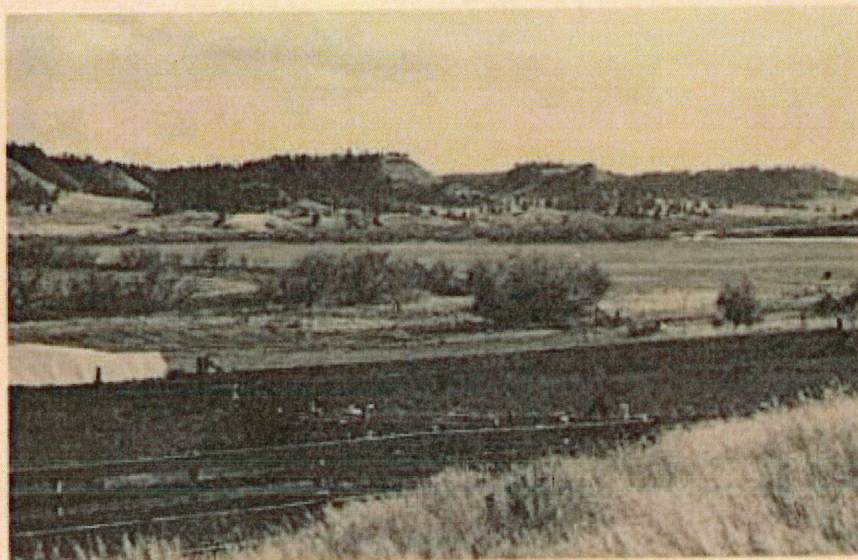


Fig. 2 View of Rosebud Creek near Slough Grass Coulee, southeastern Montana. Hay meadows are subirrigated.

Of special importance in the arid and semiarid coal mining areas are alluvial valley floors which are the productive lands that form the backbone of the agricultural and cattle ranching economy of these areas. For instance, in the Powder River Basin of eastern Montana and Wyoming, agricultural and ranching operations which form the basis of the existing economic system of the region could not survive without hay production from the naturally subirrigated and flood irrigated meadows located on the alluvial valley floors. (U.S. House of Representatives, Committee on Interior and Insular Affairs, 1976).

The understanding of an alluvial valley floor is well described in this statement and has been consistently understood in the subsequent passage and implementation of the SMCRA.

The two major aspects of an alluvial valley floor--geology and water resources--are discussed more extensively in the following sections.

A. Geology. As already noted, one of the two fundamental aspects of an alluvial valley floor is its geologic character. Regulations, judicial review, and administrative decisions have expanded and clarified the statutory definition. The geologic criteria of an alluvial valley floor are understood to be:

(a) A TOPOGRAPHIC VALLEY WITH A CONTINUOUS PERENNIAL, INTERMITTENT, OR EPHEMERAL STREAM CHANNEL RUNNING THROUGH IT; AND

agricultural activities. Most of the confusion and disagreement in identifying alluvial valleys is a function of different perspectives on whether water availability in a specific valley is actually sufficient for agricultural activities. Appendix B describes surface-water irrigation practices in the West, and appendix C describes subirrigation and its evaluation.

Legislative, judicial, and administrative interpretation of alluvial valley floors indicate that the water availability criteria are met if:

- (a) WATER IS AVAILABLE BY SURFACE-WATER IRRIGATION OR SUBIRRIGATION AND IS BEING OR HAS SUCCESSFULLY BEEN USED TO ENHANCE PRODUCTION OF AGRICULTURALLY USEFUL VEGETATION; OR
- (b) SURFACE WATER IS AVAILABLE IN SUFFICIENT QUANTITIES TO SUPPORT AGRICULTURAL ACTIVITIES.

The term "flood irrigation" means natural flood overflow or irrigation using surface waters in the methods typical for a given region. Not all styles of surface-water irrigation are appropriate for all Western coal regions. Appendix B outlines typical Western irrigation practices.

The term "subirrigation" is understood to mean the supply of water to plant roots from an underlying alluvial ground-water system such that the vegetation is more productive than in other areas and that the vegetation continues to grow during the moisture-stress portion of the growing season. Some low-lying areas have greater

vegetation productivity than adjacent uplands merely because of better soils, snow drift accumulation, or occasional flood overflow. These areas are not considered to be subirrigated, and one of the tasks of identification studies is to distinguish those valley areas whose productivity is a result of subirrigation, and not a result of water from some other source. The water availability criterion excludes areas that could be developed for subirrigation; e.g., by establishing deep rooting alfalfa to tap ground water not presently used by native vegetation.

The identification process described in the next section suggests a method of assessing water availability using regional and site-specific data.

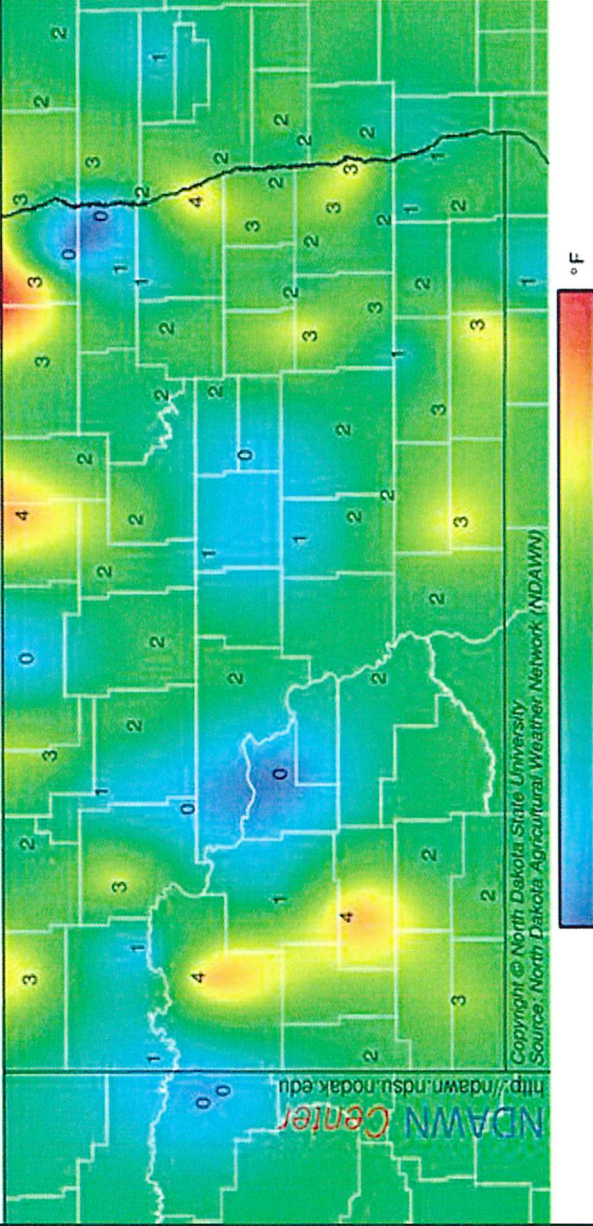
# Crop Water Use & Rooting Depth - Crop Rotation for a Dry Cycle

Joel Ransom

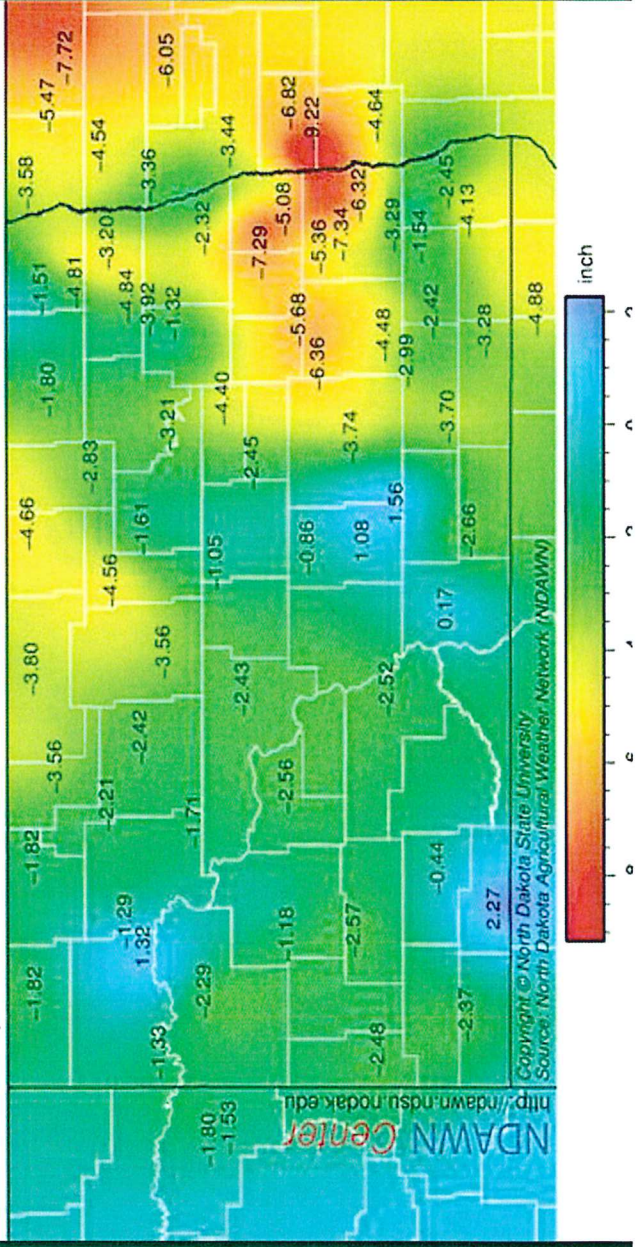
NDSU Extension Agronomist

**NDSU** EXTENSION  
SERVICE

Departure from Normal Average Air Temperature (°F) (2012-04-01 - 2012-08-31)



Departure from Normal Rainfall (inch) (2012-04-01 - 2012-08-31)



The data cutoff for Drought Monitor maps is Tuesday at 7 a.m. Eastern Time. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

# U.S. Drought Monitor

## High Plains

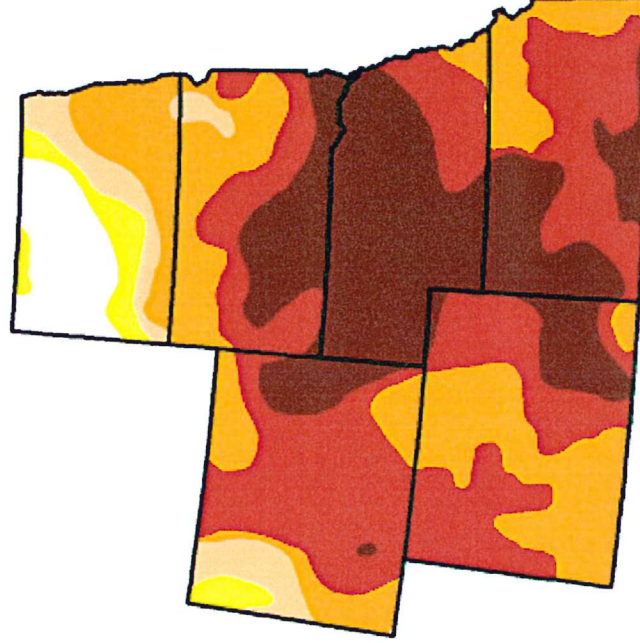
January 29, 2013  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.79	95.21	92.08	87.25	61.29	27.02
Last Week (01/22/2013 msp)	4.79	95.21	92.08	87.25	61.30	27.02
3 Months Ago (10/30/2012 msp)	0.00	100.00	98.20	83.87	57.02	27.44
Start of Calendar Year (01/01/2013 msp)	1.54	98.46	93.01	86.20	60.25	26.99
Start of Water Year (09/25/2012 msp)	0.00	100.00	98.91	83.80	61.28	24.35
One Year Ago (01/24/2012 msp)	40.03	59.97	22.86	6.33	2.22	0.04

Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, January 31, 2013  
Mark Svoboda, National Drought Mitigation Center

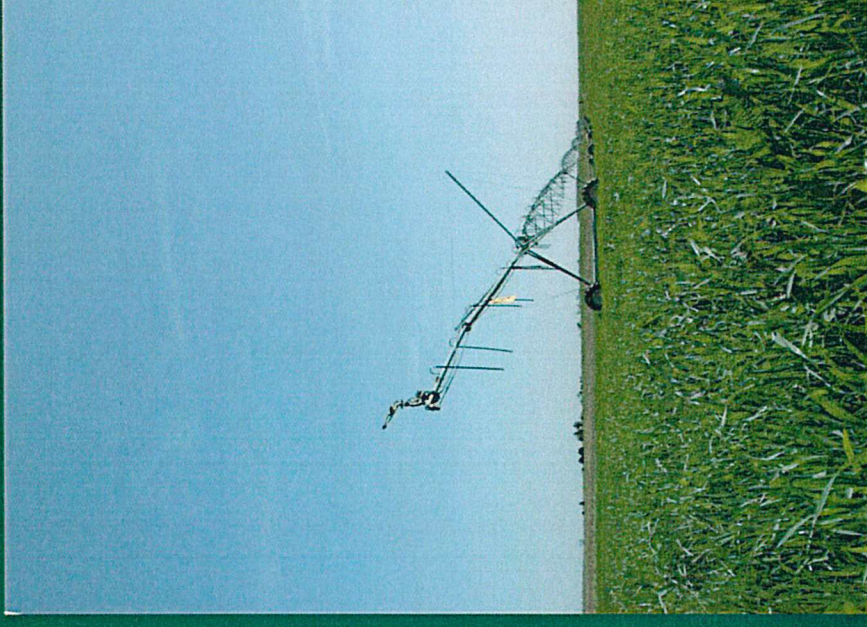
# Presentation overview

- Topics to be covered:
  - Crop water requirements
  - Soil water holding capacity
  - Rooting depth
  - Water balance calculations

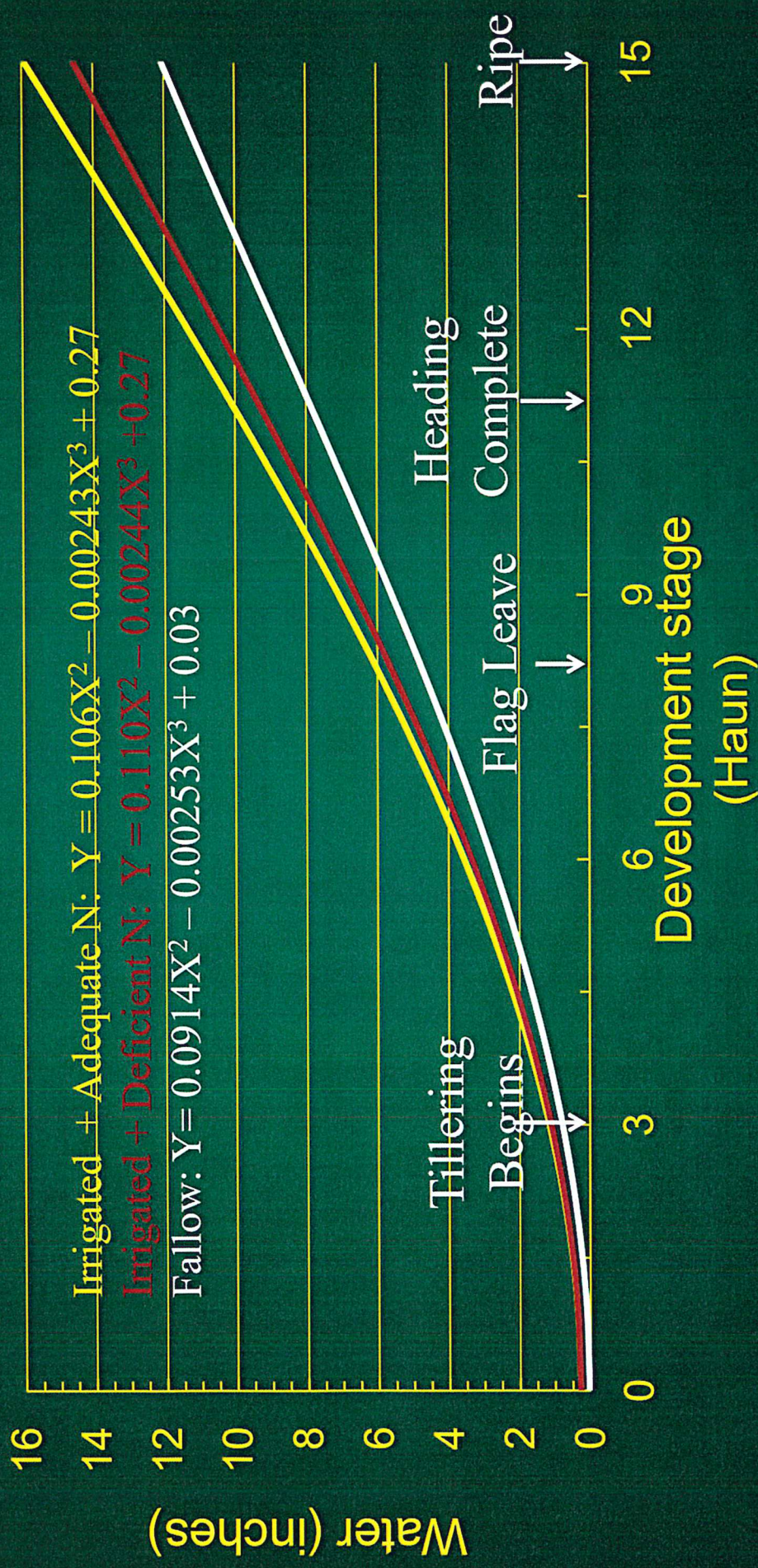


# How much water does a crop need?

- Alfalfa = 22 – 24 inches
- Sunflower = 18 -21 inches
- Corn = 19 – 20 inches
- Soybean = 16-17 inches
- Spring wheat = 12 - 16 inches
- Barley = 11 – 16 inches

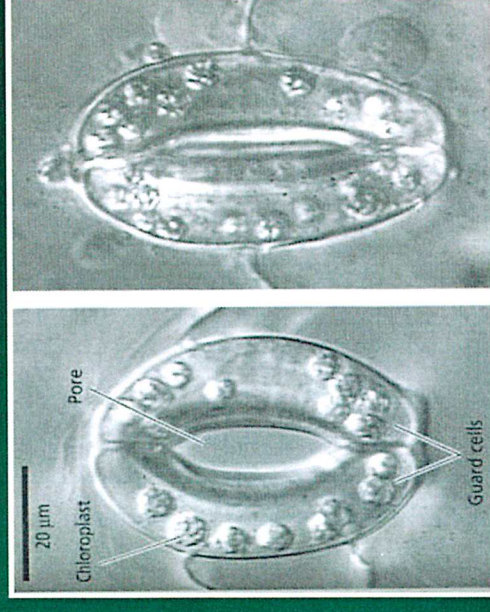


# Cumulative water-use by ET, HRSW, 1979-1987 Mandan



# Water use and drought

- Metabolism
- Structure
- Transpiration
  - Moves nutrients from the roots
  - Regulated by stomatal opening
    - Cooling of plant
    - Movement of water through the plant
    - Movement of CO<sub>2</sub> into the leaves
    - Water use correlates to yield
    - Challenges are to maximize available water for transpiration and maximize efficiency of water use



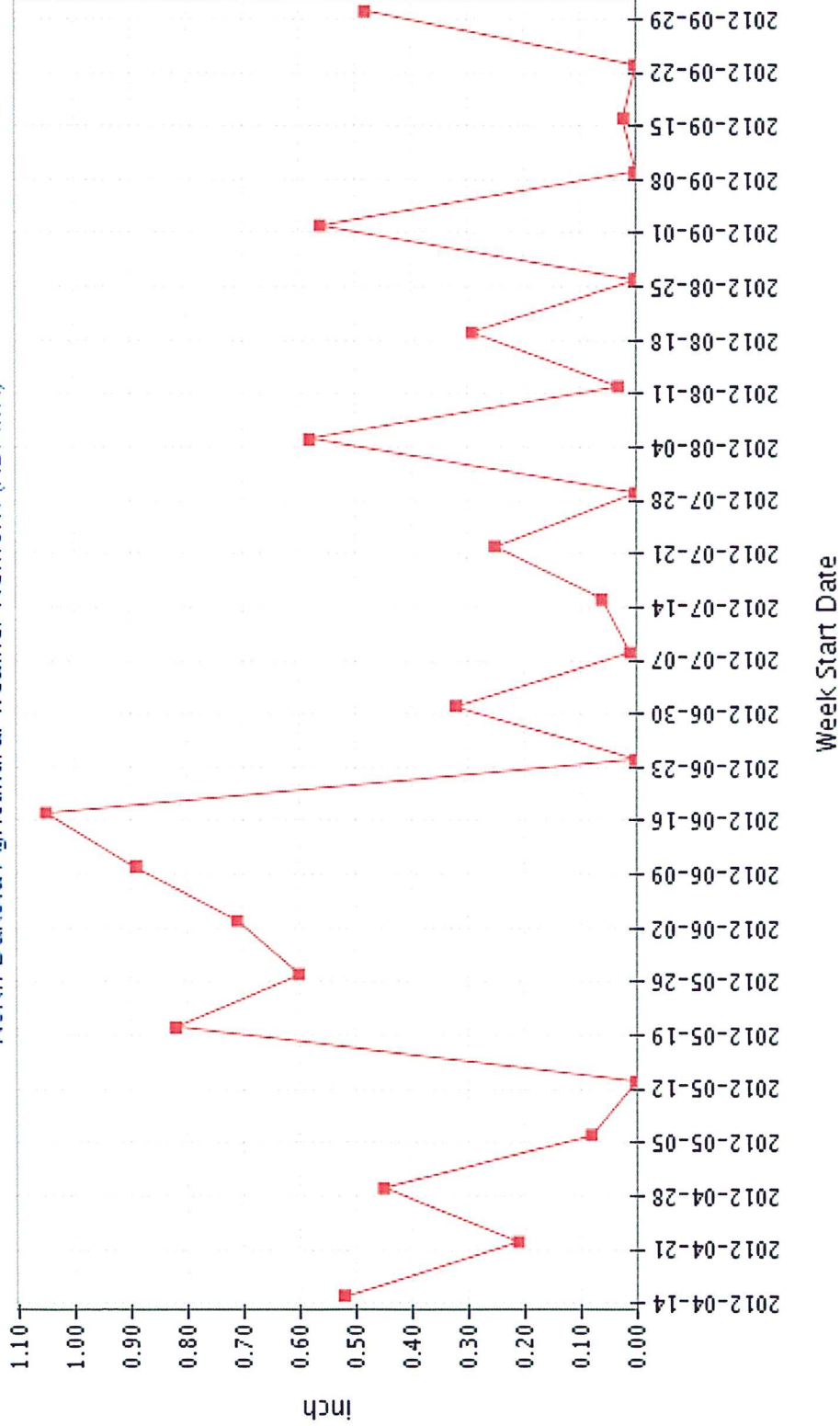
# Soil water availability in 2013

- Carryover from the end of the 2012 growing season
  - Soil type
  - Crop type:
    - rooting depth
    - water requirement
    - productivity of the crop
- Recharge during the fall and winter
- Rainfall during the growing season
- Rooting depth of crop

## Weekly Total Rainfall

(2012-04-15 - 2012-09-30)

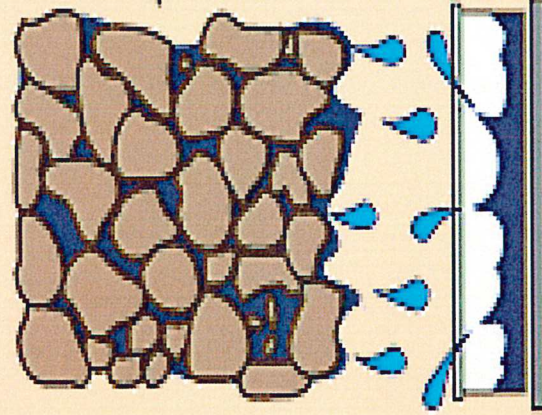
North Dakota Agricultural Weather Network (NDAWN)



Total rainfall for the period = 7.9 inches

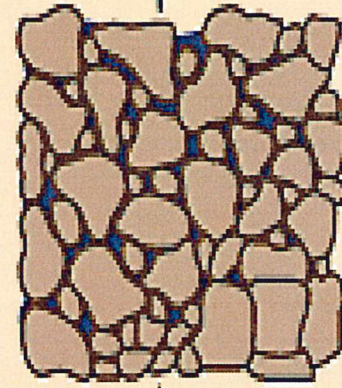
Safe to assume that soil was depleted to the rooting depth of the crop grown (16" needed minus 8" rainfall, 8 removed from the soil or all that it could hold)

# Soil water holding basics



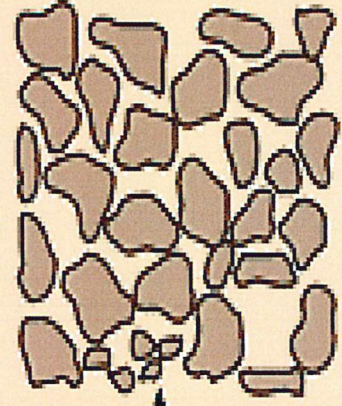
## Saturation

All pores are full of water. Gravitational water is lost



## Field Capacity

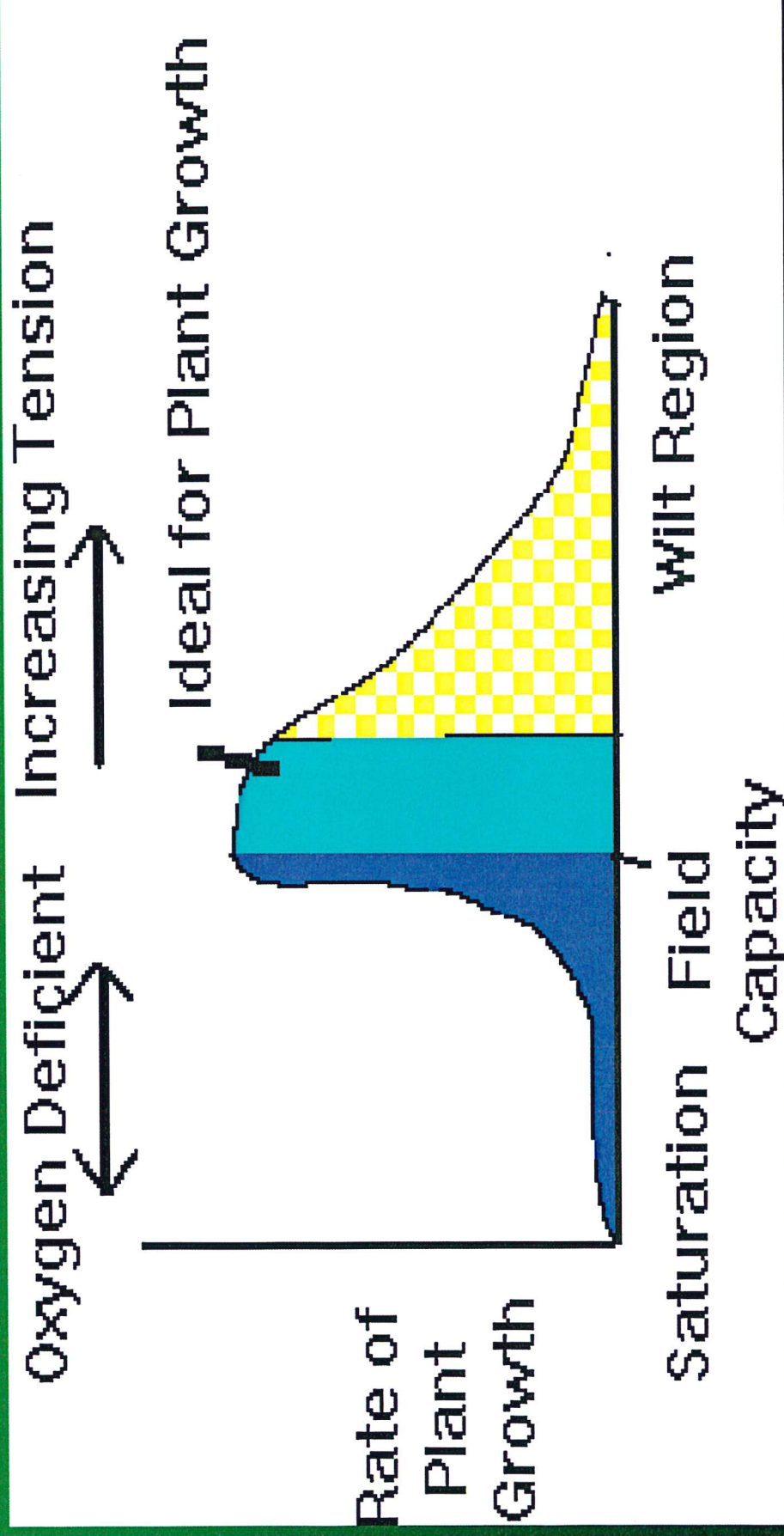
Available water for plant growth



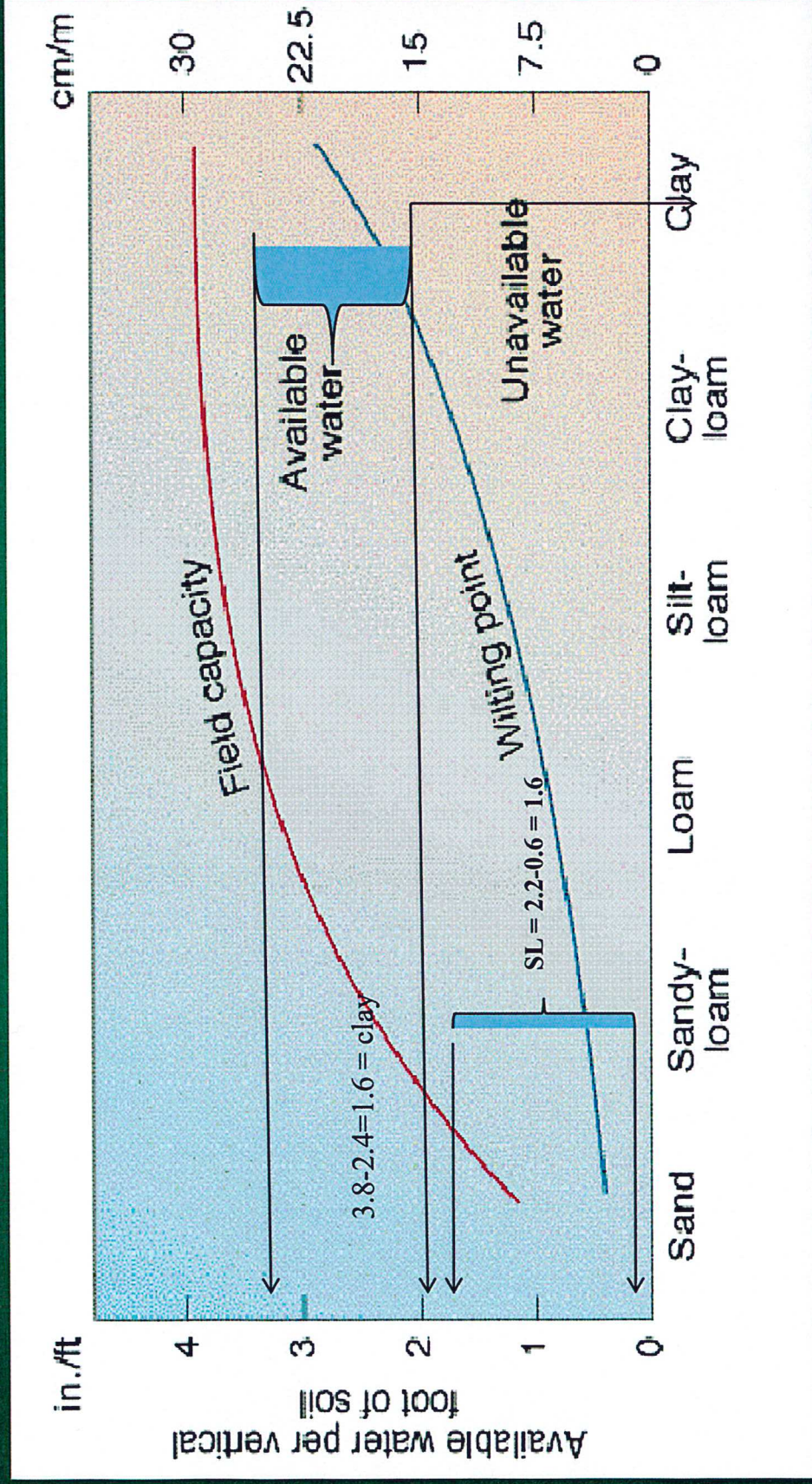
## Wilting Point

No more water is available to plants

# Soil Water and Plant Use



# Relationship between soil texture and soil water availability.



# Water holding capacity (inches/ft) of different soil types

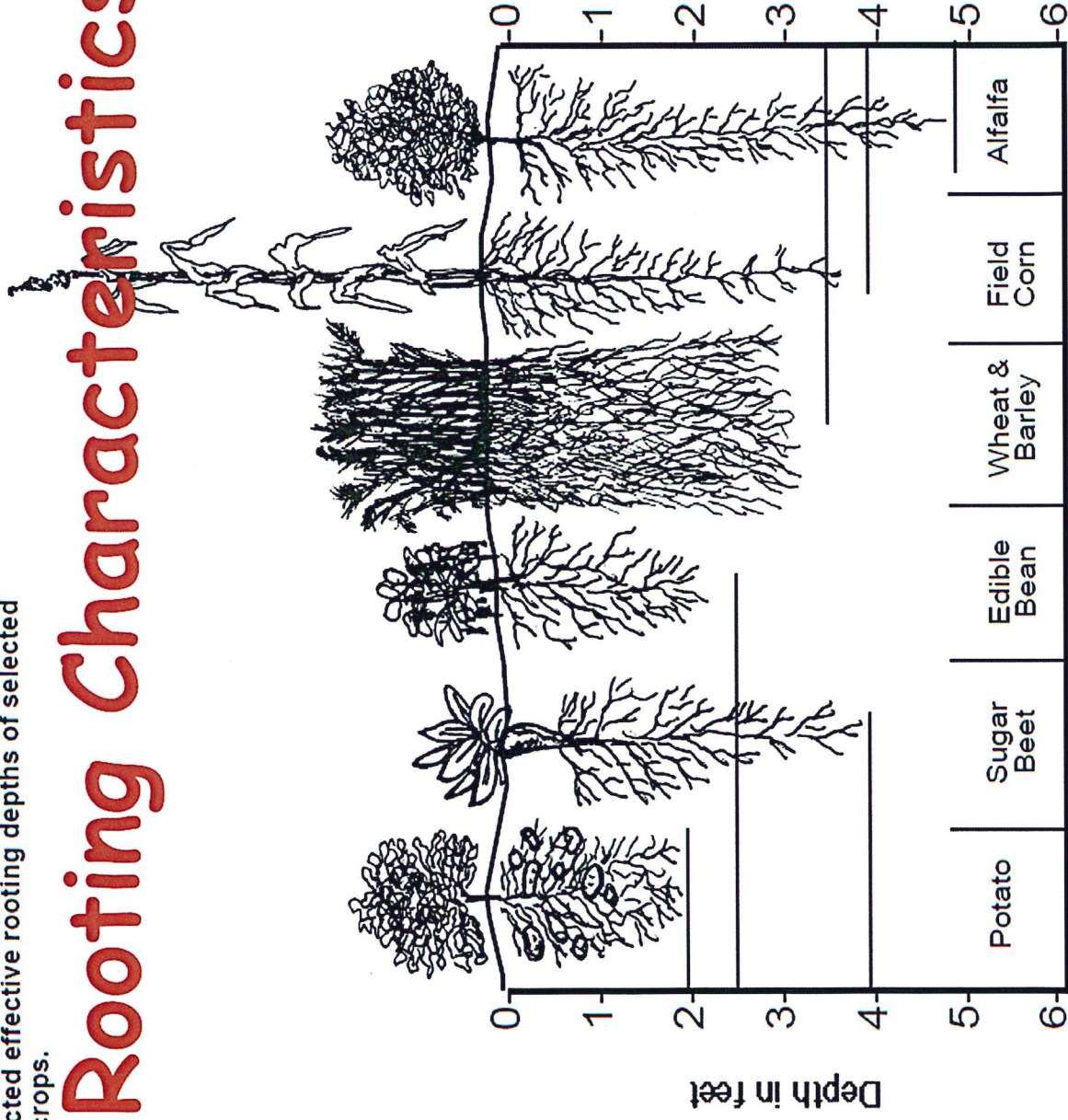
Coarse Sands	0.25 - 0.75
Fine Sands	0.75 - 1.00
Loamy Sand	1.10 - 1.20
Sandy Loams	1.25 - 1.40
Fine Sandy Loam	1.50 - 2.00
Loam	1.80 - 2.00
Silt Loams	2.00 - 2.50
Clay Loam	1.80 - 2.00
Silty Clay Loams	1.80 - 2.00
Silty Clay	1.50 - 1.70
Clay	1.20 - 1.50

# Rooting depth and crop water use characteristics



Unrestricted effective rooting depths of selected mature crops.

# Rooting Characteristics



Lundstrom, 1988

NDSU

# Rooting Depths - Mandan

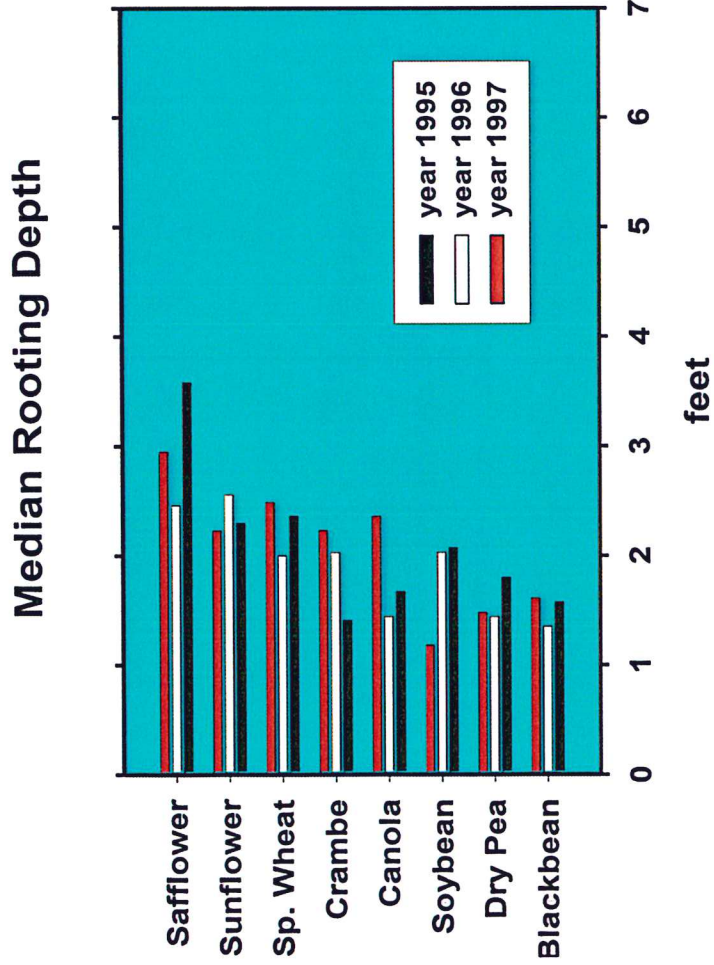
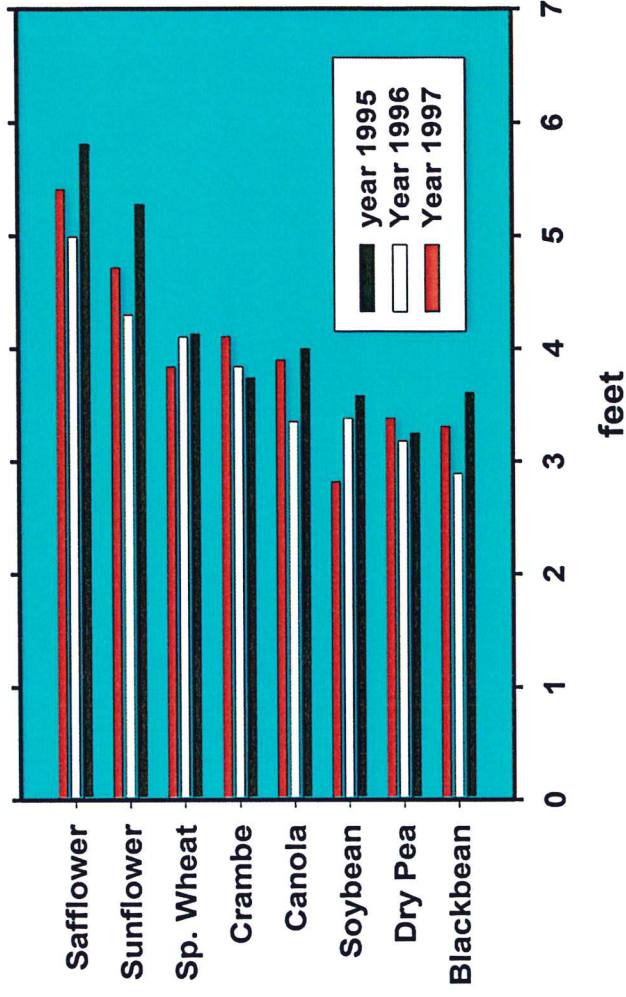


Fig. C. Maximum and median depths of root length growth measured with minirhizotron technology in Phase I Alternate Crops Experiment, 1995-1997. Median depth is that at which half of root length growth is above, half below.

Source: Crop sequence calculator

## Crop characteristics with regards to soil water use

Length of active growing season is the best overall guide to the relative amount of soil water depletion. Rooting depth is also an indicator of depletion.

	WATER DEPLETION	SEASON LENGTH	ROOTING DEPTH
SUNFLOWER	heavy	long	deep
CORN	heavy	long	mod. deep
SOYBEAN*	mod. heavy	mod. long	mod. shallow
SP. WHEAT	medium to mod. Light	mod. short	medium
CANOLA	mod. heavy to mod.light	medium but variable	medium
DRY PEA	light	short	mod. shallow

\* Soybean was grown in the Phase II crop sequence experiment.

# Soil water depletion to six feet, Mandan, 2002

<b>SUNFLOWER</b>	<b>8.2</b>
<b>CORN</b>	<b>7.0</b>
<b>SPRING WHEAT</b>	<b>5.0</b>
<b>CANOLA</b>	<b>7.2</b>
<b>Chickpea</b>	<b>5.2</b>
<b>Lentil</b>	<b>4.0</b>
<b>DRY PEA</b>	<b>3.9</b>

Crop Sequence calculator,  
USDA-Mandan

NDSU

# What about recharge during the winter

Crop	Depletion ----- inches -----	Recharge	Rank Avg Recharge
Sunflower	5.3	1.2	10
Corn	5.0	2.1	6
Spring wheat	4.2	2.4	1,2
Canola	3.9	2.1	5
Millet	3.8	2.2	3,4
Buckwheat	3.7	2.2	3,4
Chickpea	3.3	1.4	9
Lentil	3.2	1.5	8
Dry pea	2.0	1.5	7

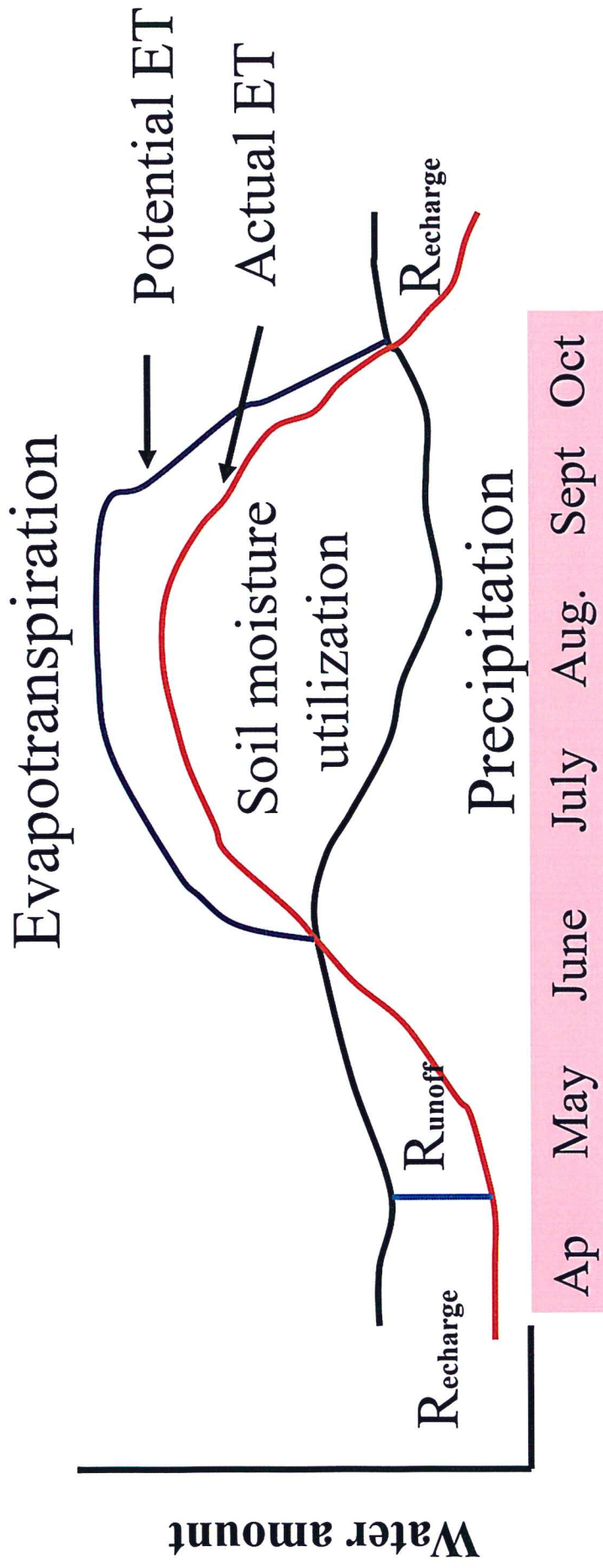
Merrill, Tanka, Krupinsky, Liebig and Hanson, 2007

# How deep will an inch of moisture move during recharge

- Depends on the moisture status of the soil
  - One inch rain that fully infiltrates into the soil moves:
    - Fine sand: 12 inches
    - Loam: 6 inches
    - Clay: 8 inches
- Heavy rain events usually mean surface runoff
- Frozen soils in the spring will not allow infiltration



# Water Balance Diagram



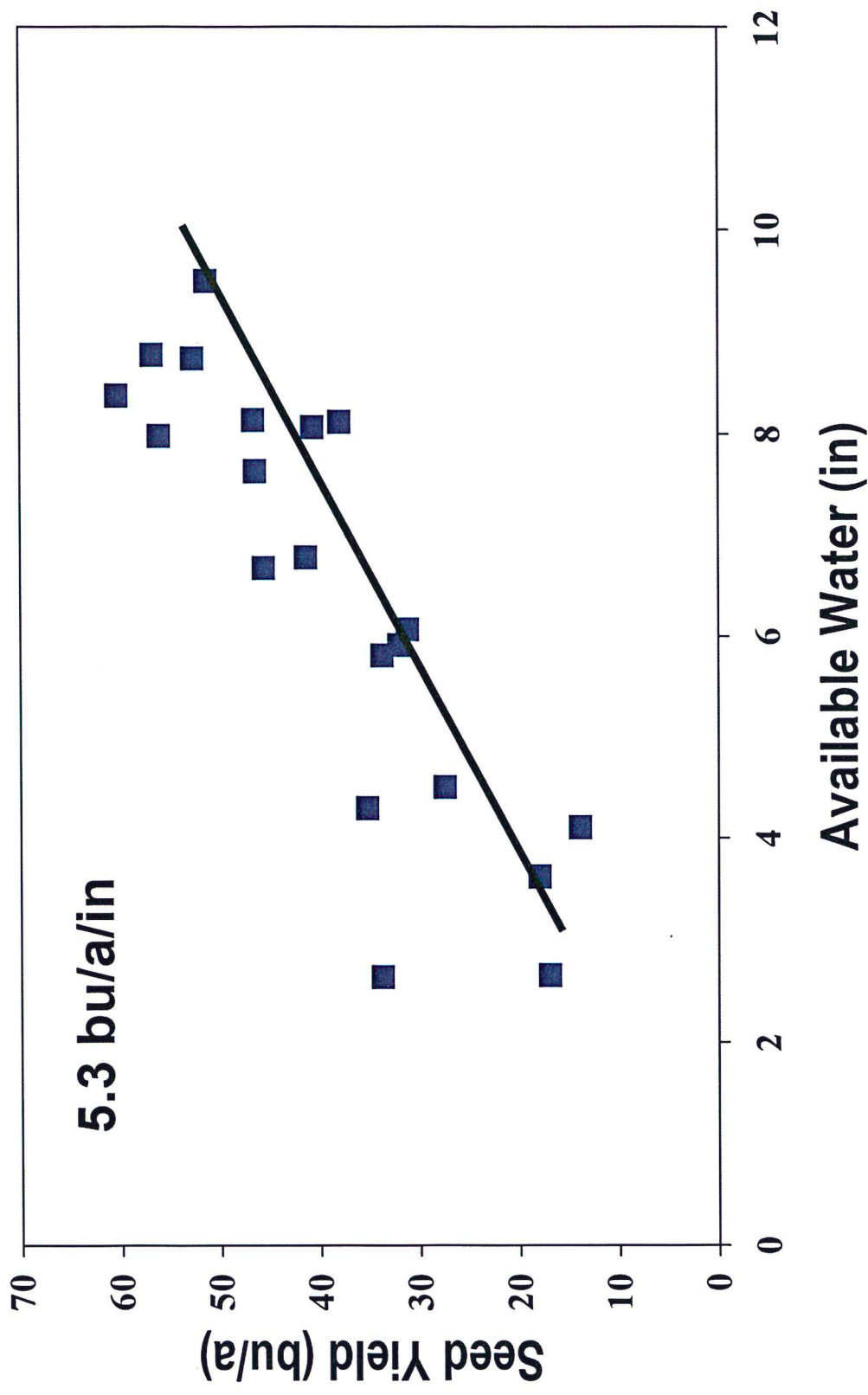
**ET > Precip = Soil moisture utilization**

**Precip > ET = Recharge, surplus, and runoff**

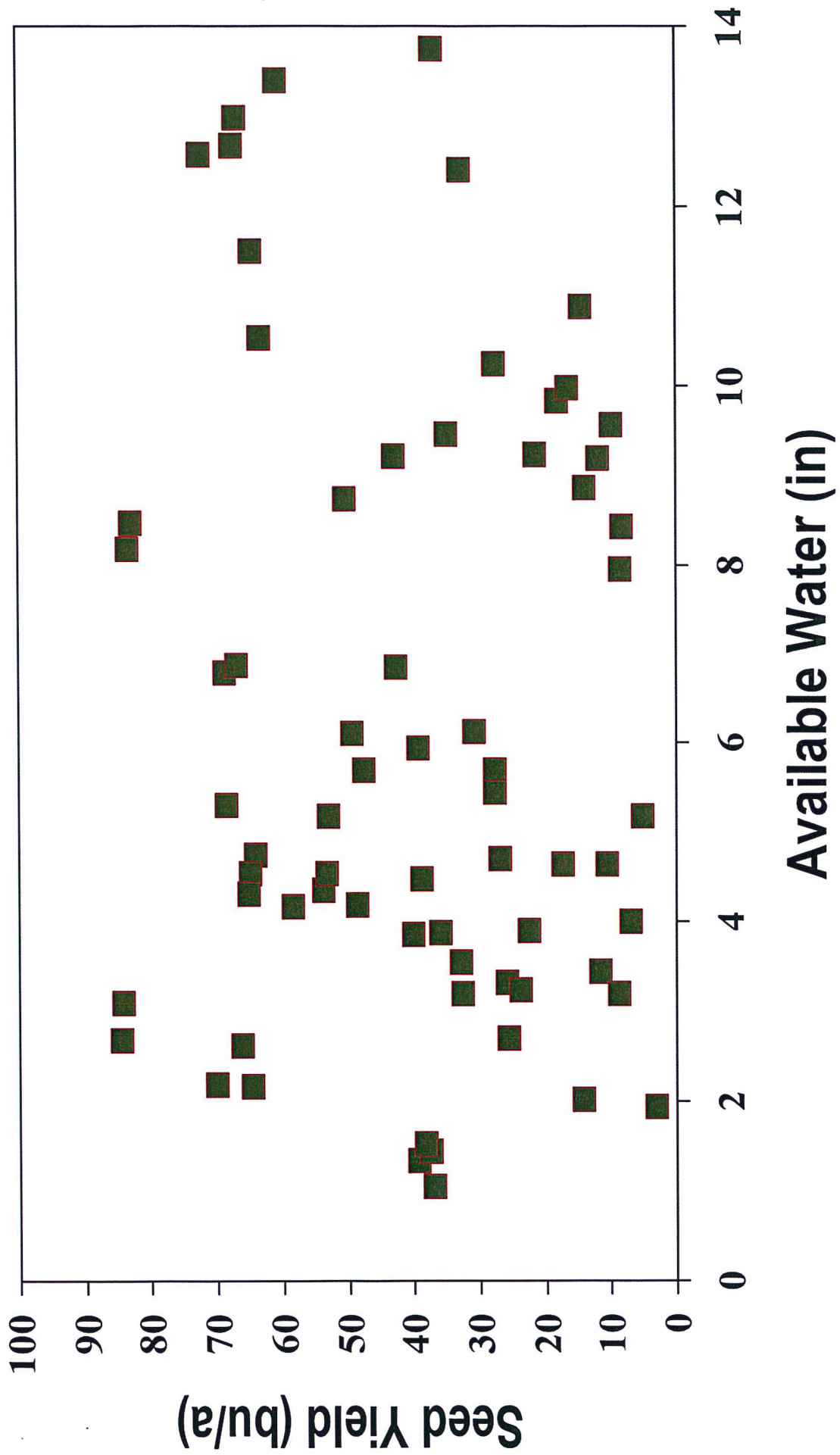
# Some practical numbers

- **A full profile shortly after planting 2012 (2 inches per foot of soil available water)**
- **Depleted root zone by harvest**
  - Spring wheat 8 inches (down to four feet)
  - Corn 10 inches (down to five feet)
- **Fall/winter recharge (1.2 inches) (top 8 inches at field capacity)**
- **Roots grow to water, but can't grow through a dry zone and are impeded by compaction.**
- **We need additional 6.8 (following wheat) and 8.8 inches (following corn) to fill the profile**

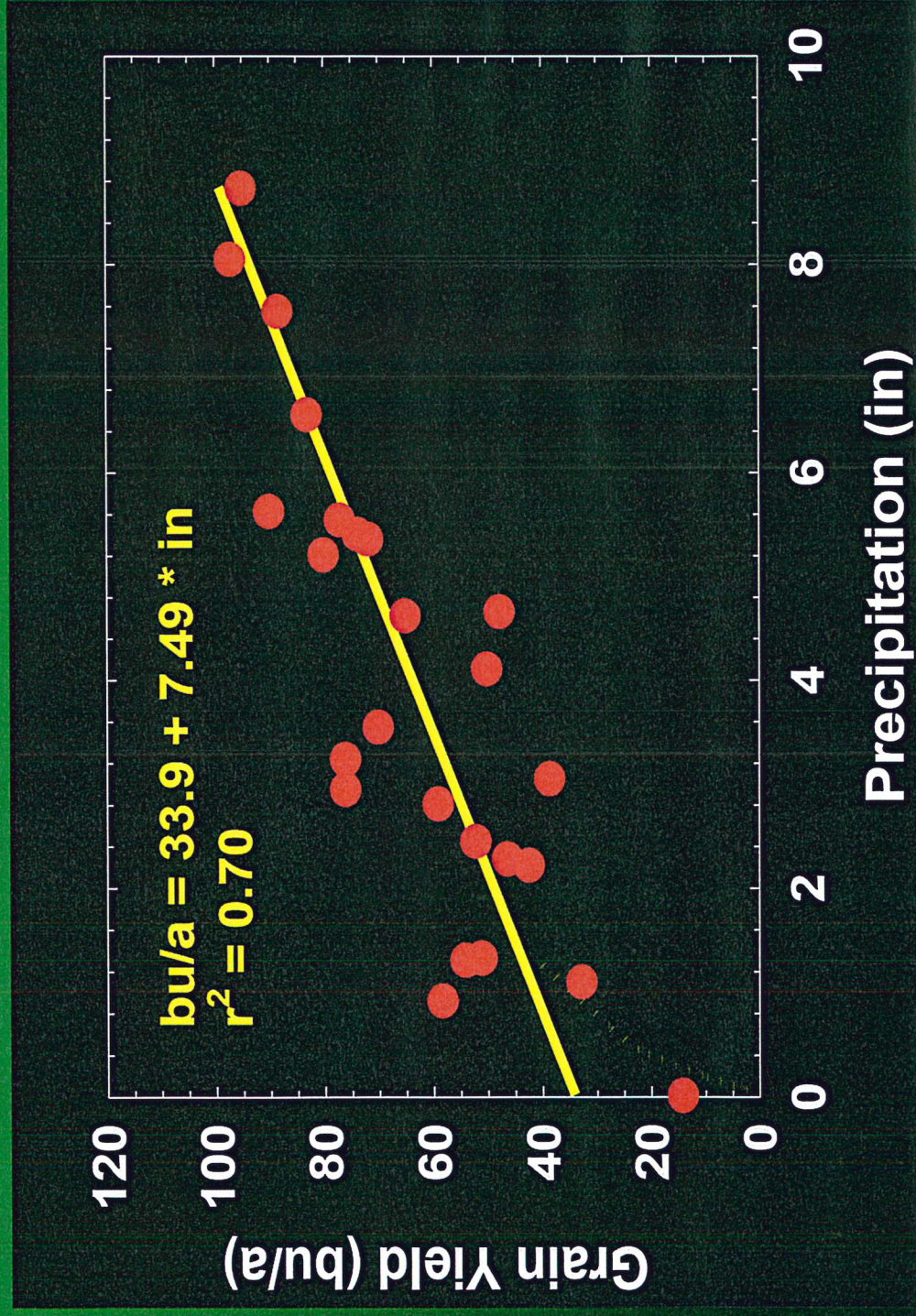
# Wheat Yield vs. Starting Soil Water



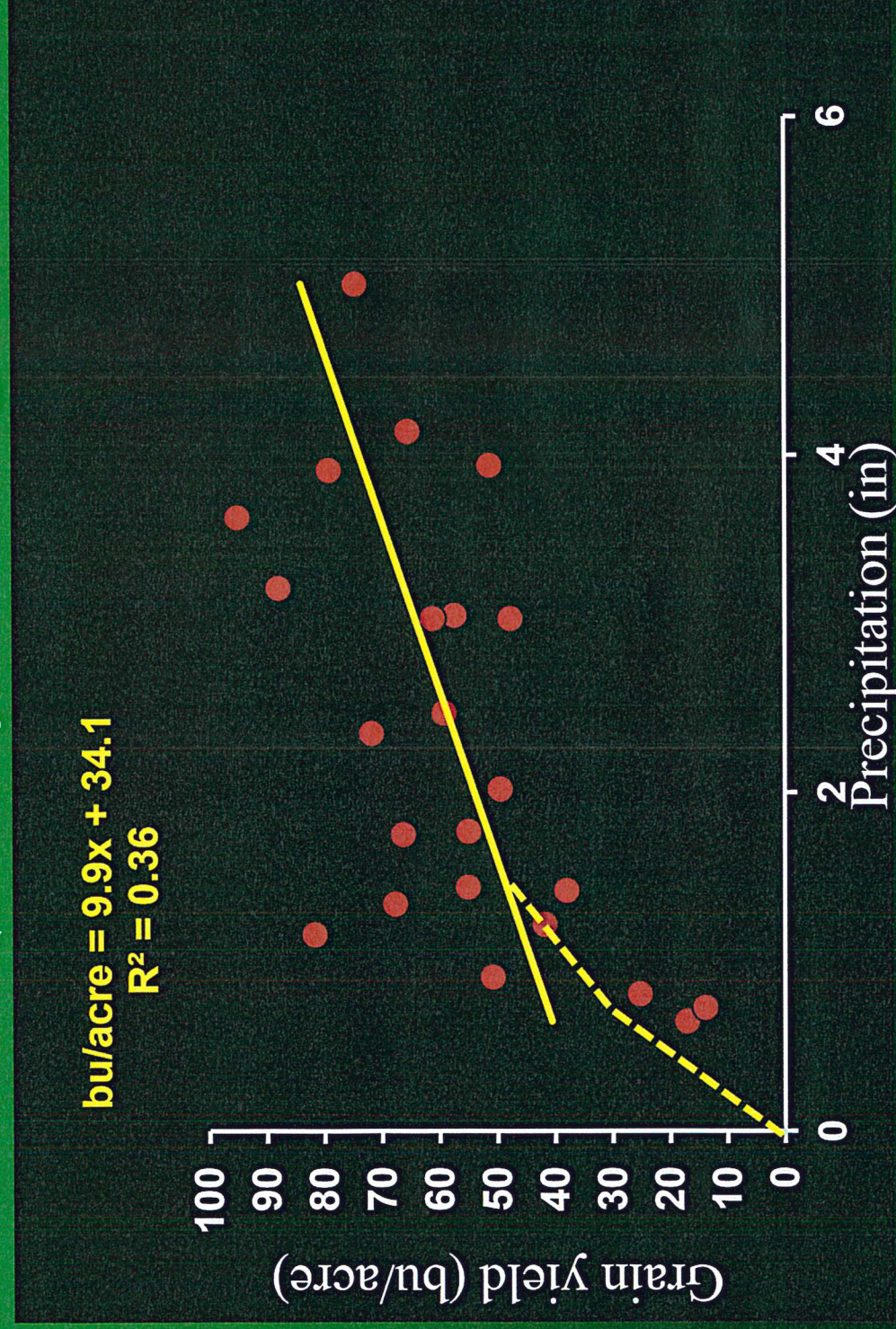
# Corn Yield vs. Starting Soil Water



# Corn Yield vs Precipitation, CO (15 July - 25 August)



# Corn Yield vs Precipitation Western ND (15 July – 25 August)



Ashley,  
2013

# Practices to increase water availability

- **Tillage**
  - Minimize or eliminate tillage
- **Residue management**
  - Snow catch is good
  - Reduced surface evaporation
  - Excessive residue can delay emergence and increase frost risks in the spring

# A couple of suggestions for 2013

- **Growing deeper rooting and high water requiring crops after barley, spring wheat, or soybeans may provide ~>2 inch of moisture**
  - Avoid corn after corn or after sunflower!
- **Small grains will be less risky than corn or soybeans in soils with little or no stored moisture**
  - If winter recharge is good and early spring rains refill the profile, a good crop would be likely
  - Corn and soybeans will need July and August rains regardless of spring recharge.

## PSC Exhibit E

### Section 3.1.1.8 - Reclamation Costs

Estimated reclamation costs for Coyote Creek Mine have been developed in accordance with Section 69-05.2-12-07 of the North Dakota Administrative Code, Section 38-14.1-16 of the North Dakota Century Code, and in accordance with procedures established in Policy Memorandum No. 16 to Mine Operators – Reclamation Cost Estimating Guidelines. The general method used to calculate the final reclamation costs are in agreement with the guidelines established in Policy Memorandum No. 16 to Mine Operators. The 8443.6 acre permit area was initially incrementally bonded to cover disturbance associated with construction of the shop/office/dragline erection site, sedimentation impoundment, field engineered diversions, haulroads, stockpiles, SPGM removal, initial dragline test pit, substation in Section 24, breaker boxes along County Road 13, and the coal processing facility. The reclamation liability for the 8443.6 acre permit area now covers the worst case scenario.

### **Legal Description Worst Case Bond Area**

The legal description contains two tracts as follows:

A tract of land for a mining permit located in T142N and T143N, R88W and R89W, of the 5th P.M., Mercer County, North Dakota. All bearings and distances are based on the North Dakota State Plane Coordinate System, South Zone, NAD 83. All bound calls supersede any metes within this description.

Described as follows:

Beginning at the northeast corner of Section 30, T143N, R88W;

thence S 00°46'11" W a distance of 2639.34', to the east 1/4 corner of said Section; thence S 00°54'16" W a distance of 2639.62', to the southeast corner of said Section; thence S 00°54'16" W a distance of 2639.60', to the east 1/4 corner of Section 31, T143N, R88W; thence S 00°54'16" W a distance of 2639.60', to the southeast corner of said Section; thence S 00°54'00" W a distance of 2649.62', to the east 1/4 corner of Section 6, T142N, R88W; thence S 00°47'22" W a distance of 2638.46', to the southeast corner of said Section; thence S 01°09'27" W a distance of 1308.63', to the N 1/16 corner of Section 7, T142N, R88W; thence N 88°59'36" W a distance of 2627.51', to the CN 1/16 corner of said Section; thence N 88°57'43" W a distance of 2627.09', to the N 1/16 corner of said Section; thence N 89°18'06" W a distance of 2622.16', to the CN 1/16 corner of Section, 12, T142N, R89W; thence N 89°12'46" W a distance of 2625.09', to the N 1/16 corner of said Section; thence N 89°02'25" W a distance of 2625.57', to the CN 1/16 corner of Section 11, T142N, R89W; thence N 89°05'11" W a distance of 2613.43', to the N 1/16 corner of said Section; thence N 01°01'21" E a distance of 1315.76', to the northwest corner of said Section; thence N 88°58'19" W a distance of 2612.33', to the south 1/4 corner of Section 3, T142N, R89W; thence N 00°57'05" E a distance of 5265.85', to the north 1/4 corner of said Section; thence N 00°48'24" E a distance of 5265.22', to the north 1/4 corner of Section 34, T143N, R89W; thence N 00°51'14" E a distance of 5279.28', to the north 1/4 corner of Section 27, T143N, R98W; thence S 88°55'24" E a distance of 2625.60', to the northeast corner of said Section; thence N 00°48'41" E a distance of 1316.90', to the S 1/16 corner of Section 23, T143N, R89W; thence S 89°19'20" E a distance of 2623.93', to the CS 1/16 corner of said Section; thence N 00°49'38" E a distance of 1317.90', to the C 1/4 corner of said Section; thence S 89°20'39" E a distance of 2625.40', to the east 1/4 corner of said Section; thence S 89°14'25" E a distance

of 2633.88', to the C 1/4 corner of Section 24, T143N, R89W; thence N 00°54'35" E a distance of 1321.07', to the CN 1/16 corner of said Section; thence S 89°13'35" E a distance of 2636.56', to the N 1/16 corner of said Section; thence N 00°55'56" E a distance of 1320.44', to the northeast corner of said Section; thence S 89°00'24" E a distance of 2551.86', to the north 1/4 corner of Section 19, T143N, R88W; thence S 00°28'38" W a distance of 5276.35', to the south 1/4 corner of said Section; thence S 89°07'41" E a distance of 2620.46', to the southeast corner of said Section, also being the point of beginning.

Said tract of land contains 8,091.511 acres.

#### DESCRIPTION – Revision 1 Addition

A tract of land for a mining permit in T143N, R88W, of the 5th P.M., Mercer County, North Dakota. All bearings and distances are based on the North Dakota State Plane Coordinate System, South Zone, NAD 83. All bound calls supersede any metes within this description.

Described as follows:

Beginning at the south 1/4 corner of Section 18, T143N R88W; thence N 01°18'29" E a distance of 2633.78' to the center 1/4 corner of said Section; thence N 45°57'37" E a distance of 3309.84'; thence S 89°22'09" E a distance of 302.33' parallel with the north line of the northeast 1/4 to the east line of the northeast 1/4 of said Section; thence N 00°50'53" E a distance of 300.00' on the east line of the northeast 1/4 to the northeast corner of said Section; thence S 88°51'49" E a distance of 2622.58' on the south line of the southwest 1/4 to the south 1/4 corner of Section 8, T143N R88W; thence S 88°52'20" E a distance of 2622.42' on the south line of the southeast 1/4 to the southeast corner of said Section; thence S 89°23'38" E a distance of 2632.99' on the south line of the southwest 1/4 to the south 1/4 corner of Section 9, T143N R88W; thence S 89°27'29" E a distance of 2634.10' on the south line of the southeast 1/4 to the southeast corner of said Section; thence S 88°14'15" E a distance of 2553.55' on the south line of the southwest 1/4 to the south 1/4 corner of Section 10, T143N R88W; thence S 88°52'57" E a distance of 1817.26' on the south line of the southeast 1/4 of said Section; thence N 00°51'10" E a distance of 735.23' parallel with the east line of the southeast 1/4 of said Section; thence N 40°02'31" W a distance of 861.94'; thence N 57°12'18" W a distance of 727.19'; thence S 50°03'18" W a distance of 284.89'; thence N 78°20'02" W a distance of 407.49' to the north-south 1/4 line of said Section; thence S 01°32'39" W a distance of 340.64' on the north-south 1/4 line to the center-south 1/16 corner of said Section; thence N 88°35'02" W a distance of 1284.06' to the southwest 1/16 corner of said Section; thence S 01°13'26" W a distance of 825.21' on the 1/16 line of said Section; thence N 88°14'15" W a distance of 639.74' parallel with the south line of the southwest 1/4 to the 1/64 line of said Section; thence N 59°04'44" W a distance of 738.79' to the west line of the southwest 1/4 of said Section; thence N 89°27'30" W a distance of 2632.67', 840' north and parallel with the south line of the southeast 1/4 to the north-south 1/4 line of Section 9, T143N R88W; thence N 89°23'38" W a distance of 2633.43', 840' north and parallel with the south line and to the west line of the southwest 1/4 of said Section; thence S 00°58'02" W a distance of 360.00' on the west line to a point 480' north of the southwest corner of the southwest 1/4 of said Section; thence N 88°52'20" W a distance of 2621.89', 480' north and parallel with the south line of the southeast 1/4 to the north-south 1/4 line of Section 8, T143N R88W; thence N 88°51'50" W a distance of 2624.04', 480' north and parallel with the south line to the west line of the southwest 1/4 of said Section; thence N 89°22'10" W a distance of 400.00' parallel with the south line of the southeast 1/4 of Section 7, T143N R88W; thence S 00°51'22" W a distance of 255.85' parallel with the east line of the southeast 1/4 of said Section; thence

S 45°57'37" W a distance of 318.84' to the south line of the southeast 1/4 of said Section; thence S 45°57'37" W a distance of 2846.09' to the north-south 1/4 line of Section 18, T143N R88W; thence S 45°57'37" W a distance of 806.77'; thence S 01°18'29" W a distance of 54.61' parallel with the north-south 1/4 line to the east-west 1/4 line of said Section; thence S 01°18'29" W a distance of 2634.42', 567.01' west and parallel with the north-south 1/4 line of said Section to the south line of the southwest 1/4 of said Section; thence S 89°00'24" E a distance of 567.01' on the south line of the southwest 1/4 to south 1/4 corner of said Section, being the point of beginning.

Said tract of land contains 352.105 acres of land.

### **Worst Case Analysis**

The worst case pit scenario is supposed to reflect the mining disturbance, which results in the maximum amount of overburden and surface disturbance and thus the highest reclamation liability at any given period during the term of the permit. The five year term, 2015-2019 through 2019-2024, was reviewed in this estimated reclamation cost calculation. Based on overburden and surface disturbance, the year 2019-2024 best represents the worst case scenario of this five year term. This worst case disturbance scenario has been illustrated on the Mine Facilities Map. The associated disturbance costs are estimated in addition to the mining disturbance. Associated disturbance includes haulroads, ponds, trails, waterways, and stockpiles not located on coal.

The Worst Case Pit Cross-Sections were developed to show average overburden depth, pit length, pit configuration, and to calculate the volumes required for reclaiming the worst case pits.

In calculation of the bond, Coyote Creek used a breakeven haul distance between scrapers and loader/trucks of 4,700 linear feet. The total fleet hours for trucks did not exceed the minimum requirement of 3,000 hours so loader/trucks were not used for handling material.

### **Assumptions for Mining Disturbance (Worst Case Pit)**

1. For the purpose of these calculations, a 140 foot pit width is assumed.
2. Highwall angle = 60 degrees.
3. Spoil angle = 35 degrees.
4. Spoil side grading will occur within four spoil peaks of the active pit.
5. Highwall grading to fill the pit will be based on cross-sections of the worst case pit on the highwall side.
6. Final reclamation grade will consist of less than a 20% grade into the pit on the highwall and spoil sides in native grassland areas, and less than a 10% grade in cropland, tame pastureland, and hayland areas.
7. Ramps descend at an 8% grade to the worst case pit on the spoil side.
8. SPGM replacement thickness is based on the projected respread thickness calculations contained in the permit.
9. Dozing costs were estimated using a D11 class dozer.
10. Scraper costs associated with overburden grading were estimated using a 657G class tractor-scraper (push-pull).

11. Support equipment costs were estimated using a 16M class motor grader and a 10,000 gallon water truck.
12. Costs for SPGM respread were estimated using a Cat 657G tractor-scraper.
13. Swell factor after regrading is estimated at 10%.
14. A simple side cast mining method is utilized using a 76 cubic yard dragline as the primary earth moving equipment for overburden depths less than 85 feet. A combination dragline and backhoe/truck prebenching operation is the primary earth moving equipment for overburden depths greater than 85 feet. The backhoe/truck prebench fleet will remove any overburden greater than 85 feet above the coal, and may often remove all overburden where depths are less than 40 feet. The depth of each prebench level will range from 10 to 45 feet, with an offset of about 100 feet between each prebench level. The dragline will dig the remaining 85 feet of overburden, and will dig two pits before prebenching is required to advance.
15. Reclamation of the worst case pits provides for regrading of the last four spoil peaks behind the final highwall. The areas between the fourth spoil peak and those areas respread with SPGM are assumed to be at final grade, and will not require any additional overburden grading.
16. Additional rough grading and fine grading was included in the overburden quantities to address the variance areas where reclamation was delayed. For rough grading, four feet of cut was included for areas behind the 4<sup>th</sup> spoil peak. For final grading, one foot of cut was included for areas behind the 4<sup>th</sup> spoil peak.

#### **Assumptions for General Backfilling and Grading:**

- a) Dragline erection pad is approximately 700 feet by 450 feet.
- b) Shop/ Office Complex pad is approximately 600 feet by 450 feet.
- c) Coal Processing Facility pad is approximately 750 feet by 750 feet.
- d) Overburden volumes utilized in the bond calculation associated with support facilities such as haulroads, the coal processing facility, and the shop-office complex are based on the design triangulation surface and the post mining topography surface lowered for SPGM removal.
- e) Dirt balancing of cut and fill material is based on cross-sections of the area and/or the volume difference between the preconstruction triangulation surface and design triangulation surfaces.

#### **Assumptions for Associated Disturbance:**

- a) SPGM replacement thickness is based on soil survey data contained in each permit.
- b) Costs for SPGM respread were estimated using a Cat 657G tractor-scraper.
- c) Costs for support equipment were based on a Cat 16H motor grader and a 10,000 gallon water truck.
- d) Topsoil was replaced for subsoil stockpiles and scraper trails, and other areas where only topsoil remains to be replaced.
- e) Topsoil and subsoil were replaced for ponds, sumps, and overburden stockpiles, and any other associated disturbance where topsoil and subsoil were removed and not yet replaced.
- f) Overburden is not generally required for field engineered diversions.
- g) Overburden is generally required for engineered diversions.
- h) County Road 25 into the site is assumed to be upgraded by the county and will remain as a post mining feature. An imported overburden volume from the County Road 25 upgrade of 5,000 cubic yards has been accounted for in the Dragline Erection Site Pad/Shop-Office earthwork volume in the SE ¼ of Section 30.

## **Specific Assumptions:**

### Shop Office Removal

Structures located within the permit that will need to be disassembled and removed are associated with the shop/office/dragline erection site. Demolition of the building will be estimated at \$350,000.00. This considers 39,000 square feet of building being demolished. An internet search indicated values between \$4.00 and \$8.00 a square foot for demolition costs. If back calculated, the average cost per square foot to demolish Coyote Creek's shop/office would be \$8.97. Concrete from the dragline pad and shop office as well as gravel from the surrounding area is assumed to be buried in place in accordance with North Dakota's Solid Waste Management Program Rules during reclamation. Prior to burying the concrete, Coyote Creek will contact the ND Health Department to obtain a variance to bury the materials in place on lands which they own, as allowed by law. The burial location will be surveyed, platted and filed with Mercer County. In addition Mercer County lacks abundant gravel deposits therefore these materials are readily available for the county to recycle if they so desire. It is assumed the metal from the building will be recycled. Recyclable materials will be hauled to the nearest recycling center. It is assumed the income from the sales of the recyclable material will cover the transportation cost to the recycling center. Therefore no additional money was included for transportation of this material. The materials which cannot be recycled such as sheetrock, ceiling tiles, porcelain, will be hauled to the Mercer County Landfill. An additional \$12,000 was added to cover transportation and disposal costs of the estimated 400 tons of rubble.

### Coal Processing Facility Removal

Structures located within the permit that will need to be disassembled and removed are associated with the coal processing facility site. Demolition of the crusher, retaining wall, and conveyor belt will be estimated at \$250,000.00. This considers 720 linear feet of conveyor belt, the crusher, water load-out, MCC building, and associated concrete. An internet search indicated values between \$4.00 and \$8.00 a square foot for demolition costs. Concrete from crusher, coal stockpile retaining wall, and water load-out and shop office as well as gravel from the surrounding area is assumed to be buried in place in accordance with North Dakota's Solid Waste Management Program Rules during reclamation. Prior to burying the concrete, Coyote Creek will contact the ND Health Department to obtain a variance to bury the materials in place on lands which they own, as allowed by law. The burial location will be surveyed, platted and filed with Mercer County. In addition Mercer County lacks abundant gravel deposits therefore these materials are readily available for the county to recycle if they so desire. It is assumed the metal from the building will be recycled. Recyclable materials will be hauled to the nearest recycling center. It is assumed the income from the sales of the recyclable material will cover the transportation cost to the recycling center. Therefore no additional money was included for transportation of this material. The materials which cannot be recycled such as sheetrock, ceiling tiles, porcelain, will be hauled to the Mercer County Landfill. An additional \$4,500 was added to cover transportation and disposal costs of the estimated 150 tons of rubble.

## County Road 12 Crossing

Structures located within the permit that will need to be disassembled and removed are associated with the County Road 12 Crossing. Demolition of MSE wall and removal of (2) corrugated steel structural plates will be estimated at \$88,000.00. This considers 88 linear feet of corrugated steel structural plates, (2) 24" CMP Culverts, and approximately 12,500 square feet of MSE wall. An additional \$12,000 was added for hauling 395 tons of concrete rubble from the site. In addition Mercer County lacks abundant gravel deposits therefore these materials are readily available for the county to recycle if they so desire. It is assumed the metal from the corrugated steel structural plates will be recycled. Recyclable materials will be hauled to the nearest recycling center. It is assumed the income from the sales of the recyclable material will cover the transportation cost to the recycling center. Therefore no additional money was included for transportation of the corrugated steel structural plates.

## Haulroads:

1. Haulroad volumes for the Main Haulroad from County Road 12 to the south pits:
  - a. Plan and profiles total 488,288 cubic yards of overburden cut (subsoil cubic yard volume is accounted for in Section 3.1.1.8.3).
  - b. A haulroad surface thickness of 12 inches for a road width of 84 feet and 13,400 linear feet of haulroad. Surface materials will be placed in P31-01 with scrapers.
2. Haulroad volumes from the Shop/Office to Main Haulroad:
  - a. Plan and profiles total 210,347 cubic yards of overburden cut.
  - b. A haulroad surface thickness of 12 inches for a road width of 90 feet and 3,100 linear feet of haulroad. Surface materials will be placed in P31-01 with scrapers.
3. Haulroad volumes North of County Road 12:
  - a. Plan and profiles total 531,696 cubic yards of overburden cut (subsoil cubic yard volume is accounted for in Section 3.1.1.8.3).
  - b. A haulroad surface thickness of 12 inches for a road width of 84 feet and 20,700 linear feet of haulroad. Surface materials will be placed in cut sections of haulroad with scrapers.
4. Haulroad volumes for the remaining haulroads and spoil side haulroad are based on:
  - a. An 80 foot road width plus a three foot cut at a 4:1 slope to ditch.
  - b. A haulroad surface thickness of 12 inches for a road width of 80 feet. Surface materials will be placed in spoils or water impoundments with tractor-scrappers.

## Ramps:

1. Ramps are assumed at an 8% grade from the active pit.
2. Ramps are assumed be 3 foot above grade from the haulroad to SPGM removal area.

## Ponds, Sumps, and Diversions:

1. Pond and diversion overburden fill requirements are calculated using cross-sections of designs. Volumes are calculated using average end area method.
2. Overburden to fill containment areas will come from gravel surfacing, haulroads, pond embankments and overburden stockpiles.

Coyote Creek Crossings:

1. The volume of fill over the precast concrete box culvert structure at the Coyote Creek crossings in Sections 30 and 19 is included in the haulroad cut volumes addressed above.
2. The south Coyote Creek crossing will include a diversion channel to route the water into the culverts from the stream bed. Cost associated with filling and reclaiming the diversion is included in Sections 3.1.1.8.2 and 3.1.1.8.3. Costs for removal of the structure are as follows:
  - Two double 10'x10' precast concrete structures are anticipated at both crossing. The salvage value of the precast structures should exceed the cost of removal, however \$75,000 per crossing was included in the final cost summary.

**Use Total Cost = \$150,000.00**

Brush Creek Crossings:

1. The volume of fill over the precast concrete box culvert structure at the Brush Creek crossings in Sections 10 is included in the haulroad cut volumes addressed above.
2. The Brush Creek crossing includes a diversion channel to route the water into the culverts from the stream bed. Cost associated with filling and reclaiming the diversion is included in Sections 3.1.1.8.2 and 3.1.1.8.3. Costs for removal of the structure are as follows:
  - One double 10'x10' precast concrete structures is anticipated at the crossing. The salvage value of the precast structures should exceed the cost of removal, however \$37,500 per crossing was included in the final cost summary.

**Use Total Cost = \$37,500.00**

Section 3.1.1.8.1 - Final Cost Summary

**Reclamation Amount Subtotal:**

Total Equipment Costs =	\$19,930,753
Total Revegetation Costs =	\$600,405
Misc. Structure Removal Costs =	\$892,000
Total Miscellaneous Costs (1% of above) =	\$214,232
<b>Subtotal =</b>	<b>\$21,637,390</b>

**Administrative Costs:**

<u>Administrative Costs</u>	<u>Acreage Type</u>	<u>Acres</u>	<u>Cost Per Acre</u>	<u>Total Cost</u>
Engineering and Design Costs				
Base Map and Control	Permit	8,443	\$10	\$84,430
Design Map and Quantities	Graded	1,474	\$25	\$36,845
As-Built Map	Permit	8,443	\$5	\$42,215
Final Quantities	Graded	1,474	\$10	\$14,738
Field Supervision				
10% of First \$200,000 of Reclamation Costs				\$20,000
+1% of Reclamation Costs Over \$200,000				\$214,374
Contractor Mobilization (>\$250,000, thus no additional cost)				\$0
<b>Total Administrative Costs =</b>				<b>\$412,602</b>
<b>TOTAL ESTIMATED RECLAMATION COST =</b>				<b>\$22,049,992</b>

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## Section 3.1.1.8.2 - Overburden Equipment Hours

REGRADE	OVERBURDEN SOURCE	VOLUME (cu yds)	657G SCRAPER HOURS			D11 DOZER HOURS			COMMENTS
			HAUL DIST. (feet)	PROD. (cu yds/hr)	EQUIP. HOURS	PUSH DIST. (feet)	PROD. (cu yds/hr)	EQUIP. HOURS	
<b>Ponds, Diversion</b>									
P19-01	Pile - OB-19-01	9,400	800	403	23	0	0	0	
P24-01	Embankment	0	0	0	0	0	0	0	
P30-01	Dragline/Shop Pad	15,000	500	476	32	0	0	0	
P30-02	Pond P30-02 Embankment	10,300	0	0	0	300	700	15	
	Pond P30-03 Embankment	6,400	3,900	280	23	0	0	0	
P30-04	Pile - OB-30-01	90,005	600	449	201	0	0	0	
P31-01	Access Haulroad	210,347	2,000	332	634	0	0	0	
	Access Haulroad								
	Engineered Diversion	12,800	2,000	332	39	0	0	0	
	Access Haulroad								
	Surfacing - 90 feet wide	10,333	1,900	343	30	0	0	0	12" thick
P06-02	Pond P06-02 Embankment	3,450	800	403	9	0	0	0	
P06-03	Pile - OB-31-01	800,000	1,000	365	1,433	600	372	744	
P24-02	Pond P24-02 Embankment	0	0	0	0	0	0	0	
P24-03	Pond P24-03 Embankment	2,000	500	476	4	0	0	0	
P24-04	Pond P24-04 Embankment	7,950	500	476	17	0	0	0	
P31-02	Pond P31-02 Embankment	12,000	400	506	24	0	0	0	
P24-05	Pond P24-05 Embankment	21,900	500	634	35	0	0	0	
P25-02	Pond P25-02 Embankment	18,600	500	634	29	0	0	0	
P06-01	Pond P06-01 Embankment	16,700	500	634	26	0	0	0	
P07-01	Pond P07-01 Embankment	19,500	500	634	31	0	0	0	
Culvert Diversion	Pile -OB-30-01	50,000	4,700	247	203	0	0	0	
	Pile -OB-30-01	50,000	5,600	217	230	0	0	0	
	<b>Pond Subtotal:</b>	<b>1,366,685</b>			<b>3,021</b>			<b>759</b>	
<b>Haulroads, Ramps</b>									
<b>North-South Haulroad</b>									
Station 0 +00 to 63+00	Station 0 +00 to 63+00	279,026	2,500	286	974	0	0	0	
Station 63+00 to 85+00	Station 63+00 to 85+00	18,160	1,300	427	43	0	0	0	
Station 85+00 to 104+00	Station 85+00 to 104+00	46,088	500	476	97	0	0	0	
Station 104+00 to 114+00	Station 104+00 to 114+00	7,342	7,800	168	44	0	0	0	
Station 114+00 to 131+00	Station 114+00 to 131+00	236,283	900	383	617	0	0	0	
Station 131+00 to 178+00	Station 131+00 to 178+00	327,560	1,500	395	830	0	0	0	
Station 178+00 to 239+00	Station 178+00 to 238+00	206,789	600	598	346	0	0	0	
	Surfacing Material - 84' wide	75,796	5,300	226	335	0	0	0	12" thick
	HR west of P30-02, Sta 0+00 to 50+00, Pile OB-30-03	450,000	2,300	303	1,485	0	0	0	
	HR west of P30-03, Sta 0+00 to 50+00, Cut/Fil Balance	215,000	2,300	303	710	0	0	0	
	Surfacing Material - 80' wide	29,629	2,500	286	103	0	0	0	12" thick
<b>Ramps / Dragline Access Trails</b>									
W1/2 Section 36	3200 FT	50,000	1,000	487	103	0	0	0	
Sections 1, 6, & 31	4300 FT	116,000	1,000	487	238	0	0	0	
<b>CHF Haulroad</b>									
Station 0+00 to 37+00	Station 0+00 to 37+00	196,325	2,900	339	580	0	0	0	
Station 37+00 to 72+00	Station 37+00 to 72+00	22,213	1,800	355	63	0	0	0	
Station 72+00 to 95+00	Station 72+00 to 95+00	23,580	1,300	427	55	0	0	0	
Station 97+00 to 130+00	Station 97+00 to 130+00	94,443	1,700	367	257	0	0	0	
Station 130+00 to 166+00	Station 130+00 to 166+00	94,636	1,700	367	258	0	0	0	
Station 157+00 to 199+00	Station 161+00 to 199+00	100,499	1,900	343	293	0	0	0	
	Surfacing Material - 84' wide	64,400	6,000	206	313	0	0	0	12" thick
Remaining Ramps	Adjacent OB	28,511	0	0	0	200	1,014	28	12" thick
	<b>Haulroad Subtotals:</b>	<b>2,682,280</b>			<b>7,743</b>			<b>28</b>	
<b>Office/Pit</b>									
Section 30-SE4	Dragline Pad/Office	146,782	1,000	365	402	0	0	0	
Section 30-SW4	Remove Access Road	3,872	0	0	0	200	1,014	4	
	Substation	7,000	1,000	365	19	0	0	0	
	<b>Office/Pit Subtotal:</b>	<b>157,654</b>			<b>421</b>			<b>4</b>	

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<b>HIGHWALL SIDE &amp; SPOIL PEAKS</b>									
X-Section 5	HIGHWALL SIDE	76,326	0	0	0	150	1,316	58	
	SPOIL SIDE	674,155	0	0	0	400	538	1,254	
X-Section 6	HIGHWALL SIDE	234,383	0	0	0	150	1,316	178	
	SPOIL SIDE	910,220	0	0	0	450	483	1,885	
X-Section 7	HIGHWALL SIDE	125,430	0	0	0	200	1,014	124	
	SPOIL SIDE	686,467	0	0	0	450	483	1,422	
X-Section 8	HIGHWALL SIDE	221,200	0	0	0	200	1,014	218	
	SPOIL SIDE	338,400	0	0	0	300	700	484	
X-Section 9	HIGHWALL SIDE	136,200	0	0	0	150	1,316	103	
	SPOIL SIDE	403,850	0	0	0	300	700	577	
X-Section10	HIGHWALL SIDE	113,764	0	0	0	150	1,316	86	
	SPOIL SIDE	850,052	0	0	0	300	700	1,215	
X-Section11	HIGHWALL SIDE	134,061	0	0	0	150	1,316	102	
	SPOIL SIDE	619,711	0	0	0	300	700	886	
X-Section12	HIGHWALL SIDE	62,736	0	0	0	150	1,316	48	
	SPOIL SIDE	680,991	0	0	0	300	700	973	
X-Section13	HIGHWALL SIDE	194,211	0	0	0	150	1,316	148	
	SPOIL SIDE	329,083	0	0	0	300	700	470	
X-Section14	HIGHWALL SIDE	123,778	0	0	0	150	1,316	94	
	SPOIL SIDE	692,518	0	0	0	400	538	1,288	
X-Section15	HIGHWALL SIDE	39,796	0	0	0	150	1,316	30	
	SPOIL SIDE	469,000	0	0	0	500	439	1,069	
<b>2016-2026 MINING</b>	<b>SPOIL SIDE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Highwall and Spoil Peaks Subtotal</b>		<b>8,116,332</b>	<b>0</b>					<b>12,712</b>	
<b>Variance Areas</b>									
<u>Variance 1</u>	<u>Rough Grading</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>1,316</u>	<u>0</u>	
	<u>Final Grading</u>	<u>0</u>	<u>1,000</u>	<u>365</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>Variance 2</u>	<u>Rough Grading</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>1,316</u>	<u>0</u>	
	<u>Final Grading</u>	<u>0</u>	<u>1,000</u>	<u>365</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>Variance 3</u>	<u>Rough Grading</u>	<u>100,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>1,316</u>	<u>76</u>	
	<u>Final Grading</u>	<u>100,000</u>	<u>1,000</u>	<u>365</u>	<u>274</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>Variance 4</u>	<u>Rough Grading</u>	<u>325,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>1,316</u>	<u>247</u>	
	<u>Final Grading</u>	<u>325,000</u>	<u>1,000</u>	<u>365</u>	<u>890</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>Variance 5</u>	<u>Rough Grading</u>	<u>250,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>1,316</u>	<u>190</u>	
	<u>Final Grading</u>	<u>250,000</u>	<u>1,000</u>	<u>365</u>	<u>685</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<u>Variance 6</u>	<u>Rough Grading</u>	<u>125,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>1,316</u>	<u>95</u>	
	<u>Final Grading</u>	<u>125,000</u>	<u>1,000</u>	<u>365</u>	<u>342</u>	<u>0</u>	<u>0</u>	<u>0</u>	
<b>Variance Areas Subtotal</b>		<b>1,600,000</b>	<b>2,191</b>					<b>608</b>	
<b>Coal Processing Facility</b>									
Section 10-SE4	Crusher/Coal Stockpile Pad								
	Sediment Ponds and Diversion	132,000	500	476	277	0	0	0	
	Ponds/Miscellaneous Dozer	23,000	0	0	0	150	1,316	17	
<b>CPF Subtotal:</b>		<b>155,000</b>	<b>277</b>					<b>17</b>	
<b>Total:</b>		<b>14,077,951</b>	<b>13,654</b>					<b>14,127</b>	
TOTAL SCRAPER YARDS =		5,095,936							
TOTAL DOZER YARDS =		8,982,015							

**Overburden Piles**

REGRADE	OVERBURDEN SOURCE	VOLUME (cu yds)	HAUL DIST. (feet)	SCRAPER HOURS		TRUCK HOURS		LOADER HOURS	
				PROD. (cu yds/hr)	EQUIP. HOURS	PROD. (cu yds/hr)	EQUIP. HOURS	PROD. (cu yds/hr)	EQUIP. HOURS
Final Pit - Sect. 36 & 6	OB PILE OB-31-01	400,000	2,800	346	1156	0	0	0	0
Final Pit - Section 36	OB PILE OB-36-01	0	2,000	332	0	0	0	0	0
Final Pit - Section 36	OB PILE OB-36-02	325,000	2,000	332	979	0	0	0	0
Final Pit - Section 25	OB PILE OB-30-03	320,000	2,000	332	964	0	0	0	0
<b>Subtotal =</b>		<b>1,045,000</b>		<b>3,099</b>		<b>0</b>		<b>0</b>	

Note: These overburden piles will be hauled to the final pit area, but their volume was not needed or used to accomplish the finish grade shown on the cross sections.

Therefore all yards and dollars are covered by this plan, but there is some buffer built into the grading plan.

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Section 3.1.1.8.3 - SPGM Respread Equipment Hours

**TABLE 1: TOPSOIL RESPREAD**

LOCATION	DISTURBANCE	LAND USE	AREA (acres)	DEPTH (inches)	STOCK- PILE	VOLUME (cu yds)	HAUL DIST. (feet)	SCRAPER HOURS		TRUCK HOURS		LOADER HOURS	
								PROD. (cu yds/hr)	EQUIP. HOURS	PROD. (cu yds/hr)	EQUIP. HOURS	PROD. (cu yds/hr)	EQUIP. HOURS
Section 10-SE4	Support Facilities	Native	28.0	11.0	TS-11	41,779	800	537	77.8	0	0	0	0
Section 10-SW4	Support Facilities	Native	16.3	9.8	TS-37	21,370	900	511	41.9	0	0	0	0
Section 9-SE4	Support Facilities	Native	16.1	16.3	TS-29	35,282	1500	395	89.4	0	0	0	0
			5.6	16.3	TS-31	12,266	800	537	22.9	0	0	0	0
Section 9-SW4	Support Facilities	Native	10.1	16.7	TS-27	22,660	800	537	42.2	0	0	0	0
			0.3	16.7	TS-29	674	1500	395	1.7	0	0	0	0
Section 8-SE4	Support Facilities	Native	12.6	12.9	TS-25	21,864	800	537	40.7	0	0	0	0
Section 8-SW4	Support Facilities	Native	15.3	15.3	TS-23	31,543	800	537	58.8	0	0	0	0
Section 7-SE4	Support Facilities	Native	2.0	10.7	TS-21	2,884	300	721	4.0	0	0	0	0
Section 18-NE4	Support Facilities	Tame Pasture	12.1	15.8	TS-17	25,703	1300	427	60.2	0	0	0	0
		Native	8.2	11.9	TS-19	13,163	1300	427	30.8	0	0	0	0
Section 18-NW4	Support Facilities	Native	2.3	14.2	TS-17	4,397	1800	355	12.4	0	0	0	0
Section 18-SW4	Support Facilities	Native	17.2	16.7	TS-17	38,533	1100	465	82.8	0	0	0	0
Section 19-NW4	Support Facilities	Native	11.9	20.1	TS-15	32,142	800	537	59.9	0	0	0	0
		Cropland	6.3	20.1	TS-15	17,016	1700	367	46.4	0	0	0	0
Section 19-SW4	Support Facilities	Native	19.3	13.1	TS-33	33,862	1700	367	92.3	0	0	0	0
		Cropland	3.1	13.1	TS-33	5,439	3500	301	18.1	0	0	0	0
Section 24-SE4	Mining/Support Facilities	Native	2.9	12.6	TS-33	4,913	1800	355	13.9	0	0	0	0
Section 24-SW4	Mining	Native	2.6	12.6	TS-33	4,404	1000	487	9.0	0	0	0	0
		Native	19.0	15.3	TS-33	39,083	1000	487	80.3	0	0	0	0
		Cropland	42.8	15.3	TS-5	88,040	1000	487	180.9	0	0	0	0
Section 25-NW4	Mining	Native	5.6	15.3	TS-41	11,519	2800	346	33.3	0	0	0	0
		Native	0.8	15.3	TS-41	1,646	2800	346	4.8	0	0	0	0
		Cropland	78.8	15.3	TS-41	162,092	2800	346	468.6	0	0	0	0
Section 25-NE4	Mining	Native	5.1	15.3	TS-13	10,491	600	598	17.5	0	0	0	0
		Cropland	12.5	15.3	TS-13	25,713	2800	346	74.3	0	0	0	0
Section 25-SE4	Mining	Native	21.9	15.3	TS-9	45,048	300	721	62.5	0	0	0	0
		Cropland	25.3	15.3	TS-45	52,042	1500	395	131.8	0	0	0	0
Section 25-SW4	Mining	Native	1.4	15.3	TS-13	2,880	4000	276	10.4	0	0	0	0
Section 30-NW4	Support Facilities	Native	71.5	13.1	TS-13	125,447	500	634	197.8	0	0	0	0
		Cropland	81.0	15.3	TS-13	166,617	4000	276	604.3	0	0	0	0
Section 30-SW4	Support Facilities	Native	71.8	13.1	TS-9	125,973	1000	487	258.8	0	0	0	0
Section 30-SE4	Support Facilities	Native	23.4	13.1	TS-1	41,055	1800	355	115.8	0	0	0	0
		Cropland	10.3	13.1	TS-1	18,071	1800	355	51.0	0	0	0	0
	Waste Storage Lagoon	Cropland	2.2	13.1	TS-1	3,860	400	675	5.7	0	0	0	0
Section 31-NW4	Mining/Support Facilities	Native	26.5	13.1	TS-9	46,494	1500	395	117.8	0	0	0	0
Section 31-NE4	Support Facilities	Native	1.1	13.1	TS-3	1,930	3200	319	6.1	0	0	0	0
		0.4	13.1	TS-7	702	3200	319	2.2	0	0	0	0	
		0.1	13.1	TS-7	175	3200	319	0.6	0	0	0	0	
		Cropland	2.4	13.1	TS-9	4,211	3200	319	13.2	0	0	0	0
Section 31-SW4	Mining	Native	87.8	13.5	CC-31-03	159,357	1100	465	342.6	0	0	0	0
Section 36-NE4	Mining	Native	39.8	12.6	TS-13	67,421	3000	332	203.2	0	0	0	0
Section 36-NW4	Mining	Native	93.6	12.6	TS-41	158,558	2500	286	553.7	0	0	0	0
Section 36-SW4	Mining	Native	49.0	12.6	TS-41	83,006	1000	487	170.5	0	0	0	0
Section 36-SE4	Mining	Native	68.8	16.2	CC-31-03	149,846	1500	395	379.6	0	0	0	0
Section 1-NE4	Mining	Native	97.2	9.0	TS-47	117,612	3200	319	368.9	0	0	0	0
Section 1-SE4	Mining	Native	2.8	9.0	TS-47	3,388	3200	319	10.6	0	0	0	0
Section 6-NW4	Mining	Native	73.6	11.7	TS-47	115,773	1000	487	237.8	0	0	0	0
Section 6-NE4	Mining	Native	4.0	13.5	TS-47	7,260	500	634	11.4	0	0	0	0
Section 6-SW4	Mining	Native	87.3	11.7	TS-47	137,323	4000	276	498.1	0	0	0	0
Section 6-SE4	Mining	Native	52.2	13.5	TS-47	94,743	2200	312	303.6	0	0	0	0
Section 7-NW4	Mining	Native	12.2	12.6	TS-49	20,667	400	675	30.6	0	0	0	0
Section 7-NE4	Mining	Native	10.7	11.5	TS-49	16,543	1500	395	41.9	0	0	0	0

Total Topsoil for Mine:

1375.1

2,474,481

6,395

0

0  
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**TABLE 2: SUBSOIL RESPREAD**

LOCATION	DISTURBANCE	LAND USE	AREA (acres)	DEPTH (inches)	STOCK- PILE	VOLUME (cu yds)	HAUL DIST. (feet)	SCRAPER HOURS		TRUCK HOURS		LOADER HOURS	
								PROD. (cu yds/hr)	EQUIP. HOURS	PROD. (cu yds/hr)	EQUIP. HOURS	PROD. (cu yds/hr)	EQUIP. HOURS
Section 10-SE4	Support Facilities	Native	24.7	5.8	SS-8	19,539	900	511	38	0	0	0	0
Section 10-SW4	Support Facilities	Native	16.0	20.2	SS-8	43,493	1600	380	114	0	0	0	0
Section 9-SE4	Support Facilities	Native	12.5	34.8	SS-26	58,519	800	537	109	0	0	0	0
Section 9-SW4	Support Facilities	Native	15.1	11.8	SS-24	23,913	800	537	45	0	0	0	0
Section 8-SE4	Support Facilities	Native	11.4	20.9	SS-22	31,995	1500	395	81	0	0	0	0
Section 8-SW4	Support Facilities	Native	13.2	27.0	SS-18	47,886	2100	322	149	0	0	0	0
Section 7-SE4	Support Facilities	Native	0.6	11.4	SS-34	922	300	721	1	0	0	0	0
Section 18-NE4	Support Facilities	Native	6.5	25.8	SS-16	22,578	1000	487	46	0	0	0	0
		Tame Pasture	11.4	25.8	SS-16	39,598	1200	445	89	0	0	0	0
Section 18-NW4	Support Facilities	Native	2.3	15.7	SS-14	4,863	1900	343	14	0	0	0	0
Section 18-SW4	Support Facilities	Native	12.7	15.8	SS-14	27,061	1000	487	56	0	0	0	0
Section 19-NW4	Support Facilities	Native	8.1	44.1	SS-10	48,025	700	566	85	0	0	0	0
		Cropland	5.9	44.1	SS-10	34,981	1600	380	92	0	0	0	0
Section 19-SW4	Support Facilities	Native	15.1	19.6	SS-20	39,831	1300	427	93	0	0	0	0
		Cropland	2.7	19.6	SS-20	7,122	3100	325	22	0	0	0	0
Section 24-SE4	Mining/Support Facilities	Native	2.0	31.4	SS-30	8,443	1000	487	17	0	0	0	0
Section 24-SW4	Mining	Native	19.1	35.4	CC-24-06	90,903	900	511	178	0	0	0	0
		Cropland	42.4	32.7	CC-24-06	186,405	500	634	294	0	0	0	0
Section 30-NW4	Support Facilities	Native	36.3	19.6	SS-20	95,752	1200	445	215	0	0	0	0
Section 30-SW4	Support Facilities	Native	48.9	19.6	SS-6	128,988	1200	445	290	0	0	0	0
Section 30-SE4	Support Facilities	Native	19.6	19.6	SS-2	51,701	1600	380	136	0	0	0	0
		Cropland	1.3	19.6	SS-6	3,429	1600	380	9	0	0	0	0
		Native	2.5	19.6	SS-4	6,595	800	537	12	0	0	0	0
		Cropland	4.5	15.8	SS-4	9,529	800	537	18	0	0	0	0
Section 31-NE4	Support Facilities	Native	1.8	19.6	SS-6	4,748	2500	286	17	0	0	0	0
		Cropland	2.1	19.6	SS-6	5,539	2500	286	19	0	0	0	0
Section 31-NW4	Mining/Support Facilities	Native	26.5	19.6	SS-6	69,902	1600	380	184	0	0	0	0
Section 31-SW4	Mining	Native	62.8	34.5	CC-31-02	291,287	700	566	515	0	0	0	0
Section 25-NW4	Mining	Native	2.8	32.7	SS-46	12,310	200	772	16	0	0	0	0
		Cropland	78.3	32.7	SS-12	344,233	3500	301	1143	0	0	0	0
Section 25-NE4	Mining	Native	5.1	32.7	SS-20	22,421	400	675	33	0	0	0	0
		Cropland	12.5	32.7	SS-20	54,954	1000	487	113	0	0	0	0
Section 25-SE4	Mining	Native	21.9	32.7	SS-12	96,280	1000	487	198	0	0	0	0
		Cropland	25.3	32.7	SS-12	111,227	2500	286	388	0	0	0	0
Section 25-SW4	Mining	Native	1.4	32.7	SS-42	6,155	4000	276	22	0	0	0	0
		Cropland	81.0	32.7	SS-42	356,103	4000	276	1292	0	0	0	0
Section 36-NE4	Mining	Native	17.8	35.4	SS-42	84,716	2800	346	245	0	0	0	0
	Mining	Native	22.0	35.4	SS-6	104,705	1200	445	235	0	0	0	0
Section 36-NW4	Mining	Native	74.7	35.4	SS-42	355,522	1200	445	798	0	0	0	0
Section 36-SW4	Mining	Native	29.0	35.4	SS-52	138,021	1500	395	350	0	0	0	0
Section 36-SE4	Mining	Native	68.8	35.0	SS-54	323,280	2500	286	1129	0	0	0	0
Section 1-NE4	Mining	Native	97.2	35.4	CC-31-02	462,607	2500	286	1615	0	0	0	0
Section 1-NW4	Mining	Native	2.8	35.4	CC-31-02	13,326	2500	286	47	0	0	0	0
Section 6-NW4	Mining	Native	80.3	31.8	CC-31-02	343,309	1000	487	705	0	0	0	0
Section 6-NE4	Mining	Native	2.1	34.5	SS-56	9,741	800	537	18	0	0	0	0
Section 6-SW4	Mining	Native	87.3	36.3	SS-56	426,053	4000	276	1545	0	0	0	0
Section 6-SE4	Mining	Native	55.9	34.5	SS-56	259,283	3200	319	813	0	0	0	0
Section 7-NW4	Mining	Native	12.2	35.4	SS-56	58,064	5200	229	253	0	0	0	0
Section 7-NE4	Mining	Native	10.7	36.5	SS-56	52,507	5200	229	229	0	0	0	0

Total Subsoil for Mine

1217.1

5,038,363

14,127

0

0

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Section 3.1.1.8.4 - Equipment Hour Summary

Activity	Scraper - 657G (Hours)	Dozer - D11T (Hours)	Dozer - D9T (Hours)	Loader - 993K (Hours)	Truck - 777F (Hours)	Grader - 16M (Hours)	Water Wagon (Hours)
Overburden							
Ponds, Diversion	3,061	759	0	0	0	510	0
Haulroads, Ramps	7,743	28	0	0	0	1,291	0
Office/Pit	421	4	0	0	0	70	0
Highwall Side and Spoil Peaks	0	12,712	0	0	0	0	0
Variance Areas	2,191	608	0	0	0	365	0
Coal Processing Facility	277	17	0	0	0	46	0
Overburden Stockpiles	3,099	0	0	0	0	517	0
SPGM Respread							
Topsoil Respread	6,395	0	0	0	0	1,066	533
Subsoil Respread	14,127	0	0	0	0	2,355	1,177
<b>TOTAL HOURS =</b>	<b>37,314</b>	<b>14,128</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,220</b>	<b>1,710</b>

Cost Summary

Hourly Equipment Rate	\$354.60	\$381.56	\$216.31	\$334.12	\$260.11	\$165.01	\$165.01
<b>TOTAL COST =</b>	<b>\$13,231,544</b>	<b>\$5,390,680</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,026,362</b>	<b>\$282,167</b>
<b>TOTAL EQUIPMENT COST =</b>	<b>\$19,930,753</b>						

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Section 3.1.1.8.5 - Revegetation Cost Summary

<u>Operation</u>	<u>Acres</u>	<u>Cost per Acre</u>	<u>Applications</u>	<u>Total Cost</u>
<b>Field Preparation</b>				
Chiseling	1474	\$11.85	2	\$34,929
Fertilizer - Material	1474	\$16.09	1	\$23,713
Application	1474	\$6.39	1	\$9,418
Rock Picking	1474	\$55.25	1	\$81,427
<b>Seeding</b>				
Native: Material	1196	\$131.22	1	\$156,986
Application	1196	\$19.86	1	\$23,761
Pre-crop: Material	265	\$54.50	1	\$14,459
Application	265	\$16.94	1	\$4,494
Tame Pasture: Material	12	\$26.73	1	\$323
Application	12	\$8.96	1	\$108
<b>Mulching</b>				
< 10% Slope	1221	\$100.00	1	\$122,060
> 10% Slope	253	\$150.00	1	\$37,980
<b>Tree Plantings</b>				<u>\$90,747</u>
<b>TOTAL REVEGETATION COSTS =</b>				<b>\$600,405</b>

**CALCULATIONS USED FOR ABOVE SUMMARY:**

<b>SEED COSTS:</b>	<u>Pounds Per Acre</u>	<u>Cost Per Pound</u>	<u>Cost Per Acre</u>
<b><u>Native Grassland Seed Mixture</u></b>			
<i>Western Wheatgrass</i>	1.00	\$6.25	\$6.25
<i>Slender Wheatgrass</i>	0.38	\$2.00	\$0.76
<i>Green Needlegrass</i>	1.05	\$13.00	\$13.65
<i>Blue Grama</i>	0.90	\$8.75	\$7.88
<i>Sideoats Grama</i>	2.25	\$9.50	\$21.38
<i>Switchgrass</i>	1.31	\$8.00	\$10.48
<i>Little Bluestem</i>	1.50	\$12.25	\$18.38
<i>Big Bluestem</i>	1.50	\$13.50	\$20.25
<i>Prairie Sandreed</i>	1.00	\$25.00	\$25.00
<i>Forbs</i>	<u>0.24</u>	<u>\$30.00</u>	<u>\$7.20</u>
<b>Total</b>	<b>11.13</b>	<b>\$11.79</b>	<b>\$131.22</b>
<b><u>Pre-Cropland Seed Mixture</u></b>			
<i>Pubescent Wheatgrass</i>	4	\$3.00	\$12.00
<i>Western Wheatgrass</i>	4	\$4.50	\$18.00
<i>Alfalfa</i>	<u>10</u>	<u>\$2.45</u>	<u>\$24.50</u>
<b>Total</b>	<b>18</b>	<b>\$3.03</b>	<b>\$54.50</b>
<b><u>Tame Pastureland Seed Mixture</u></b>			
<i>Pubescent Wheatgrass</i>	8.5	\$3.00	\$25.50
<i>Alfalfa</i>	<u>0.5</u>	<u>\$2.45</u>	<u>\$1.23</u>
<b>Total</b>	<b>9</b>	<b>\$2.97</b>	<b>\$26.73</b>

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TREE PLANTINGS		Cost		
		<u>Per 100 feet</u>	<u>Required Footage</u>	
	Fabric	\$65.00	-	\$0.00
	Tree	\$30.00	238,491	\$71,547.30
		<u>Cost per</u>	<u>Application</u>	
		<u>Acres</u>	<u>Rate*</u>	
	Mulch	19.2	10	<u>\$19,200.00</u>
				\$90,747.30

\* Mulch will be applied in tree plantings at 10 times the normal rate.

ACREAGE	
Topsoil Respread =	1,375 Acres
Topsoil Pile Bases =	<u>99</u> Acres
<b>Total Acreage =</b>	<b>1,474</b> Acres

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NACC-1302 Coyote Creek alluvial water level analysis

Well ID	Location	Location Comment	Date of Reading	MP Elevation	Measured level	Water Elevation	Change since mining began (feet)	Coyote Creek Elev.
CM12-088	Sec. 31 NE1/4	east side of Voigt's north alfalfa field	3/28/2016	1903.32 ft.	11.40 ft.	1891.92 ft.	Pre-mining	
CM12-088	Sec. 31 NE1/4	east side of Voigt's north alfalfa field	3/19/2019	1903.32 ft.	10.89 ft.	1892.43	+51	
CM12-088	Sec. 31 NE1/4	east side of Voigt's north alfalfa field	6/25/2019	1903.32 ft.	12.05 ft.	1891.27	-65	
CM12-088	Sec. 31 NE1/4	east side of Voigt's north alfalfa field	9/11/2019	1903.32 ft.	11.94 ft.	1891.38	-54	1891.5
CM12-088	Sec. 31 NE1/4	east side of Voigt's north alfalfa field	9/24/2019	1903.32	11.35 ft.	1891.97	+05	

From baseline (8/12/2012) to before start of mining (mid-April 2016) water elevations ranged from a low of 1892.26 to a high of 1894.64 (range of 2.38 ft.)  
 From baseline (8/12/2012) to before start of mining (1st Quarter 2016 measurement) the water level of CM12-088 dropped by .62 ft.  
 2017 was a significant drought year. From 4th Qtr 2017 to 1st Qtr 2018 the water level of monitoring well CM12-088 increased from 1891.92 to 1893.61 (total of 1.69 ft.)  
 The 3/27/2018 water level of 1893.61 for monitoring well CM12-088, after two years of coal removal, represents the 3rd highest water level from this well since 2012 (8 years/30 records)  
 2014 precipitation was recorded at 26.2 inches. The 2nd and 3rd Quarters of 2014 registered the two highest water level elevations of CM12-088 since 2012 (8 years/30 records)

Well ID	Location	Location Comment	Date of Reading	MP Elevation	Measured level	Water Elevation	Change since mining began (feet)	Coyote Creek Elev.
CM12-208	Sec. 31 SE1/4	west side of Voigt's south alfalfa field	3/28/2016	1923.31 ft.	12.68 ft.	1910.63	Pre-mining	
CM12-208	Sec. 31 SE1/4	west side of Voigt's south alfalfa field	3/19/2019	1923.31 ft.	12.55 ft.	1910.76	+13	
CM12-208	Sec. 31 SE1/4	west side of Voigt's south alfalfa field	6/13/2019	1923.31 ft.	13.12 ft.	1910.19	-44	
CM12-208	Sec. 31 SE1/4	west side of Voigt's south alfalfa field	9/11/2019	1923.31 ft.	12.96 ft.	1910.35	-28	1911.2
CM12-208	Sec. 31 SE1/4	west side of Voigt's south alfalfa field	9/24/2019	1923.31 ft.	12.1 ft.	1911.21	+58	

From baseline (8/12/2012) to before start of mining (mid-April 2016) water elevations ranged from a low of 1910.87 to a high of 1913.84 (range of 2.97 ft.)  
 From baseline (8/12/2012) to before start of mining (1st. Quarter 2016 measurement) the water level of CM12-208 dropped by 1.93 ft.  
 2017 was a significant drought year. From 4th Qtr 2017 to 1st Qtr 2018 the water level of monitoring well CM12-208 increased from 1910.21 to 1912.35 (total of 2.14 ft.)  
 2014 precipitation was recorded at 26.2 inches. The 2nd and 3rd Quarters of 2014 registered the highest and 5th highest water level elevations of CM12-208 since 2012 (8 years/30 records)

Coyote Creek Mine Precipitation - CoCoRaHS (Data Station ND-MR-7) used from January - April and November - December. May - October data from recording rain gauges at the mine  
 Beulah Historic Average = 16.59 inches

Year	Inches
2014	26.2
2015	12.58
2016	21.4
2017	9.55
2018	15
2019	

1st qtr = 1.32, 2nd qtr = 7.05, 3rd qtr =

Table



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objectid*	Well_ID*	Elev_Casing_Top	Date	Depth_to_Water	Water_Elevation	Comments
262	CM12-08B	1903.32	8/12/2012	10.78	1892.54	<Null>
263	CM12-08B	1903.32	11/7/2012	10.69	1892.63	<Null>
264	CM12-08B	1903.32	12/4/2012	10.83	1892.49	<Null>
265	CM12-08B	1903.32	1/16/2013	10.84	1892.48	<Null>
266	CM12-08B	1903.32	3/21/2013	10.07	1893.25	<Null>
267	CM12-08B	1903.32	5/28/2013	9.93	1893.39	<Null>
268	CM12-08B	1903.32	9/13/2013	10.04	1893.28	<Null>
269	CM12-08B	1903.32	3/24/2014	10.12	1893.2	<Null>
270	CM12-08B	1903.32	6/30/2014	9.7	1893.62	<Null>
271	CM12-08B	1903.32	9/15/2014	8.68	1894.64	<Null>
272	CM12-08B	1903.32	11/8/2014	9.78	1893.54	<Null>
273	CM12-08B	1903.32	3/20/2015	9.86	1893.46	<Null>
274	CM12-08B	1903.32	6/30/2015	9.75	1893.57	<Null>
275	CM12-08B	1903.32	9/10/2015	11.06	1892.26	<Null>
276	CM12-08B	1903.32	12/6/2015	10.89	1892.43	<Null>
1127	CM12-08B	1903.32	3/28/2016	11.4	1891.92	<Null>
1205	CM12-08B	1903.32	6/27/2016	11.51	1891.81	<Null>
1283	CM12-08B	1903.32	9/28/2016	11.57	1891.75	<Null>
1361	CM12-08B	1903.32	11/13/2016	11.42	1891.9	<Null>
1437	CM12-08B	1903.32	3/25/2017	10.5	1892.82	<Null>
1513	CM12-08B	1903.32	6/25/2017	11.75	1891.57	<Null>
1589	CM12-08B	1903.32	9/28/2017	11.36	1891.96	<Null>
1665	CM12-08B	1903.32	10/23/2017	11.4	1891.92	<Null>
1786	CM12-08B	1903.32	3/27/2018	9.71	1893.61	<Null>
1787	CM12-08B	1903.32	6/29/2018	11.7	1891.62	<Null>
1788	CM12-08B	1903.32	9/10/2018	11.88	1891.44	<Null>
1789	CM12-08B	1903.32	10/4/2018	11.74	1891.58	<Null>
2030	CM12-08B	1903.32	3/19/2019	10.89	1892.43	<Null>
2031	CM12-08B	1903.32	6/25/2019	12.05	1891.27	<Null>
2032	CM12-08B	1903.32	9/11/2019	11.94	1891.38	PSC measurement
2431	CM12-08B	1903.32	9/24/2019	11.35	1891.97	PSC measurement

Table



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objectid*	Well_ID*	Elev_Casing_Top	Date	Depth_to_Water	Water_Elevation	Comments
939	CM12-20B	1923.31	8/12/2012	10.75	1912.56	<Null>
940	CM12-20B	1923.31	11/5/2012	10.74	1912.57	<Null>
941	CM12-20B	1923.31	12/4/2012	10.74	1912.57	<Null>
942	CM12-20B	1923.31	3/21/2013	9.74	1913.57	<Null>
943	CM12-20B	1923.31	5/28/2013	9.67	1913.64	<Null>
944	CM12-20B	1923.31	9/13/2013	10.38	1912.93	<Null>
945	CM12-20B	1923.31	3/24/2014	10.25	1913.06	<Null>
946	CM12-20B	1923.31	6/22/2014	9.47	1913.84	<Null>
947	CM12-20B	1923.31	9/12/2014	10.27	1913.04	<Null>
948	CM12-20B	1923.31	11/7/2014	11.51	1911.8	<Null>
949	CM12-20B	1923.31	3/20/2015	11.34	1911.97	<Null>
950	CM12-20B	1923.31	6/20/2015	10.49	1912.82	<Null>
951	CM12-20B	1923.31	9/10/2015	12.44	1910.87	<Null>
952	CM12-20B	1923.31	10/21/2015	12.39	1910.92	<Null>
1174	CM12-20B	1923.31	3/28/2016	12.68	1910.63	<Null>
1252	CM12-20B	1923.31	6/27/2016	13.02	1910.29	<Null>
1330	CM12-20B	1923.31	9/28/2016	12.97	1910.34	<Null>
1408	CM12-20B	1923.31	11/13/2016	12.92	1910.39	<Null>
1484	CM12-20B	1923.31	3/25/2017	11.93	1911.38	<Null>
1560	CM12-20B	1923.31	6/25/2017	13.18	1910.13	<Null>
1636	CM12-20B	1923.31	9/28/2017	13.06	1910.25	<Null>
1712	CM12-20B	1923.31	10/24/2017	13.1	1910.21	<Null>
1974	CM12-20B	1923.31	3/27/2018	10.96	1912.35	<Null>
1975	CM12-20B	1923.31	6/29/2018	12.78	1910.53	<Null>
1976	CM12-20B	1923.31	9/10/2018	13.34	1909.97	<Null>
1977	CM12-20B	1923.31	10/5/2018	13.17	1910.14	<Null>
2033	CM12-20B	1923.31	3/19/2019	12.55	1910.76	<Null>
2034	CM12-20B	1923.31	6/25/2019	13.12	1910.19	<Null>
2035	CM12-20B	1923.31	9/11/2019	12.96	1910.35	PSC measurement
2432	CM12-20B	1923.31	9/24/2019	12.1	1911.21	PSC measurement